

The Circular Economy, Trade, and Development:

Addressing spillovers and leveraging opportunities



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Table of Contents

1. Introduction.....	1
2. The circular economy: an overview.....	4
3. Shifts in trade flows and implications for developing economies.....	7
3.1 Overview.....	7
3.2 Reduced trade in primary raw materials; increased trade in secondary raw materials.....	9
3.3 Increased trade in waste material.....	12
3.4 Increased trade in second-hand goods.....	17
3.5 Shift in trade towards products meeting CE standards.....	20
3.6 Emergence of new trading opportunities in services.....	22
4. Policy options for developing economies in moving towards a circular economy.....	26
4.1 The role of domestic policy.....	26
4.2 The role of Trade Agreements.....	28
4.2.1 Define key product categories.....	28
4.2.2 Develop quality standards for the circular economy.....	30
4.2.3 Negotiate market access.....	33
4.3 The role of the WTO.....	34
5. Conclusion.....	36
References.....	37
Appendix: Predicted shifts in trade caused and impact on developing economies.....	41

Executive Summary

As a result of global value chains, a transition to a circular economy in some countries will have an impact on international trade flows. While the transition to a circular economy agenda is predominantly driven by national policies, there is increased awareness that it will have associated impact on international supply chains that will extend beyond national borders. Specifically, several global trends can be expected, including: reduced trade in primary raw materials; increased trade in secondary raw materials; increased trade in recyclable waste; increased trade in second-hand products; and increased trade in services.

These anticipated shifts in international trade flows will be especially significant for developing economies – creating both challenges and opportunities. For instance, it could potentially reduce export earnings of commodity-dependent developing economies, undermine industrial development, increase import of waste exceeding a country's recycling capacity, and create a shift in trade towards products that meet circular economy standards. However, these shifts also present new opportunities for job creation and development, especially in emerging services industries like recycling, repurposing and re-use of materials. It could also lead to new opportunities for the commodities-dependent countries, offering an alternative strategy to the traditional manufacturing-led export model for industrial development.

There are different ways in which a developing economy can buffer potentially negative spillovers associated with a transition to a circular economy while leveraging any opportunities – with a role for proactive domestic policies, regional trade agreements, and the World Trade Organization. On the domestic level, developing economies must undertake a study to identify any sections that could be vulnerable to job loss over the long run, map opportunities in new sectors, with an emphasis on emerging services, and create a roadmap that enables a country to be proactive as opposed to reactive to the transition to a circular economy.

International trade agreements could play a role in (i) defining key product categories for new tradeable products associated to the circular economy; (ii) developing and harmonizing quality standards for circular economy products; (iii) opening markets for trade in goods and services relevant to the circular economy; and (iv) providing technical assistance for developing countries. In addition, the World Trade Organization (WTO) could play a role in advancing an inclusive transition to a circular economy by: (i) including the circular economy as a priority area in the multilateral agenda; (ii) strengthening the role of the Committee on Trade and Environment; (iii) facilitating specific initiatives related to the circular economy; and (iv) strengthening the link between Aid for Trade and circular economy objectives.

1 Introduction

Modern consumption has created unsustainable levels of resource extraction and waste generation, putting high pressure on the environment and climate. The “take-make-use-dispose” pattern of production and consumption that characterizes the linear economy has resulted in an inefficient use of scarce resources, harmful emissions, and the generation of large amounts of waste. In coming decades, a growing population and increasing levels of disposable income in many countries are expected to further exacerbate these environmental challenges.¹ Indeed, the OECD’s *Global Material Resources Outlook Report* predicts that, if policies remain unchanged, global primary materials use will almost double by 2060.²

In response to these challenges, and aiming to make supply chains more resilient, a number of advanced economies have signaled an increased policy interest in transitioning to a more resource-efficient and circular economy. Circular economy roadmaps have been adopted by China (2013), the European Union (2015), Finland, France, the Netherlands and Scotland (2016), Slovenia and Portugal (2017), and Japan.³ Moreover, developing economies have adopted a number of initiatives in the context of the circular economy. These policy frameworks aim to achieve a 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 by employing a variety of different instruments, including green public procurement, extended producer responsibility (EPR) schemes, product design standards, recycling standards, waste disposal taxes, and research and development.⁴

A shift towards a circular economy goes hand-in-hand with achieving climate targets by advancing a low carbon growth path. Along with supporting a transition towards renewable energy, the circular economy can eliminate almost half of the remaining

¹ OECD (2019), *Global Material Resource Outlook to 2060: Economic Drivers and Environmental Consequences*, p. 15.

² *Ibid.*, p. 15.

³ *Ibid.*, p. 34.

⁴ *Ibid.*, p. 37.

carbon emissions by changing the way products are designed.⁵ Reinventing a regenerative food system, based on optimization of nutrient loops, would also contribute to water impact, biodiversity, and nutrition. Moreover, a circular economy transition would directly contribute to a number of the Sustainable Development Goals (SDGs), most directly to Goal 12 which aims to ensure “sustainable consumption and production patterns”.⁶ Furthermore, the International Labor Organization (ILO) has predicted that a transition to an economy that emphasizes reuse, recycling and remanufacturing will create around 6 million new jobs.⁷

While the transition to a circular economy agenda is predominantly driven by national policies, there is increased awareness that it will have associated impact on international supply chains that will extend beyond national borders. For instance, a widespread transition towards a circular economy may lead to a reduced trade in primary raw materials; increased trade in secondary raw materials; increased trade in recyclable waste; increased trade in second-hand products; and increased trade in services.

These anticipated shifts in trade flows will be especially significant for developing economies. On the one hand, it creates challenges: advanced economies’ transition to a circular economy could potentially reduce the export earnings of commodity-dependent developing economies, undermine industrial development, increase import of waste exceeding a country’s recycling capacity, and reduce exports in manufacturing products due to increasingly stringent product standards.

On the other hand, the circular economy presents new opportunities for job creation and development, especially in emerging services industries like recycling, repurposing and re-use of materials. It could also lead to new opportunities for the commodities and manufacturing sectors.⁸ In this context, the circular economy offers an alternative strategy to the traditional manufacturing-led export model for industrial development.

⁵ Ellen MacArthur Foundation (2019), “Completing the Picture: How the Circular Economy Tackles Climate Change”https://www.ellenmacarthurfoundation.org/assets/downloads/Climate_Executive_Summary.pdf.

⁶ The circular economy model is also directly aligned with several other economic and environmental goals of the 2030 Agenda for Sustainable Development, including Goal 6 (clean water and sanitation); Goal 9 (promoting sustainable industrialization and foster innovation); Goal 11 (Sustainable Cities and Communities); Goal 13 (Sustainable Consumption and Production); Goal 14 (Life Below Water); and Goal 15 (Life on Land).

⁷ ILO (2018), “Greening with Jobs”, World Employment Social Outlook.

⁸ UNCTAD (May 2018), “Circular Economy: The New Normal?”, UNCTAD Policy Brief, No. 61.

This paper aims to obtain a clearer understanding of the linkages between the circular economy, trade, and development, and the various tools available to leverage opportunities and mitigate any negative spillovers.⁹ Specifically, this paper is organized in two sections: the first section maps out different ways in which advanced countries' circular economy roadmaps might impact trade flows with developing economies. The second part focuses on how the effective use of trade policy can contribute to rendering the transition towards a circular economy more inclusive. It does so by looking at the role of domestic governments, regional trade agreements (RTAs), and the World Trade Organization (WTO) in helping developing economies capitalize on advanced economies' transitions to a circular economy.

⁹ Importantly, in doing so, this paper makes a distinction between the impact on developing countries of shifting trade flows due to *other (mostly developed) countries* transitioning to a circular economy, and policy action taken by developing countries to transition to a circular economy at the national level, and between exports and imports.

2. The circular economy: an overview

While the term “circular economy” is gaining momentum in international organizations and governments, the concept has deep-rooted origins in ideas that first became popular in the late 1970s.¹⁰ Indeed, it 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.¹¹ It also relates and overlaps with environment-related concepts such as “green growth” and Sustainable Development Goals (SDG) 12 aiming to ensure “sustainable consumption and production patterns”. Thus, while the ideas of the circular economy are not novel, 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.

