



GLOBAL
PLASTIC ACTION
PARTNERSHIP


**Trade and the
Circular Economy:**
A deep dive into plastics
action in Ghana

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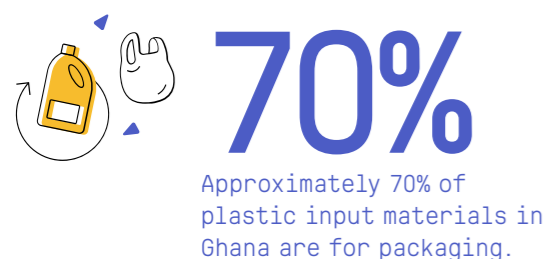
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Executive summary

This white paper is jointly commissioned by the [Global Plastic Action Partnership](#) (GPAP), an impartial initiative of the World Economic Forum, and the Forum's Platform for Shaping the Future of Trade and Global Economic Interdependence. It aims to better understand how trade flows and trade policies may help or hinder a country to address plastic pollution and move to a circular economy.

Ghana, a fast-growing economy with a burgeoning plastic waste problem, is home to one of GPAP's flagship national partnerships and is used here as a case study. The research and subsequent policy options form a preliminary assessment, with the suggested trade policy areas meriting further investigation.

Plastic, in particular single-use plastic, holds negative environmental consequences, yet the material is a preferred input for a variety of uses. Business-as-usual projections indicate that annual total plastic consumption could more than triple from about 380 million metric tons today to 1.3 billion metric tons by 2050. Ghana, an oil-producing, coastal country in West Africa with ambitious economic growth and industrialization plans, can harness trade policy to convert its plastic waste challenge into an opportunity by transitioning to a circular economy that reduces, reuses and recycles its waste. This would mitigate the risks of plastic waste pollution to land and marine ecosystems while also boosting investment, jobs and innovation.



Transitioning to a Circular Economy for Plastics in Ghana

Outlined below are the key findings and policy options for Ghana's transition to a circular economy for plastics. These are discussed in the paper in the context of two broad mechanisms, domestic policy instruments – which are vital to understanding the broader international policy landscape – and trade agreements, as well as links drawn between the two.

Boost domestic policy instruments for a circular economy

With about 70% of plastic input materials used in Ghana for packaging, the country needs to take urgent measures to accelerate alternatives, waste reduction, reuse and recycling. At the same time, it must also address the key economic and social contributions made by the plastic sector. Through policies, regulations and incentives, Ghana can induce demand for alternatives and recycled plastics, while reducing plastic waste and stimulating its economy.

Stem the surge of single-use plastics through incentives

One way Ghana could reduce single-use plastic usage is through disincentivizing the use of PET bottles for on-premises consumption in environments like hotels, restaurants, cinemas and cafes where returnable glass bottles or aluminum could serve as effective substitutes. Alternatively, it could mandate a trade-level Deposit Refund Scheme (DRS) for beverage manufacturers to take back and account for used PET bottles and other packs sold to such retailers. This would minimize the volume of beverage packaging that leaks into the waste stream, provide feedstock for recycling facilities and contribute to a domestic market for recycled plastics, which in turn, could be enhanced by trade policy. Other polymer types, including multi-layer sachets, also merit attention.

Create a domestic market for recovery and recycling

The predominance of cottage recycling operations in Ghana suggests that low plastic waste recovery and recycling rates – 12% and 10% respectively (and in the case of PET, only a 2% recycling rate) – could persist for the foreseeable future. Ghana could take measures

to create a domestic market for recycled plastics by mapping offtake opportunities in industries such as consumer-packaged goods, construction, textiles and the newly emerging automotive sector, and then inject appropriate stimuli (policies, regulations and incentives) to induce demand for recycled plastics by the target industries. Food-grade recycled PET (rPET) could support large PET users like Coca-Cola and Nestlé in meeting their global commitments on plastic action.

Evaluate capacity to become a regional plastic waste recycling hub

Plastic waste recycling capacity could become a strategic and competitive advantage for countries in the coming decades. Ghana could benefit by developing a vibrant plastic recycling industry which could grow and build sufficient capacity to become a major player in this domain, leveraging plastic waste as feedstock for plastics production. Stakeholders will need to assess the merits of this approach against capacity to ensure environmental goals are met. It will also be important to prioritize the latest decarbonization technologies to avoid wasting investment in “stranded assets” related to climate action or other outdated technologies.

Control plastic waste trade

To keep hazardous and hard-to-recycle plastic waste out of its market, it is important for Ghana to develop a strategic approach to restricting such waste, in accordance with international trade expectations, including the newly adopted plastic waste amendments to the Basel Convention. It will be important to equip border officials with the capacity to implement the Basel Convention Prior Informed Consent (PIC) procedure and expedite trade for responsible materials recyclers whether import or export. Greater border efficiency could reduce the risks of illegal trade too.

Facilitate imports of relevant goods

To strategically link its waste management agenda with trade agreements, Ghana, within the context of the Economic Community of West African States (ECOWAS), is encouraged to (i) identify the types of goods it requires to advance both the upstream and downstream elements of its plastic waste management strategy; (ii) set its Common External Tariff on these; (iii) determine which products

should see their tariffs reduced; and (iv) examine whether additional subcategories are required to remove tariffs on the identified goods.

Attract investment and services

To promote investment in its plastic waste management sector, Ghana can explore various options through the ongoing negotiations of its free trade agreements. Firstly, it can strategically negotiate services schedules which set out countries' commitments to the liberalization of services and which cover foreign direct investment. Secondly, it can include investment chapters in its trade agreements to set investor obligations such as not undermining environmental regulations and adhering to sound practices.

Develop export markets

The African Continental Free Trade Agreement's Annex on Technical Barriers to Trade sets out a provision to develop regional standards in cases where no relevant international standard exists. This provision could allow the development of African standards for different grades of recycled plastic, for example. The EU-Ghana Economic Partnership Agreement could also be leveraged to help prepare Ghana-based exporters to comply with plastic packaging standards being developed in the EU, including through capacity building, and identifying the pathway to use of plastic alternatives.

Investigate relevant initiatives at the WTO level

Ghana could explore participating in ongoing plurilateral initiatives at the World Trade Organization (WTO), including informal dialogue on plastics pollution and trade, informal dialogue on trade and environmental sustainability, and discussions on phasing out fossil fuel subsidies. Of particular importance for Ghana would be to explore linkages between technical assistance associated with trade and that administered by environmental communities.

To orchestrate a coordinated approach to pursuing these prospective policy options, Ghana could consider establishing an inter-ministerial committee. As Ghana develops its plastic waste management strategy and trade policy priorities, public-private dialogue and cooperation will also be critical to ensure the market responds to the policy signals accordingly.

Introduction

This white paper is jointly commissioned by the [Global Plastic Action Partnership](#) (GPAP), an impartial initiative of the World Economic Forum, and the Forum's Platform for Shaping the Future of Trade and Global Economic Interdependence. The [World Economic Forum](#) is the world's leading international organization for public-private cooperation, established in 1971 as an independent, impartial, not-for-profit foundation.

The Global Plastic Action Partnership was launched in September 2018 during the Forum's Sustainable Development Impact Summit. Founded by a coalition of public and private partners, it emerged as an ambitious platform to accelerate the global response to the growing plastic pollution crisis. The Forum's Platform for Shaping the Future of Trade and Global Economic Interdependence works to support debate and collaborative action on international trade and investment for recovery, growth and sustainable development. Together, collaboration has enabled greater research, analysis and partnership on oft-siloed issues at the interface of trade, trade policy and plastic waste.

This case study on Ghana builds on earlier joint research into [Plastics, the Circular Economy and Global Trade](#), which provided an overview of the challenges for plastics circularity in a global economy. The analysis recommended trade policy action across three categories: border measures, behind the border issues and increased transparency, complemented by regulatory cooperation. Specific recommendations included refining the international classification system for traded goods to distinguish between different types of plastics and plastic waste, reducing tariffs on technologies and goods for waste management processes, and commitments to keep environmental services sectors open to foreign companies.

With a new amendment to the Basel Convention covering the transboundary movement of plastic waste in force since January 2021, this deep-dive analysis on Ghana offers a timely exploration of relevant issues. Ghana's fast-growing economy was selected for this case study based on its commitment to creating a domestic recycling industry and to protecting informal sector waste pickers.

Background

Plastics in the global economy

Plastics emerged as a mainstream industrial material in the 1950s and have since gained preference over alternative materials, like metal, copper, paper and glass, due to advantages such as light weight, versatility and durability. Today, plastics are a basic input and packaging material across all industries and products – from agriculture to laptops and from candies to spacecraft.

About 380 million metric tons of plastics are produced annually worldwide. This figure is set to grow to 1.3 billion metric tons annually by 2050 under a business-as-usual scenario.¹ Yet frequent mismanagement after use and a low global average recycling rate of 14%,² have led to plastic pollution impacting land, oceans, human health and the climate crisis.

Plastics consumption correlates with industrialization and affluence. Average consumption of plastics per person in North America and Western Europe was estimated at 139 and 136 kilograms respectively in 2015. In contrast, average consumption per person in the Middle East and Africa was just 16 kilograms,³ but underdeveloped waste management systems have escalated a pollution crisis.

Ghana, a coastal West African country, grapples with a serious problem of plastic pollution that could be aggravated by its ambitious growth and industrialization plans. Promoting a circular economy – designing out waste, keeping materials in use and regenerating natural systems – will be essential to avoid environmental degradation. Trade and investment policies have a role to play in controlling waste and facilitating investment, as well as in ensuring access to goods, services and external markets critical to the circular economy.

This paper proceeds in two parts. The first part presents the plastics landscape in Ghana and offers policy options to improve plastic management outcomes and generate economic opportunities through domestic policy instruments. The second part establishes, for a sub-set of these policy options, vital linkages with trade and provides additional suggestions about how Ghana might leverage trade agreements effectively. It also highlights the many challenges that must be addressed in doing so. Through this practical case study, the paper is designed to contribute to ongoing global conversations about how trade affects environmental protection, while also accounting for economic development priorities.

380M

metric tons of plastics are produced annually worldwide

1.3B

This figure is set to grow to 1.3 billion metric tons annually by 2050 under a business-as-usual scenario.

14%

global average recycling rate has led to plastic pollution impacting land, oceans, human health and the climate crisis.

139KG

Average consumption of plastics per person in North America and Western Europe was estimated at 139 and 136 kilograms respectively in 2015.

16KG

average consumption per person in the Middle East and Africa was just 16 kilograms, but underdeveloped waste management systems have escalated a pollution crisis.

Sources: Centre for International Environmental Law, World Economic Forum, Plastics Insight



The circular economy can help Ghana in its pursuit of green growth. It could unlock opportunities for job creation, investment and innovation while also integrating the informal sector into the mainstream economy.



The relevance of a circular economy

Why plastics management matters for Ghana

Ghana is one of Africa's fastest-growing economies, averaging annual GDP growth of 6.8% over the past 30 years.⁴ The country's Long-term National Development Plan (2018 to 2057) projects Ghana's population will grow from 29.6 million to 49.1 million and urbanization will increase from 56% to 95% by mid-century.⁵ These projections have implications for resource consumption and, in turn, environmental stewardship.

Like the rest of the world, Ghana is faced with a plastics dilemma: a vital resource that is also a major contributor to environmental pollution. Plastic is used in industry but plays a social role too. People at the bottom of Ghana's economic pyramid can afford food items and other basic consumer necessities mostly through low-priced miniature packs sold in plastic sachets. Similarly, due to the inadequate reach of municipal water supply, sachet water,

packaged in small, heat-sealed plastic bags, provides the source of safe drinking water for 63% of Ghanaians.⁶ Ghana's municipal and solid waste management system, meanwhile, is under-resourced and overstretched. The country's notorious scrapyard at Agbogbloshie, near Accra, has become renowned for its detrimental human and environmental impacts, resulting in part, from the burning of plastic from exported electronic waste. Accra's frequent floods have been linked, in part, to plastic-clogged drainage and waterways.⁷ As such, the Government is focusing pragmatically on the challenges of plastic waste management and is considering a shift to a more circular economy. A National Plastics Management Policy (NPMP) was put forward in 2020⁸ and the National Plastic Action Partnership launched in 2019 as a key platform for multistakeholder collaboration in support of Ghana's transition to a plastics circular economy.⁹



Like the rest of the world, Ghana is faced with a plastics dilemma: a vital resource that is also a major contributor to environmental pollution.

