

# UNLOCKING FINANCING TO COMBAT THE PLASTICS CRISIS

Opportunities, Risks, and  
Recommendations for Plastic Credits

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June 2024

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June 2024



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# ACRONYMS AND ABBREVIATIONS

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<b>3RI</b>	3R Initiative
<b>AEPW</b>	Alliance to End Plastic Waste
<b>ARC</b>	Attribute of Recycled Content
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>BAU</b>	Business As Usual
<b>CAH</b>	Circular Action Hub
<b>CCM</b>	Circular Credits Mechanism
<b>CDM</b>	Clean Development Mechanism
<b>CPCB</b>	Central Pollution Control Board
<b>CSR</b>	Corporate Social Responsibility
<b>EMF</b>	Ellen MacArthur Foundation
<b>EPR</b>	Extended Producer Responsibility
<b>FMCG</b>	Fast-Moving Consumer Goods
<b>GHG</b>	Greenhouse Gas
<b>GHG Protocol</b>	Greenhouse Gas Protocol
<b>HDPE</b>	High-Density Polyethylene
<b>ICVCM</b>	Integrity Council for the Voluntary Carbon Market
<b>INC</b>	Intergovernmental Negotiating Committee
<b>ISEAL</b>	International Social and Environmental Accreditation and Labeling Alliance
<b>ITMO</b>	Internationally Transferred Mitigation Outcome
<b>kg</b>	Kilogram
<b>MoEF</b>	Ministry of Environment and Forestry Indonesia
<b>MRV</b>	Measurement, Reporting, and Verification
<b>NDC</b>	Nationally Determined Contribution
<b>NGO</b>	Non-Governmental Organization
<b>OBP</b>	Ocean-Bound Plastic
<b>OECD</b>	Organization for Economic Cooperation and Development



<b>PAF</b>	Pilot Auction Facility for Methane and Climate Change Mitigation
<b>PCX</b>	Plastic Credit Exchange
<b>PERN</b>	Packaging Waste Export Recycling Note
<b>PET</b>	Polyethylene Terephthalate
<b>PIBO</b>	Producers, Importers, and Brand Owners
<b>PPRS</b>	Plastic Pollution Reduction Standard
<b>PRN</b>	Packaging Waste Recycling Note
<b>PWRS</b>	Plastic Waste Reduction Standard
<b>RMS</b>	Recycled Material Standard
<b>SBTi</b>	Science Based Targets initiative
<b>SDG</b>	Sustainable Development Goal
<b>SMEs</b>	Small- and Medium-Sized Enterprises
<b>t</b>	Metric ton
<b>UNEA</b>	United Nations Environment Assembly
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>USD</b>	United States Dollar
<b>VCM</b>	Voluntary Carbon Market
<b>VCMI</b>	Voluntary Carbon Markets Integrity Initiative
<b>VVB</b>	Validation/Verification Body
<b>WBCSD</b>	World Business Council for Sustainable Development
<b>WEF</b>	World Economic Forum
<b>WWF</b>	World Wildlife Fund
<b>ZPO</b>	Zero Plastic Ocean

# FOREWARD

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Plastic pollution has become a global crisis, with significant negative environmental, social, and economic implications. The crisis has become acute as exponential growth in plastic production and consumption has not been met with the necessary investments to address the corresponding waste. There is significant and growing momentum globally towards addressing this crisis, most notably seen through the ongoing International Negotiating Committee (INC) process which aims to develop a legally binding agreement on plastic pollution by the end of 2024. Regardless of the outcomes of the INC process and the final agreement, a significant scaling of plastic policies, investment, innovations, and tools will be needed to tackle the crisis.

This publication, *Unlocking Financing to Combat Plastic Crisis: Opportunities, Risks, and Recommendations for Plastic Credits*, aims to provide a comprehensive analysis of one of these potential tools, plastic crediting. This report is intended for a range of stakeholders, including policymakers, plastic crediting programs, multilateral organizations, private sector, and civil society organizations.

Plastic pollution is a global challenge that requires coordinated actions and innovative solutions. Plastic crediting offers a results-based mechanism to connect public and private sector finance with specific activities that address plastic pollution. By quantifying and certifying the results of plastic pollution reduction initiatives, plastic credits provide a means for organizations to financially support these projects and contribute to the transition to a circular economy.

The report highlights the potential benefits of plastic crediting, such as increased funding for plastic waste management projects, enhanced accountability and transparency, and the promotion of sustainable practices. However, it also acknowledges the challenges and risks associated with plastic crediting, including the lack of a common definition and standards, the potential for greenwashing, and the need for robust governance and enforcement. The report also recognizes the need for plastic credits to supplement, not replace, comprehensive waste management investments and policies.

To address these challenges and fully realize the potential benefits of plastic crediting, the report provides a set of recommendations for key stakeholders. These recommendations include the development of a centralized, independent, and neutral governance framework, the establishment of clear guidelines for plastic crediting programs and associated claims, and the fostering of market development through pre-purchase facilities and clear pricing guidelines.

The World Bank Group is committed to supporting environmentally sustainable investments and working with countries to mobilize investments in low-carbon and resilient activities.

We are pleased to share this report with the hope that it will contribute to the global efforts to address plastic pollution and promote the responsible use of plastic crediting as a tool for positive change.

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## EXECUTIVE SUMMARY

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**Plastic pollution has become an urgent global issue (OECD 2022). Policymakers, business leaders, and communities are advancing solutions to address the problem, but a significant financing gap remains for a circular plastics economy. This report explores the viability of plastic crediting as a potential mechanism to finance plastic pollution interventions.**

The rapid increase in plastic production and consumption has far outpaced available waste management systems globally, with only nine percent of plastic waste ever produced has been recycled (OECD 2022). According to the OECD (2022), plastic waste generation more than doubled to 353 million tons between 2000 and 2019. The transboundary movement of plastic pollution (Galaiduk et al. 2020) and international transport of plastic waste complicate efforts to address the challenge (Lebreton et al. 2012). Approximately 81 percent of plastic waste that enters the ocean comes from waterways in Asia (Meijer et al. 2021). Meanwhile, there is a significant finance gap to achieve a circular economy, ranging from USD 426 billion to USD 1.2 trillion by 2040 globally, and an estimated USD 28-40 per ton for plastic waste collection in five Southeast Asian countries (Kaplan 2022; Circulate Initiative 2021; 3RI 2021; Lewis 2019).