Specifically, the circular economy stands for a fundamental paradigm shift and transformation, in which the concept of waste is significantly reduced¹² through design, and remaining waste is understood as a resource. It is characterized by three key principles:¹³

1. **Design-out waste:** This concerns the rethinking, reducing and redesign of products. Waste does not exist when biological or technical components of a product are designed by intention to fit within a biological or technical cycle. According to the Ellen MacArthur Foundation, 80 percent of environmental impacts are determined at the product design stage.¹⁴
2. **Keep products/materials in use:** This involves the keeping of products and materials in the economy through reuse, repair, remanufacturing, and recycling of products.

¹⁰ Ellen MacArthur Foundation, “Circular Economy – Schools of thought”.

¹¹*Ibid.*

¹² It is impossible to eliminate all waste as a product cannot be recycled *ad infinitum*.

¹³ Lucas et al. (2016), “Potential effects of circular economy policies in the EU and the Netherlands on developing countries”, PBL Netherlands Environmental Assessment Agency.

¹⁴ Ellen MacArthur Foundation, “What is the circular economy ?”

3. **Regenerate natural systems:** This concerns the avoidance of the use of non-renewable sources, and the preservation/enhancement of renewable ones.

Governments have been adopting a variety of different policies to advance the principles of a circular economy. For example, on 11 March 2020 – in the midst of the COVID-19 pandemic – the European Commission launched a new *Circular Economy Action Plan*.¹⁵ If anything, the pandemic has demonstrated the fragility of international supply chains, further strengthening the European Union’s resolve to reduce dependency on primary raw materials by adopting a circular economy model.

Specifically, the EU’s new *Circular Action Plan* contains a roadmap towards a climate-neutral circular economy where growth is decoupled from resource use. For instance, it proposes to introduce measures to ensure that electronics and ICT products last longer, with companies keeping ownership of products throughout their lifecycle; measures to incentivize eco-design of products; measures to phase out single-use plastic; initiatives on reuse to substitute single-use packaging; measures on waste prevention and reduction, increasing recycling content in products, and minimizing waste exports outside the EU.¹⁶ The EU’s new *Circular Economy Action Plan* builds on previous legislation, including waste legislation with minimum requirements for Extended Producer Responsibility (EPR) and the *EU Strategy for Plastics in the Circular Economy*, encouraging national and regional authorities to use taxation and other economic instruments to reward the uptake of recycled plastics and to use public procurement and funds to support plastic waste prevention and recycling of plastics.¹⁷

China provides another example of a country that has adopted numerous laws to support a transition towards a circular economy. For instance, under the Circular Economy Promotion Law, which came into effect in 2009, manufacturers are encouraged to use recyclable materials in their packaging. A second major law, which was part of China’s 13th Five year plan, sets out an EPR framework and sets out national goals for waste reduction and the circular economy, including the requirement that 50 percent of all used packaging is biodegradable by 2020; that 50 percent of all waste must be recycled by 2025; and that new products contain at least

¹⁵ European Commission (2020), “Circular Economy Action Plan”. The EU launched a first circular action plan in 2015.

¹⁶ *Ibid.*

¹⁷ European Commission (16 January 2018), “A European Strategy for Plastics in a Circular Economy”.

20 percent recycled materials.¹⁸ China also adopted a number of industry-specific goals.

While different countries' industrial policy packages are necessarily distinct, they commonly include a combination of the following measures: different levels of taxation for used or reused or recycled products, reduced value added tax for repair and reuse services, extended producer responsibility schemes, circularity efficiency and labelling schemes, green public procurement, minimum recycling standards, and extended legal warranties. Most of these policies relate to the second principle, i.e., to extend the lifespan of products. These policies are linked to the three different elements of the circular economy as set out in the Table 1 below.

TABLE 1: LINKING CE PRINCIPLES TO KEY CE POLICY INSTRUMENTS

CE Principle	Key Policy Instruments
Design-out waste	<ul style="list-style-type: none"> • Minimum requirement/standards for product durability, reparability, the reuse of components through Ecodesign and labelling (e.g., EU Ecodesign Directive, EU Ecolabelling; ISO 14006:2011 Guidelines for incorporating eco-design) • Green public procurement
Keep products and materials in use	<ul style="list-style-type: none"> • Extended Producer Responsibility schemes (EPRs) • Taxation on landfill and incineration • Different levels of taxation for reused or recycled products • Extended legal warranties • Green public procurement •
Regenerate natural systems	<ul style="list-style-type: none"> • Policies to encourage shifts to renewable energy (e.g., carbon tax); requirements for bio-based packaging/bans on single-used plastic • Green public procurement

¹⁸ Renery, Benoit (2009) "The Circular Economy in China".

3. Shifts in trade flows and implications for developing economies

3.1 Overview

By moving into the mainstream, the circular economy is expected to increasingly impact international trade flows. This will likely be especially significant for developing economies, due to existing patterns of international trade. It is difficult, if not impossible, to predict how trade patterns will shift. Indeed, changes to international trade flows – and 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) the number of countries that are transitioning towards a circular economy; (iii) socioeconomic trends, such as population growth and rising standards of living; (iv) the extent to which specific sectors/material streams will be affected by the circular economy; (v) a developing economies' dependency on exports of primary raw materials, in the context of a country's resource endowments and consumption patterns; and (iv) a developing economy's ability to absorb and respond to shifts in the global value chain.

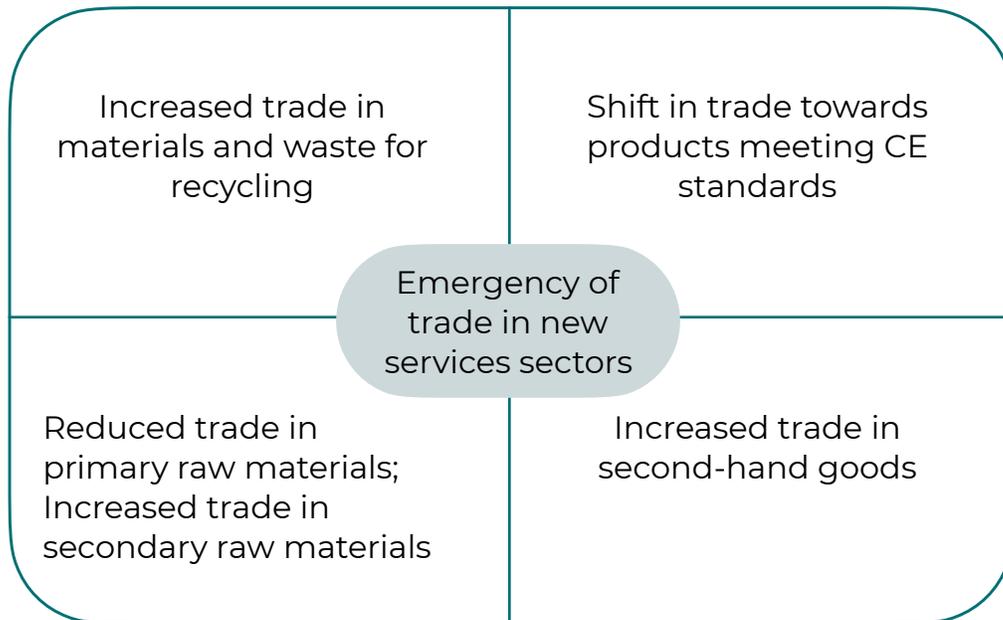
Despite these unknowns, several important trends in the shift in global trade flows can be expected, based on the principles of the circular economy and the corresponding policy instruments that governments are adopting to advance these principles, as mentioned above. These include:

- Increased trade in materials and waste for recycling;¹⁹
- Shift in trade towards products that meet circular economy standards
- Increased trade in second-hand goods;

¹⁹ Some of the research suggests that trade in waste for recycling will decrease, as adoption of the circular economy 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.