Shifting to a circular economy

In contrast to a linear economy, the circular economy promotes a closed-loop system that designs out waste and pollution, keeps products and materials in use, and regenerates natural systems. As the Ellen McArthur Foundation notes, transitioning to a circular economy goes beyond waste reduction and "represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits."¹⁰

The circular economy can help Ghana in its pursuit of green growth. It could unlock opportunities for job creation,

investment and innovation while also integrating the informal sector into the mainstream economy. Additionally, a circular economy could enhance Ghana's prospects of meeting major global commitments like the Sustainable Development Goals (SDGs) and the Nationally Determined Contributions (NDCs) of the Paris Agreement on Climate Change (2015). Establishing a circular economy focus may encourage additional development assistance, particularly given, for example, the World Bank's recently stated intention to link funding support to countries' climate change actions.¹¹

Ghana's plastic trade and local value chain

Trend and patterns in Ghana's plastic trade

As Ghana is not a significant producer of plastics, understanding how it sources and consumes this resource is an essential part of developing recommendations for plastic waste management. Doing so introduces three major data-related challenges: (i) plastics are embedded as casings or wrappings in several imported products but, as such plastics are not listed under any of the Harmonized System (HS) code headings – a six digit-code system that serves as a foundation for worldwide import and export classifications – on “plastics”;¹² plastic imports are under-counted and

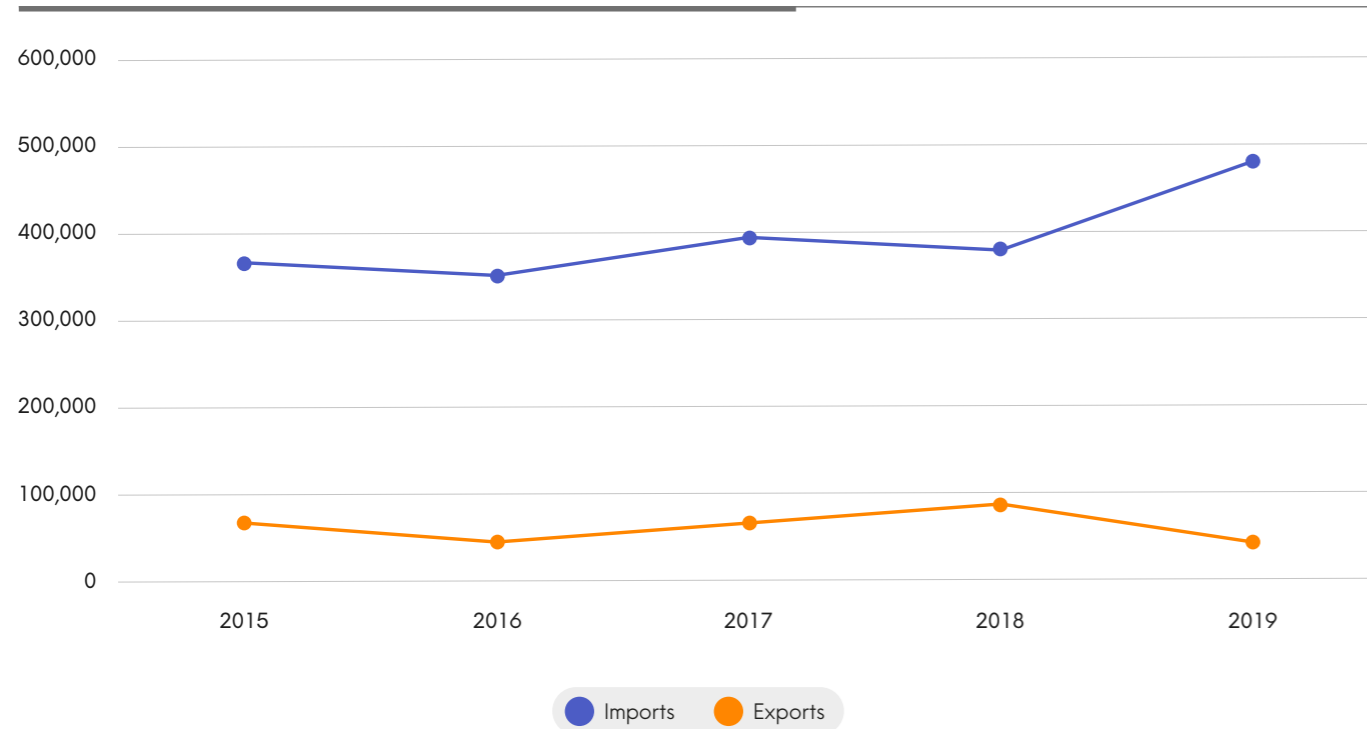
under-reported; (ii) the data presented below does not include plastics, plastic products and plastic waste that may have been brought into the country unofficially or illegally; and (iii) there is significant inconsistency of data from different sources on imports, exports and local production.¹³ These factors make it difficult to obtain a complete picture of Ghana's plastic imports, exports, local manufacturing and, by extension, total consumption and waste generation.

The calculations for the data used in this section are based on three classifications under the HS codes:

plastics and plastic articles covering polymer resins, semi-finished materials, plastic products and plastic waste, pairings and scraps (Chapter 39); fishnets (Chapter 56); and synthetic textiles (Chapter 63). These were chosen because they capture most imported plastics covered by the HS codes, and synthetic textiles are included among plastic items levied under the environmental excise tax (EET) introduced by Ghana's Custom and Excise Act (863).¹⁴ Charts 1 and 2 below display the import and export of plastics by Ghana between 2015 and 2019:

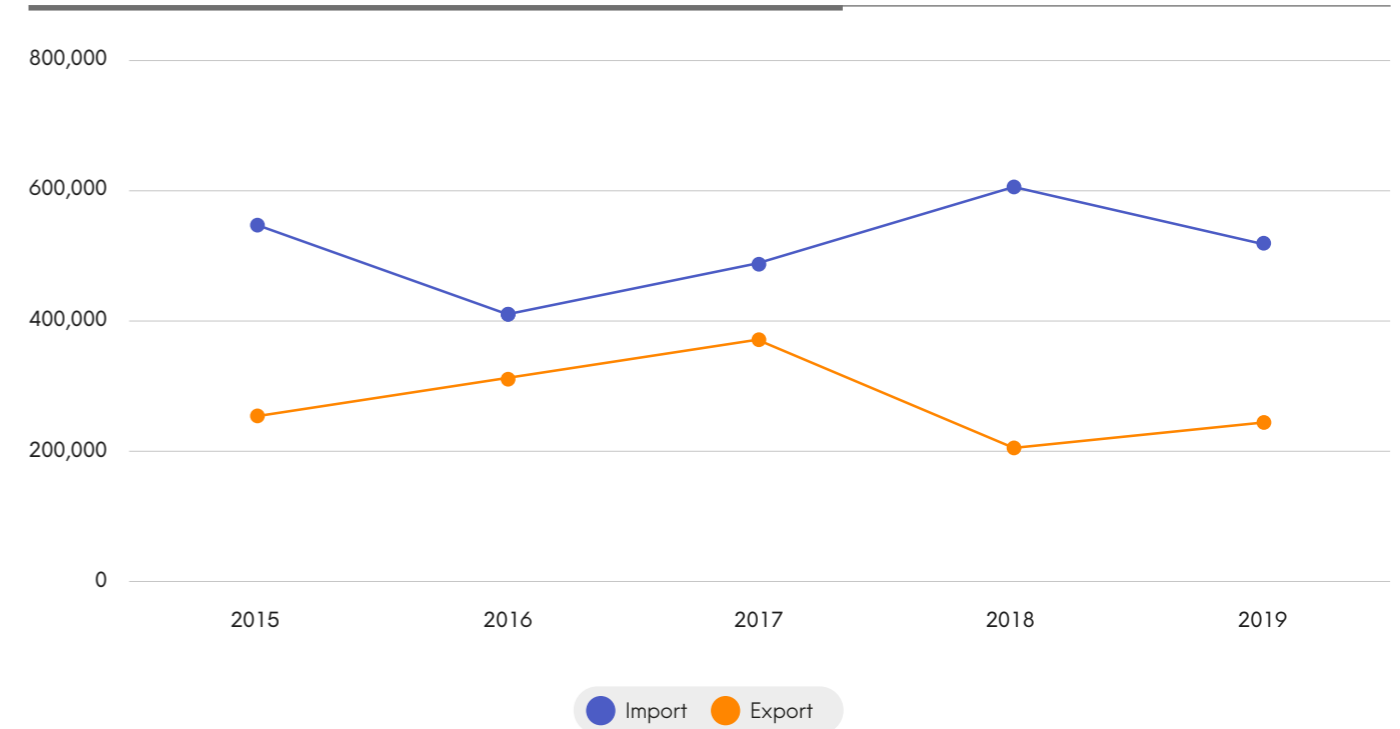


Chart 1: Trend in Ghana's Plastic Trade Volume (Tons)



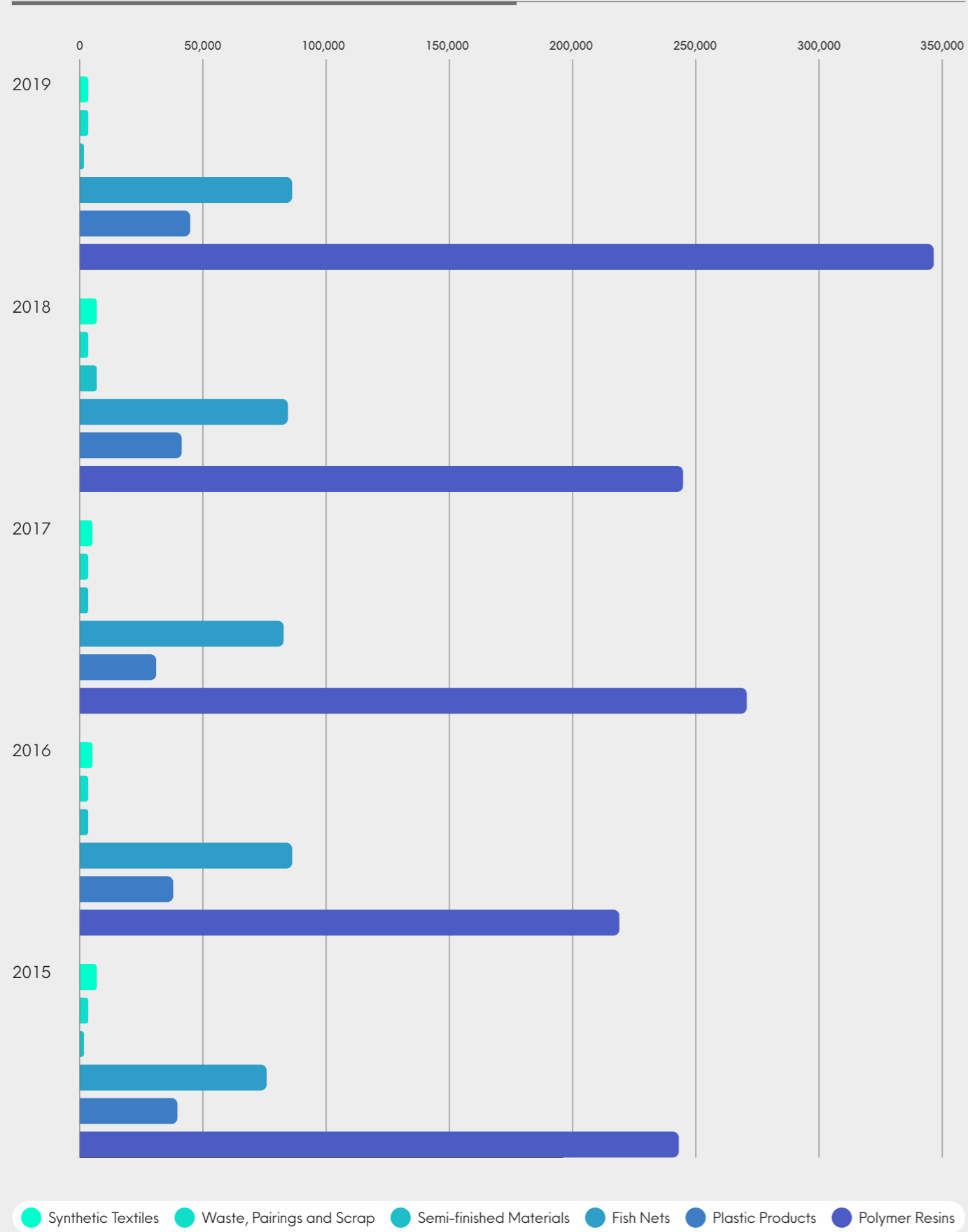
Source: UN Comtrade

Chart 2: Trend in Ghana's Plastic Trade Value (US\$'000)



Source: UN Comtrade

Chart 3: Ghana Plastic Import by Materials (Tons)



Source: UN Comtrade

The figures here reflect finished products, which as mentioned above, are significantly under-reported for several reasons.