A range of solutions are needed to end plastic pollution, starting with a reduction in plastic production, market transformation, and solutions to address legacy plastics (UNEP 2023b). Regulatory frameworks are in development to support the transition to a circular economy. This includes extended producer responsibility (EPR) schemes, whereby producers are required to take responsibility for waste from their products or packaging through upstream design and downstream waste management. Financial

mechanisms, such as taxes, levies, and market-based crediting schemes can be applied within a suite of solutions to accelerate plastic pollution reduction activities. Among these solutions, plastic crediting is an emerging mechanism that has the potential to mobilize financing to address plastic pollution during the transition to a circular economy. Plastic pollution presents unique challenges; the potential role of a crediting mechanism requires further exploration. To examine its potential impacts and risks, this report: introduces the concept of plastic crediting; provides an overview of the current state of the plastic crediting system; analyzes the associated challenges, risks, and benefits; and puts forward some recommendations. For the purposes of this report, the term ‘plastic credit’ is used to refer to the credit itself, while the term ‘plastic crediting’ is used to refer to the concept and mechanism of plastic crediting.

**Plastic crediting is an emerging results-based mechanism that aims to connect public and private sector finance with specific activities that address plastic pollution.**

There is no common definition of ‘plastic credit’. A plastic credit can be understood as an environmental certificate that represents the result of collecting and managing plastic waste from the environment, recycling plastic waste, or avoiding plastic use. Plastic credits are issued per metric ton or per kilogram and are primarily issued under a plastic crediting program. Programs are initiatives run by standard setting organizations that provide the rules, standards, procedures and methods to measure, monitor, and verify the results of plastic pollution interventions. Different types of plastic credits reflect different activities (e.g., avoidance credit,

collection credit<sup>1</sup> or recycling credit) or origin (e.g., ocean bound plastic credit). There is no distinction in credit types based on plastic polymer. Most programs require that projects monitor their results by plastic type, however all polymers are currently weighted equally in the estimation of plastic credits. The introduction of a conversion factor to assign a plastic waste reduction impact per polymer type is under consideration.

The plastic crediting mechanism enables a results-based approach where projects can issue credits only after their plastic pollution reduction is quantified and confirmed. The more successful the project is in reducing plastic pollution, the more credits it can generate. These credits can be sold to interested buyers. In some cases, prepayments are made for plastic credits (e.g., when upfront investment is needed to finance the credited activities). As a result of this process, projects are incentivized to deliver results efficiently and at scale. Plastic crediting can act as an additional tool for financing plastic pollution reduction activities. And it should not displace the long-term efforts and commitments of national governments and private sector in this regard.

Plastic credits can be purchased by compliance buyers to fulfill their obligations under specific policies (e.g., EPR), or by voluntary buyers to claim a contribution to reduce plastic pollution. The revenue from the sale of plastic credits is used to support plastic pollution reduction efforts. This helps to make the efforts more financially viable and scalable and generates additional environmental and social benefits.

**The plastic credit market is at a very early stage of development, with significant variation in methodologies, credit types, and transparency across crediting programs.**

The concept of payment for waste management services through certificates first developed between 2013 and 2015.<sup>2</sup> Many programs have since emerged, including highly simplified schemes and highly structured crediting approaches.

Plastic crediting programs vary widely. Definitions, eligible project types, calculation methods, and processes are set by each crediting program. Several program owners adopt multiple roles—including project implementation, standard development, and sales of plastic credits. This has led to concerns around transparency and conflict of interest. A few programs include specific crediting standards, host public registries, and operate independently of project implementation and sales.

To better understand the landscape of plastic crediting programs, this study classifies them into three categories:<sup>3</sup>

1. Fully independent and transparent programs;
2. Programs with a public standard and multiple roles in the value chain; and
3. Other programs financing plastic pollution reduction that do not fit into the first two categories.

Category 1 crediting programs publicize standards and methodologies, and their projects require third-party verification. These programs were developed through a multistakeholder development process involving public and expert consultation, and the programs align with International Social and Environmental Accreditation

1 Collection credits require project actors to demonstrate that the collected plastic waste has been managed before any credits can be issued. Standards set definitions and requirements to define adequate or appropriate management.

2 For example, the Reverse Logistics Credit created by BVRio in 2013 and piloted in 2014-2015 in Brazil (more information [here](#)).

3 The categorization is based on criteria relating to the independence and transparency of crediting programs and does not reflect the ambition or level of integrity of crediting standards or methods used by programs.

and Labeling Alliance (ISEAL)<sup>4</sup> best practices. Programs are open to applications from any project that meets the eligibility criteria. Projects are listed on public registries displaying project identification (ID) and name, quantity of credits issued, serial numbers per credit, quantity of credits retired, retirement date, and reference period. The programs in category 1 and affiliate organizations are fully independent from the project development and implementation purchase and sales of plastic credits.

This study identified three fully independent plastic crediting programs under category 1:<sup>5</sup>

- Verra Plastic Waste Reduction Standard (PWRS);<sup>6</sup>
- GreenBlue Recycled Material Standard (RMS);<sup>7</sup> and
- Zero Plastic Oceans Ocean-Bound Plastic (OBP) Neutralization Certification.<sup>8</sup>

Category 2 programs also apply a publicized crediting standard and methodology, require third-party verification and follow ISEAL best practices. Any project owner may apply to these programs. Programs in this category list projects on public registries. However, information may be limited (e.g., not all information on project ID, project name, credit serial number, issuance and retirement transaction details, and crediting period is available). Also, standard setters may not be fully independent and could get involved in the implementation of projects, purchase and sales of plastic credits or provision of paid certificates for buyers.

This study identified two programs under Category 2:<sup>9</sup>

- PCX Solutions Plastic Pollution Reduction Standard (PPRS)
- BVRio Circular Credits Mechanism (CCM)

There are several other programs that offer financing solutions marketed as a ‘credit’ or under an alternative name (e.g., offsets, certificates, contributions, verified units), but apply a different approach to plastic crediting (category 3). For example, the quantified results of a plastics reduction activity (e.g., weight of plastic waste managed) are measured according to internal guidelines and sold to a buyer as a results-based purchase. Programs in this category follow internal guidelines and methodologies that are not typically publicly available. Program owners select projects to work with (i.e., the program is not open to any project owner). Projects are managed through a registry that is not available to the public (e.g., blockchain-enabled platforms only available to the program or buyers). Requirements for third-party verification vary among programs in this category. Programs may be involved in project development and implementation, sales of credits, and provide certifications for buyers (e.g., Plastic Neutral).