- Reduced trade in primary²⁰ raw materials; increased trade in secondary²¹ raw materials;
- Emergence of trade in new services sectors (e.g., waste management, recycling, refurbishment, remanufacturing etc.).

FIGURE 1: PREDICTED IMPACT OF THE CIRCULAR ECONOMY ON TRADE FLOWS



Most of the shifts in trade flows created by the circular economy stem from the second principle mentioned above, i.e., keeping products and materials in the loop. Extending the life of a product creates markets for new products, e.g., scrap material and waste for recycling and secondary raw materials, expands markets for re-use through second-hand products, and reduces, *ceteris paribus*, demand for primary raw materials.

The section below elaborates on each of these four categories in which trade is expected to change and the implications this will have for developing economies. It will further highlight some of the variables that would impact the extent to which the change may occur.

²⁰ This 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).

²¹ This 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. Examples include: usable waste of ferrous, nonferrous and precious metals; discontinued articles made of polyethylene; worn out tire threads, and waste paper.

3.2 Reduced trade in primary raw materials; increased trade in secondary raw materials

In assessing the impact on demand for primary raw materials, it is important to consider socioeconomic trends. Global population is projected to reach 10 billion by 2060.²² This, coupled with higher incomes, is expected to drive a strong increase in demand for material resources. These factors may, at least in the near future, continue to result in an increase in demand for primary raw materials – even if the circular economy transition were to become mainstream.

That said, a transition towards a circular economy implies, *ceteris paribus*, a reduced need for primary raw materials.²³ Indeed, there will be an increased emphasis on trying to substitute primary raw materials for secondary raw materials. The trade implications on both primary and secondary raw materials could be significant, given that natural resources are unequally distributed, making trade in natural resources highly unbalanced.²⁴

A reduction in the demand for primary raw materials could have serious implications for commodity-dependent developing economies where resource revenues have been a key driver of economic growth. It has been estimated that at least 10 percent of low-income countries' GDP comes from natural resource rents.²⁵ This means that a fundamental decoupling of economic growth from resource use driven by the circular economy will put pressure on developing economies to alter their dominant economic models and industrial strategy. This, in turn, creates an opportunity to move away from the so-called “resource course”.

The exact impact of a transition towards a circular economy on developing economies' extractive industries will vary, depending on (i) the speed and scope of the circular economy transition; (ii) the characteristics of a developing country's commodities export; and (iii) the type of raw materials a country exports.

A study (2016) commissioned by the Netherlands calculated the impact on raw material demand under three different scenarios: (i) only the Netherlands moves

²² OECD, *Global Material Resource Outlook to 2060*, p. 15.

²³ See, e.g., IEEP (2019), “EU Circular Economy and Trade: improving policy coherence for sustainable development”; De Jong et al. (2016), “The Circular Economy and Developing Countries: A Data Analysis of the Impact of a Circular Economy on Resource-Dependent Developing Nations”, *The Hague Centre for Strategic Studies*.

²⁴ OECD (25 September 2018), “International Trade and the Transition to a More Resource Efficient and Circular Economy – Concept Paper”, p. 15.

²⁵ *Ibid*, p. 22.

towards a circular economy; (ii) the European Union implements the circular economy roadmap; and (iii) circular economy principles are adopted worldwide. While primary raw materials exports from Africa would be minimally affected if only the Netherlands were to transition to a circular economy, the study found that an EU-wide transition to a circular economy could result in a reduced demand in raw materials accounting for a direct loss of , for example, 1.6 percent of Mozambique’s revenue and 1.2 percent of the Republic of the Congo’s revenue.²⁶ While these numbers are still quite low, they effect could be profound if major non-European economies were also to transition to a circular economy– ranging from 8.12 percent of total export GDP in Mozambique to 13.56 percent of total export GDP in the Republic of the Congo.²⁷

Country characteristics are crucial in anticipating the impact of the circular economy transition on developing economies. Specifically, developing economies with a highly concentrated export basket will be more vulnerable to trade shifts compared to economies that are more diversified. Similarly, the concentration of export destinations matter: if a country exports most of its primary raw materials to one country, it will likely be more vulnerable to shifts in global value chains induced by a transition to a circular economy.

Another factor that will determine a country’s vulnerability is the types of raw materials at issue. Circular roadmaps typically single out a number of raw materials, or have a sector-specific focus. For instance, the EU’s 2015 Circular Economy Action Plan focuses on “critical raw materials” identified based on their high economic importance for the European Union and their vulnerability to supply disruption.²⁸ This includes rare earths and other precious metals, but also phosphorous. Developing economies that export these raw materials, as opposed to raw materials that are not considered critical, could be expected to be impacted by these shifts more than countries that export “non-critical” raw materials.

Despite the challenges developing economies may face as a result of a decoupling between economic growth and resources, 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.

²⁶ De Jong et al., (2016) “The Circular Economy and Developing Countries”, p. 26.

²⁷ *Ibid*, p. 35.

²⁸ European Commission (2 December 2015), “Closing the Loop – An EU action plan for the Circular Economy”.

The flipside of reduced demand in primary raw materials is an increased demand for secondary raw materials. For example, in 2018, the European Union, Japan and the United States were the largest exporters of scrap metal²⁹, with Turkey, South Korea, India, and the United States being the largest importers.³⁰ Specifically, some countries, including Turkey, Belarus, Egypt, Malaysia and Thailand, are dependent on scrap imports for more than 30 percent of their total steel production.³¹ In 2014, India accounted for 13 percent of global secondary steel production, despite limited supplies of domestic steel scrap.³² This implies that trade in scrap played an important role in enabling India's production in secondary steel.³³

Thus, the circular economy provides developing economies the opportunity to enhance capacity in recycling of steel into scrap material, and develop capacity in the production of secondary steel. Since scrap importing countries are often also manufacturing hubs, it would not only be less polluting, but also economically efficient to reuse recycled material in proximity to these recycling hubs.

For developing economies to develop competitive scrap material production, it is important that they have access to feedstock material at low prices. This could potentially be undermined by the imposition of export restrictions on scrap material, in the form of bans, quotas and taxes. Another key challenge in the trade in scrap materials concerns the lack of an internationally accepted definition of secondary raw materials, as will be elaborated on below. This makes it very difficult to track trade flows in secondary raw materials.

²⁹ Statista (2018), Major Exporting Markets of Steel Scrap, available at: <https://www.statista.com/statistics/281051/major-exporting-countries-of-steel-scrap/>

³⁰ Statista, Major Target Countries for Steel Scrap Imports, available at: <https://www.statista.com/statistics/281050/major-target-countries-for-steel-scrap-imports/>.

³¹ Thomas Danjczek, "Scrap Supply in the Global Steel Industry: A Better Path", OECD Steel Committee (December 2010).

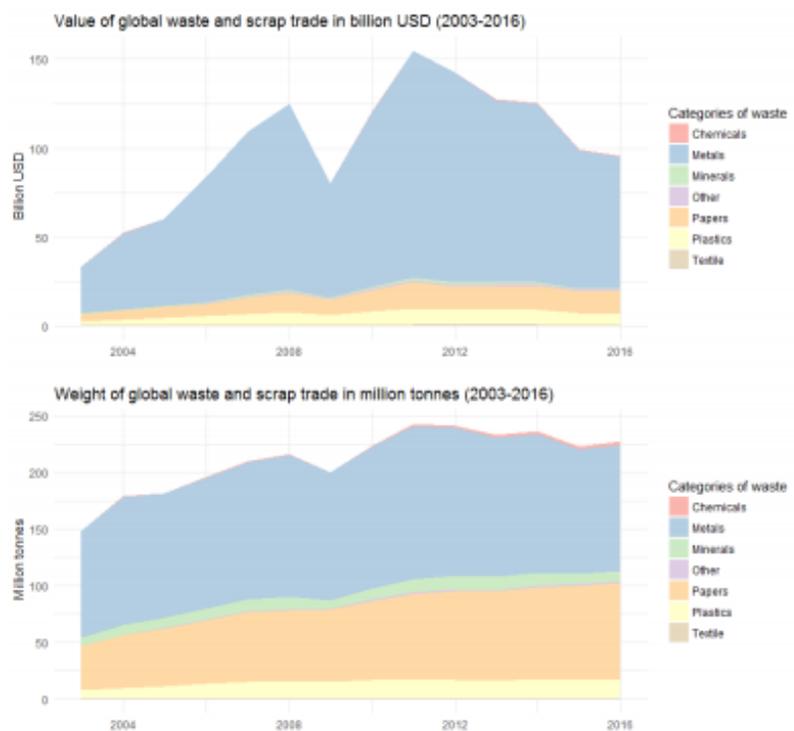
³² OECD (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy," p. 8.