1.99M

Ghana's imported plastic volume grew 25% between 2015 and 2019, totalling 1.99 million tons

\$2.56B

Ghana's annual imported plastic was worth \$2.56 billion in the period 2015-2019.

77%

of Ghana's plastic imports came from ten countries, particularly China and the Middle East.

Several conclusions can be drawn from this data. Ghana's imported plastic volume grew 25% and totaled 1.99 million tons worth \$2.56 billion over the period with a sharp upward spike of over 24% in 2019 versus the 2018 volume. Polymer resins, the primary input material for plastic production, accounted for over 70% of imported volume (as shown in Chart 3), indicating a degree of value-added local manufacturing in the plastics sector as corroborated by the fact that finished products accounted for over 69% of the \$1.38 billion total export value. Finished products primarily include single-use carrier bags, food and beverage packaging and plastic furniture, and are frequently exported to neighboring countries including Burkina Faso, Togo, Benin and Mali. Imports of plastic waste, pairings and scrap were less significant at fewer than 15,000 tons over the period.

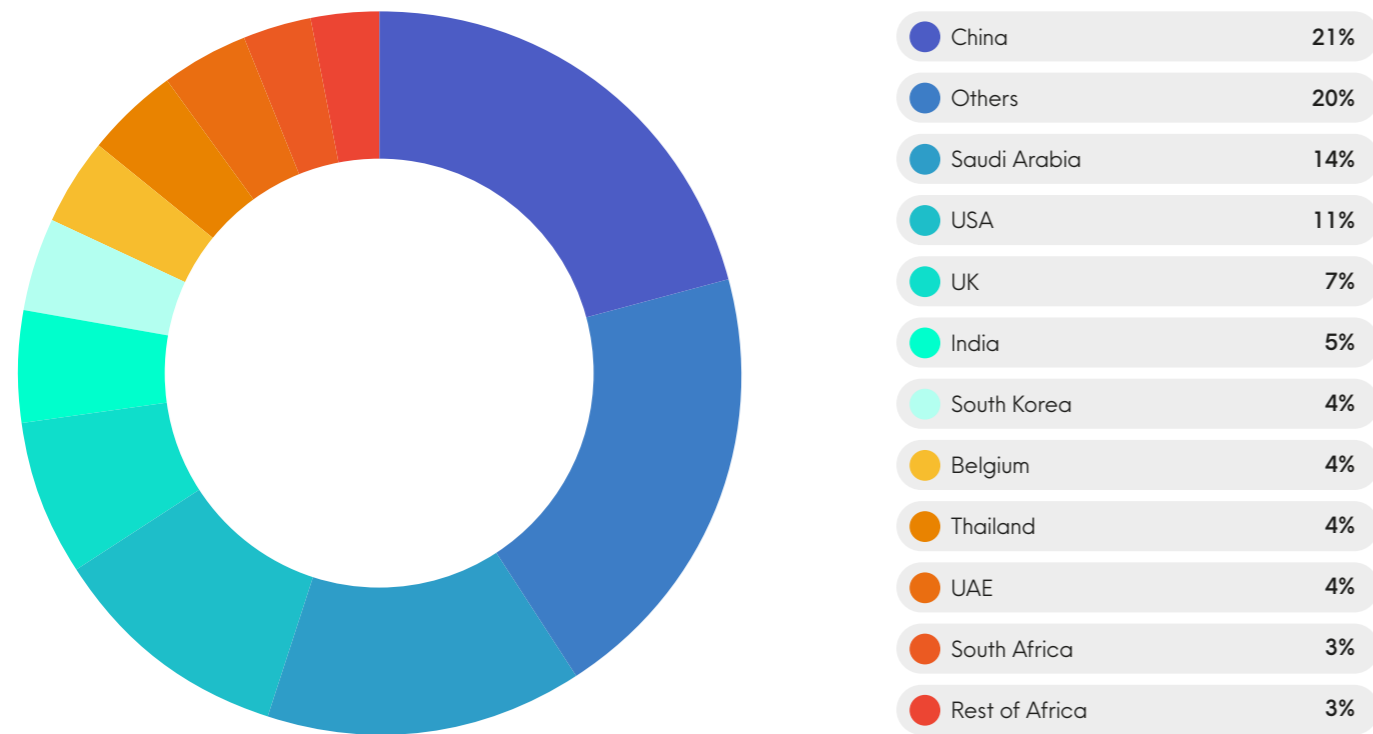
Ghana's plastic imports in 2019 (Chart 4) were spread across global regions, but there was significant geographic concentration as approximately 77% of the value came from just ten countries. The Asia region, including China and the Middle East, accounted for 52% of the total. Plastic imports from regional

partners in Africa were negligible, totaling about 6%. South Africa's share of 2.95% exceeded the combined 2.76% from Ghana's immediate neighbours within its subregional trading bloc, the Economic Community of West African States (ECOWAS).

It is no surprise that Ghana is so much more dependent on plastic imports from Asia than Africa: Asia, particularly China, is the world's pre-eminent plastic supply point, and Africa has relatively little capacity for producing polymers and plastics.

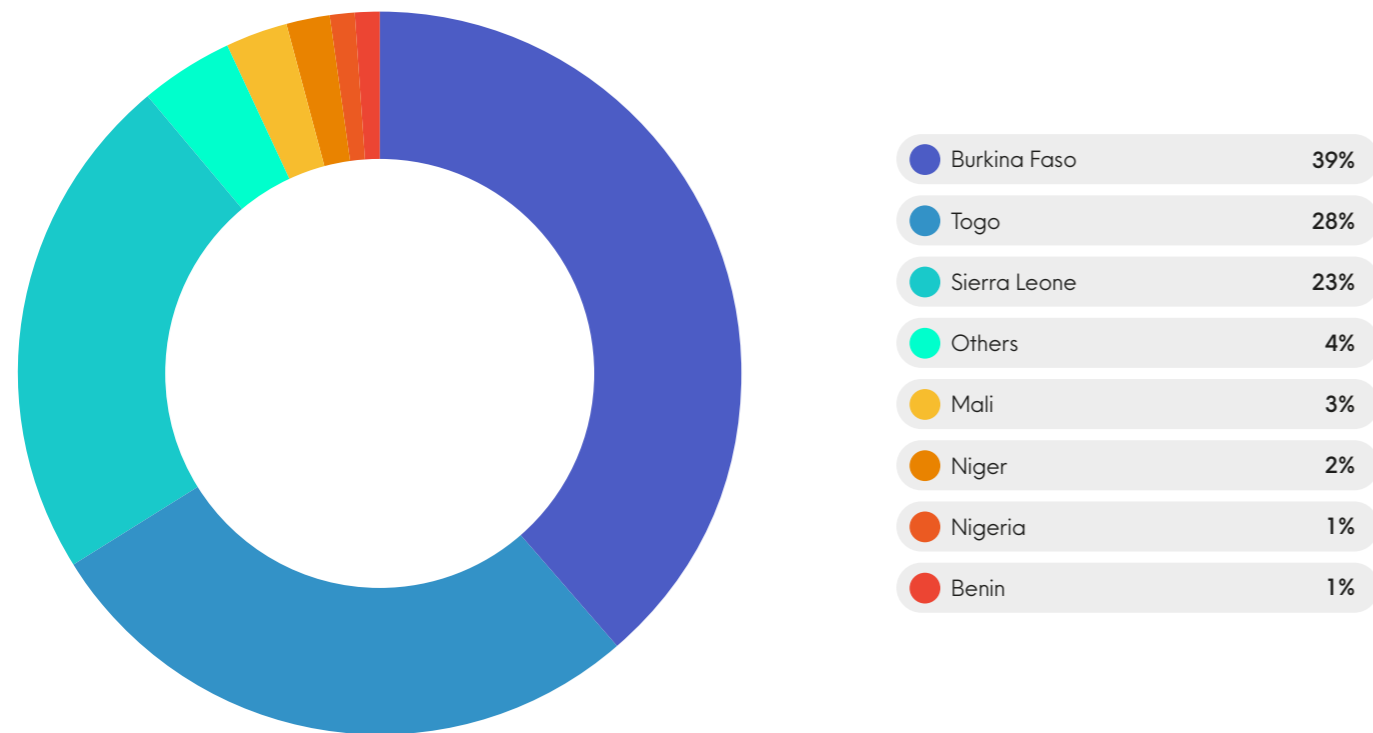
In sharp contrast to imports, Ghana's plastic exports (Chart 5) were almost exclusively limited to Africa, specifically within ECOWAS which captured almost 99% of value share in 2019. Three bordering countries alone – Burkina Faso, Togo and Sierra Leone – accounted for 90% of total plastic exports. This may be explained by simple proximity, as well as the trade advantages of ECOWAS. Challenges posed by poor logistics, the relative immaturity of the Ghanaian manufacturing industry and other trade barriers that hinder a wider flow of regional trade in Africa, however, cannot be discounted.

Chart 4: Ghana Plastic Import by Origins (Value Share, 2019)



Source: UN Comtrade
Note that similar to Chart 3, the figures here reflect finished products, which are significantly under-reported.

Chart 5: Ghana Plastic Export by Destination (Value Share, 2019)



Source: UN Comtrade

The local plastics value chain

Circularity needs to be embedded throughout the plastic value chain – from manufacturing to resource recovery. Product design decisions, including for single-use, reuse or recyclability, are made and implemented upstream and midstream, and must be accounted for alongside plastic waste management. Evaluating the Ghanaian plastics value chain provides an understanding of the constraints and prospects for making changes in the current landscape.

1 Upstream Activities: Resin and other raw input supply

As illustrated in Figure 1, Ghana does not produce polymer resins despite being a crude oil and gas exporter and having a petroleum refinery

(although the refinery is not functional at present, serving as a storage facility for imported refined products).¹⁵ Ghana is therefore wholly dependent on imports for plastic input supplies to its industries, spending an average of \$413 million annually importing these materials over a five-year period between 2015 and 2019.

