

**Assessing the contribution  
of plastic credit schemes to  
reducing plastics pollution  
and improving recycling**

Working paper

## **Acknowledgement**

This report was developed as part of **SEA circular – Reducing marine litter by addressing the management of the plastic value chain in South-East Asia**, a project jointly implemented by the **United Nations Environment Programme (UNEP) and the Secretariat of the Coordinating Body on the Seas of East Asia (COBSEA)**, with funding from the Government of Sweden. This study on the contribution of plastic credit schemes to reducing plastics pollution and improving recycling was conducted in 2022, by the **International Solid Waste Association (ISWA)**, with guidance and direction from the SEA circular Project team.

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The SEA circular project – Reducing marine litter by addressing the management of the plastic value chain in South-East Asia is implemented by the UNEP Regional Office for Asia and the Pacific and the Secretariat of the Coordinating Body on the Seas of East Asia (COBSEA), with funding support from the Government of Sweden. SEA circular aims to reduce and prevent plastic pollution and its impact by working with governments, businesses, civil society, academia, and international partners. The initiative promotes market-based solutions and enabling policies to transform plastic value-chain management, strengthens the science base for informed decision making, creates outreach and awareness. The project leverages COBSEA's regional mechanism to tackle the transboundary challenge of marine litter in a harmonized manner.

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The International Solid Waste Association is a global, independent, and non-profit making association, working in the public interest to promote and develop sustainable waste and resource management, and a transition to a circular economy. ISWA membership is open to individuals and organisations from the scientific community, public institutions and public and private companies from all over the world working in the field or interested in waste management. As the only worldwide waste association with members in over 110 countries, ISWA allows you to network with professionals, companies and institutional representatives on a global scale. ISWA's unique mix of members spans the whole waste sector for the promotion and development of sustainable waste management across the world.

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# Glossary of terms and abbreviations

<b>3R Initiative</b>	Reduce, Recover, Recycle [Initiative]
<b>ABS</b>	Acrylonitrile butadiene styrene
<b>EPR</b>	Extended Producer Responsibility
<b>EPS</b>	Expanded polystyrene
<b>GHG</b>	Greenhouse gas
<b>HDPE</b>	High-Density Polyethylene
<b>LDPE</b>	Low-density polyethylene
<b>MRF</b>	Material Recovery Facility
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PET</b>	Polyethylene Terephthalate
<b>PP</b>	Polypropylene
<b>PRO</b>	Producer Responsibility Organization
<b>PS</b>	Polystyrene
<b>PSAWG</b>	Plastic Standard Assessment Working Group
<b>PSDC</b>	Plastic Standard Development Committee
<b>PVC</b>	Polyvinyl chloride
<b>VVB</b>	Validation/verification body
<b>WCC</b>	Waste Collection Credit
<b>WRC</b>	Waste Recycling Credit





# 01

## INTRODUCTION TO PLASTIC CREDIT SYSTEMS



Plastics, a general term for a wide range of synthetic or semi-synthetic materials, are used in a vast and growing range of applications and are omnipresent in our daily lives. Plastics are increasingly used in packaging, building and construction, transportation, medical and health products, electrical and electronic appliances, agriculture, textiles, furniture, and sports and leisure equipment.

According to the OECD, plastic consumption has quadrupled over the past 30 years, driven by growth in emerging markets and global plastics production, which doubled from 2000 to 2019 to reach 460 million tonnes. Plastics account for 3.4% of global greenhouse gas emissions (OECD, 2022). With increased use of plastics in consumer applications, the fraction of plastics in the municipal solid waste streams keeps growing, its growth being primarily attributable to packaging waste.

From 2000 to 2019, global plastic waste generation more than doubled to 353 million tonnes. Nearly two-thirds of plastic waste comes from plastics with lifetimes of under five years, with 40% coming from packaging, 12% from consumer goods and 11% from clothing and textiles (OECD, 2022).

Plastics by their very nature store carbon, and this energy is retained by reusing and recycling plastics. It is estimated that currently only 9% of plastic waste is recycled (15% is collected for recycling but 40% of that is disposed of as residues). Another 19% is incinerated, 50% ends up in landfills and 22% evades waste management systems and goes into uncontrolled dumpsites, is burned in open pits or ends up in terrestrial or aquatic environments, especially in low- and middle-income economies (OECD, 2022).

When released in nature, plastics never completely degrade – instead, they break down into tiny particles and fibres (microplastics) that pose a threat to fish, birds, other land animals and humans as well. Larger plastic pieces can transport invasive species and accumulate in freshwater and coastal environments, altering ecosystem functions. There are diverse and competing options available for resource recovery as the use of end-of-life plastics can contribute to resource conservation by substituting fuel, reductive agents and/or primary raw materials. Hence, the management and utilisation of plastic waste is often debated due to the alternatives available.

There is an urgent need to take steps to reduce the current plastic footprint and in turn stem the tide of plastic pollution and its leakage into the environment, especially since there is a large amount, different usages and diversity in types of plastic materials used. It is also important to analyse all possibilities to eliminate, design out and minimise unnecessary and avoidable<sup>1</sup> plastic, plan products for reuse and recycling, use sustainable or recyclable material

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<sup>1</sup> Unnecessary plastic refers to a superfluous product or use of plastics. Avoidable items are those that meet an essential need, but do not need to be made of plastic. Problematic items are those made from plastic material that meet a need, but that need is overshadowed by problems with the material, its use, or the management of the item itself.

within products, and improve the end-of-life management of waste, including the adoption of alternatives such as EPR schemes and plastic credit projects to effectively deal with unavoidable plastic waste.

EPR schemes are a policy approach under which producers are given a significant responsibility – financial and/or physical – for the collection, treatment or disposal of their post-consumer products or packaging. In essence, EPR is a strategy to add all environmental costs associated with a product throughout the product life cycle to the market prices of that product. EPR schemes do not by themselves reduce the volume of waste created but are rather an attempt to divert a considerable volume of materials from final sinks (landfills and WtE plants). Unless specifically mandated, EPR does not necessarily result in the creation of a more durable, longer-lasting product or address waste creation due to practices of planned obsolescence. However, when implemented and monitored well, EPR schemes have positive effects up and down the value chain, making them an ideal tool to push the economy towards circularity. However, they can take several years to design and successfully implement.