³³ *Ibid.*

3.3 Increased trade in waste material

As the world is becoming increasingly circular, it aims to keep products in the economy for longer periods of time. When products can no longer be used for their original purpose, they are either recycled and turned into secondary raw materials, or become final waste that is not fit for recycling.³⁴ Waste turns into a tradeable product when countries decide not to – or do not have the capacity to – process waste for recycling domestically. As shown by the graph below, between 2003 and 2016, trade in waste and scrap has increased significantly: by 48 percent in weight and 183 percent in value.

FIGURE 2: TRENDS IN TRADE IN WASTE AND SCRAP (2003-2016)³⁵



International trade in waste is regulated by the *Basel Convention*, to ensure that trade in such materials, especially hazardous waste, does not negatively impact the environment.³⁶ Meanwhile, countries are aiming to implement the proximity principle, ensuring that waste is treated as closely as possible to where it was generated. However,

³⁴ IEEP (2019), “EU Circular Economy and Trade: improving policy coherence for sustainable development.”

³⁵ OECD (2018), “International Trade and the Transition to a More Resource Efficient and Circular Economy.”

³⁶ *Ibid*, p. 11.

under proper controls, trade in waste can provide opportunities for countries that have a comparative advantage in sorting and processing activities.³⁷

Waste has been predominantly traded from advanced economies into developing economies. This has been the case because developing economies typically offer recycling services at a cheaper rate, in part due to less stringent environmental policies and a lack of enforcement of environmental regulations.³⁸ This has created challenges in developing economies with limited waste processing capacity, resulting in “waste dumping”, which refers to the increase – in theory – of recyclable materials being exported to developing economies (mostly Southeast Asia)³⁹ but in reality, of increased amounts of waste of either insufficient quality for recycling or for which developing economies lack the capacity to recycle. As a result, the waste ends up in landfills or is dumped in the environment.

Waste dumping is facilitated by the lack of quality control. Indeed, international standards to categorize different types of waste are inadequate and fail to differentiate between waste and reusable and repairable waste. This has resulted in an influx in imports that are supposedly “waste for recycling” but that are of low quality and often contaminated, making it unfit for any processing. Responding to this challenge, in 2018 China adopted an import ban on certain types of scrap plastic and unsorted waste paper, in a response to failing quality of imported recyclables and as a message to waste producers that their sorting practices had to improve.⁴⁰ Waste exporters from the European Union and the United States have turned to alternative markets with lower standards, principally in Southeast Asia. This, in turn, has contributed to a growing waste crisis in many developing economies, with major environmental and health effects.

Despite these challenges, increased imports in recyclable waste for developing economies can also create opportunities. For instance, it enhances demand for emerging sectors such as the repair and recycling sector, which in turn could lead to an improvement of domestic waste management.⁴¹ This also has the potential to generate significant employment, as repair of products tends to be more labor-

³⁷ *Ibid*, p. 12.

³⁸ *Ibid*, p. 13.

³⁹ IEEP (2019), “EU Circular Economy and Trade: improving policy coherence for sustainable development”.

⁴⁰ Joyita Ghose and Shilpi Kapur, (2019) “Policies and Practices to Enable Business Models for Resource Efficiency and a Circular Economy”, p.2.

⁴¹ *Ibid*.

intensive than manufacturing from raw materials.⁴² Such employment, however, must be carefully managed, as those employed in waste management in developing economies are often part of the informal sector, and are working in unsafe conditions. This is especially the case for e-waste (see Box 1 below for more information about trade in e-waste).

Recyclable waste could also transform the current end points of global value chains into new production hubs supplying secondary raw materials to global markets or serve as catalyst to develop local processing/manufacturing capabilities. As different types of products may require different recycling technologies, developing economies could consider specializing in recycling services in specific sectors, aligned with their (nascent) comparative advantages.⁴³

However, to enable developing economies to turn importing waste into an economic opportunity, it is imperative that the waste and scrap materials that are imported are of sufficiently high quality and with low degrees of contamination to be fit for safe recycling. It is also critical that “waste” can be distinguished from “waste for recycling”. In this context, a key challenge is developing benchmarks, including in the form of standards, that could help countries differentiate waste that is fit for recycling from waste that is unfit.

⁴² WRAP (2015), “Economic Growth Potential of More Circular Economies”.

⁴³ Preston et al., “An Inclusive Circular Economy”. While many developing countries already have significant experience with recycling and other related circular activities, significant investment would be needed to turn these sectors into competitive, safe, and scalable industries.

Box 1. Electronic and electrical waste

Due to ever-increasing demand for electrical and electronic equipment and low recycling rates, electronic and electrical waste (“e-waste”) has become one of the fastest growing waste streams in the world: whereas in 2018, the volume of e-waste was 50 Mt, this is expected to increase to 52Mt by 2021, and 120 Mt by 2050.

The electronics value chain is largely dominated by the linear “make, use, dispose” model, with high dependence on raw materials, lack of durable design, and used equipment being shipped to developing economies that lack the capacity to properly and safely recycle e-waste. As e-waste is hazardous due to the presence of certain toxics, it can pose a serious threat to both human health and the environment when managed in an environmentally unsound way.

At the same time, e-waste contains precious metals, including gold, copper and nickel, and rare materials such as indium and palladium. These precious and heavy metals have great economic value: they are estimated to amount to more than €55 billion per year. Thus, developing economies have a keen interest in recycling e-waste to recover some of these important metals. However, given the risks involved, this can only be done if the cross-border trade in e-waste is carefully managed.

The Basel Convention has imposed strict rules on trade in e-waste. Under the Ban Amendment that entered into force in 2019 most e-waste can no longer be exported from OECD countries to non-OECD countries. However, there is an exception under the Basel Convention for “re-usable” e-waste. Despite additional guidance on how to differentiate between waste and non-waste (2019), the requirements that must be fulfilled for a product to qualify as “re-usable” e-waste are weak as there is no prior informed consent for “re-usable e-waste, it is not possible for importing countries to know what type of e-waste they are receiving, thereby limiting their enforcement ability.

Source: International Telecommunication Union, “Why we need a circular economy for electronics” (2019); United Nations, “Addendum to Technical Guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste under the Basel Convention” (June 2019).

3.4 Increased trade in second-hand goods

A key principle of the circular economy is expanding the lifespan of a product by promoting re-use. This could result in environmental benefits as it reduces demand for manufacturing in energy-intensive industries like cars or clothing.⁴⁴

Similar to trade in waste, most of the trade in second-hand goods originates in advanced economies and is exported to developing economies. Concerns that large amounts of second-hand goods imports will undermine a country's ability to develop competitive local industries in these sectors, has led some countries to adopt import restrictions on second-hand goods. For instance, in 2017, East African countries tried to impose a ban on the import of second-hand clothing in 2017 – the primary source of clothing across Africa. This was in response to the import of US\$151 million in second-hand clothing and shoes (in 2015 alone), mostly from Europe and the United States.⁴⁵ Ultimately, only Rwanda went ahead with the ban.⁴⁶ Other countries have imposed bans on old and inefficient second-hand vehicles.⁴⁷

Other issues related to the import of secondary goods concern their often low quality and/or operational inefficiency. Moreover, they are often imported through illegal channels. Reliance on second-hand imports could lock-in developing economies' reliance on inefficient secondary products. In sectors like second-hand vehicles, this could undermine a country's ability to meet their contributions under, for instance, the *Paris Agreement*.⁴⁸ Trade in second-hand goods has raised concerns as it could be used as a loophole for illegal trade in contaminated and hazardous waste, prohibited under the Basel Convention.⁴⁹

However, increased trade in second-hand products could also create opportunities for developing economies. Indeed, the second-hand good industry constitutes a source of employment for many in developing economies, especially in the clothing industry. Moreover, it enables consumers to buy products they would otherwise not be able to

⁴⁴ OECD (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy"; OECD (2020), "International Trade and the Circular Economy – Policy Alignment", COM/TAD/ENV/JWPT(2020)2. Increases in trade in second-hand goods can also be considered as leakage, especially in the context of Extended Producer Responsibility (EPR).