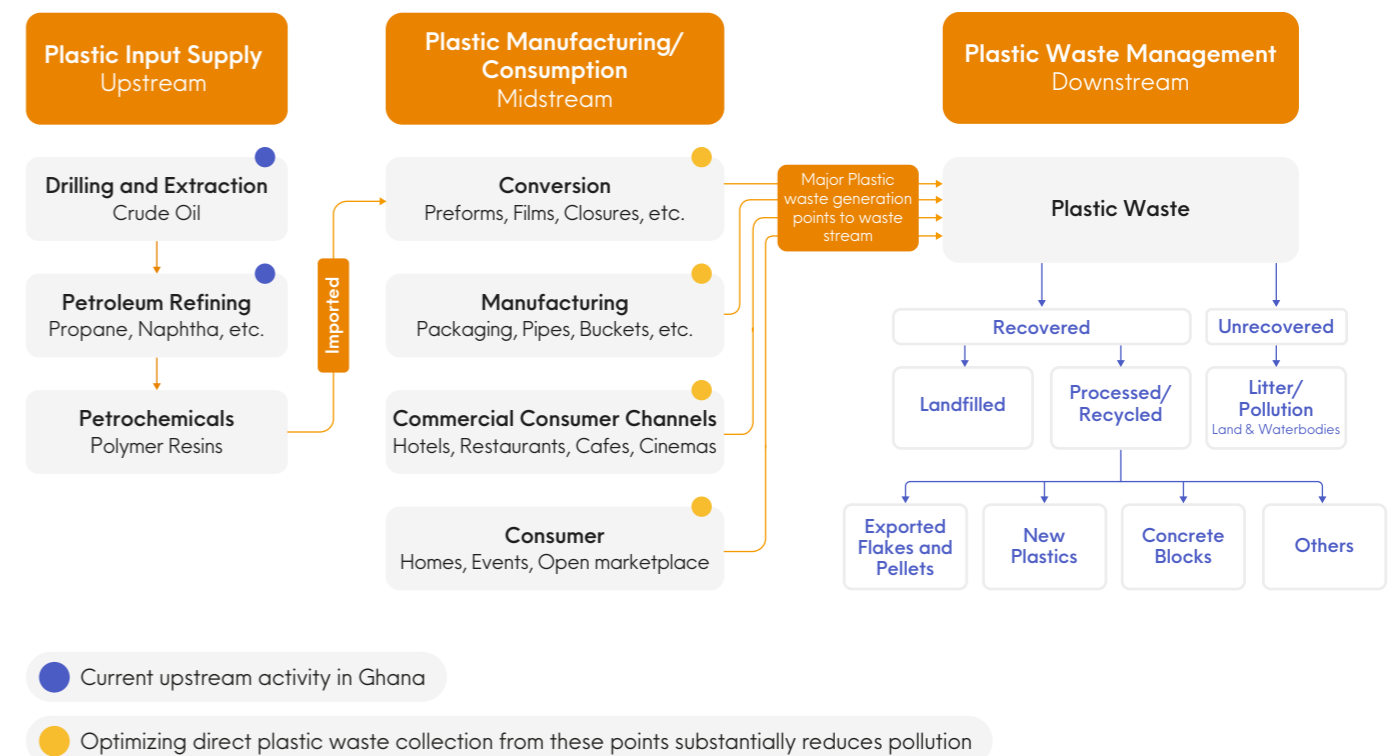
One way of closing this gap would be for Ghana to explore forward integration into polymer resin production through technological advances. The Government has identified the establishment of a petrochemical industry as one of 12 Strategic Anchor Industries that could support an industrialized, inclusive and resilient economy. According to the Ministry of Trade and Industry, Ghana is already working on a masterplan to develop a petroleum hub in its Western

Region as part of an ambition to become a regional plastic production hub.¹⁶ This objective seems counter to other national objectives, though, as the carbon footprint and environmental impact of the petrochemical industry could be detrimental to Ghana's sustainable development and circular economy goals and risks creating stranded assets. Contradictions such as this underline the need for improved mechanisms for inter-ministerial coordination and greater policy coherence.



Ghana's plans to develop a petroleum hub to promote a resilient economy could be detrimental to the country's sustainability goals.

Figure 1: Plastics Full Cycle Value Chain in Ghana



While the petroleum refinery has not been functional in recent years, Ghana has the capacity to refine crude oil.



60%

By 2050, 60% of global plastics production could be based on plastic reuse and recycling, including through chemical technologies.

Instead of developing petrochemical capability, economies like Ghana's may wish to consider the merits of investing in low-carbon or non-fossil fuel chemical technologies for alternative or recycled plastic production. Examples to think about include:

- Bioplastics made from biomass feedstock, including bamboo, paper pulp and agricultural waste plants. Bioplastics have the potential to be fully biodegradable when produced from 100% biomass, though further study is needed on material specificities.¹⁷
- Depolymerization and similar chemical recycling technologies that break down plastics, including difficult-to-recycle plastic waste, into their basic components for the production of virgin resins.¹⁸

These technologies are costly and mostly in their infancy, and their commercial viability and net environmental footprints

are still being debated by experts.¹⁹ Discussions on these innovations are nonetheless evolving quickly. A recent report by McKinsey estimates that, by 2050, 60% of global plastics production could be based on plastic reuse and recycling, including through chemical recycling technologies.²⁰ In Africa, which along with the Middle East is projected to become the world's largest consumer of plastics by the latter part of the century, early investment in new technologies may prove strategic.²¹ The next decade is critical for making vital assessments that will get Ghana on track to meet its climate action and economic development goals.

2 Midstream Activities: Plastic manufacturing and consumption

Ghana's plastics value chain, comprising polymer converters, plastic products and packaging manufacturers, local and global

consumer packaged goods (CPG) companies and their distributors, and importers and exporters of plastics. About 120 companies are engaged in converting imported polymer resins or semi-finished plastics into various end-use or packaging products, such as films, containers, housewares and preforms.²²

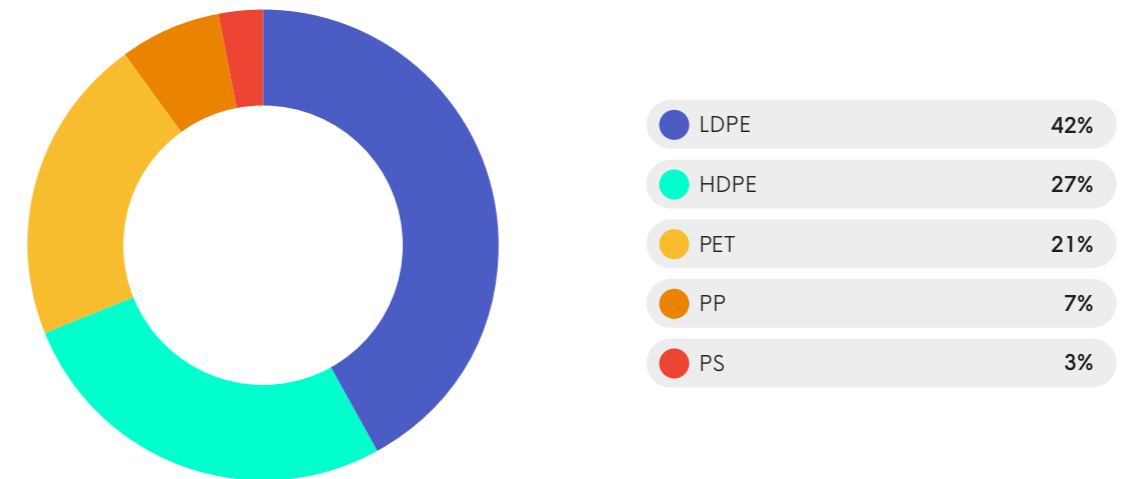
The shortage of data about plastic production makes it challenging to conduct a detailed analysis of the sector's local manufacturing capacity. It is clear from plastic imports that single-use plastics manufacturing is

likely predominant. Chart 6, drawn from a study focusing on the Greater Accra area, provides a polymer analysis of plastic imports in 2018.²³ Table 1 indicates how these polymers are used in Ghana. There are just a handful of companies, such as Mini Plast, that are using locally sourced recycled plastics to make new products.²⁴

The surge in single-use plastics is not unique to Ghana and is largely driven by two factors: an ever-increasing need for convenience and inefficiencies such as the poor access to municipal water supply

that has created a boom for drinking water packaged in plastic sachets. Disrupting the trend will require changes in product design, packaging mix, waste management systems and individuals' habits as well as expanded reach of municipal water supply. CPG companies can influence this segment of the value chain, particularly when it comes to product, packaging and marketing decisions. Companies like Coca-Cola, Nestlé and Unilever have adopted circular economy principles in framing their respective global commitments and targets on plastic action (see Box 1)²⁵

Chart 6: Ghana Plastic Import by Polymers (Greater Accra Area, 2018)



Note that the data excludes some finished products (i.e., more complex polymers) which may lead to under-reported figures, as in Charts 3 and 4.

Table 1: Major end-use of polymer types in Ghana

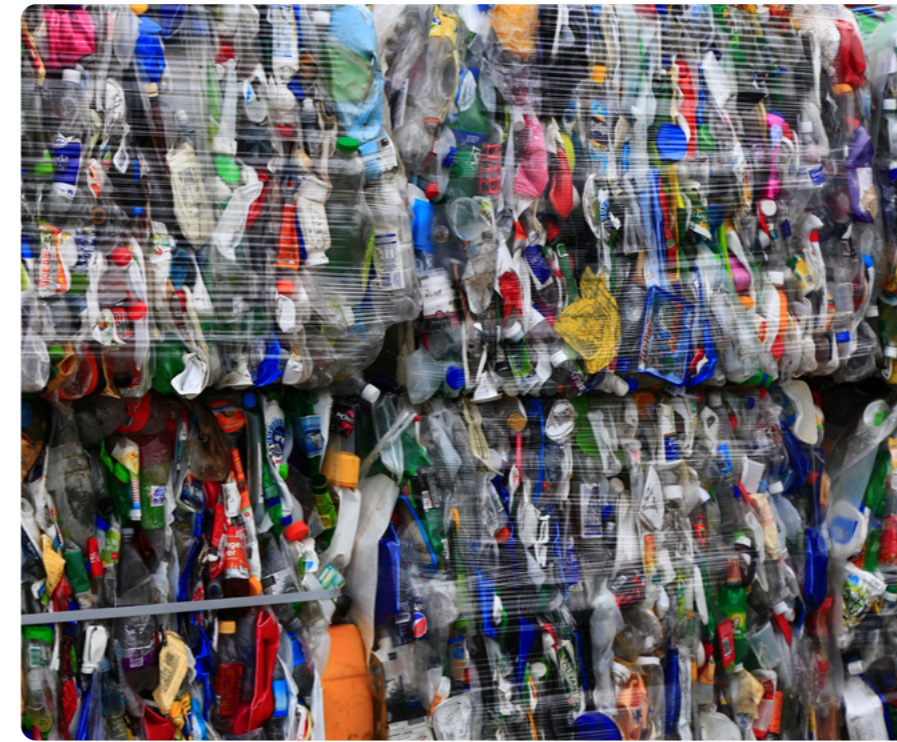
Polymer	Used in Ghana predominantly for
● LDPE: Low Density Polyethylene Terephthalate	Single-use water sachet, single-use shopping bags
● HDPE: High Density Polyethylene Terephthalate	Single-use water sachet, single-use cosmetic containers as well as gallons, crates, pallets and pipes
● PET: Polyethylene Terephthalate	Single-use beverage bottles, single-use food packs, blister
● PP: Polypropylene	Single-use cosmetic containers, blister as well as films, raffia bags, buckets, chairs, plastic furniture
● PS: Polystyrene	Single-use food packs and cups

Box 1: Global commitments on circular packaging actions by major companies by 2025-2030

Company Global Commitments on Plastics/Packaging Reduction, Reuse and Recycling

Coca-Cola	<ul style="list-style-type: none"> • Make 100% of our packaging recyclable globally by 2025 • Use at least 50% recycled material in our packaging by 2030 • Collect and recycle a bottle or can for each one we sell by 2030
PepsiCo	<ul style="list-style-type: none"> • Design 100% of packaging to be recyclable, compostable or biodegradable by 2025 • Increase recycled content in our plastics packaging to 25% by 2025 • Reduce 35% of virgin plastic content across our beverage portfolio by 2025 • Invest to increase recycling rates in key markets by 2025
Nestlé	<ul style="list-style-type: none"> • Make 100% of our packaging recyclable or reusable by 2025 • Reduce our use of virgin plastics by one third in the same timeframe • Innovate with new materials & develop Alternative Delivery Systems
Unilever	<ul style="list-style-type: none"> • By 2025 we will halve the amount of virgin plastic we use in our packaging • By 2025 we will increase the recycled plastic material content in our packaging to 25% • Help collect and process more plastic packaging than we sell by 2025 • By 2025 all of our plastic packaging will be designed to be fully reusable, recyclable or compostable
Danone*	<ul style="list-style-type: none"> • Using 100% reusable, recyclable or compostable packaging • Streamlining our use of materials and developing new delivery models • Co-building effective, efficient and inclusive systems for collection and recycling • Reintegrating recycled materials
Dow	<ul style="list-style-type: none"> • By 2030, reduce net annual carbon emissions by 5 million metric tons versus its 2020 baseline (15% reduction) • By 2030, enable 1 million metric tons of plastic to be collected, reused or recycled through direct actions and partnerships. • By 2035, close the loop by enabling 100% of Dow products sold into packaging applications to be reusable or recyclable

*Danone operates in Ghana under the Fan Milk brand.