On the other hand, there are systems that could be applied to stimulate recycling of dry materials and provide more upstream solutions via recycling where EPR schemes are not yet in place. This is where recycling credits, especially plastic credits systems, can bridge the gap.

There is no global agreed-upon definition of what a recycling credit is. In this report, we mean them to be measurable, verifiable and transferable units representing a specific quantity of recyclables that have been collected from the environment and recycled. While long term EPR schemes are being planned, developed and set up, projects that generate recycling credits can complement the efforts by channelling much needed – and often lacking – funds towards waste collection systems and new recycling infrastructure and businesses. In addition, once EPR systems are implemented, plastic credits can provide transparency in compliance.

As plastics are the fastest growing stream among dry recyclables that pose several risks to the environment, it is an opportune time to develop and disseminate well-functioning systems to divert such materials from the waste stream and ensure they have a new cycle or life through recycling. Therefore, plastic credits can be a new form of financing mechanism that can also drive private sector investments towards social and environmental improvements throughout the value chain.

This report is aimed at compiling existing knowledge about plastic credits in order to support the path towards a harmonised standard for plastic credits, flag up potential problems, learn from comparable credits markets and explore how a plastic credits system may be established in order to fulfil its core objectives. It takes a holistic view of the most important stakeholders involved in the value chain and analyses which players could benefit from a harmonised system.

A broad range of experts and organizations were consulted during the research phase and the development of this report. This was followed by in-depth desktop research on relevant reports on plastic credits, existing literature and supported with examples from around the world. Based on extensive research and in-depth interviews, the report presents an understanding on the plastic credits mechanism and recommends what this accounting method should address to be effective for stakeholders, decision, policy makers and to the environment.





# 02

## FRAMING PLASTIC CREDITS WITHIN SUSTAINABLE WASTE MANAGEMENT

Waste composition is a direct result of local habits and levels of income, but considering the average global waste composition<sup>2</sup>, it is common to identify that the organic fraction often corresponds to 45–50%, followed by paper and cardboard (10–20%) and plastics (10–12%), resulting in more than two-thirds of the total waste generated.

The generation of waste is growing in quantity and types of waste, but the absence of a regular waste collection service is a reality in many parts of the world. In this situation, people need to manage or dispose of their own waste; for municipal solid waste, common methods include open burning and wild dumping on land or in drainage channels and waterbodies. This poses several risks for individuals and also has negative impacts on society as a whole, as it contaminates the environment with a direct impact on public health and as a continued source of pollution, affecting everyone living in the region or who uses water from the river downstream.

It is estimated that over one-third of the world's population lacks access to basic waste management services, including its collection and treatment. In the absence of sustainable and sound waste management services, there are economic costs in terms of health and environmental impacts that are borne, not just by the individuals or firms discarding their waste, but by the wider community. It is difficult to calculate the actual costs in terms of harm to human health and the environment, but the case for urgent action is overwhelming (ISWA, 2015) (Cook & Velis, 2020).

Municipal solid waste (MSW) management is an essential utility service provided by or on behalf of a city or municipality to its citizens and can be considered as a basic human right. However, many municipalities around the world are unable to carry out the sound management and disposal of waste. Affordability, i.e., the ability of households to pay for a certain level of waste management services, is a significant constraint on municipal solid waste management services in low- and middle-income economies.

The largest element of a municipality's budget for waste management is for collection rather than recovery and disposal, so financing collection as well as recovery and disposal are critical. Additionally, operating costs represent a much higher proportion of total costs than do capital costs; there are several examples of past projects where donors funded the investment cost, but the municipality was unable to finance the ongoing costs of operation, so the system reverted to being uncontrolled and thus an inadequate one (UNEP & ISWA, 2015).

The municipality can generate revenue through several sources: for instance, by charging a user fee, a local tax or a transfer from national funds, or a combination of these. This can be done by the direct charging of households via a waste bill, direct charging of households via a utility bill, direct charging of commercial waste generators, or indirect cost recovery via proper-

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<sup>2</sup> Kaza, Silpa, Lisa Yao, Perinaz Bhada-Tata, and Frank Van Woerden. 2018. *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*. Urban Development Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1329-0 - p.29