As of December 2023, 160 plastic crediting projects were identified of which 61 projects were under category 1.<sup>10</sup> Approximately 11,584 plastic credits (equivalent to 11,584 metric tons of plastic waste) were verified by third-party

4 International Social and Environmental Accreditation and Labeling Alliance (ISEAL) Codes of Good Practice provide a globally recognized framework for effective and credible sustainability systems. They are considered ‘best practice’ for programs seeking to make a positive impact. See <https://www.isealalliance.org>.

5 This categorization is based on publicly available data in January 2024. Programs given here are examples of this category. As programs develop this categorization may change.

6 Verra PWRS (available [here](#)).

7 RMS (available [here](#)).

8 OBP Certification Program (available [here](#)).

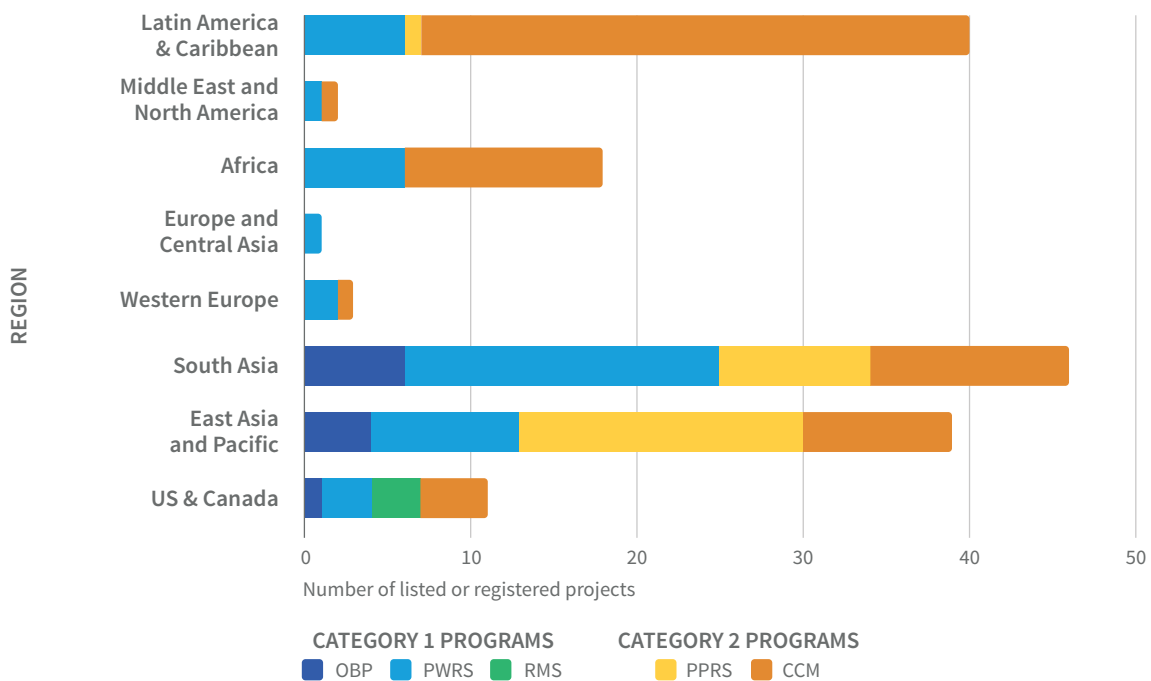
9 This categorization is based on publicly available data in January 2024. Programs given here are examples of this category. As programs develop this categorization may change.

10 For the purposes of this analysis, programs under category 3 are not considered typical plastic crediting programs. As a result, the statistics shown in the report only include category 1 and category 2 programs, unless otherwise specified. This includes projects listed on the public registries pending registration and those registered.

auditors and issued under programs in category 1.<sup>11</sup> Geographically, the majority of the 160 projects are in South and East Asia (53 percent), Latin America (25 percent), and Africa (11 percent). This reflects the development of multiple crediting programs in response to the plastic waste challenge in these regions (See

figure 1). With current pricing estimates, plastic crediting could bring approximately 10 million USD of financing to plastic pollution interventions from the sale of existing plastic credits and could grow to approximately 30 million USD annually within the next five years.<sup>12</sup>

**FIGURE 1:** Distribution of Registered and Listed Plastic Credit Projects across Programs and Regions



Source: Verra n.d.; OBP, n.d.; BVRio n.d.; PCX n.d.; RMS n.d.<sup>13</sup>

Plastic crediting standards currently focus on downstream plastic waste reduction activities, including plastic collection and management (e.g., environmental clean-ups and waste disposal in landfill), diversion of plastic waste from landfill (e.g., plastic is incinerated with energy recovery), and plastic recycling.

Plastic credits for upstream activities (e.g., avoidance of plastic, substitution for alternative materials), are being explored. One pilot project was conducted by rePurpose Global to trial the “Upstream Innovation” credit for a project using natural fibers to displace plastic materials. Another program (PCX Solutions) includes

11 Verra registry, RMS registry, and OBP registry.

12 Estimation made using average price and number of plastic credits available on the market in 2023. Projection with triple of current market size.

13 Figure includes listed and registered projects from programs in categories 1 and 2 as of December 2023.



an “Avoidance” credit for upstream activities that avoid the use of plastic products and plastic waste generation and is exploring a plastic innovation credit and plastic avoidance credit. These credit types are under review as both programs cite the need for proper mechanisms and methodologies for upstream credits.<sup>14</sup> Significant testing and stakeholder alignment is needed before a plastic crediting system with robust methodologies for upstream activities can be properly established and developed. Moreover, plastic credit standards currently target macro-plastic waste (larger than 5mm) and not yet involve micro-plastic pollution (smaller than 5mm).

The level of accountability and transparency varies among plastic crediting programs. Programs in category 1 with publicly available standards and methodologies, and third-party audits often include more stringent requirements on demonstration of additionality, robust monitoring frameworks, open disclosure, and public registries. Further work is needed to achieve alignment on common definitions and best practices of plastic crediting. Existing guidelines, such as those developed

by the Circulate Initiative and the 3RI, which could serve as potential references for programs and buyers respectively (Circulate Initiative 2021; 3RI 2021). To improve their effectiveness, plastic crediting programs should consider the specific challenges presented by plastic pollution, such as the permanence of plastic pollution, local dynamics, and range of polymer types and applications.

The first two programs (category 2) were launched in 2020 with an initial surge of projects listed in the registry in the same year. In 2021, three category 1 programs were launched. The number of listed and registered projects has increased ever since (see figure 2).

The uptake of plastic credits is growing as the awareness of the plastic crediting mechanism increases. While the number of plastic credits continues to grow (see figure 3), the lack of a common framework, definition, and requirements for the use of plastic credits is inhibiting further adoption.