Practical examples of how these companies can advance their circular economy commitments for plastics in Ghana are highlighted below. They are also discussed further in subsequent aspects of this paper.

- **Use of recycled plastics:** Recycled plastics can be used for nearly all packaging applications, including food packaging. In the case of PET in Ghana, using recycled PET, including food grade quality, for all consumer goods packaging could directly reduce virgin plastics consumption and boost collection and recycling.
- **Substitution of PET bottles:** Returnable glass bottles (RGBs) and aluminum cans could serve as substitutes for PET bottles in hotels, restaurants, cinemas and cafes (HORECCAs) which are on-premises consumption channels. A local bottled water brand, Bel Aqua, has successfully launched and sustained glass bottled water in Ghana.²⁶ While most studies ascribe a higher carbon footprint to single-use glass packaging when compared to PET, in Africa (including Ghana), where glass bottles have over 90% recovery rate and are estimated to be reused between 18-25 times before recycling, there may be better lifecycle benefits.²⁷
- **Use of refillable PET bottles:** Refillable PET (RefPET) has emerged as the plastic equivalent of the RGB bottle and is popular across Latin America and in Germany, especially for larger-sized beverage packs of one-litre or more.²⁸ Like RGBs, RefPET bottles offer waste-reduction benefits as they are recovered by the beverage companies directly and washed and reused several times before being recycled at the end of their life.

10%

Ghana's recycling rate is estimated to be 10%.

3 Downstream Activities: Plastic waste management

Municipal waste management and plastics

The waste management system relies heavily on a chain of informal sector operators working independently or as members of cooperatives, retrieving recyclables from residential and commercial premises, roadsides, beachfronts, dumpsites and landfills which are then sold directly to recyclers or to waste aggregators. About 5,000 informal collectors are said to operate in the Greater Accra Region alone.²⁹ Licensed waste collection firms also exist. To boost capacity, the Government has encouraged private sector participation, leading to investment in modern material recovery facilities (MRFs) like the Integrated Recycling & Compost Plant (IRECOP).³⁰ There are not enough of these facilities to meet current needs. Plastic waste accounts for 14% of municipal solid waste and is projected to increase to 17% by 2030.³¹ Ghana's overall plastic recycling rate is estimated to be 10%, with PET recycling even lower at 2%.³² An estimated 1.2 million tons of plastic waste has accumulated in Ghana's dumpsites and landfills over the years.³³

Rethinking material recovery

Material recovery is crucial to addressing the plastic waste pollution challenge in Ghana. There are four key challenges to overcome: (i) the absence of sorting bins reduces point-of-use collection, resulting in recyclables ending up in dumpsites unnecessarily; (ii) collectors are underfunded, poorly equipped and demotivated by price and demand volatility; (iii) the absence of an extended producer responsibility (EPR) scheme limits private sector funding and support; and (iv) a lack of scaled recycling translates to low offtake, weak prices and poor earnings for collectors.

An underlying problem, however, is the mindset that still treats plastic as disposable. As demonstrated in

many countries, a deposit refund scheme (DRS) would help change this, motivating consumers to return used PET bottles.³⁴ Aside from consumer-level DRS, Ghana could also introduce an innovative trade-level DRS for food and drink destinations, such as hotels, restaurants, cinemas and cafes, in addition to cosmetics and consumer goods locales. This approach would require manufacturers and their customers to recover and account for all sold packaging and containers (PET, aluminum cans, juice cartons, cosmetic containers and so on).

Further down the value chain, about 25 formal recyclers operate across Ghana with an estimated, aggregated annual capacity of 96,000 tons.³⁵ They recycle LDPE and HDPE water sachets into nylon shopping bags, HDPE and PP into chairs, crates, and more, downcycle a mix of plastics into bricks and other materials, and crush plastics including PET into flakes for local or export markets. Most are small operators with high production costs and poor funding that prevent them from utilizing their full capacity. For example, Nelplast is reputed for high-quality bricks made from plastic waste³⁶, but it has struggled to scale up. The absence of a PET-to-fibre or PET-to-bottle recycling plant and a recycling solution for flexibles and composite sachets remain substantial gaps.

Plastic waste reduction initiatives in Ghana, as in many other emerging countries, are supported largely by funding from international NGOs, development agencies and corporate organizations. Most of this financing is targeted towards boosting collection (the push factor) with very little investment in expanding domestic demand or recycling capacity (the pull factors). Collection cannot grow beyond the available demand and recycling capacities – both of which are currently weak in Ghana. The result is that both demand and pricing are low and unstable, impeding waste recovery.

Developing the domestic market for recycled plastics through policy stimuli

Ghana could achieve a market-driven self-sustaining plastic recycling economy by mapping domestic market

opportunities and creating effective policies, regulations and incentives to induce demand for recycled plastics.

As illustrated in Figure 4, there are high-value and potentially large-scale opportunities where effective policies and incentives could stimulate demand and attract investment in recovery and recycling infrastructure. For example: (i) CPG companies need food-grade recycled plastics to meet their circular plastic packaging commitments; (ii) the textile, garment and apparel industry in Ghana requires synthetic fibre to augment the declining supply of cotton;³⁷ (iii) Ghana's automotive policy goal to locally manufacture components and parts³⁸ also requires synthetic fibre – Volkswagen and Toyota have already set up assembly plants, illustrating a timely opportunity;³⁹ (iv) a Norwegian investor (PRF) is keen to set up a plastic pyrolysis plant in Accra;⁴⁰ and (v) the boom in middle- to upper-income housing construction⁴¹ could benefit from materials made from recycled plastic waste.

Addressing the existing hurdles will require some reflection on policy stimuli and public-private partnerships. PET bottles, serving as an illustrative example cited previously, represent a problematic variant in Ghana's plastic waste stream. By comparison, South Africa achieved a 62% PET recycling rate totaling 95,879 tons in

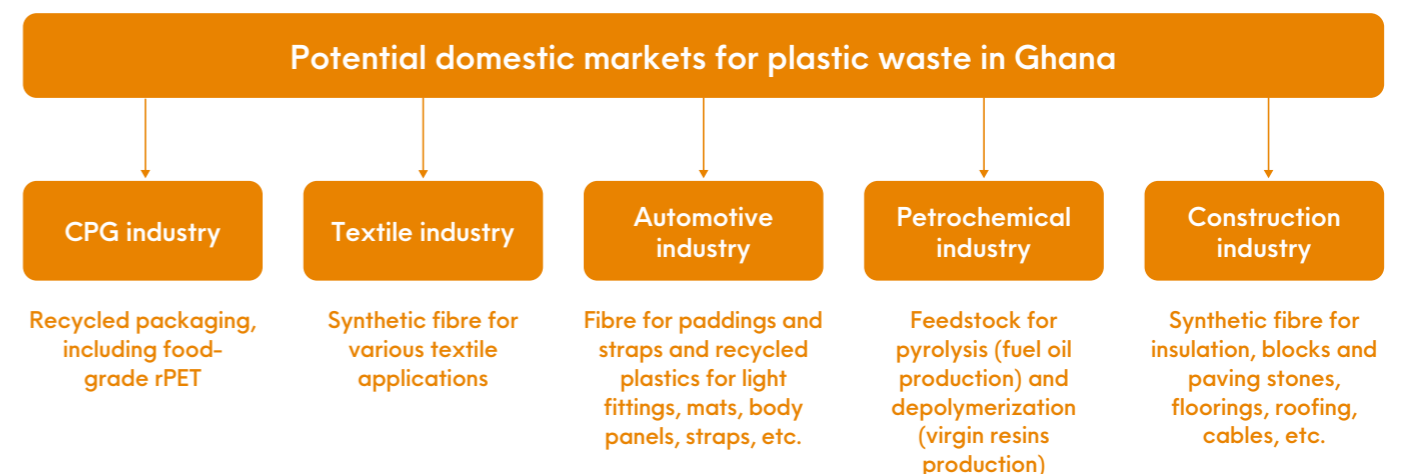
2019⁴² aided by regulatory approval for food-grade recycled PET since 2009. A plastic alliance, PETCO SA, has also helped to grow the recycling industry by implementing an EPR with buyback subsidies in addition to offtake contracts.⁴³ Additionally, textile, furnishing and automotive industries support the PET recycling industry by purchasing synthetic fibre. South Africa's enabling framework, which mandates plastic-packaging companies to ensure a market for recycled plastics, is helping to boost collection and develop a circular plastics economy. Coca-Cola has actively advocated for an rPET standard in Ghana, and some potential investors in PET-to-bottle recycling are waiting for this enabling condition.

Looking at another case, the rapid development of premium gated-communities in large cities demonstrates a sustained boom in the middle- to upper-income housing segments for Ghana's real estate construction industry. The Government could leverage this growth to create a coveted 'eco-friendly housing certification' scheme, incentivizing the local manufacture of materials such as building blocks, paving stones, floorings and drainage pipes from recycled plastics. Through public procurement, the Government could also use these recycled materials in public housing, schools, hospitals and other civic construction projects.



Government schemes to incentivize eco-friendly construction could help to promote local manufacturing of materials made from recycled plastics.

Figure 4: Potential domestic markets for plastic waste/recycled plastics in Ghana



Ghana's plastic pollution control efforts and vision for circularity



Evolving legislation and the NPAP roadmap

Prior to 2017, under the overall supervision of the Ministry of Environment, Science, Technology and Innovation (MESTI) and its implementation arm, the Ghana Environmental Protection Agency (EPA), Ghana initiated about 30 policies and laws concerned with managing plastic waste and other forms of pollution.⁴⁴ Box 2 lists some of these policies and laws. In addition, a Ministerial directive in July 2015 prohibited the sale of plastic bags under 20 microns thick and advocated for all flexible plastics to contain biodegradable components. This effort proved ineffective, along with several attempts to ban single-use plastic bags and sachet water.⁴⁵ Similarly, a 10% environmental excise tax (EET) levied on imported plastics does not appear to have discouraged importation. Nor does it seem to have improved plastic waste collection or pollution prevention, given that, to date, the fund has not been administered.⁴⁶

Most of these initiatives have not achieved their desired objectives for several reasons, including a lack of planning, poor coordination between sectors and stakeholders, weak enforcement and an absence of policy incentives for the general public and the private sector.⁴⁷ Nevertheless, some positive outcomes have resulted during this period, including greater public awareness and the creation of beneficial public-private partnerships. The Government has also since pivoted to focus on multistakeholder collaboration towards a circular plastics economy, establishing three anchor initiatives:

1 National Plastics Management Policy (NPMP):

The policy provides a comprehensive policy framework for plastics management in Ghana and clearly identifies all relevant stakeholder groups and their respective roles. It also outlines key measures to address the identified challenges, including an EPR scheme and the establishment of a Resource Recovery Secretariat to oversee the policy implementation and administer the EET fund.

2 National Plastic Action Partnership (NPAP) Ghana:

In 2019, Ghana became the second country in the world to adopt the NPAP model, an initiative of the Global Plastic Action Partnership – a World Economic Forum platform to translate commitments into actions on plastic waste and pollution.⁴⁸ NPAP Ghana convenes stakeholders and initiatives to scale and accelerate in-country partnerships. It has also supported policy formation such as the NPMP and has helped design an EPR scheme by bringing together relevant sectors to communicate and conduct science-based analysis. NPAP Ghana partnered with enterprise software giant, SAP, to develop and pilot a mobile phone-based application to measure and track the amount of plastic waste pickers are collecting, increasing transparency across the value chain.⁴⁹ It also developed a baseline analysis for gender that highlights inequality in the value chain and informs policy. Currently, the NPAP is working to produce a national plastic action roadmap.