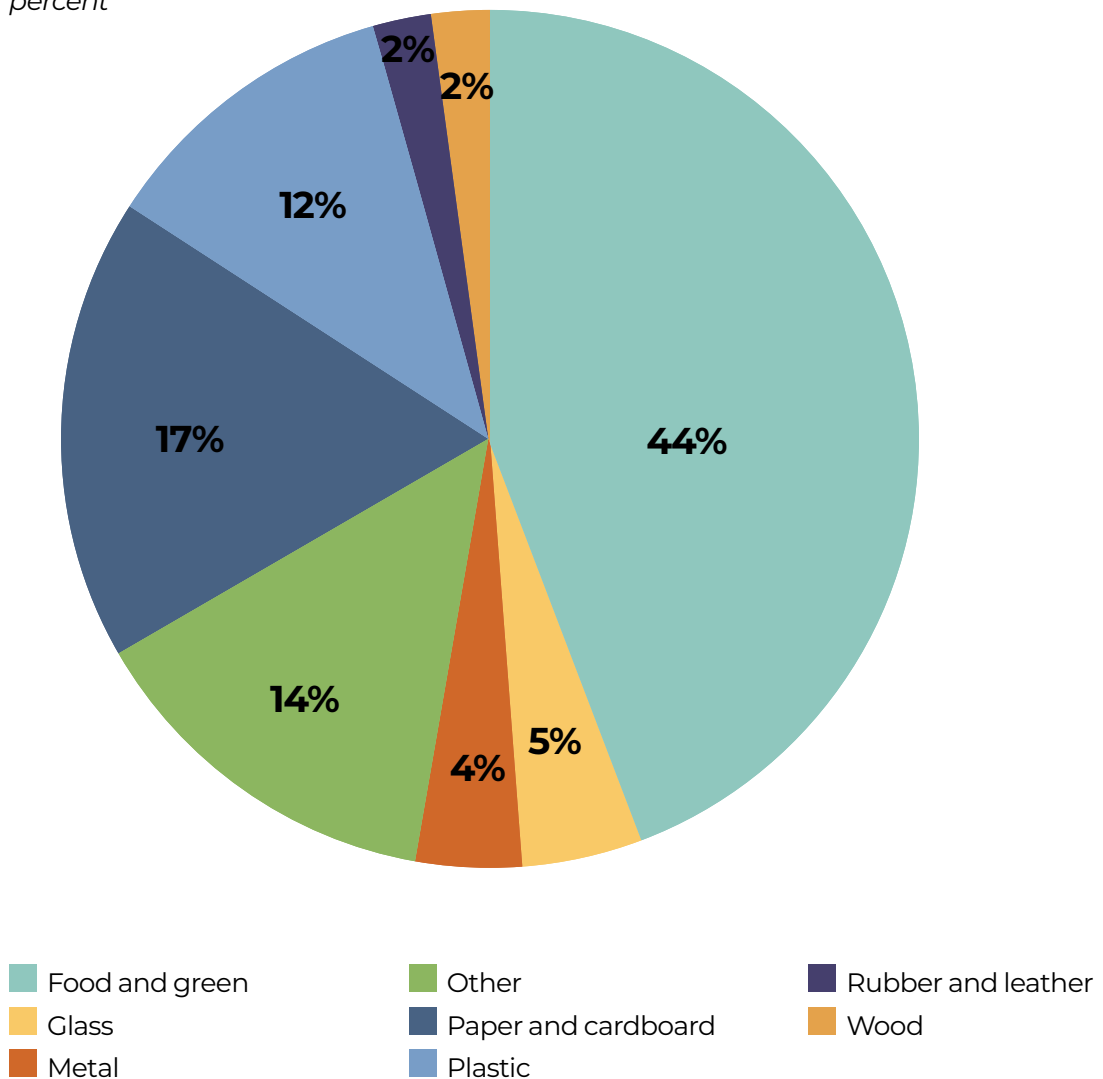


ty or other local taxes such as fines for littering or charges for waste permits or licenses. There may also be other fees or taxes.

Despite being the third largest fraction in the MSW stream, plastic pollution and leakage into the environment is part of the bigger issue of lack of basic waste management services. This has led to the need for discussions, meetings and conventions between stakeholders and between countries, and possibly a global treaty to deal with this specific type of material.

Hence, finding suitable solutions to prevent further leakages and stop increased pollution caused by plastics is an important task and plastic credit strategies can play an important role as part of comprehensive and sustainable waste management systems to bring about lasting change. At the same time, concentrating on the fastest growing waste stream currently reported does not mean disregarding other waste types.

**FIGURE 01** - Global Waste Composition  
*percent*



Source: What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050.



# 03

## PLASTIC CREDITS DESIGN, ORGANISATION AND GOVERNANCE



In recent years, several alternatives have been established in different parts of the world in an attempt to sustain solutions directed to take into consideration the needs and demands for better management of plastic waste and to divert those materials from the waste stream towards the recycling chain.

The emerging and fast developing marketplace of plastic credits now includes dozens of companies, each incorporating several plastic collection and recycling projects worldwide, and adopting different setups and methodologies.

**Plastic credits are financial-institutional instruments that incentivise recovery or disincentivise pollution, and pay for offsetting its impacts. Both of these functions are classified by economists as strategies to internalise environmental costs and benefits. A plastic credit system is an institutional and financial intervention for preventing plastics to be discarded in nature and, in principle, for ensuring that they reach either controlled disposal or recycling.**

Current research shows a proliferation of standards, guidelines, certification schemes, marketplaces, platforms and digital solutions in the recent years. These have emerged across the world and there is currently no common agreement on plastic pollution or credits at the global level. However, the United Nations Environment Assembly (UNEA-5) that took place in early 2022 passed the resolution<sup>3</sup>, “End plastic pollution: Towards an international legally binding instrument”, to be negotiated by the member States. The draft states that the instrument could “include both binding and voluntary approaches, based on a comprehensive approach that addresses the full lifecycle of plastic”. While the instrument is being negotiated, the resolution “calls upon all Member States to continue and step-up activities and adopt voluntary measures to combat plastic pollution, including measures related to sustainable consumption and production”.

All the experts who were interviewed for this report agreed that addressing the full life cycle of plastics would be most effectively done through legally binding and enforced targets. However, until policies are implemented and are effective around the world, plastic credits could be a way to bring in financing to a traditionally underfunded sector. This new form of financing has the potential to drive social and environmental improvements throughout the value chain. For instance, it could fund new infrastructures for logistics and sorting, support local economies by providing living wages for informal waste workers and generate new job opportunities, and drive some required resources to environmental education. However, in order to avoid double counting of actions, it is important that plastic credits be generated from

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<sup>3</sup> <https://wedocs.unep.org/20.500.11822/38525>

new additional activities – activities which would not have taken place without funds coming in from the credits – in order to guarantee investment in increased collection and recycling capacity. Furthermore, transparent reporting, monitoring and independent auditing of waste management and recycling systems are all key components of credible plastic crediting.

Plastic credits, when implemented well, have the potential to empower local communities to deal with the deluge of plastics in their systems through providing much needed financing for collection and/or recycling infrastructure that is not available through existing resources. Plastic credits allow corporations to fund high-impact community clean-up projects, particularly focused on non-recyclable plastic wastes that are currently not being collected or are not part of the recycling system.

### RECYCLING CREDITS SYSTEM IN BRAZIL

**B**razil adopted the recycling credits system as an official alternative to producers to fulfill their responsibility towards the targets established for the reverse logistics of packaging waste. The system has been functioning for a few years but most recently, it has been regulated to provide more stability and organisation to this internal market.

One of the innovations brought by the new regulation is the mandatory monitoring and independent auditing system of packaging recycling credits. According to the existing regulation, in order to be able to issue a recycling credit to be sold in the market, all PROs must upload their invoices related to the commercialisation of recycling materials to be validated by an independent verifier.

To aid this, the online platform Custody Center for Reverse Logistics for Packaging was established and during its first year of operation, has monitored and verified 530,000 tonnes of recovered recyclable post-consumer packaging waste, out of which 120,000 tonnes were plastic packaging. The system operates directly with the Producer Responsibility Operators Schemes (PROs), and it focuses on the verification, end-to-end traceability and consolidation of their activities.