**FIGURE 2:** Overview of plastic credit projects listed and registered per year<sup>15</sup>

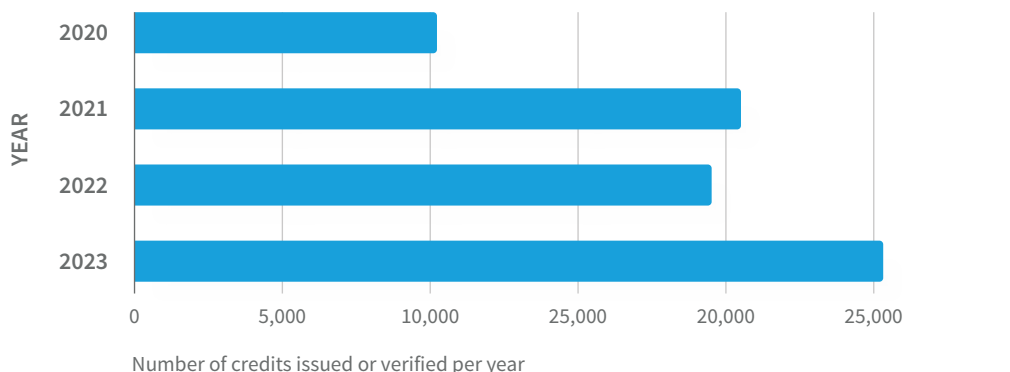


Source: OBP, n.d.; RMS n.d.; Verra n.d.; PCX Solutions, n.d.; BVRio<sup>16</sup> n.d.

<sup>14</sup> For example, see “Guidance note: avoidance” by PCX Solutions in the PPRS version 7 (available [here](#)).

<sup>15</sup> Data is provided for category 1 and 2 programs as data is not publicly available for programs under category 3.

<sup>16</sup> Projects listed on Circular Action Hub for pre-payment or performance credits under the CCM.

**FIGURE 3:** Overview of plastic credits issued or verified by year<sup>17</sup>

Source: BVRio n.d.; OBP, n.d.; PCX n.d.; RMS n.d.; Verra n.d.

**The majority of plastic credits are used for voluntary purposes. Examples of compliance mechanisms are emerging.**

The plastic credit market is predominantly voluntary. The main motivation for voluntary buyers of plastic credits is to finance waste management projects as a Corporate Social Responsibility activity in response to consumer demand for greater action to address plastic waste. Several voluntary corporate plastic reporting initiatives exist (e.g., Ellen MacArthur Foundation, CDP plastic questionnaire). There is currently no global requirement or target-setting initiative (i.e., equivalent to the Science Based Targets Initiative) that requires companies to reduce plastic pollution. Plastic credits can be purchased as a compensation tool for a plastic waste footprint with corresponding environmental claims to communicate to consumers, such as Net Zero Plastic to Nature or Plastic Neutral. There is growing consensus to move away from ‘neutrality’ claims (WWF 2021). Plastic credits are also purchased as a general financial contribution by the public and private sectors to address plastic pollution, without claiming compensation of

a plastic footprint.<sup>18</sup> There is limited data available on plastic credit transactions and the level of demand for compensation compared with general contributions. Early buyers of plastic credits include national branches of fast-moving consumer goods (FMCG) companies, pharmaceutical organizations, personal care brands, travel companies, and social enterprises.

There are a few emerging examples of using plastic crediting as a regulatory instrument. One example is the integration of plastic crediting within EPR schemes. Crediting mechanisms are included in producer responsibility schemes in the United Kingdom (UK), India, Brazil, and the Philippines as a way for obligated parties to meet their waste management commitments. In 2023, 33 percent of the plastic credit retirements under the PPRS standard were made for compliance under the Philippines EPR scheme (PCX Markets, n.d.). Wider compliance schemes for plastic crediting like the regulated carbon markets do not yet exist. The utility of plastic crediting as a compliance tool is case specific and will need to be further developed.

17 Annual data is provided for CAH, OBP, PWRS, PWRS crediting programs by 31 December 2023. Credits issued under PPRS obtained in May 2023. Data is not publicly available for programs under category 3.

18 A plastic footprint is defined by the Plastic Footprint Network as “the assessment of the effect that plastic leakage associated with a product / company / activity / country has on the environment and human health” (available [here](#)).

**Several benefits and risks of plastic crediting were identified. These must be carefully considered and addressed before a plastic crediting system can be used to effectively address plastic pollution.**

## KEY BENEFITS

- **Benefit 1:** Provide financing for plastic pollution reduction initiatives, waste management, increase recycled content, and address legacy plastic pollution. The plastic crediting mechanism can be used by public and private sector organizations to make solutions economically viable and scalable.
- **Benefit 2:** Place a price or value on plastic waste reduction or reduction of plastic consumption (including environmental externalities).
- **Benefit 3:** The standards and methodologies used for plastic crediting can provide a framework for traceable results-based accounting that can enhance monitoring and evaluation of plastic pollution initiatives and increase the accountability and transparency of impact reporting.
- **Benefit 4:** Marginalized groups, including the informal sector, can be recognized as an important stakeholder in waste management, opening the door to benefit sharing among actors. Specific requirements and safeguards to improve social and environmental conditions of plastic pollution reduction initiatives, and links with the Sustainable Development Goals (SDGs) are integrated into some crediting programs.

## CHALLENGES AND RISKS

- **Challenge/risk 1:** Plastic credits are in the early stages of adoption. Programs vary greatly in terms of quality and robustness, lack common definitions, and are not aligned on key principles.

- **Challenge/risk 2:** In the absence of alignment between programs and clear governance to ensure market integrity, the results of some plastic pollution activities may be double counted and not result in a net increase of plastic pollution management.
- **Challenge/risk 3:** While the supply of projects is increasing, the current market demand for plastic credits is mostly voluntary and ad-hoc. Lack of sufficient, sustained, and predictable demand, and a risk of low prices for plastic credits could start to hinder project uptake.
- **Challenge/risk 4:** Plastic credits purchased for corporate offsetting purposes may be misused as a tool for greenwashing and misleading claims, and/or as a disincentive to reduce plastic pollution given the absence of clear rules around plastic credit usage and claims.
- **Challenge/risk 5:** Technical complexity, transaction times, and costs associated with the plastic crediting process (e.g., project validation and registration, credit verification and issuance) may deter project developers, particularly marginalized informal workers, and small businesses, from directly accessing the mechanism.
- **Challenge/risk 6:** Plastic crediting programs' current focus on downstream solutions risks overshadowing upstream plastic reduction measures if not considered equally.