⁴⁵ Kimiko de Freytas-Tamura (12 October 2017), "For Dignity and Development, East Africa Curbs Used Clothes Imports", *New York Times*.

⁴⁶ Other countries withdrew the ban in response to threats by the United States to remove trade preferences under the African Growth and Opportunity Act (AGOA).

⁴⁷ OECD (2020), "International Trade and the Circular Economy – Policy Alignment", p. 25.

⁴⁸ OECD (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy."

⁴⁹ OECD (2020), "International Trade and the Circular Economy – Policy Alignment", p. 25.

afford. This is particularly the case in the automotive and electronic sectors. For instance, in Nigeria, 95% of cars are second-hand vehicles, and 80% of electronic products in Ghana are second-hand, repaired or refurbished.⁵⁰ In thinking about developing competitiveness through importing second-hand products, developing economies must carefully balance any potential negative impact of doing so, with the potential to create competitive, green jobs – within the context of the available policy space as elaborated upon in Box 2.

⁵⁰ Tearfund (2017), “How Will Europe’s Ecodesign measures affect the circular economy in low-income countries?”.

Box 2. Policy space to regulate retreated and second-hand tyres

In 2005, the European Union requested the establishment of a panel in the WTO dispute settlement system challenging the WTO-consistence of Brazil's import ban on retreated tires. Retreating tires involves a process that recycles tires and thereby extends their life span by 30-100 percent. While this process advances "re-use", one of the principles of the circular economy, importing retreated tires can also lead to negative environmental outcomes. Indeed, because the lifespan of a retreated tire is considerably shorter compared to the life span of a new tire, importing retreated tires could result in higher levels of waste. Moreover, in tropical countries like Brazil, tires disposed in landfills can fill with water and become breeding grounds for mosquitos and vectors for disease, such as malaria and yellow fever.

To minimize challenges related to tire waste, Brazil imposed an import ban on retreated tires. The European Union challenged this ban in the dispute settlement system of the WTO, arguing that the ban was discriminatory and constituted a WTO-inconsistent quantitative restriction. Brazil argued that these violations were justified under the general exceptions clause set out in Article XX of the GATT 1994, which authorizes trade law violations, inter alia, if the measures applied are necessary to protect human, animal or plant life or health.

The panel found, and the Appellate Body confirmed, that Brazil's import ban on retreated tires was necessary to protect human life or health under Article XX(b), but that it was applied in a manner that constituted arbitrary or unjustifiable discrimination and a disguised restriction on trade because MERCOSUR countries were exempted from the ban.

While the Appellate Body found that Brazil's import ban was inconsistent with the WTO, this case is generally considered a ruling that advances environmental policies, with Professor Joost Pauwelyn noting that it turns Article XX in "a catch-all obligation to engage in sound and reasonable environmental policies."

Source: WTO, dispute settlement, "DS332 Brazil – Measures Affecting Imports of Retreaded Tyres"; ICTSD, "Litigating Environmental Protection and Public Health at the WTO: The Brazil-Retreaded Tyres Case", September 2010.

In sum, anticipated increases in trade in second-hand goods present both challenges and opportunities for developing economies. What makes it difficult to develop a deep understanding of this issue is the lack of available comprehensive data on trade

in second-hand goods.⁵¹ Part of the issue is the difficulty distinguishing between trade in second-hand goods and goods that are exported for recycling and recovery.⁵² The lack of statistics, in addition to uncertainty on how a transition to a circular economy will impact trade in second-hand products, makes it difficult to understand the magnitude of trade in second-hand products, as well as any anticipated changes.

⁵¹ OECD (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy, p. 17.

⁵² *Ibid*; Similar problems exist for goods imported or exported for remanufacturing, as they are difficult to categorize within the HS system.

3.5 Shift in trade towards products meeting CE standards

To advance the circular economy, governments are adopting a number of different policies, including establishing standards for eco-design and recycling, or by requiring governments to purchase goods that meet environmental standards (e.g. green public procurement). 53 Box 3, below, provides examples of some of these standards. While these types of measures have great potential to incentivize business to increasingly adopt circular principles, they could function as non-tariff barriers for businesses that are unable to meet these heightened standards. This mostly concerns businesses from developing economies, for whom the costs and technological processes involved in adopting circular methods and processes are typically very high.

The exact way in which standards affect market access for products from developing economies will depend on a large number of variables. On the one hand, this includes the scope and nature of the standards adopted. For instance, standards tend to be voluntary, but could still command great authority in practice because they facilitate certain regulatory procedures or are widely recognized by large-scale purchasers or consumers.⁵⁴ This would be the case, for instance, if supermarkets in a given market were to only supply products with a given type of ecolabeling or recycling standard.

Another factor concerns the heterogeneity of these measures. As countries are adopting circular economy roadmaps mostly at a national level, many different standards and requirements are being developed. This creates a significant barrier to businesses looking to sell in a variety of different markets. This problem will be especially problematic for businesses from developing economies. As will be elaborated on below, this calls for the development of international standards and mutual recognition schemes.

However, the adoption of more stringent circular economy standards in advanced economies can also present an opportunity for developing economies. The precise effect will depend on the types of standards introduced. For instance, if a standard requires enhanced durability of a product, it could reduce the influx of second-hand goods.⁵⁵ Moreover, standards that boost the recyclability of products, for instance, by reducing the use of plastics that are incompatible with recycling targets, could improve the quality and value of imported waste, turning them from low-grade waste into higher-value waste. These higher value waste products could enhance developing

⁵³ WTO (2019), "Role of trade in promoting circular economy highlighted at WTO Environment Week".

⁵⁴ Partnership for Action on Green Economy (2017), *Green Industrial Policy and Trade: A Tool-Box*, https://www.un-page.org/files/public/green_industrial_and_trade_policy_a_tool-box.pdf.

⁵⁵ Tearfund (2017), "How will Europe's Ecodesign Measures affect the circular economy in low-income countries?"

Box 3. Examples of standards relevant to the circular economy

A number of different standards are currently being developed in the context of the circular economy. These standards can be differentiated between “management” standards and “product” standards. Within the category of products standards, a distinction can be made between “upstream” and “downstream” standards. Below we provide some examples for each of these categories of standards.

Circular Economy Management standards:

- International Standards Organization (ISO): ISO TC/323
- British Standards Institution: Framework for Implementing the principles of the circular economy in organizations (BS 8001). 2017.
- French National Standardization Organization: PR XP X30 901 Circular Economy Project Management System.

Circular Economy Product standards for product design and production (upstream):

- International Material Data Systems
SCS Global Services
- EU Directive on the restriction of hazardous substances
- EPR schemes and modulated fees (France, Germany, Italy)
- CEN/CLC/JTC 10 – General method for assessing the proportion of recycled material content in energy-related products (pending approval)
- CEN/CLC/JTC 10 – General methods for assessing the recyclability and recoverability of energy-related products (Reference EN 45555: 2019)
- CEN/CLC/JTC 10 – General methods for the assessment of the ability to repair, reuse and upgrade energy-related products (Reference 45555:2019).
- Product 10Y reparability label
- Austrian standard on recyclability (ONR 192102:2014)
- Global Organic Textile Standard
- Higg Material Sustainability Index

Circular Economy Product standards for secondary materials, goods (downstream):

- Circular Economy Action Plan – development of quality standards for secondary raw materials (ongoing)
- British Standards Institute: developed a voluntary standard PAS141:2011 – Reuse of used and waste electrical and electronic equipment
- American National Standards Institute “Specifications for the Process of Remanufacturing – RIC001.1-2016”
- CEN/CLC/JTC 10 – General method for assessing the proportion of reused components in energy-related products (Reference EN 45556:2019)

Source: OECD (2020, forthcoming), “Trade and Circular Economy Policy Alignment”, OECD Trade and Environment Working Papers.

economies' recycling, repair and remanufacturing efforts. Likewise, enhanced information about the products, and a reduction in hazardous content would reduce the health safety risk currently associated with processing waste in developing economies.⁵⁶

Moreover, increased circularity standards for products imported in advanced economies could have spillovers and encourage developing economies to also increase their own product standards. This will be further elaborated on below.