Recently, the Custody Center was hired by the Brazilian Plastic Industry Association (ABIPLAST) and the National Industry Development Agency (ABDI) to develop the Plastic Circularity System, which is a platform that will allow the complete traceability of the plastic recycled in the country and monitoring of the entire process from disposal to recycling into a new packaging or product.





## 1. COMPULSORY VERSUS VOLUNTARY SCHEMES

Credit systems may either be compulsory schemes – which put an obligation on addressed parties – or voluntary schemes. In the first case, the obligated parties are free with respect to the nature of the measures they set; however, they are required to meet a quantitative target. For example, they may choose freely the least expensive way to meet the required reduction target. In the case of voluntary schemes there is no obligation imposed; however, measures reducing pollution should be incentivised. Credit schemes are known as so-called quantitative systems that may guarantee the quantity of pollution reduction overall; however, they cannot guarantee the qualitative level of pollution reduction anywhere.

Compulsory schemes are used by the authorities to impose obligations but allow for some level of flexibility. There are currently no compulsory plastic credit schemes being implemented; however, some EPR models propose that plastic producers and manufacturers purchase plastic credits from properly accredited processors (e.g., recyclers, waste-to-energy plant operators, cement co-processors, users utilising plastic in road) or exporters to ensure that an equivalent amount of “packaging waste” has been recovered and recycled to meet their waste management obligations. In such cases, producers and manufacturers are “mandated to acquire evidence of recycling or recovery” from properly accredited processes.

On the other hand, voluntary schemes may increase the overall money available to manage the waste, which could be in conflict with EPR schemes (if they exist) and pose a high risk of greenwashing if the impact of such schemes are not communicated in a transparent manner.

**Greenwashing is a communication and marketing strategy adopted by companies or other organisations; here, it could mean the process of conveying a false impression or that misleading, false or unsubstantiated information is used to overstate how a company's products are environmentally sound when they actually are not. It consists in putting forward ecological arguments in order to forge an ecologically responsible image among the public. This could lead to the risk of misleading the public, investors and consumers who are genuinely seeking environmentally friendly activities or products, on the reality of the operations and activities of a company's actual practices. Often, green products are sold at a premium, which can lead consumers overpaying for the product or service.**

Plastic credits belong to a set of flexible policy instruments. Compulsory credit schemes may guarantee reaching an overall quantitative target. These should allow for the setting of measures to tackle pollution wherever this can be done at the least cost; however, as a consequence of this flexibility, they cannot guarantee a minimum required environmental standard. For example, in order to reach a 30% target of plastic waste recovered and recycled, a company can buy plastic credits that are equivalent to 30% of their plastic footprint. However, in choosing a scheme for plastic credits, the company will be able to shop around. They may choose an organisation or project who can collect and/or recycle plastic in a cheaper but more carbon intensive manner, considering that carbon emissions are not always accounted for in plastic credits. Furthermore, differences in methodologies for verifying plastic credits can also mean varying outcomes in terms of actual plastics collected or recycled.

The following represents a selection of the goals and purposes listed for different existing plastic credits systems:

- Increasing the amount of plastics being recovered through collection and recycling; collecting and aggregating specific types of packaging.
  - Subsidising informal and formal recycling of low-grade plastics or those that are economically unviable for recycling.
  - Financing collection and recycling infrastructure.
  - Subsidising capture of conventional recyclables in low- and middle-income countries where landfill gate fees are too low to provide a financial incentive for recycling by payment of an additional fee per kg of plastic recovered through the programme.
  - Reducing leakages and losses of plastics (to water) by rewarding or financing other forms of management.
  - “Pushing” non-recyclables towards controlled disposal, recycling and energy recovery, and reducing open burning and open dumping.
  - Mobilising funds from high-income economies and global consumer goods and packaging companies, to create a targeted and dedicated supplemental income stream to co-finance solid waste management in low- and middle-income countries.
  - Providing due diligence and traceability to brand-holders and producers to prove that they are not net emitters of plastics (but have not yet proven that they are capturing their own branded products and packaging).
- Channelling donor funds to ocean clean-ups through plastic credit systems in countries where donors are active.

Organisations that conduct plastic collection and recycling can also shop around different verifiers to find the cheapest option.

There are several firms that sell plastic credits today, but the market remains mostly voluntary and unstandardised. The onus is on companies/producers to do their due diligence on crediting schemes and select only those that ensure social and environmental safeguards.

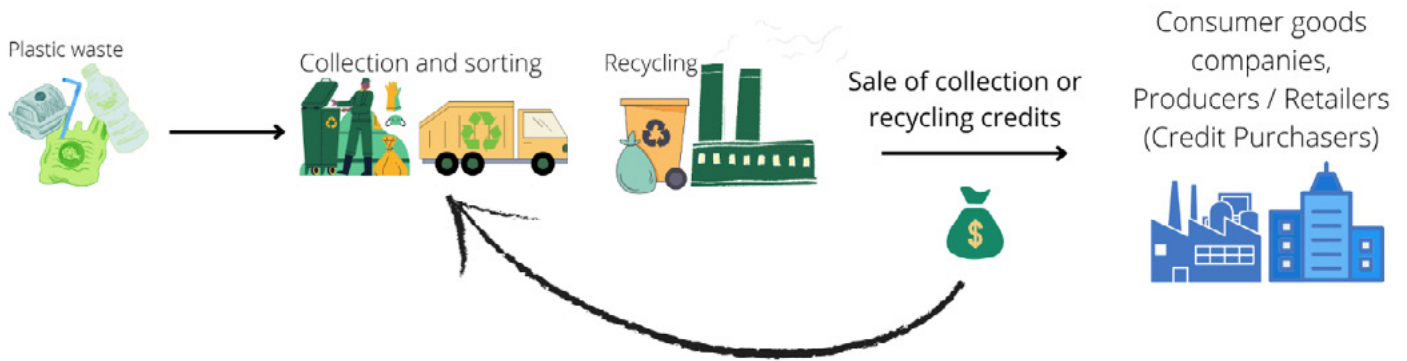
## **2. “SOMETHING FOR EVERYONE”: A VARIETY OF GOALS FOR DIFFERENT VARIETIES OF STAKEHOLDERS**

The basic function of a plastic credit system is to offer an incentive payment to the agent who has captured the plastics and has documented that they have been sold or delivered to the recycling chain. Secondary functions of a plastic credit system include traceability -- documenting precisely what the final destination of the plastics are and providing this information in a certified, audited form to the manufacturers and those putting plastics on the market, as well as to national or international authorities requiring certain forms of plastic management.