## Recommendations

To address the identified risks and challenges and fully realize the potential benefits, the following mitigation measures (Table 1) are proposed and recommendations are put forward for consideration.

**TABLE 1:** Proposed mitigation measures to address identified challenges and risks

Challenges/risks	Mitigation measures
<p><b>Challenge/risk 1:</b> Plastic credits are in the early stages of adoption. Programs vary greatly in terms of quality and robustness, lack common definitions, and are not aligned on key principles.</p>	<p>Establish minimum requirements and common principles for plastic crediting programs and protocols for the use of plastic credits.</p> <p>In the interim, plastic credit programs should ensure that robust calculation methodologies and environmental and social safeguards are in place.</p> <p><i>See Recommendation 1</i></p>
<p><b>Challenge/risk 2:</b> In the absence of alignment between programs and clear governance to ensure market integrity, the results of some plastic pollution activities may be double counted and not result in a net increase of plastic pollution management. Plastic waste collected are not properly disposed or treated.</p>	<p>Robust measures to ensure additionality, a net increase in plastic waste management and avoid double counting should be applied across crediting programs (e.g., thresholds per activity, material, or location thresholds, assigning unique serial numbers, requiring responsible management of plastic waste in all cases<sup>19</sup>, and disclosing credit transactions on public registries).</p> <p>Some plastic credit programs require projects to demonstrate that plastic waste has been properly disposed or treated permanently before credits can be issued. Such measures that ensure end-to-end management of plastic waste from collection to final disposal or recycling should be applied to all programs (e.g., specific requirements for disposal sites and measures to demonstrate permanence of waste management). A strong governance framework is needed to monitor effective implementation and ensure independent verification.</p> <p>In the absence of a common governance framework, credit buyers should review project documentation and crediting programs to understand measures to avoid double counting and ensure additionality.</p> <p><i>See Recommendation 1</i></p>
<p><b>Challenge/risk 3:</b> While the supply of projects is increasing, the current market demand for plastic credits is mostly voluntary and ad-hoc. Lack of sufficient, sustained, and predictable demand, and a risk of low prices for plastic credits could start to hinder project uptake</p>	<p>A fund or pre-purchase facility could address some of the challenges of plastic crediting (e.g., provide technical assistance for marginalized groups, further developing methodologies), and offer financial security to prospective projects.</p> <p>Establish pricing guidelines and categories to reflect activity type, location, material type and co-benefits.</p> <p><i>See Recommendation 2</i></p>

19 In locations where plastic is at risk of re-entering the environment after collection, alternative management options should be supported (e.g., establishing a new recycling center, or transporting to the nearest managed landfill).

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**Challenges/risks**
**Mitigation measures**

**Challenge/risk 4:** Plastic credits purchased for corporate offsetting purposes may be misused as a tool for greenwashing and misleading claims, and/or as a disincentive to reduce plastic pollution given the absence of clear rules around plastic credit usage and claims. Plastic credits may be misused to displace efforts from governments or private sector actors to establish extended producer responsibility systems and/or proper waste collection systems.

Develop best practices to promote the responsible use of plastic credits to fund specific activities during a transition period within a wider plastic action framework.

Alignment is needed on the distinction between plastic credits, a tool to finance activities beyond a company's value chain, and activities that directly reduce plastic use within a company's value chain. Guidance is also needed on suitable claims surrounding credit purchases.

A public disclosure platform where buyers report plastic use, mitigation activities within their own supply chain and use of plastic credits will enable monitoring.

Plastic crediting can be utilized as an additional financing tool and should not displace the long-term sustained efforts and commitments from public and private sector actors.

*See Recommendations 1 and 3*

**Challenge/risk 5:** Technical complexity, transaction times, and costs associated with the plastic crediting process (e.g., project validation and registration, credit verification and issuance) may deter project developers, particularly marginalized informal workers, and small businesses, from directly accessing the mechanism.

Provide technical assistance for early-stage and projects with informal marginalized workers. This may include exploring options to simplify data-collation, and benefit sharing mechanisms for marginalized workers.

*See Recommendation 4*

**Challenge/risk 6:** Plastic crediting programs' current focus on downstream solutions risks overshadowing upstream plastic reduction measures if not considered equally.

If robust protocols for plastic crediting are established, explore crediting for upstream solutions through extensive piloting and stakeholder engagement.

*See Recommendation 5*

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**1. Strengthen the governance system of plastic crediting, including the potential creation of a neutral governance body. Principles for plastic crediting programs and guidelines for plastic credit purchases and claims are needed.**

It is imperative to establish minimum requirements and common protocols for plastic crediting including alignment on fundamental principles, definitions, and validation and verification protocols for plastic crediting programs. Enforceable rules are needed for robust

plastic waste standards and accounting methodologies. Alignment on the possible role of crediting to finance plastic pollution interventions, accounting methods and associated claims for buyers is also needed. Measures to incentivize the collection and management of legacy plastics, as well as plastic types that have a low value after use or are hard to recycle should be explored. Positioning the role of plastic crediting in the context of a broader range of actions on reducing plastic pollution would help to foster trust and avoid plastic credits becoming a perverse incentive or a greenwashing tool. Nongovernmental organizations (NGOs) like the World Wildlife Fund (WWF) (WWF 2021) have highlighted key considerations that provide a guide for such a framework.

For this to occur, an independent and neutral governance entity could help align a set of common core principles and protocols that can be integrated across crediting programs. Measures to ensure additionality and avoid double counting should be adopted across all programs (e.g., activity, material, or location specific thresholds, understanding project funding sources and historic waste management, serial numbers for issued credits, publicly available credit registries with detailed project information etc.). Requirements for projects to demonstrate responsible and permanent management of plastic waste should be applied across crediting programs, when not already in place, to develop a high integrity crediting system (e.g., through robust requirements on waste management practices and permanence). Long-term reliance on a crediting system can be avoided by setting eligibility requirements that include new or capacity expansion projects, as well as time bound restrictions (e.g., registration within a certain date or limited renewals). A knowledge-sharing platform could help to raise awareness, increase understanding, and address the potential risks.

The ongoing Intergovernmental Negotiating Committee (INC) process provides an important opportunity to collectively consider these risks and challenges. The INC Options Paper (April 2023)<sup>20</sup> calls for “new, additional, stable, accessible, adequate, timely, and predictable flows of financial resources to support the implementation of the instrument,” including “using credit schemes to finance initiatives that reduce plastic waste.” Core obligations include strengthening waste management; eliminating the release and emissions of plastics to water, soil, and air; addressing existing plastic pollution; and facilitating a just and inclusive transition. If deemed suitable and appropriate, negotiators could consider plastic crediting as one possible tool to support the financing of core obligations. To do so, an accepted definition of a plastic credit and agreement on the role that plastic crediting could play in fulfilling core obligations need to be established. In the interim, actors seeking to use the plastic credit system should carefully assess plastic crediting programs to understand their standards, methods and procedures particularly around additionality, double counting, environmental and social safeguards.