3 National plastic action roadmap:

The roadmap will provide a clear pathway for the eradication of plastic pollution of marine environments and other water bodies by 2040. It will offer key recommendations for comprehensive systems change through the implementation of five complementary interventions across the plastics value chain relating to: reduction and substitution, product redesign, enhanced collection, greater recycling and safe disposal.

Box 2: Some of the major policies and legislations for the control of plastic waste and other pollutions

- Hazardous and Electronic Waste Control and Management Act, 2016 (ACT 917) which imposed an eco-levy on imported electronic products to fund the management of e-waste.
- Environmental Policy, 2014
- Customs and Excise Act, 2013 (ACT 863) which imposed a 10% Environmental Excise Tax on imported plastics.
- Hazardous and Electronic Waste Control and Management Act, 2016 (ACT 917) which imposed an eco-levy on imported electronic products to fund the management of e-waste.
- Climate Change Policy, 2012
- Environmental Sanitation Policy, 2010
- National Environmental Sanitation Strategy and Action Plan (Materials in Transition, MINT), 2010
- Management of Ozone Depleting Substances and Products Regulations, 2005 (LI 1812), which placed pre-polymers under the “controlled substances” category liable to Pollution tax
- Environmental Impact Assessment Regulations 1999, (LI 1652), which listed plastic products among the “undertakings requiring registration and environmental permit.
- Environmental Protection Agency Act, 1994 (Act 490) Part I & II

The national plastic action roadmap, expected to launch in July 2021, complemented by an EPR policy, will be the next significant milestones to encourage progress.

Private sector response and initiatives

Prior to 2016, private sector participation in plastic waste management in Ghana was mostly through solid waste service providers and recyclers. Active involvement by CPG companies like Coca-Cola, Unilever and Nestlé was a response to the global outcry against plastic waste pollution, leading to the eventual

establishment of two industry platforms for collective action on both plastic waste and the necessary regulatory framework. The Ghana Recycling Initiative by Private Enterprises (GRIPE) formed in 2017,⁵⁰ while the Ghana Plastic Producers Responsibility Organization (GPPRO) was created in 2019 to implement the anticipated EPR scheme for the plastics sector.

Since then, through GRIPE and initiatives by some member-companies, the private sector has endeavoured to support the transition to a circular plastics economy and its related policy development. However, the scope, scale and impact of GRIPE's initiatives have been criticized for coming up short of expectations.⁵¹

Energizing plastic waste management in Ghana

Boosting principles and policies

The Government's vision for industrialization is made clear in its Long-term National Development Plan (2018-2057). Plastics are identified as a key material in the "10-Point Agenda for Industrial Transformation" that designates twelve "Strategic Anchor Industries", including four that have direct and substantial linkages with the plastics value chain.⁵² The Government is optimistic that a vibrant recycling industry can recover nearly one million tons of plastic waste to generate two billion GH¢ annually in basic-need products. It also estimates the potential to create five million jobs across formal and informal sectors of the economy.⁵³ However, as this paper has set out, changes need to be made to achieve this vision. The following principles could guide Ghana's plastics stakeholders towards their circular economy and industrialization goals in a complementary manner:

1 Resolve the data challenge: Ghana needs an effective plastics data repository to inform nationwide plastic studies, feedstock assessments and planning and investment decisions.

The Government could speed up the objective stated in its NPMP to establish a Resource Recovery Secretariat (RRS). The RRS would be empowered to collate and manage data about plastics and other recyclables.

2 Institutionalize coordination: Effective plastic action in Ghana requires active collaboration and policy coordination between MESTI and other ministries responsible for sectors such as trade, industry, petroleum and housing. The provision in the NPMP for an inter-ministerial forum to ensure coordinated and coherent policy-making on issues such as plastics should be implemented.

3 Build regulatory and enforcement capacity: Ghana needs to invest in effective regulatory and enforcement capabilities for the institutions that are tasked with implementing the NPMP's action roadmap. This also entails assessing performance and demonstrating political support for those institutions.

4 Adapt relevant best practices: Ghana could learn a great deal from South Africa's experience of introducing an EPR scheme, PET recycling and refillable PET bottles, as well as its ongoing exploration of alternative feedstock for plastics resin production.

5 Optimize public-private collaboration: Ghana already has a strong foundation in public-private collaboration and partnerships. Its leaders could consider replicating South Africa's Plastic Pact⁵⁴, which aims to involve the general public in meeting CPG companies' global commitments on plastics reduction, to strengthen the private sector's engagement in the implementation of the action roadmap.

Table 2 summarizes responsible plastic management policies that Ghana's stakeholders may want to consider. It will be important to strike a balance between incentivizing circular plastics and the need for enforcement and environmental protection.

Evaluating capacity to become a regional recycling hub

Ghana is emerging as an important political and business hub in West Africa. It hosts the headquarters of the African Continental Free Trade Agreement (AfCFTA) Secretariat and Twitter's Africa regional offices, among several others.⁵⁶ Stakeholders could consider the merits, and challenges, of operating as a regional leader in circular plastics and particularly around recycling. For example,

Ghana's fast-growing plastics product manufacturing industry currently supplies some of its ECOWAS neighbours. With a low-cost business environment and supportive trade policies, the local plastics sector could consolidate these beginnings and expand beyond ECOWAS, especially if it is able to adopt less carbon-intensive manufacturing practices. Furthermore, if Ghana develops a responsible

plastic recycling economy, it could eventually evolve into a regional hub. There would be upsides and downsides to consider with this approach.

The following sections of this paper will discuss the trade implications of some of these policy options and suggest how Ghana can harness trade policy and tools to take advantage of a number of opportunities.

Table 2: Overview of policy options to advance plastic management

Policy Options	Target Impact		
	Reduce/Reuse	Recover	Recycle
Stimulate domestic demand for recycled plastics to accelerate and scale plastic recycling by: <ul style="list-style-type: none"> a) creating plastic recycling standards for end-use applications, including food-grade rPET; b) setting an implementation timeframe for mandatory minimum recycled plastics content for product packaging; c) incentivizing recycled plastics packaging; d) developing a recycled plastics market linkage masterplan to promote adoption of recycled plastics input materials by target industries. 	●	●	●
Reduce plastic consumption through reuse and substitution by: <ul style="list-style-type: none"> a) incentivizing use of RGBs and aluminum cans for beverages, including bottled water, in HORECCAs; b) promoting and incentivizing use of refillable PET bottles, which should be exempted from virgin PET tax because of their reusability; c) promoting through advocacy the use of bulk water dispensers to replace PET bottled water where possible/appropriate; d) expanding municipal water supply to provide access to piped water where possible/appropriate, thereby reducing the extensive dependency on sachet water. 	●	●	
Boost plastic waste collection by: <ul style="list-style-type: none"> a) deploying and enforcing the use of segregated waste bins to encourage waste sorting at source and improve point-of-use recovery; b) scaling up digital collection apps to automate the recycling value chain (Coliba, UNDP, SAP versions already exist); c) considering trade-level DRS to encourage direct takeback of beverage packaging waste by manufacturers from HORECCAs; d) implementing a consumer-level DRS. 	●	●	●
Facilitate funding opportunities to develop the recycling value chain by: <ul style="list-style-type: none"> a) expediting implementation of the NPMP, environmental excise tax disbursement and EPR scheme to boost private sector support for collectors and recyclers; b) providing investment incentives for large-scale recycling infrastructure similar to the automotive industry incentive scheme; c) harnessing circular economy funding opportunities available globally⁵⁵ – e.g., African Development Bank's Africa Circular Economy Fund (ACEF). 	●	●	●
Incentivize innovation and adoption of plastic alternatives and substitutes by: <ul style="list-style-type: none"> a) enforcing a levy on plastic shopping bags to encourage use of paper and textile substitutes; b) implementing effective green procurement policies that prioritize viable non-plastic alternatives. 	●		
Eliminate non-recyclable and hazardous plastics by: <ul style="list-style-type: none"> a) mandating a timeframe to phase out the use of non-recyclable and hazardous plastics; b) strengthening controls to prevent the importation of non-recyclable and hazardous plastic waste until, e.g. a ban comes into effect. 	●		●

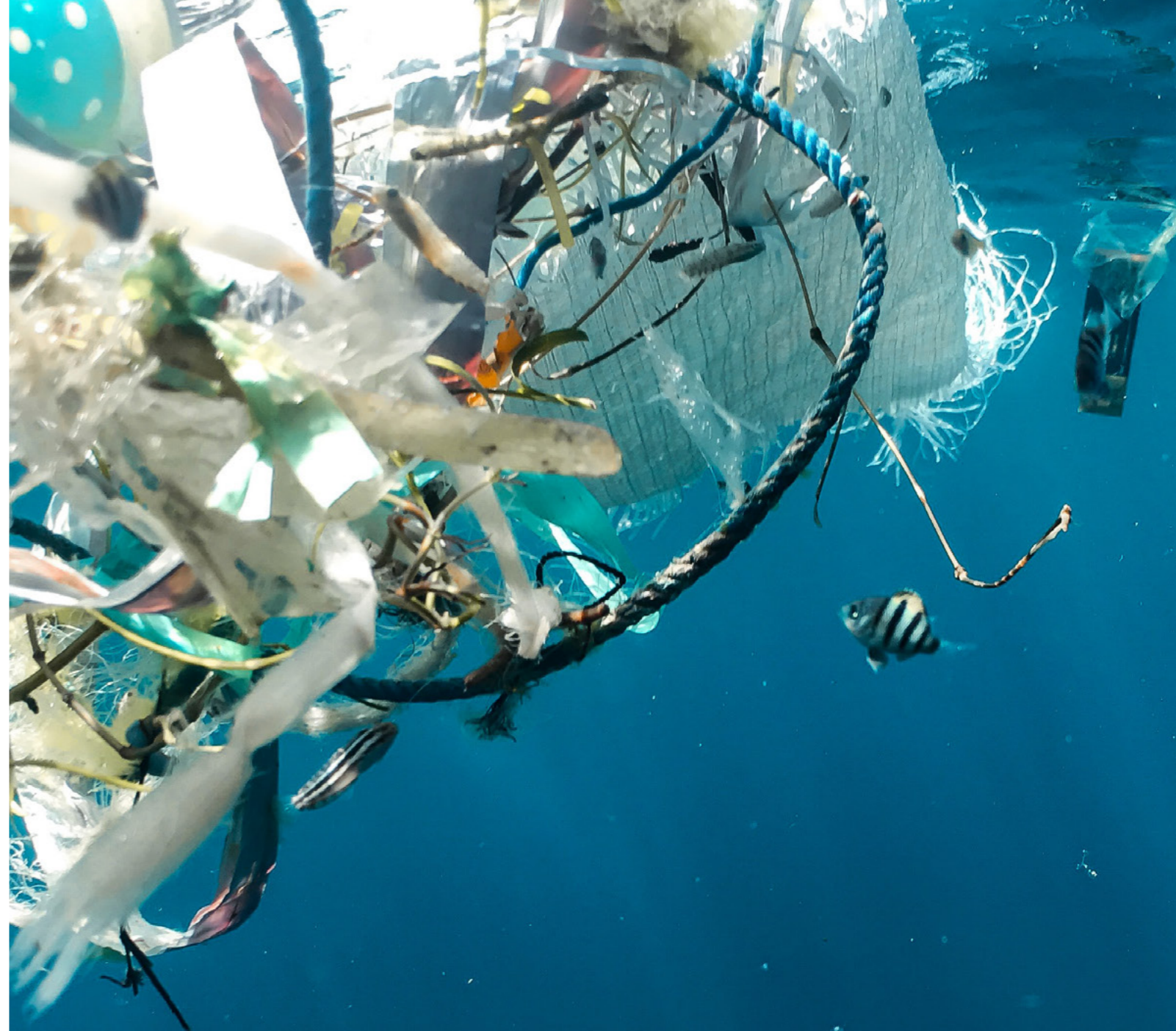
Using trade agreements for circular plastics

To advance some of the policy options set out in the previous section, Ghana will need to adopt a proactive trade policy. This section demonstrates where potential linkages already exist, analyses the challenges and opportunities associated with plastics trade, and explores the role of Ghana's trade agreements. It also provides an overview of relevant multilateral initiatives where stronger connections between the plastic pollution agenda and sustainable economic development are needed. The analysis in this section focuses on trade agreements that Ghana is a party to, as set out in Box 3 below, with an emphasis on AfCFTA, ECOWAS, the EU-Ghana Economic Partnership Agreement (EPA) and the pending EU-ECOWAS EPA, and the World Trade Organization (WTO).