Plastic credits are created when the organisation or entity voluntarily collects and or recycles plastics from the environment, which would remain in the environment without this intervention. The plastics recovery can be purchased and claimed by another entity.



**FIGURE 02** - Typical Plastic Credits system



Although the plastic credit landscape is currently mostly unregulated, a plastic credit system can also be established through government backing, similar to a carbon market (see below). Governments can act as mediators and regulators of such schemes by setting the drivers for establishing a marketplace for plastic credit trading and the rules and regulations governing the scheme, as well as by monitoring and enforcing standards for plastic credits.

A transparent plastic credit scheme can also empower consumers to make sustainable choices when purchasing products following a company’s plastic footprint and how that is offset through plastic credits. The communication of plastic offsets through credits should be clearly and transparently communicated, such as through specifying the impact avoided, the quantity and type of materials involved, how those materials are managed and the geographical context. Currently, each provider has their own methodology, platform and standard. The challenge with this is high level of customisation of the standard for projects under them which can lead to greenwashing.

**3. PLASTIC CREDITS VS CARBON CREDITS**

The term “recycling credit” – and then more specifically “plastic credit” – appears to be drawn from the climate change landscape, such as by analogy to “carbon credit”. The carbon trading system limits carbon emissions by granting firms/entities permits to emit a certain amount of carbon dioxide reduction. There is a clear definition as to what counts as a carbon credit i.e., 1 offset credit = 1 tonne of CO2 equivalent. This definition has strengthened and advanced the carbon market. However, the recycling/plastic credit market is still in its early stages and there is yet to be a clear agreed-upon definition as to what counts as a credit. The number of permits is usually decided by the government, and then permits are given to firms depending on various criteria. Based on carbon budgets allocated for sectors and industries the principles of carbon emissions trading, plastic credits give companies an opportunity to indirectly tackle their own plastic pollution by funding initiatives that clear plastic pollution from the environment and recycle it.

Plastic credit schemes, however, are markedly different from carbon credit schemes. Carbon credits and trading is based on the principle that all carbon have the same effect. This is because

the atmosphere is known to be 'well-mixed', and therefore carbon emitted anywhere in the world will have the same effect as carbon emitted in a different place. Furthermore, the heating effect of different greenhouse gases, such as carbon dioxide and methane, are normalised through the use of a 'carbon dioxide equivalent' metric to enable comparability of their climate effects. This is not the case for plastic, where different plastic discarded in different geographies will have very different effects which may not be so easily quantified and compared.

Some plastic credit schemes attempt to correct such issues by proposing matching criteria, whereby companies are encouraged to offset plastic of the same type and in the same region. However, this may not always be possible. As such, where a company claims to have offset their plastic footprint, it may be misleading as a 'tonne to tonne' offset could hide the difference in impact.

#### **4. PLASTIC CREDITS AND EPR**

Plastic credit mechanisms are evolving rapidly, and for different purposes. Though plastic credits have the potential to jump-start and complement EPR schemes while they are being developed, plastic credits often have an uneasy relationship with EPR and are sometimes seen as a low-cost alternative to producers taking actual responsibility for their products and packaging. In countries where there are extensive coastlines, high levels of ocean plastics pollution and where informal recyclers have a high level of activity, plastic credits are often used as price supports to incentivise the informal sector to capture plastics that have low or negative market value.


Voluntary plastic credit schemes are often global in nature, meaning that companies from any country can purchase plastic credits in any other country. These can run alongside local mandatory EPR programmes which are more geographically restricted.

EPR itself does not have a single specific framework, but instead its implementation is varied across different markets. This makes it possible for an EPR framework to be inclusive of plastic credit schemes. An example market where EPR and credit schemes can co-exist is Vietnam, where plastic waste producers under its EPR laws can either carry out recycling themselves, hire a recycling organisation to do so on their behalf, contribute to the Vietnam Environmental Protection Fund (VEP Fund) or authorise a third-party organisation to conduct recycling to meet producer obligations under the EPR law. The latter mechanism makes it possible for plastic credits to co-exist, as purchasing plastic credits can be interpreted as conducting recycling via a third-party organisation. It is worthy to note, however, that in this case, plastic credit schemes would be geographically restricted to projects occurring in the same market as the production of plastic waste by the credit purchasing company.

#### **5. CURRENT SCENE**

Both compulsory and voluntary plastic credit schemes fall into the following types of financial incentives, depending on their rules and how they are operated, and this makes a large difference in what they are actually promoting and supporting.





**T**he Extended Producer Responsibility (EPR) in Colombia is one of the five instruments that are part of the country's National Circular Economy Strategy (ENEC), established in 2019. Currently, nine priority products have their own regulations for producers' responsibility:

- (i) domestic pesticides
- (ii) expired or obsolete medicines,
- (iii) batteries,
- (iv) used tires,
- (v) light bulbs,
- (vi) electronic equipment (other than computers)
- (vii) electronic waste, and
- (viii) packaging.

Such regulations determine the guidelines for the return of post-consumer products, including the obligations of the actors in the chain and collection targets.

As for packaging, resolution 1407/2018 establishes the responsibility of the producer to formulate, implement and keep up to date an individual or collective environmental management plan, which should promote the recycling of mentioned materials (metal, paper and cardboard, glass and plastic). The recycling target for 2030 is 30%.

Some plastic credits systems operate as diversion credits; that is, they pay out when it has been proven that the collected materials have been prevented from entering nature or a disposal facility and have been delivered to and accepted by a recycling or manufacturing system. Diversion credits pay for collection or keeping them out of disposal, but do not necessarily trace the plastics to their final destination. It is essentially the mechanism of assigning a credit of value of some kind to material while disassociating that from the actual material itself. The mechanism is a way of directly attaching economic value to something.

Some plastic credits systems operate as price supports; that is, they provide a premium or bonus payment above the market price for the plastics sold to the recycling industry, especially in cases where the market price is too low to support the cost of collection or recycling. A price support is only paid on top of or in association with actual purchase by the recycling or refurbishment industry, so there is a strong presumption (and in many cases proof) of the plastics' final destination and whether they are actually re-entering a production or manufacturing process.