⁵⁶ *Ibid.*

3.6 Emergence of new trading opportunities in services

The circular economy creates opportunities for trade in new services sectors. Specifically, as highlighted throughout this section, it will lead to a rise in services in waste management, recycling, refurbishment and remanufacturing, reuse and repair.⁵⁷

Moreover, a transition to a circular economy can be expected to replace goods with services. For instance, the sharing economy can be expected to reduce ownership of physical products, such as clothing or light bulbs or cars, and instead result in the use of services that provide access to these items.⁵⁸ This can be a clothing rental services, car sharing services, or buying lightening services as opposed to owning the light bulb.⁵⁹ This will likewise give rise to an increase in trade in services in these areas.

Specifically, these types of services could be traded under the General Agreement on Trade in Services (GATS), through “commercial presence” (Mode 3).⁶⁰ New services (such as car sharing applications) could also be traded through “cross border trade” (Mode 1). However, the link between the circular economy and services trade requires further study.⁶¹

In sum, key circular economy measures adopted by advanced economies are predicted to have an impact on trade flows, creating both challenges and opportunities for developing economies. To recap, Table 2 below presents an overview of the predicted impact on trade and developing economies different circular economy policies might have, linking them to the corresponding CE principle.

⁵⁷ OECD (2020), “International Trade and the Circular Economy – Policy Alignment”, p. 26

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ The GATS contains four models of services trade, including Mode 1 covering cross-border trade; Mode 2 covering consumption abroad; Mode 3 covering Commercial Presence; and Mode 4 covering temporary presence of natural persons abroad.

⁶¹ A forthcoming study by the International Institute on Sustainable Development (IISD) is examining this question in more detail.

TABLE 2: PREDICTED IMPACT OF A CIRCULAR ECONOMY TRANSITION ON TRADE FLOWS AND DEVELOPING ECONOMIES

CE Principle	Key policy instruments	Impact on Trade (predicted)	Impact on Developing Economies (predicted)
Design-out waste	Minimum requirement/ standards for product durability, reparability, the reuse of components through Ecodesign and labelling	<ul style="list-style-type: none"> • Strict standards could function as a market access barrier, thus reducing imports 	<ul style="list-style-type: none"> • Could function like a non-tariff barrier on the import of manufactured goods from developing economies • Could incentivize developing economies to adopt their own set of more stringent circular economy standards • Could trigger companies to relocate production to developing economies with more relaxed regulations (creating jobs but potentially hurting the environment)
Keep products and materials in use	<ul style="list-style-type: none"> • Extended Producer Responsibility schemes (EPRs) • Taxation on landfill and incineration • Different levels of taxation for reused or recycled products • Extended legal warranties • Green public procurement 	<ul style="list-style-type: none"> • Lowering of trade in primary raw materials • Increase trade in secondary materials 	<ul style="list-style-type: none"> • Could negatively impact developing economies' export of raw materials • Could incentivize developing economies to diversify their exports
		<ul style="list-style-type: none"> • Increased trade in second-hand goods 	<ul style="list-style-type: none"> • Could undermine local industrial development • Could enhance waste • Could create employment • Could benefit consumers

Shifts in trade flows and implications for developing economies

		<ul style="list-style-type: none"> • Increase trade in waste for recycling 	<ul style="list-style-type: none"> • Could increase import of non-recyclable waste • Could create new opportunities in services (recycling etc.)
Regenerate natural systems	Policies to encourage shifts to renewable energy (e.g., carbon tax); requirements for bio-based packaging/bans on single-used plastic.	<ul style="list-style-type: none"> • Increase trade in renewables/ bio-materials 	<ul style="list-style-type: none"> • Could create opportunity in new industries (bio packaging)

4. Policy options for developing economies in moving towards a circular economy

There are different ways in which countries can buffer negative spillovers that stem from such a transition while leveraging any opportunities – with a role for proactive domestic policies, regional trade agreements, as well as the World Trade Organization. This section will address possible policy options and recommendations at these three levels. The table in the Appendix below provides a full overview of these different policy options and how to relate to the principles of the circular economy.

FIGURE 3: DIFFERENT LEVELS OF ENGAGEMENT



4.1 The role of domestic policy

Domestic policy design plays a critical role in responding to a circular economy transition. As the predicted impact will be different on different countries, it is imperative that developing economies study the implications of the circular economy on its industries, economic strategy and position in global value chains. The study's findings would need to be reflected back into a country's trade, industrial, and/or development strategies in order to mitigate any challenges and losses, and leverage opportunities. This suggests that an adequate response to a circular economy

transition requires cooperation among different ministries and government agencies, and should not be exclusively dealt with by the Ministry of the Environment.⁶²

Specifically, such a country-specific study could include a number of different steps:

- **Step 1:** Develop a clear understanding of how anticipated shifts in international trade flows will impact industry sectors and employment. This requires mapping key industries, and anticipate the changes to these sectors as a result of (i) anticipated reduction in the demand for primary raw material; (ii) import of secondary raw materials, waste for recycling and second-hand goods; and (iii) the impact of the adoption of stringent environmental product standards in key international markets. Provide a roadmap on how these challenges can be mitigated/how to address any changes in employment.
- **Step 2:** Map opportunities in emerging sectors, such as trade in services related to waste processing and recycling, refurbishment and remanufacturing, reuse and repair. Likewise, identify opportunities in manufacturing. This could include shifting from extracting primary raw materials to developing capabilities in producing secondary raw materials. Proactively developing these sectors could lead to employment opportunities and contribute to economic diversification.⁶³
- **Step 3:** Once opportunities and challenges have been identified, governments should consider how to strategically use trade agreements to deepen the opportunities and mitigate any challenges. For instance, once a country has identified that developing e-waste processing capabilities could create significant benefits, it must ensure access to products and services that would be required to build and operate a processing plant in e-waste. This would require reducing import tariffs on equipment used in these plants, and/or ensuring market access for foreign service providers in the sector relevant to investing in recyclable infrastructure. Likewise, if a key challenge a country has identified concerns the influx of low quality secondary raw materials and second-hand goods, a country could decide to support efforts to develop standards for second-hand goods and related products.

⁶² *Ibid.*, p.19.

⁶³ WTO, Role of trade in promoting circular economy highlighted at WTO Environment Week.

The types of regulations to consider would need to be tailored to the specific characteristics and situation of each country, and will certainly be different than the types of regulations adopted by developed economies. Indeed, it would be difficult to administer schemes that apply different VAT rates for repair services and sales of second-hand products in countries with low institutional capacity.⁶⁴ Moreover, it would be difficult for developing economies to adopt rules of Extended Producer Responsibility, given widespread issues related to counterfeit products and product smuggling.⁶⁵

Developing economies may also consider imposing stricter regulations and standards on waste management and the management of imports on second-hand goods. For instance, they could require second-hand goods and waste imports to comply with certain minimum quality standards. In this context, developing economies should be vocal in the discussions on trade in waste that are happening in the *Basel Convention*.

⁶⁴ *Ibid*, p. 42.

⁶⁵ Institute for Global Environmental Strategies (March 2012), “Applying EPR in developing countries,” https://iges.or.jp/en/publication_documents/pub/issue/en/2561/rio_issue_brief_vol3_EPR_mar2012.pdf.