Trade deals could help promote a circular economy by incorporating specific environmental references.⁵⁷ Even without such references, trade agreements could be used to improve plastic waste management, though to date that has largely been untested. Areas to consider include: controlling plastic waste, facilitating the import of relevant goods and services, attracting critical investment, and developing export markets – especially regionally – for plastic products containing recycled material or non-plastic alternatives. Table 3 below provides an overview of where trade agreements could be most relevant for some of the policy options outlined previously.

Box 3: Overview of Ghana's major trade agreements

- **The World Trade Organization** – an intergovernmental organization that deals with global trade rules between nations.
- **The Economic Community of West African States (ECOWAS)** – a customs union comprising of fifteen countries located in West Africa.
- **The African Continental Free Trade Area (AfCFTA)** – a continent-wide free-trade agreement that came into effect on 1 January 2021. Negotiations are ongoing, including schedules of concessions for goods and service and rules of origin, and Protocols on Investment, Intellectual Property, Competition and E-commerce.
- **The African Growth and Opportunity Act (AGOA)** – a unilateral trade-preference program that provides Ghana with duty-free access to the United States for many products. This programme is expected to expire in 2025.
- **The EU-Ghana Economic Partnership Agreement (EU-Ghana EPA)** – a stepping stone EPA between Ghana and the EU that has been in place since 2016. The EPA is a trade and development agreement, which secures Ghana's free access to Europe's market for Ghanaian goods while also establishing institutional partnerships.
- **The EU-ECOWAS EPA** – an EPA between ECOWAS countries and the EU that is pending ratification by Nigeria. At present, Nigeria has no intention to sign, which makes the agreement currently inoperable. While the text has been finalized, there are various areas that are expected to be negotiated after the agreement enters into force, including services, investment and sustainable development.
- **The UK-Ghana Interim Trade Partnership Agreement (TPA)** – signed in February 2021. A bilateral trade deal that provides duty-free and quota-free access for goods exported from Ghana to the UK market and gradual tariff liberalization of UK goods exported to Ghana.



2019

In 2019, Ghana became the second country in the world to adopt the NPAP model to translate commitments into actions on plastic waste and pollution.

Table 3: Linking policy options for effective plastic waste management in Ghana to trade

Policy options	Leveraging trade agreements			
	Control plastic (waste) imports	Facilitate imports of relevant goods and services	Attract investment	Develop export markets
Advancing plastic management action				
1(a): Stimulate domestic demand for recycled plastic: create plastic recycling standards for various end-use applications, including food-grade rPET			●	●
4(b): Facilitate funding opportunities for recycling value chain development through: provide investment incentives for large-scale recycling infrastructure investors		●	●	
5: Incentivize innovation and adaptation of plastic alternatives and substitutes		●	●	●
6(b): Eliminate non-recyclable and hazardous plastic: strengthen controls to prevent importation of non-recyclable and hazardous plastic waste	●			
Evaluating capacity to become a regional hub				
Encourage plastics production and waste management facilities in special economic zones		●	●	●
Develop a competitive plastic recycling economy that could potentially evolve into a regional hub for plastic recycling and output supply	●	●	●	●

Trade agreements could, in theory, also restrict Ghana’s ability to implement policies related to plastic waste management. The extent of that influence would depend on the plastic waste measures Ghana might adopt and the exact design of these measures. For instance, to encourage plastics production and waste management facilities in special

economic zones (SEZs), Ghana may opt to subsidize the construction of plastic recycling plants. Subsidies are regulated by trade agreements, so such measures would need to be designed with those commitments in mind. The following sub-sections look in more detail at how trade and plastic waste management might complement each other.

1. Controlling plastic waste trade

Following new international rules

To prevent the country’s plastic pollution crisis getting worse, it is imperative that Ghana strengthens controls to restrict the importation of non-recyclable and hazardous plastic waste, in line with international developments. While it is unclear whether Ghana currently applies any restrictions to the import of non-recyclable or hazardous plastic waste, it is a party to the Basel Convention – a treaty concerning the transboundary movement and disposal of hazardous and other wastes – and has signed the Ban Amendment that prevents the export of hazardous wastes from OECD economies to non-OECD economies.⁵⁸

Ghana has signed on to the Basel Convention plastic waste amendments

that went into effect in January 2021.⁵⁹ Specifically, these amendments added hard-to-recycle plastic waste to Annex II of the Convention, which lists categories of waste requiring special consideration through the prior informed consent procedure (PIC) – a control system with strict requirements for transboundary movements of waste. It involves carrying out four key steps, including (i) notification by the state of export or by the exporter to the appropriate authorities of export, import and transit; (ii) written consent by transport/importing states; (iii) the use of transboundary movement documents from point of export to disposal; and (iv) the confirmation of disposal. The plastic waste amendments further added clarifications to the scope of plastic waste covered by Annex VIII (presumed hazardous, and thus,

controlled) as well as the scope of plastic waste presumed to be non-hazardous.⁶⁰ The latter category covers plastic waste that is recyclable, sorted, (largely) uncontaminated and destined for recycling (that is, easy-to-recycle plastics) and is not subject to the PIC procedure unless a domestic decision is taken otherwise (See Box 4).⁶¹

To keep hazardous and hard-to-recycle plastic waste out of its market, Ghana needs to follow and implement the rules of the Basel Convention on trade in plastic waste. Ghana can also adopt further restrictions on the import and export of hazardous or hard-to-recycle plastic waste beyond these international baselines. To do so, it is critical that the country develops adequate customs capacity, as discussed below.

Box 4: Overview of Basel’s rules for three types of plastic waste categories

The Basel Convention has rules for three different categories of plastic waste: hazardous plastics waste, easy-to-recycle plastic, and hard-to-recycle plastic.

- **Hazardous plastic waste:** (Annex VIII of the Basel Convention) covers plastic waste that is controlled (Annex I) and exhibits hazardous characteristics (Annex III). Trade in hazardous plastic waste is either prohibited or subject to the PIC procedure. Imports of such waste into Ghana are prohibited from OECD countries (Ban Amendment) and from non-parties to the Basel Convention (e.g., the United States). Ghana could also ban the import of hazardous plastic waste from non-OECD countries. Where not banned, the listed waste can be traded subject to the PIC procedure. Finally, Ghana could designate as “hazardous” certain plastic waste not considered hazardous under Basel and subsequently ban its import. It may also choose to impose bans on non-OECD countries.

- **Easy-to-recycle plastic waste:** (Annex IX, of the Basel Convention) covers non-hazardous plastic waste that is recyclable, sorted, (largely) uncontaminated and destined for recycling. Trade in easy-to-recycle plastic waste is allowed and not subject to the PIC procedure, unless Ghana decides otherwise.

- **Hard-to-recycle plastic waste:** (Annex II of the Basel Convention) covers all other plastic waste that is non-hazardous and not easy-to-recycle. Trade in hard-to-recycle plastic waste is subject to the PIC procedure.





Better border capacity through licensing, green lists and trade facilitation

The Basel plastic waste amendments present various implementation challenges. While the recyclability of plastic waste is a determining factor in triggering the PIC procedure, the Basel Convention does not provide guidance on how to differentiate between different types of plastic waste. This problem is further complicated because customs procedures are based on product descriptions set out in the World Customs Organization (WCO) Harmonized System (HS). The HS lists product codes for worldwide import and export, typically focusing on physical characteristics that can be easily verified by customs officials and not on a product's end-use, such as whether it is destined for recycling.

An ability to differentiate between types of plastic waste is critical. At present, authorities and customs officials need to act with caution, likely applying the PIC procedure to all incoming and outgoing plastic waste. That is important to do to avoid waste dumping but could reduce material re-use options. Border officials' jobs could also be made easier through different measures:

- An import licensing scheme could be set up for companies that import easy-to-recycle plastic waste. It could come with benefits like swifter import approvals, as well as a monitoring system to ensure the waste is making it to appropriate facilities, as is already required by the PIC procedure.
- Ghana and other ECOWAS countries could "green list" companies through a pre-export verification process. For example, a company that imports plastic waste could be green listed if it has a good record of compliance with customs and other laws and regulations. Green list benefits could include longer-term approval validity for PIC procedure requirements.⁶²
- The PIC procedure could be streamlined through digitalization and automation. Both ECOWAS and the AfCFTA contain provisions that could be harnessed to advance such measures.⁶³ Some experts believe that electronic processes help reduce opportunities for illegal trade in hazardous waste.

- Basel-listed plastic waste requires written consent not only from the importing country but also the transit countries, potentially delaying the PIC process. Ghana could consider suggesting that ECOWAS members use the Basel Convention's tacit consent option for the transit of plastic waste within member states. At the very least, ECOWAS members could agree that consent is given if no objection is voiced within a limited timeframe.

Implementing these ideas will require technical assistance and capacity building. The EU-Ghana EPA provides for the latter through the modernization of and enhanced cooperation between customs administrations.⁶⁴ These provisions together with the WTO's Aid for Trade – an initiative aiming to help developing countries build trade capacity and infrastructure – can be leveraged to secure technical assistance for strengthening customs procedures and environmental oversight. Moreover, the EU-Ghana EPA includes an agreement for parties to assist each other in ensuring correct application of customs legislation.⁶⁵

2. Facilitating imports of relevant goods⁶⁶

Trade agreements can facilitate access to the goods Ghana needs to advance its plastic waste management agenda while also restricting the import of unwanted goods in line with the policy options presented. As noted above, the current six-digit HS classification does not differentiate products based on their potential for hazard or recyclability. This lack of distinction not only makes it difficult to gather accurate data on the types of plastic waste being imported, but it also reduces the use of targeted trade incentives. Consequently, Ghana has limited ability to either lower tariffs on recycled plastics and plastics alternatives or increase tariffs and import restrictions on plastic products. Aware of dilemmas such as this, the Basel Secretariat is preparing a recommendation to the WCO to revise the HS codes.

In the meantime, Ghana could seek to add new a subheading to amend its eight- or 10-digit HS schedules. Given that Ghana is part of the ECOWAS customs union and applies a Common External Tariff (CET), such changes would require agreement by the ECOWAS member states. Specifically, any new subcategories would need to be based

on measurable physical differences, such as a threshold level of contaminants for waste to be considered almost-free from contamination. Some OECD countries are already doing so.⁶⁷

Ghana could also leverage trade agreements to remove tariffs on the import of environmental goods that would accelerate its progress in plastic waste management. For instance, Ghana may need recycling machinery, technology and chemicals used for the recycling process, all of which are likely to need importing. As part of ECOWAS, Ghana would need to: (i) identify the types of goods it requires to advance its plastic waste management strategy; (ii) identify its Common External Tariff (CET) on these; (iii) establish which product tariffs should be reduced; and (iv) examine whether additional subcategories would be needed to remove tariffs on the identified goods.

A strategic approach to lowering tariffs on such goods could be included in the ongoing AfCFTA negotiations too. And Ghana might want to consider participating in forthcoming global initiatives seeking to lower tariffs on environmental goods. Taking

part at an early stage would help Ghana ensure that the list of what constitutes an environmental good would include the goods important to its plastic waste management and circular economy goals.

Another classification issue concerns so-called "hidden" plastic. HS Chapter 39 covers "plastics and articles thereof", but plastics embedded in products or products wrapped in plastic packaging materials are not covered. That includes synthetic fibres, which comprise a large proportion of the world's clothing, plastic packaging and plastic fishing nets, as well as plastic contained in products, such as toys, vehicles and household appliances. The lack of nuance makes it difficult for countries to control the import of plastic or to apply environmental taxes to all plastics. For instance, Ghana applies its environmental tax to plastic and plastic products listed under HS codes 39 and 63 but not to plastic that is embedded in products classified under other HS codes.⁶⁸ Detailed examinations are underway at a global level to draw up more useful classifications for plastic waste imports.⁶⁹



\$3B

A capital expenditure of \$3 billion is needed over the next twenty years to establish the necessary management infrastructure in Ghana.