On a lesser scale, some plastic credits operate as a traceability mechanism and subsidy for safe end-of-life management; that is, the producers agree to pay for gate fees for safe controlled landfilling or energy recovery, and the payment goes to supporting the costs of this safe end-of-life management. The credit is then associated with proof that plastics have reached their end-of-life at a disposal facility (which means that the material does not enter a new cycle as a resource) or by being recycled.

Another function of plastic credits – analogous to the “market” for greenhouse gas (GHG) and carbon credits – is to create a paper or digital marketplace for emitters of plastics to compensate the release of an “economic bad” to the environment, and/or raise funds for appropriate end-of-life management.

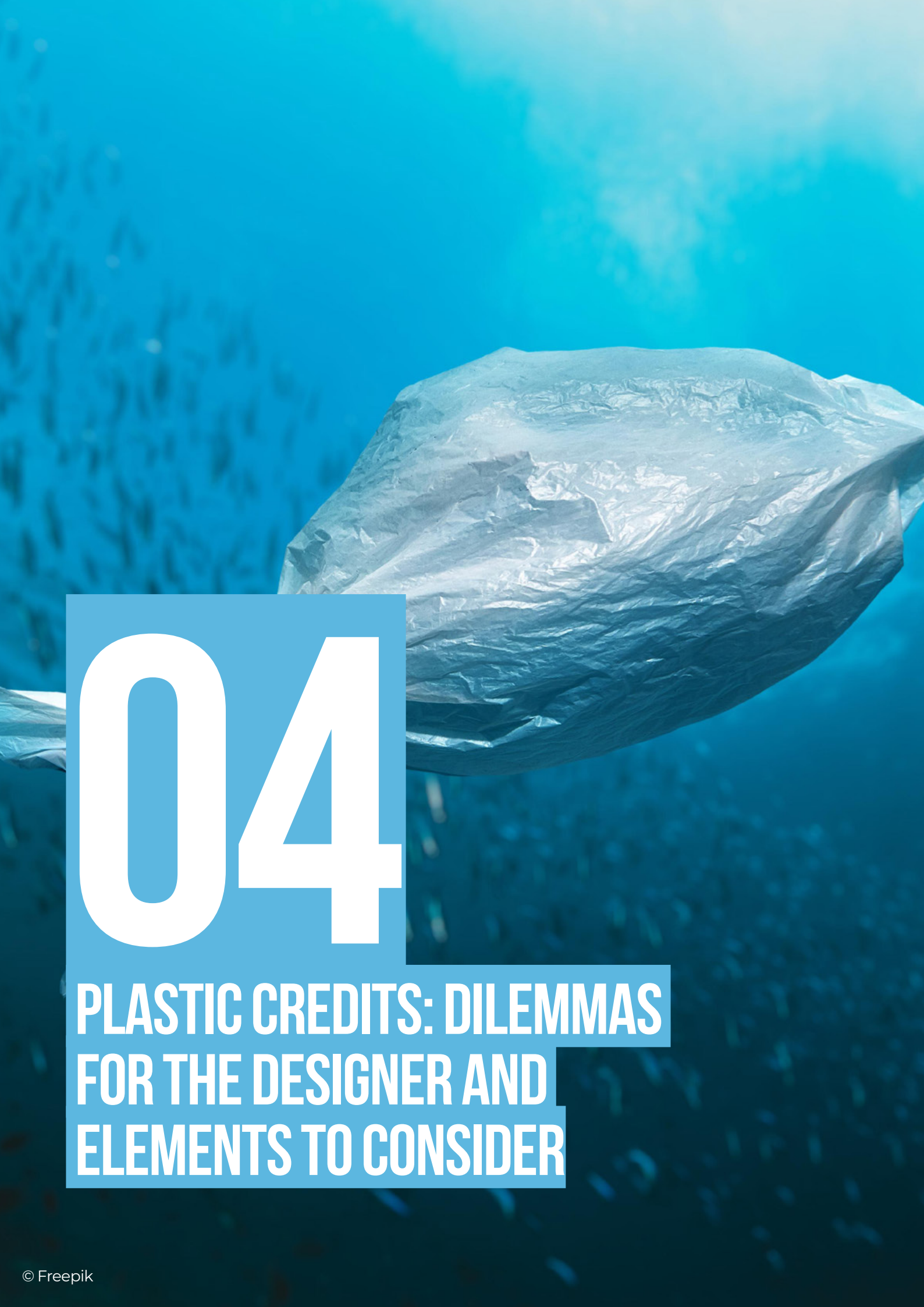
There is currently no global consistent best practice framework for the plastic credit landscape. There is, however, potential for plastic credits systems to limit plastics leakage into the environment, tackle the plastics crisis and improve recycling, and create permanent system change.

In the interviews conducted when preparing this report, the respondents made a distinction between plastic credits systems that operate within countries and geopolitical regions, and those that are designed to mobilise funds from producers and other payers in the Global North to incentivise and subsidise capture and safe disposal of low-value and non-recyclable plastics in the Global South.

Some of these projects involve direct investment in plastic capture, but it is more common for them to support development and modernisation of the solid waste system on the one hand, and direct intervention to strengthen the plastics market on the other hand. This provides a much more fertile ground for a variety of plastic credits systems, which to some extent compete with one another. On the other hand, there is potential to make informal and formal recyclers much more vulnerable to the distortions in the plastic markets which come when a large number of players seek to influence pricing in the absence of coordination from government or agreements within the packaging, EPR or waste management sectors. This is an instance of how plastic credit schemes are carried out most easily and at the lowest cost, rather than preventing actual pollution control, and expose the potential ineffectiveness of plastic credit schemes.



There can be potential risks of large companies continuing to pollute while obtaining plastic neutrality certificate. New supply chains will be created due to plastic credits (e.g., recovery of MLPs) and the credit systems depend on the availability/financing of credits by the companies. There is huge risk of dependency of the recycler population on such projects and can make them vulnerable. Further, the requirements of data and traceability are often changed regularly by plastic credit companies and adds a significant administrative burden to recycling associations.