4.2 The role of Trade Agreements

Trade agreements can mitigate challenges and leverage opportunities associated with a transition to a circular economy. In doing so, there is a role for both regional trade agreements, and the World Trade Organization. This section highlights the role of trade agreements in addressing various issues related to the circular economy and developing economies, whereas the next section focuses specifically on the role of the WTO.

Specifically, trade agreements could play a role in (i) defining key categories of products; (ii) developing and harmonizing quality standards for the circular economy; (iii) opening markets for trade in goods and services relevant to the circular economy; and (iv) providing technical assistance for developing economies.

4.2.1 *Define key product categories*

As noted above, a key issue that makes it difficult for developing economies to build competitive recycling and processing industries around imported secondary products relates to inadequate products or lack of ability to determine the type of products that are being imported. Often, recycling plants receive low-quality materials that contain hazardous traces.

Part of the reason behind this is the lack of harmonized product categories in secondary materials, which makes it difficult for importing countries to determine the quality and type of products that are being imported, and to develop a tariff scheme to reflect wanted and unwanted secondary materials. For example, whether a product is waste, scrap, or secondary material is currently determined at a national level, and could differ from country-to-country.⁶⁶ This means that it is unclear what to expect based solely on how the exporter has labelled the product.

An additional challenge relates to the classification of trade on the basis of the Harmonized System (HS), and the Basel Convention. On the one hand, the Basel Convention lacks the ability to make differentiations that are essential for the regulation of trade in secondary products. For instance, the current HS codes that cover waste and scrap make no distinction between hazardous and non-hazardous waste – a distinction that is critical to determining whether a product is subject to the requirements of the Basel Convention.⁶⁷ This leaves it up to customs officials to

⁶⁶ Preston et al., “An Inclusive Circular Economy”, p. 67; OECD, *International Trade and the Transition to a More Resource Efficient and Circular Economy*.

⁶⁷ OECD (forthcoming), “Trade and Circular Economy Policy Alignment”, OECD Trade and Environment Working Papers.

determine the presence of hazardous materials on a case-by-case basis. On the other hand, where HS codes distinguish between different types of secondary waste, such as used products and waste, it is difficult to enforce given that it is visually very difficult to make the distinction.⁶⁸ Indeed, this points to a misalignment between HS product descriptions, which are based on physical product characteristics that can be easily verified by customs officials,⁶⁹ and the defining difference between, for instance primary and secondary raw materials, or waste and waste for recycling, which is based on the intention of the end use of the product (e.g., intention to discard, or waste for recycling etc.).⁷⁰

One step forward could be to disaggregate the classification of waste based on characteristics that relate to the characteristics of a product, such as recycling potential. Indeed, such a distinction has been adopted in an amendment to the Basel Convention, which will become effective on 1 January 2021.⁷¹ Specifically, the amendment offers a distinction between hard and easy to recycle plastic, with hard-to-recycle plastic requiring prior informed consent before it can be traded, and easy-to-recycle plastic not being subject to any obligations. These proposals should be discussed at the World Customs Organization (WCO). However, absent progress at the international level, parties to an RTA could agree to incorporate such differentiation in classifying trade between the parties. Similarly, for products where the current six-digit HS code does not enable distinguishing secondary raw materials from waste and scrap, parties to an RTA could agree on 8 or 10-digit HS codes that would enable such a differentiation– and the application of different tariff.

Another possible avenue to explore would be to link HS codes to minimum “standards” a product must adhere to. This could be particularly useful for products characteristics that are not easily visible, such as second-hand clothing for recycling and second-hand clothing for re-use, or e-waste and re-usable e-waste.⁷² The downside of this approach is that it would conflate the issue of standards with the issue of classification, which are distinct under international trade law. Another key challenge would be reaching agreement on the types of standards to include as

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*

⁷¹ Basel Convention Plastic Waste Amendments, available at: <http://www.basel.int/Implementation/Plasticwaste/PlasticWasteAmendments/Overview/tabid/8426/Default.aspx>

⁷² Assuming adequate customs enforcement, this could reduce the loophole under the Basel Convention for re-usable e-waste.

benchmarks to determine the product's fitness for recycling.⁷³ Indeed, as will be elaborated on in the discussion below, the fragmentation of circular economy standards nationally, and the relative dearth of international standards relevant to the circular economy, will make this task even more challenging. It would be easier to agree on coupling a standard to a product classification in the context of negotiating RTAs.

4.2.2 Develop quality standards for the circular economy

As noted above, the dearth of international standards in the circular economy has created challenges for developing economies, both on the import and export side.

On the import side, the lack of harmonized standards makes it difficult for developing economies to ascertain the quality of the imported secondary goods. On the export side, fragmented standards operate as a market access barrier. Thus, the development of standards in the context of the circular economy is an area developing economies should pay close attention to. There are a few different ways in which developing economies can leverage international trade agreements to facilitate the development of beneficial standards.

First, on the import side, developing economies should consider adopting standards and/or technical regulations related to the quality of imported secondary products. This could include developing energy-efficiency requirements for imported second-hand vehicles, or health and safety standards for recycled and recyclable imports. Developing economies could use RTAs as a vehicle to agree upon minimum quality standards for specific products. This could be done, for instance, through exploring the inclusion of an annex on the circular economy. Where there exist no international standards, governments have the flexibility to specify their own minimum domestic standards. Such standards must, however, be designed consistently with the WTO's Technical Barriers to Trade Agreement (TBT Agreement). Box 4 below sets out the key obligations to design standards under the TBT Agreement.

Second, on the export side, to facilitate market access for exported products and enhance the quality of imported secondary products, developing economies should participate in the development of international standards related to circular economy activities.⁷⁴ Indeed, from the perspective of developing economies, it is better to develop a uniform set of standards at the international level and participate in the

⁷³ See, e.g., C. van der Ven (2018) in "EU GSP Reform Study" for a similar discussion in the context of linking tariff lines to voluntary sustainability standards.

⁷⁴ WTO (25 November 2019), "DDG Wolff: WTO can play a role in supporting a circular economy", https://www.wto.org/english/news_e/news19_e/ddgaw_25nov19_e.htm.

Box 4. Principles of the WTO Agreement on Technical Barriers to Trade

The WTO Technical Barriers to Trade (TBT) Agreement covers technical regulations, voluntary standards, and conformity assessment procedures.

While the TBT Agreement covers three different types of measures, similar rules and principles apply to these three different categories. These include non-discrimination disciplines through the most favoured nation and national treatment principles. Moreover, TBTs cannot be more trade restrictive than necessary to fulfill a legitimate public policy objective. Other key principles of the TBT Agreement include harmonization and the use of relevant international standards as a basis for technical regulations. Furthermore, the TBT Agreement encourages non-discriminatory mutual recognition and equivalence of foreign technical regulations or conformity assessment procedures provided that they fulfil the same objectives. Another key category includes transparency obligations, which includes notification obligations prior to the enactment of a measure and the possibility for Members to provide comments to be taken into consideration before the measure is introduced.

The TBT Agreement provides additional rules for standards. Specifically, it requires that standardizing bodies accept and comply with the “Code of Good Practices”, which is set out in Annex III to the TBT Agreement. The Code of Good Practices requires, *inter alia*, that standards are adopted in a non-discriminatory way, avoid unnecessary obstacles to trade, use international standards as a basis for national standards (where they exist and are relevant) and focus on performance as opposed to description/design.

development of these standards, then to be confronted with a different set of Circular economy standards for each export market. Key organizations that are in the process of developing international standards include the ISO and the Basel Convention. Developing economies want to ensure that they have a seat at the table in these discussions.

Third, developing economies should ensure that they receive technical assistance to develop capacity to meet more stringent circular economy standards. This would include developing capacity to engage in conformity assessment procedures, but also providing assistance to the private sector, such as technical training, to meet some of these standards. Specifically, developing economies could include provisions for assistance in creating special circular economic zones, which could serve as laboratories to showcase best practices in circular economy standards.⁷⁵

4.2.3 Negotiate market access

Developing economies could opportunities created by the circular economy by facilitating the opening of markets in both goods and services in trade agreements.