3. Attracting investment and services

Significant investment is required to develop Ghana's plastic waste management agenda. According to forecasting by NPAP Ghana's plastic action roadmap, a capital expenditure of \$3 billion is needed over the next twenty years to establish the necessary management infrastructure, based on a scenario assuming an 85% collection and a recycling rate of 32% by 2040. Investments in innovation and the adoption of alternative materials and business models will also be needed.

Upstream, investment in research and development is required to redesign products – reducing plastic content, increasing reuse and establishing collection and refill infrastructure – as well as to develop products from alternative materials and produce rPET and other standards for recycled materials.

Downstream, developing a plastic waste collection and recycling hub and setting up recycling capabilities in SEZs would require significant investment in infrastructure. To get there, investment in services would be particularly important. For example, a plastic waste recycling hub would also need access to recycling, installation, assembly, testing, and maintenance services to be created and funded. Related services, including logistics, construction and engineering, transportation and telecommunications would all be vital too.⁷⁰

Ghana can use its trade agreements to facilitate investment by reviewing the trade schedules for its services, which set out the degree to which

foreign companies can access the domestic market. Countries can make commitments based on each services sector as well as on the way in which services are delivered.⁷¹ The latter includes foreign investment into a country. In this area, Ghana could demonstrate greater openness to investment in services critical to developing a responsible plastic waste management environment. Under the WTO, Ghana has made commitments in construction and engineering but not in other services sectors important to plastic waste management infrastructure. Ghana could also consider making market access commitments to relevant services sectors in its trade agreement negotiations, including with the AfCFTA, and – if the agreement gets ratified – the EU-ECOWAS EPA or any potential post-AGOA agreement with the United States.

However, mirroring the issues with HS, the global services trade classification system, W/120, typically used as a basis for countries' market access commitments in trade agreements, does not contain sub-categories for waste recycling or product-design services. As countries are free to deviate from W/120, Ghana, under the ECOWAS umbrella, could explore adding new services subsectors to its schedules to help meet its plastic waste objectives. There is a precedent for this: in recent regional trade agreements,⁷² the EU has added the subsector "recycling services" as a committed service subsector.⁷³ Market access commitments in certain services sectors would be particularly relevant to the AfCFTA – for which services schedules negotiations

are ongoing – ECOWAS' Services Policy Review,⁷⁴ and the EU-ECOWAS EPA, which aims to include services schedules post-ratification. In terms of attracting foreign investment in services, the EU-ECOWAS EPA is most useful.

Ghana can also aim to include investment chapters that liberalize, protect and regulate investments within its trade agreements.⁷⁵ Recently, investment chapters in trade agreements have started to contain provisions that facilitate investment and set expectations for investors' obligations. Commitments can emphasize that investors may not undermine the environmental regulations of the host country, such as its recycling measures, and promote the transfer of environmental technology, including plastic waste management. For instance, the draft ECOWAS Investment Code requires foreign companies to adhere to sound management practices, including recycling, waste discharge reduction and knowledge transfer. These provisions could help Ghana attract investment in useful technologies.

Investment from outside of Africa will be particularly important as it could bring high-tech operations into the country. The Ghana-EU EPA does not currently contain investment provisions, but investment and services commitments are planned for EU-ECOWAS EPA. Should the EU-ECOWAS EPA come into force, it will give Ghana an opportunity to attract EU investment that enhances its plastic waste management. Connecting with the private sector will also be crucial in pursuing that agenda.



European standards for recycling and waste reduction are positive developments for a global circular economy, but add new complexity for Ghanaian exporters to the EU.

4. Developing export markets

Differences in design and the implementation of standards and regulations across jurisdictions can lead to inefficiencies and increase trade costs, particularly for small- and medium-sized enterprises. These costs include gathering information on standards and regulatory requirements in different markets, adjusting the specification of goods to comply with different requirements and undertaking conformity assessments to prove compliance.⁷⁶ In some cases, countries have implemented standards limiting plastic use. The European Strategy for Plastics in a Circular Economy and the European Union's Circular Economy Action Plan (CEAP), for example, set out mandatory requirements for recycled content and waste reduction measures for key product groups, including packaging.⁷⁷ These developments, while positive for global circular economy objectives, add new complexity for Ghanaian exporters to the EU.

Trade agreements commonly include provisions for technical barriers to trade (TBT), which aim to reduce unnecessary and discriminatory barriers by privileging the use of international product standards as a basis for countries' technical regulations. TBT chapters also tend to encourage harmonization, equivalence and mutual recognition to reduce the friction for multiple standards and approaches. Some recent trade agreements go a step further and contain specific provisions to encourage a circular economy.⁷⁸

In the case of plastics and plastic waste management, the limitations of international standards in areas such as defining easy-to-recycle or contaminant-free waste, and establishing quality thresholds for different grades of recycled plastic present challenges. To be clear, some plastic waste-related standards exist but with varying degrees of relevance. These include: the International Standards Organization (ISO)/BSO 12418-1:2012 on post-consumer PET bottle recyclates; ISO 15270: 2008 which sets out guidelines for

the recovery and recycling of plastic waste; and American Society for Testing Materials (ASTM) D5814 -18, which sets out standard practice for determination of contamination in recycled PET flakes and chips using a plaque test. Other initiatives to introduce standards or improve existing ones are ongoing, including the Basel Convention's work to upgrade the technical guidelines for the identification and environmentally sound management of plastic waste and its disposal⁷⁹ and the currently under-development ISO/WD 59010 series containing guidelines on business models and value chains for the circular economy.

Ghana could actively participate in the progression of international standards. Ghana can also play a leading role in developing the regional standards within ECOWAS or the AfCFTA. The AfCFTA's Annex on TBT encourages members to develop regional standards under the umbrella of the African Standards Organization (ARSO) or the African Electro-Technical Standardization Commission (AFSEC) where no relevant international standard currently exists. This could present an opportunity for Africa to develop plastic recycling standards for various end-use applications, including food-grade rPET. The World Economic Forum's Regional Action Group for Africa is already exploring a common regional standard for food-grade rPET with the African Circular Economy Alliance (ACEA) and the ARSO.⁸⁰ Developing regional standards could reduce non-tariff barriers to trade in recycled plastic bottles and other circular plastics.

The EU-Ghana EPA could be leveraged to help Ghana-based exporters comply with the elevated plastics standards being developed in the EU, specifically, with the aim of improving the quality and competitiveness of Ghanaian products within the EU market. The EU-Ghana EPA encourages cooperation between states to enable greater conformity with EU rules and regulations. It provides for capacity-building in the public and

private sectors and for developing national capacities for the assessment of EU-compliant products.⁸¹ The EU-Ghana EPA could also be utilized to explore the equivalence and mutual recognition of standards between Ghana and the EU.

Relevant initiatives at the World Trade Organization

To develop trade that benefits its plastic waste management agenda, Ghana could also take part in plurilateral initiatives at the WTO. In November 2020, based on discussions convened by China and Fiji, several WTO members launched an "open-ended informal dialogue" on plastics pollution and sustainable plastics trade. The initiative explores, "How improved trade cooperation, within the rules and mechanisms of the WTO, could contribute to domestic, regional and global efforts to reduce plastics pollution and transition to a more circular and environmentally sustainable global plastics economy."⁸² The focus areas of the dialogue include improving transparency, monitoring trade trends, promoting best practices, strengthening policy coherence, identifying scope for collective approaches and assessing the capacity and technical assistance needed.⁸³ Ghana does not currently participate in this initiative.

Other relevant initiatives taking place at the WTO include the recently launched Structured Discussions on Trade and Environmental Sustainability. Of particular importance for Ghana, which does not participate in this initiative either, would be the role of the WTO in capacity building and technical assistance, including strengthening customs controls systems. The latter could be linked to the WTO's Trade Facilitation Agreement. It would also be useful to explore ways of linking the WTO's technical assistance programmes with those administered by the WCO and the Basel Convention.⁸⁴ With particular regard to the recycling and disposal of plastic waste, the Basel Convention provides a platform for policy development which includes technical assistance, partnerships, and more.



Conclusion

This paper has discussed Ghana's plastic pollution challenge and how the transition to a circular economy can be supported by trade policy. It has shown that not only can trade policy help mitigate the environmental risks, but it can also create new economic opportunities for investment, jobs and the informal sector – the latter of which forms the bedrock of the country's waste collection infrastructure. Taking action on plastic waste in this way could enhance Ghana's profile in global trade arenas and facilitate low-carbon economic growth and industrialization.

The paper highlights the key challenges and opportunities related to Ghana's plastic waste management and develops several policy options for Ghana to consider as it embraces a circular plastics framework. The progressive steps Ghana has taken in developing a National Plastics Management Policy and adopting the NPAP model, as well as its ongoing development of a national plastic action roadmap, are significant and welcome. To complement these, this paper offers practical policy options for dealing with plastic waste in Ghana. These include taking steps towards biomass or carbon feedstock technology – a potential avenue of the future of plastics – particularly if Ghana aims to pursue upstream industrial development. Among other measures, disincentivizing PET bottles in certain channels where the returnable glass bottle or aluminum can could serve as effective substitutes could help stem the surge in single-use plastics. Ghana could also implement a Deposit Refund Scheme (DRS) at both trade and consumer levels.

Significantly, the paper advocates for a market-oriented approach to

recovering and recycling plastics, focusing on deliberately creating demand for recycled plastics through policy stimuli. This could be include mandating a minimum recycled PET (rPET) content for beverage bottles or incentivizing the housing sector to use materials such as bricks and pipes made from recycled plastics, for example. The effectiveness of this approach is illustrated by South Africa where recycled plastics have been successfully integrated into the local economy, resulting in a vibrant recycling industry.

As the plastic value chain is a global one, trade necessarily plays an important role, but its positive contribution is not a given. This paper has identified four key areas in which trade agreements can help Ghana advance its waste management agenda: controlling the import of waste plastic, facilitating imports of relevant goods, attracting investment and developing export markets. In addition, it has identified not only opportunities, but also challenges that must be addressed, including those associated with the lack of alignment between trade agreements and the Basel Convention, the lack of classification of different types of plastic waste in the HS, implementing and streamlining the PIC procedure mandated under the Basel Convention for certain types of plastic wastes, the need to include relevant services subsectors in services schedules, and the absence of a widely accepted, relevant international standards for food-grade rPET.

Ghana will have most leeway to align its trade and plastic waste management agenda in trade agreements that are still under negotiation or that will be negotiated

in the future. That includes the AfCFTA, the EU-ECOWAS EPA – should it be ratified in future – any potential post-AGOA agreement with the United States and any enhanced arrangement with the United Kingdom. If it wants to influence ongoing trade negotiations, it is important that Ghana invests resources in developing negotiators who are well-versed in environmental challenges and who have the ability to shape the agenda and take the lead on critical issues by developing effective coalitions. Technical assistance and capacity building could play an important role in achieving this.

A proactive approach to aligning Ghana's plastic waste management ambitions with its trade agenda will necessitate adequate institutional foundations. To orchestrate a coordinated approach, Ghana might want to consider establishing an inter-ministerial committee. As demonstrated in this case study, the Ministry of Trade and Industry have a vital role to play in such a committee.

Finally, public-private dialogue and cooperation will be essential as Ghana continues to develop its plastic waste management strategy and trade policy priorities. Indeed, the end-goals of trade policy in this context are to send clear market signals that create cost parity for recycled plastics and circular materials and for Ghana to reduce its plastic pollution as part of a transition to a more circular economy. Private sector insights can help ensure policies are aligned with industrial realities, while private players must also actively pursue their own progressive plastic waste management strategies to support Ghana in reaching its objectives.



Taking action on plastic waste in this way could enhance Ghana's profile in global trade arenas and facilitate low-carbon economic growth and industrialization.



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