# 04

**PLASTIC CREDITS: DILEMMAS  
FOR THE DESIGNER AND  
ELEMENTS TO CONSIDER**

The following aspects are crucial to be defined, considered and discussed in order to avoid fraud and abuse of the plastic credit mechanism as well as the effects of pollution locally:

- **Compulsory or voluntary schemes:** the first one as a potential substitute for an EPR scheme (if designed right); the second one without a strong legal obligation posing a high risk of greenwashing. There is also the need to identify who might be obligated to the flexible credit system and who might take advantage of it.
- **Eligible measures for issuing credits** must be clearly defined by the competent authorities, as well as the accepted destinations of the collected amount of plastics.
- **The process of issuing credits** – validation, certification, issuing and other measures leading to the issuing of credits – must be transparent and traceable. There must be an independent third party responsible for this based on stringent rules with strong governance to secure credibility and avoid greenwashing for voluntary schemes.
- **Tradability of credits:** between whom are they tradable – only obligated parties among themselves or anyone, also environmental organisations so as to boost the demand? To where are they tradable – only actors in a certain jurisdiction or Global South to Global North?
- **Validity of credits:** whether credits will be valid indefinitely, or only for a limited time period. If they stay valid forever and if trading to anyone is allowed, the credits might be used for speculative or adverse financial transactions.
- **Tracking of credits:** what are plastic credits resulting from, what is the measure, when and where, sold from whom to whom, etc.?
- **Redemption mechanism:** who can redeem them, when and where can they be redeemed – there must be avoidance of double-dipping and double counting.
- **Credits must be a transitional and a preparatory solution for EPR systems to be implemented.**

If not properly implemented, plastic credits pose the risk of only addressing the symptoms and not the cause of plastic pollution, which is the production of virgin and single use plastics. Plastic credits focus on the optimisation of plastic waste management – specifically, collection and recycling – while technically, companies can keep producing more plastic while being associated with green credit schemes.

The plastic credits marketplace is a swiftly evolving marketplace, but still riddled with risk, as it is unchartered territory. Furthermore, regulation is lacking in several parts of the world



and compliance is voluntary. There is also the issue of additionality, namely in which the plastic being collected or recycled on behalf of credit-buying companies must be additional to the baseline of what is usually removed. There is the need to avoid double counting of the material, for which there needs to be tracking and registration through an independent auditor/verifier. In addition, it is crucial to consider collection/system boundaries because plastic waste might create environmental and social problems in one country that cannot be accounted for when it is gathered from a different place.

Other issues include greenwashing, which is overstating the benefits of plastic credits or when companies claim to be doing something when, in fact, they are not really in place or accountable. WWF stresses in their position paper that it is problematic if companies prioritise plastic credits without reducing the production and use of virgin plastic. Plastic credits could lead to a proliferation of “plastic neutrality” claims and other potentially misleading language around offsetting (WWF, 2021). ‘Plastic neutrality’ or ‘net zero plastic’ claims due to offsetting could create the impression that there is no negative impact of a company’s plastic waste. However, it is important to note that the waste produced will still have a negative impact even when credits are purchased to reduce impacts of other plastic waste not produced by a company. This also amplifies the importance of the matching criteria of the impact of the produced plastic waste against the impact avoided through the collection and recycling of plastic waste through a plastic credit scheme. A company claiming neutrality may still have a net negative impact if the plastic waste they produce do more harm than the plastics that gets collected and recycled through a credit scheme due to difference in material type or geographical factors.

Proponents of plastic credits mechanisms claim that they can potentially act as an economic incentive, help clear millions of tonnes of plastic pollution and curtail its hazardous impact on the environment. Removing pollution from the environment tonne-by-tonne gives companies a way to account for the share of plastic they say they must produce because there are no available alternatives for the material as yet. They potentially alleviate the systematic failure to tackle waste. In theory, it should funnel more money towards systems that capture and recycle waste that would otherwise ending up in the environment. Additionally, plastic credits schemes should also foster innovation for plastic waste management and speed up action on pollution. Private-sector-driven plastic credits offer companies a route to immediately extract and recycle waste through existing projects. Also, companies providing plastic credits determine the value of each credit. They might not be paying the true cost of pollution removal to recyclers. The administrative, marketing and trading fees of organisations providing plastic credits are high and this is not transparent.

Currently, plastic credit mechanisms are helping companies – especially large fast-moving consumer goods companies – take responsibility for the leakage of the plastic waste that they generate without a strong legal obligation as they are mostly voluntary schemes.

Keeping in mind the above, the following considerations are synthesised from interviews with a diverse set of stakeholders and research using existing literature. These points were highlighted and discussed regarding elements to consider while designing plastic credit:

## 1. LOCAL, REGIONAL, OR GLOBAL

The geographical area that the plastic credits cover is an important consideration, as companies may be generating plastic credits in countries other than where their actual plastic pollution impacts are. There is a risk that a company's plastic pollution will continue to proliferate in one area if other areas are not properly tracked, leading to the miscalculation of the distribution of global waste. Companies must be transparent about their claims and provide relevant geographical information while reporting. The solution by companies to their plastic pollution must be local as the impact of plastic pollution is local.

As mentioned by TCI in their report (The Circulate Initiative, 2021), crediting programmes should be global or multi-regional, covering at least three continents, and thus should be able to promote harmonisation, large scale impact and ease of programme use for multinational companies.

Some plastic credit standards take geographical context into account in terms of the level of waste management infrastructure. In such cases, a company cannot purchase plastic credits in regions where the waste management infrastructure is better than where their plastic waste is produced. For example, waste produced in a low-to-middle income country with inadequate infrastructure for waste management cannot be offset through credits purchased in places like North America where waste management infrastructure tends to be more developed.

This idea can also be extended to disparities that exist for areas which are remote or hard to reach. If plastic waste by an entity is produced in urban areas where collection is easier, then plastic waste offsets in a remote area may be worth more than the produced waste because the waste in the remote area is less likely to be disposed of sustainably owing to a lack of infrastructure and therefore could have a larger environmental impact.

It is important to highlight that a current key weakness of plastic credit schemes is that plastics in different geographical contexts are not easily comparable with each other, even though some simple and rough approximations are made with regards to levels of waste management infrastructure in different geographies. This comparability is not so easily quantified and could be complex owing to composite factors such as environmental vulnerability, social factors and waste infrastructure, which together influences the impact of a tonne of plastic of specific type.