⁷⁵ Preston et al., “An Inclusive Circular Economy”, p. 68.

With respect to market access in goods, trade agreements could be used to remove or reduce import duties on primary goods important in establishing a circular economy infrastructure, including machinery for waste processing, waste containers, machinery and equipment for moving and lifting, and new materials used in eco-design.⁷⁶ Indeed, the WTO has calculated that Members apply tariffs averaging almost 6 percent on a sample list of 30 goods related to the circular economy (and for individual members can be between 10 percent and 40 percent).⁷⁷ Thus, reducing or eliminating these tariffs could help disseminate the technologies needed for developing economies to build a circular economy infrastructure. This can be done at a regional or bilateral level in trade agreements, but also at the WTO. For instance, should negotiations on the Environmental Goods Agreement (EGA) continue at the multilateral level, the scope could be expanded to include critical circular economy products in these negotiations.

With regards to services, developing economies should open up sectors that are relevant to optimising resource use and minimizing waste. Indeed, this would facilitate foreign direct investment in some key services sectors relevant to building capacity in the circular economy. Specifically, this may require that developing economies schedule commitments in the services sectors and sub-sectors that are relevant to the circular economy, such as sewage services (9401), refuse disposal services (9402), sanitation and similar services (9403).

Some services sectors relevant to the circular economy, like waste recycling, are not currently covered by the Services Sectoral Classification W/120. Such sectors must be added to the W/120 to ensure that countries can open up sectors that would generate the required investment to leverage opportunities relevant to the circular economy. Indeed, the EU has negotiated several RTAs that include market access commitments in recycling services.⁷⁸

⁷⁶ *Ibid.*, p. 45.

⁷⁷ Hoe Lim (6 November 2019), “Circular economy: the 21st-century economic paradigm to redefine growth and development”, *Speech for ECOMONDO*.

⁷⁸ See, e.g., EU-Vietnam FTA and EU-Singapore FTA (EU making commitments for “recycling services” under manufacturing).

4.3 The role of the WTO⁷⁹

The WTO plays an important role in advancing a transition to a circular economy, and ensure that the multilateral system facilitates a transition towards a circular economy. Specifically, the WTO could contribute to advancing the circular economy agenda in various ways, including: (i) by including it as a priority area in the multilateral agenda; (ii) by strengthening the role of the Committee on Trade and Environment; (iii) by facilitating specific initiatives related to the circular economy; and (iv) by linking Aid for Trade to the circular economy.

First, the 12th Ministerial Conference – which is currently on hold due to COVID-19 – may serve as an avenue for Members to agree to reinforce and update existing efforts on the environment and trade, with a focus on “newer” environmental issues such as the transition to a circular economy. This could be done through making a statement concerning Members’ intention to work towards building a circular economy. The participation of developing economies and emerging markets will be vital for the WTO Membership to make such a commitment. Already, many developing economies are supporting the adoption of a circular economy agenda at the WTO, including Ghana, Namibia, Morocco, and Sri Lanka.⁸⁰

Second, the role of the WTO’s Committee on Trade and the Environment (CTE) can be bolstered. The mandate of the CTE is to contribute to understanding the relationship between trade and environmental protection, in order to promote sustainable development. It also serves as a forum dedicated to dialogue between governments on the impact of trade policies on the environment. The CTE has played an active role in organizing discussions with the membership on, among other things, circular economy, waste management, environmental requirements and market access, and labelling. For instance, it recently organized a workshop at the request of Least Developed Countries (LDCs) focusing on key issues related to the circular economy. The CTE could advance the circular economy agenda at the multilateral level by continuing to encourage Members to engage in information sharing, experiences, and exchanging best practices in the context of trade and the circular economy.

Third, Members could use the WTO platform to negotiate special initiatives relevant to the circular economy. For instance, China has assumed leadership on helping Members consider how the WTO can address specific issues like trade in plastic

⁷⁹ Carolyn Birkbeck (November 2019), “A Ministerial Declaration on Environment and Trade at the 2020 WTO Ministerial Conference”, *Global Governance Brief* No.01.

⁸⁰ *Ibid.*

waste.⁸¹ Such initiatives could focus on efforts to promote coherence between domestic restrictions and trade measures on certain types of plastics, transparency, reduced trade barriers for products and services that reduce plastic pollution; and trade-related capacity building related to plastics pollution.⁸²

Fourth, developing economies need to build capacity to buffer negative spillover and take advantage of new opportunities emerging in the circular economy. To do so, resource efficiency should be mainstreamed into official development assistance. The WTO's Aid for Trade Program, which helps developing economies overcome trade-related constraints, could play an important role in doing so. Specifically, financial support provided under the Aid for Trade Program should be targeted to help developing economies build capacity in key emerging industries such recycling and waste management. It should also include building capacity for businesses in developing economies to meet the Eco standards and labelling requirements that are increasingly imposed by developed economies.

⁸¹ *Ibid.*

⁸² *Ibid.*

5. Conclusion

As demonstrated in this paper, a transition towards a circular economy will impact international trade flows, creating both challenges and opportunities for developing economies. The exact impact on developing economies is difficult to predict. This will, in part, depend on the speed and scope in which the transition towards a circular economy will take place, the socioeconomic context (e.g. population growth), and developing economies' ability to leverage emerging opportunities and mitigate negative spillovers.

Despite these many unknowns, developing economies are advised to adopt a proactive approach to adopt a policy package that would mitigate any negative consequences, and leverage 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 establish a policy roadmap on how to respond to challenges while creating competitiveness in newly emerging sectors. In this context, international trade agreements and the WTO 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.

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APPENDIX: PREDICTED SHIFTS IN TRADE

CAUSED AND IMPACT ON DEVELOPING ECONOMIES

CE Principle	Key policy instruments	Impact on Trade (predicted)	Impact on Developing Economies (predicted)	Domestic Policy	Trade Agreements
Design-out waste	Minimum requirement/ standards for product durability, reparability, the reuse of components through Ecodesign and labelling (e.g., EU Ecodesign Directive, EU Ecolabelling; ISO 14006:2011 Guidelines for incorporating eco-design)	Strict standards could function as a market access barrier	<p>Could function like a non-tariff barrier on the import of manufactured goods from developing economies</p> <p>Could trigger companies to relocate production to developing economies with more relaxed regulations (creating jobs but potentially hurting the environment)</p>	Adopt more robust regulation in the area of the circular economy	<p>Participate in the development of international standards</p> <p>Request technical assistance to ensure that businesses from developing economies can meet the requisite standards</p>

<p>Keep products and materials in use</p>	<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>	<p>Lowering of trade in primary raw materials</p> <p>Increase trade in secondary materials</p>	<p>Could negatively impact developing economies' export of raw materials</p> <p>Could incentivize developing economies to diversify their exports</p>	<p>Conduct country-level studies to analyze and anticipate the impact of a circular economy transition. Identify areas of loss and areas of opportunity and invest in the latter</p>	<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>Request Aid for Trade in emerging sectors like recycling in which the country may have a comparative advantage</p>
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		Increased trade in second-hand goods	<p>Could undermine local industrial development</p> <p>Could create employment</p> <p>Could benefit consumers</p> <p>Could enhance waste</p>	Develop technical regulations /standards for imported second-hand materials	Support the development of adequate definitions and standards for secondary products at an international level
		Increase trade in waste for recycling	<p>Could increase import of non-recyclable waste</p> <p>Could create new opportunities in services (recycling etc.)</p>		
Regenerate natural systems	Policies to encourage shifts to renewable energy (e.g., carbon tax); requirements for bio-based packaging/bans on single-used plastic.	<p>Increase trade in renewables</p> <p>Carbon leakage</p> <p>Increased trade in bio-materials</p>	Could create opportunity in new industries (bio packaging)	Conduct country-level studies to analyze and anticipate the impact of a circular economy transition. Identify areas of loss and areas of opportunity.	Negotiate tariff reductions/removal for products in new industries