## **2. Address market dynamics and uncertainties in the plastic credit market.**

To address market uncertainties, a dedicated fund or prepurchase facility could be established to send a positive signal and give confidence to market practitioners about prospective demand and pricing. A fund could be utilized for piloting a specific activity, use case (e.g., plastic credits in EPR), or methodology development. Outcome bonds, such as the Plastic Waste Reduction-Linked Bond could provide up-front financing where the return on investment is linked to the future plastic credit issuance and sales.<sup>21</sup>

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20 Potential options for elements towards an international legally binding instrument, UNEP/PP/INC.2/4, April 13, 2023

21 <https://www.worldbank.org/en/news/feature/2024/01/25/tackling-the-plastics-pollution-crisis-by-channeling-private-capital-to-projects-that-reduce-plastic-waste>

Establishing guidelines for plastic credit pricing with clear categories including factors for price determination and possibly a floor price could steer prices in this early market and help avoid prices falling below sustainable thresholds. Reasonable pricing of plastic credits should properly reflect the true cost of reducing consumption and waste generation, and realize the social changes required in the transition to a circular economy. Further, establishing plastic crediting as a transition mechanism (as plastic pollution reduces over time and waste management systems are established) will help to set the right mindset for adoption and can prevent a situation where credit purchases facilitate the status quo. Civil society and private sector actors, including waste management operators, recyclers, and potential buyers, should inform the development of pricing categories and guidelines.

### **3. Develop guidelines to inform the interaction of EPR and plastic crediting.**

Guidelines are needed to support the development of EPR schemes against a background of existing voluntary plastic crediting programs and their standards. This may include the use of a plastic crediting mechanism for compliance within the EPR scheme, or the coexistence of a mandatory EPR scheme and a voluntary plastic credit market (e.g., for obligated parties to go beyond regulatory requirements).

Plastic crediting can provide a measurable and transparent tool to account for results under EPR schemes. Government agencies can choose to enable the use of plastic credits from specific external crediting programs or establish basic criteria for eligible standards. Key stakeholders should be engaged early in the design process if a plastic crediting mechanism is integrated into EPR schemes. Plastic crediting can be utilized as an additional financing tool but should not displace the long-term sustained efforts and commitments from public and private sector actors. For example, some projects require short term financing to scale (e.g., private sector recycling activities), while

others require sustained investment from national governments and private sector actors to cover the ongoing operations and maintenance costs over the long-term (e.g., payment for the waste collection and treatment).

In countries where EPR schemes are in development, existing voluntary plastic crediting systems may provide an interim measure that prepares companies for compliance. Close coordination with existing crediting programs and projects is critical to develop high-quality crediting systems and align pricing expectations. Voluntary plastic credit programs do not displace the EPR schemes under development, which can provide a holistic set of measures. EPR requirements can include annual plastic footprint reporting, reduction targets, and an obligation for organizations to finance pollution reduction measures at a level that is proportional to their plastic footprint. Guidelines could be developed for EPR schemes to provide rules around the use of plastic credits from existing crediting programs for national compliance.

### **4. Provide technical assistance for early-stage and informal projects.**

The technical complexity, transaction time and costs to go through project validation, registration, verification, monitoring and reporting to plastic credit issuance, sales and receipt of revenue can be obstacles for potential project developers, in particular small businesses, and marginalized actors. Provision of technical and financial assistance to these actors is essential for raising awareness, enhancing knowledge, and expanding accessibility to plastic credit opportunities. A benefit-sharing mechanism for marginalized and informal workers (e.g., where certain actors could receive a certain percentage of revenue) established through plastic crediting programs could also enable these groups to directly benefit from plastic credit financing. Standard-setting organizations can review options to streamline processes or reduce fees for small projects. Governments and investors can play

a pivotal role in providing upfront capital for project implementation and plastic credit certification through forward transactions to secure a stable future supply or structured deals over multiple years.

### **5. Future prospect: pilot plastic credits upstream solutions.**

Recognizing that most plastic crediting programs currently focus on downstream activities, there is a promising opportunity to transform a plastic credit standard into a circular mechanism by expanding its scope to include upstream solutions. Upstream activities, such as reuse and refill schemes, are essential to reducing plastic use and waste generation. The concept of a plastic credit for upstream activities is at a very early stage of consideration. Initial piloting by rePurpose Global revealed that a significant level of effort is needed to develop robust methodologies

(e.g., eligible activities, project types, and accounting methods) and establish a solid plastic crediting system that promotes upstream solutions. Further piloting could be beneficial once the current plastic credit market is well established. Private sector actors implementing upstream solutions should be engaged early in the consideration of plastic credits for upstream activities. In addition, the use of plastic crediting to address microplastic pollution may warrant further exploration.

**In conclusion, plastic crediting is a tool that could be used to channel results-based finance to projects within a wider suite of solutions addressing plastic pollution. Addressing the current uncertainties around plastic crediting and strengthening the governance system are critical to ensure the responsible use and adoption of this emerging mechanism in conjunction with other efforts to reduce pollution at source.**



## How to read this report

### SECTION 1.

#### INTRODUCTION

Summarizes the plastic pollution challenge and establishes the concept of plastic crediting within a wider framework of action.

### SECTION 2.

#### HOW DO PLASTIC CREDITS WORK?

Section two introduces a definition of plastic credits, explains how they work, and identifies key stakeholders involved in the plastic credit landscape.

### SECTION 3.

#### OVERVIEW OF THE PLASTIC CREDIT MARKET

Explores the current state and trends of the plastic credit market, together with the associated risks and opportunities presented by plastics. Potential links between EPR and plastic crediting are also considered.

### SECTION 4.

#### RECOMMENDATIONS

Presents ways to mitigate the risks associated with plastic crediting and to realize opportunities for addressing plastic pollution. The report concludes with proposed actions for key stakeholders.