## 2. THE IMPACT OF COMPETING INTERESTS ON DUE DILIGENCE, TRACEABILITY AND TRANSPARENCY

To avoid misleading communications and claims, WWF recommends in their 2021 report that businesses be transparent about how plastic credit purchases fit into the company's longer-term vision and strategy for reducing the plastic pollution footprint resulting from their direct operations (WWF, 2021).

Companies should be transparent and must communicate with right terminology, i.e., that the purchase of credits should be considered as a temporary measure to eliminate plastic pollution and not a long-term strategy. These credits can finance much-needed waste management activities and support the global transition to a circular economy. If there is transparency

along with effective standards developed quickly, crediting systems may be implemented faster than legislation, such as EPR policies, and provide more immediate benefits. Rigorous independent verification will create transparency as well as traceability of material and monetary flows in the waste value chain.

### **3. INDEPENDENT, PART OF THE SOLID WASTE LANDSCAPE, OR ALLIED TO EPR SCHEMES**

Plastic credits must be considered as a part of the whole solid waste management system as focus on collection and recycling of only plastic waste may lead to the neglect of other waste streams. The crediting system should not be seen as an alternative to EPR. Plastic credits risk undermining progress on introducing policies such as EPR, a proven and effective policy intervention for financing waste management activities, or even displacing EPR completely when they are not integrated into national/local waste management systems. If not well implemented, plastic credits can pose a great challenge for authorities and municipalities to improve waste management systems through EPR schemes. Ideally, crediting should improve the local waste management infrastructure, and build the capacity of waste management systems to keep plastic in the system and out of nature.

An effective EPR policy should place an emphasis on mechanisms to ensure the reduction of plastic waste through design change in packaging, and by promoting alternative materials for packaging following the waste hierarchy beginning with waste prevention. EPR guidelines should also aim to stop excessive production.

### **4. NATIONAL, INTERNATIONAL, SECTORAL, OR FISCAL CERTIFICATION AND GOVERNANCE**

The current plastic credits certification is unregulated, with only voluntary standards and a few official national regulations, and no international frameworks. As it is currently implemented by several organisations, the plastic credit model does not currently discourage plastic production. Instead, it aims to offset the impact on the worst polluters by allowing certain companies or entities to extract plastics from the environment and convert them into credits that can be sold in the market. Organisations providing plastic credits could be made to report on the cost breakup, clients buying the credits, methodologies, materials etc. in order to openly ensure transparency. They could be asked to set a minimum value of credits and methodologies standardised across the spectrum.

### **5. GETTING THE VALUE PER CREDIT RIGHT**

In credit systems, demand determines the value of the credits. However, the price per tonne should ideally bring investment and improvement to local waste management infrastructures, and building the capacity of waste management systems to keep plastic in the system and out of nature (Nguyen, 2021). Similar to the price of carbon, the price of producing plastics should be ratcheted up over time. This should be a cost that is manageable for businesses



while remaining high enough to deter them from producing plastic from virgin/fossil materials during the seeking of alternatives.

An existing weakness for plastic credits is that the pricing model for plastic credits is not often clear or transparent, which makes it difficult to assess which credits should be purchased. A more transparent pricing model for a plastic credit, which clearly indicates what a purchaser will receive for one plastic credit, including social benefits and the flow of funding, may make pricing per credit more meaningful and aid decision-making when making credit purchases.

## **6. SOCIAL ELEMENTS – INCLUSIVITY**

In addition to an environmental mission, plastic credits should also have a social mission to support local economies by providing living wages for waste pickers and generating new job opportunities. Social policies should ensure that workers are at least paid legal minimum wages and have good working conditions. Plastic credits schemes need to ensure that they support these essential workers, prevent further inequity and produce a synergy between producers, users and plastic collectors.

The plastic credit scheme should contain requirements regarding gender equality and social inclusion. Operating partners shall observe best practices on gender equality and social inclusion, and activities should not implement any specific actions that constitute any form of discrimination or harassment.

Plastic credits could potentially offer a pathway towards better social protections and development, by offering stable jobs and income to informal workers while guaranteeing safer working conditions and effectively transforming the informal sector into a more formalised sector of waste management.

## **7. THE LOGISTICS**

The creation of indicators and metrics at various stages of the plastic waste management chain could be considered as this could potentially cover performance, recovery rates, the reduction of plastic leaking into oceans, etc. Current and emerging technology and digital solutions could be applied to make the system more transparent by using digital accounting, pay-out systems and/or blockchain.

## **8. THE REGULATION – PRODUCING AN INDUSTRY STANDARD**

Current regulations are mostly voluntary, calling into question the effectiveness of these schemes. What supporting regulation, treaties or conventions are needed to enforce decisive action against plastic production and waste? A hybrid or mandatory model might work better than a purely voluntary one in some instances. While some markets are more advanced (or better funded) to resource waste management, recycling (e.g., in the European Union), the regulations and frameworks developed by and for these markets may not be applicable to Global South.





**05**

**NEXT STEPS/PRIORITIES FOR  
POLICYMAKERS, INDUSTRY,  
WASTE MANAGEMENT:  
SET OF RECOMMENDATIONS**



There are currently several crediting programmes available in the marketplace that are operating projects around the world but there is still no formal agreed-upon standard or framework methodology to run these systems. Plastic credits should apply the lessons learnt from carbon credits market.

Plastic credit systems pose risks if not developed and implemented appropriately; they should contribute to meaningful, systemic change through continuous improvement, support of circular systems and progress towards comprehensive Extended Producer Responsibility (WWF, 2021).

Plastic credit schemes still need agreed-upon terminology, definitions, methodologies and concepts to standardise the meaning of plastic credits and the implementation of plastic credit mechanisms.

Credit systems should be considered as an add-on to command-and-control-regulations. These regulations need to secure a certain limit of environmental protection, only for anything that goes beyond that flexible (credit) mechanisms should be possibly used.

**In conclusion, plastic credit mechanisms can play a significant role within sustainable waste management systems along with local and national policies such as producer responsibility schemes and waste prevention and reduction laws but can also be a potential tool for greenwashing if not implemented properly. Plastic credits are not a long-term solution but rather a short-term remedy while we move to better waste and resource management systems.**



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