# 1. INTRODUCTION

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## The plastic pollution challenge

Hygienic, lightweight, strong, durable, cost-effective, and corrosion-resistant: these are just some of the benefits provided by the plastics that facilitate modern lives ([Napper and Thompson 2019](#); [Rhein and Schmid 2020](#)). Annual plastic production grew from 1.5 million metric tons (t) to 367 million t throughout 1950–2020 ([World Economic Forum \[WEF\], 2022](#)). This growth in plastic-based products far outpaced available waste management systems, causing plastic waste generation to more than double between 2020 to 2019 alone ([Organization for Economic Cooperation and Development \[OECD\] 2022](#)). Plastic pollution now threatens the environmental, social, and economic aspects of sustainable development globally. To date, an estimated 140 million t of plastic is estimated to have accumulated in the environment, with approximately 8 million t entering the environment each year ([OECD 2022](#)). At the current rate of plastic production, the amount of plastic waste polluting nature is expected to almost triple by 2060 ([OECD 2022](#)). The largest market use of plastic is in packaging, accounting for nearly half of all plastic waste generated ([Defruyt 2019](#); [MacArthur et al. 2017](#); [Walther et al. 2020](#)). Single-use, takeaway plastic packaging represents 44 percent of the plastic waste entering the ocean ([Morales-Caselles et al. 2021](#)). Meanwhile, the life cycle of single-use plastic packaging remains predominantly linear, relying on economic models that ignore the externalities of waste ([Phelan et al. 2022](#); [Geyer et al. 2017](#); [Lebreton and Andrady 2019](#)).

To counteract this surge in plastic pollution, regulatory, private sector, and community initiatives are evolving. Public sector efforts are characterized by an array of national policies ([Karasik et al. 2022](#)). In 2022, building upon extensive public awareness campaigns,

the fifth session of the United Nations Environment Assembly (UNEA-5.2) adopted a resolution to develop an international, legally binding agreement on plastic pollution under the INC ([UNEP 2022](#)) (See box 3). In addition, the private sector participates in voluntary public initiatives such as the Ellen MacArthur Foundation's (EMF) New Plastic Economy Global Commitment, WWF's ReSource Footprint Tracker, the World Business Council for Sustainable Development's (WBCSD) Circular Plastics and Packaging project and Plastics & Packaging Working Group, and the Carbon Disclosure Project's environmental disclosure questionnaire ([EMF, n.d.](#); [WWF n.d.](#); [WBCSD n.d.](#); [CDP 2022](#)). Community initiatives are also springing up to address the immediate effects of plastic pollution through clean-up, awareness-raising, and plastic pollution reduction programs.

Plastic pollution presents significant challenges as it can persist in the environment for decades to hundreds of years, unless it is directly removed (Chamas et al., 2020). After removal (i.e., collection), plastic waste must be well-managed to ensure that it will not reenter the environment in the future. Further, the level of waste generated, the possible waste management options and their relative cost, will be influenced by the polymer type (e.g., PET, LDPE, PVC etc.), product or packaging application (e.g., tubs, bags, bottles, toys etc.) and location (e.g., existence of waste collection services and suitable disposal methods, extent of plastic waste in the environment). A significant amount of financing is required to address the 140 million t of plastic waste estimated to be present in the environment. The international trade of plastic complicates matters; approximately 50 percent of plastic polymers are traded

internationally, while more than a third of plastic packaging moves across borders (Charles 2021). The export of plastic waste from high-income countries to middle- and low-income countries amounted to 3.5 million t in 2016 (Pew 2020).

Plastic pollution is pervasive in Southeast and East Asian countries (Mathis et al. 2022). The global waste trade results in waste being imported from Europe and the United States into Southeast and East Asia. Coupled with rapid population growth, increasing rates of urbanization, high levels of plastic consumption, and insufficient waste management infrastructure for the scale of the challenge, these factors have increased the urgency of addressing plastic pollution within Southeast

Asian nations (World Bank 2022). Estimates show that 51 percent of global production comes from Asia (Plastics Europe 2020). Meanwhile, 81 percent of ocean plastics are emitted from countries in Asia, which is also home to 60 percent of the world's population (Meijer 2021; UN 2022). Annually, 31 million t of plastic waste is generated in Southeast Asia (WEF 2022). Without radical and transformative changes, such as introducing reduction policies, investing in local collection, and recycling infrastructure, and implementing material substitution, it will be difficult to alleviate the problem. Complementary solutions need to be developed in parallel to transform Southeast Asian nations from linear to circular economies.



## Measures and priorities to address plastic pollution in Southeast Asia

While there are technologies and solutions to reduce annual plastic pollution flows into the ocean by 80 percent by 2040, they require supporting regulatory frameworks, business models, and funding mechanisms ([Pew 2020](#)). Measures to address plastic pollution are being introduced at local, regional, and transnational levels across Southeast Asia. Prominent regulatory frameworks include the introduction of bans and levies on plastic as well as the development of EPR systems. These are being adopted at different rates across the region, with Indonesia and Vietnam leading the introduction of an EPR system for packaging. Indonesia, via its Ministry of Environment and Forestry (MoEF) regulation No. 75/2019, sets a target for a broad range of producers to reduce their packaging waste by 30 percent by 2029 through direct reduction, use of biodegradable substitutes, and reuse or recycling of packaging. Meanwhile, Vietnam established and enacted Decree No. 08/2022/ND-CD, providing a detailed rule for EPR ([Kenji 2022](#)). The Philippines soon followed suit, passing an EPR scheme into law in July 2022 ([3E 2022](#)). EPR frameworks are currently under consideration in Malaysia and Thailand, while Cambodia and Laos are in the process of formulating a comprehensive regulatory framework to combat plastic pollution.

A range of new funds, taxes, and levies have emerged in the past decade globally to target plastic pollution. Grant, debt, and equity financing opportunities can provide 1 to 5 years of financing to waste management projects and activities for a circular plastics economy.<sup>22</sup> Taxes, levies, and compulsory financial charges have proved successful in discouraging unwanted behavior or use of products, such as single-use plastic items. For example, taxes on single use plastic bags led to a

decrease in their consumption by 70 percent in Wales within the first three years of adoption (OECD 2020). In Spain, the introduction of a 450-euro tax per ton on non-recycled plastic packaging from January 2023 (EY Global 2023) transposes the European Union Directives (2018/851) on Waste Framework and Single Use Plastics (2019/904) into Spanish law. It aims to internalize the environmental costs related to the manufacturing and consumption of plastic packaging in the price of the final product. These policy initiatives can create an enabling environment to encourage the adoption of alternative measures, such as reuse or refill schemes, and redistribute finance towards them.

Nonetheless, there is still a significant finance gap in efforts to achieve a circular economy, with estimates of this investment gap ranging from USD 426–544 billion to USD 1.2 trillion by 2040 ([Kaplan 2022](#); [Circulate Initiative 2022](#)). There is an estimated financing gap of USD 28–40 per t for plastic waste collection services and a gap of USD 24–40 per t across plastic recycling value chains in Indonesia, the Philippines, Thailand, Vietnam, and China ([Lewis 2019](#)). Indonesia alone estimates that a total of USD 5.1 billion in investment is required to achieve the national target of reducing ocean plastic leakage by 70 percent between 2017 and 2025 ([Ocean Conservancy 2021](#)). The scale of finance and level of impact requires access to a range of fiscal and financing instruments.

Financing for the circular economy is needed for upstream initiatives (such as product redesign, and models for material innovation and reuse) and downstream activities that close the loop on plastic at its end-of-life phase, including collection, recycling, and disposal infrastructure. Most of the finance pledged for

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22 Examples include the Circulate Capital Ocean Fund, by the IFC and Circulate Capital, the Closed Loop Circular Plastics Fund by Closed Loop Partners, Plastics Innovation Fund by the Ministry for the Environment New Zealand) and the Circular Plastics Fund by Infinity Recycling.

circularity currently supports investments for improved waste management.<sup>23</sup>

Marginalized groups, including informal workers, play a significant role in the waste management sector, contributing to between 50 and 100 percent of waste management activities within many Global South cities (OECD 2023). However, informal workers are typically underpaid (Kwakwa and Garcia Mora 2021), exposed to unsafe working conditions, and lack access to healthcare

or social security (Velis 2017). The development of waste management solutions provides an opportunity to support informal-sector workers access to safe working conditions and secure incomes (UNEP 2022). Both mid- and late-stage small- and medium-sized enterprises (SMEs) in the plastic recycling value chain also struggle to access finance ([Ocean Conservancy 2021](#)). SMEs may benefit from a combination of derisked financing and technical assistance to scale ([Circulate Initiative 2022](#)).

## Plastic crediting as an emerging market mechanism

Among the solutions for counteracting plastic pollution, plastic crediting is an emerging results-based financing solution. Plastic credits are environmental certificates representing a defined unit of impact (e.g., plastic collection and management, recycling, or plastic avoidance).<sup>24</sup> The plastic crediting mechanism adopts a results-based approach where activities receive financing after delivering specific results. Plastic crediting provides a system for identifying and certifying the results of plastic pollution avoidance and reduction solutions (e.g., reducing consumption, increasing waste management, and recycling). Plastic credits can be purchased by organizations to financially support these initiatives. The revenue from the sale of plastic credits can be used by projects as an additional income stream that can help to make projects financially viable. This new market enables funding to support previously unfeasible plastic collection and recycling projects with quantifiable results ([Bryce 2022](#)). Plastic crediting provides an additional financing mechanism that could be used in the transition to a circular economy in conjunction with taxes, levies, and grants.



<sup>23</sup> For instance, the Alliance to End Plastic Waste (AEPW), one of the largest corporate-backed initiatives, has committed USD 1.5 billion over the next five years from 2019 to prevent and recover plastic waste (AEPW 2019).

<sup>24</sup> For the purposes of this report, the term 'plastic credit' is used to refer to the credit itself, while the term 'plastic crediting' is used to refer to the concept and mechanism of plastic crediting.

Given the early development of plastic crediting, approaches, standards, and definitions vary. Knowledge of the potential risks, challenges, transparency, and credibility issues associated with plastic crediting is limited. There is a need to review existing approaches and identify pathways to build robust governance frameworks. The characteristics of plastic pollution are diverse to the challenges addressed with existing environmental markets (e.g., carbon credits, biodiversity credits). The suitability of crediting approaches to address plastic pollution specifically also require attention. In particular, the relevance of plastic crediting to developing regulatory frameworks such as EPR schemes requires further assessment.

This report aims to explore the potential of a results-based plastic crediting mechanism in financing reductions in plastic pollution and the use of virgin plastics, while addressing plastic waste management. The report reviews the opportunities and risks associated with plastic crediting and explores the emerging link between plastic crediting and EPR schemes. Finally, the report provides recommendations on how to tackle the challenges, mitigate the risks, and consequently harness the plastic crediting mechanism to promote plastic reduction solutions.





## 2. HOW DO PLASTIC CREDITS WORK?

Plastic credits are a form of results-based finance. The plastic crediting mechanism provides methods for identifying and certifying plastic avoidance and reduction activities. These activities can be financially supported by the public and private sectors through the purchase of a plastic credit. The plastic crediting mechanism is

a potential catalyst for facilitating the scaling up of, and filling the gaps in, necessary infrastructure for the circular economy, while also supporting community development. This section presents a working definition of plastic credits, explains how plastic crediting works, and identifies key stakeholder groups involved.

### 2.1. Definition of a plastic credit

There is no universally accepted definition of a plastic credit. Current definitions vary in scope, terminology, and units of measurement between plastic crediting programs. The following definition from the WWF provides a starting point:

“Conceptually, a plastic credit is a transferable unit representing a specific quantity of plastic that has been collected and possibly recycled from the environment.” (WWF 2021)

Theoretically, plastic credits can also be applied to upstream interventions (see table 2). For the purposes of this report, the following working definition of a plastic credit is applied:

“A plastic credit is a transferable unit representing a specific quantity of plastic that is avoided from use, collected and managed, or recycled.”

A ‘transferable unit’ refers to the result of a project activity (e.g., plastic collection and management, recycling, or avoidance) captured in a predetermined metric (e.g., kilograms (kg) or t). This transferable unit encapsulates the environmental benefit of the project activity and can be issued by one party and attributed to another through a transaction chain. Each time the unit passes from one party to another, the right to claim the specific result passes with it. Through this transferable unit, projects can sell the right to claim the environmental benefit to third parties.

## 2.2 Types of plastic credit

There are two main types of plastic credit based on the targeted underlying plastic reduction activities: plastic credits targeting upstream activities and those targeting downstream activities of the plastic value chain (see table 2). Plastic credits for upstream activities that reduce the use of virgin plastics are still in the early conceptual stage. One pilot has been carried out by rePurpose Global in India (see box 2). The majority of the plastic credits that exist are for downstream activities. They can be further classified under three subtypes: i) reducing plastic in nature; ii) landfill diversion; and iii) recycling. The first subtype of downstream credit represents activities that directly remove plastic from

the environment (e.g., coastal cleanups), or avoid plastic entering the environment through collection programs (e.g., household collections). This activity type must demonstrate that the plastic waste is managed in a way that it will not reenter the environment (e.g., in a managed landfill, through coprocessing or recycling). The second subtype of downstream credit represents activities that divert plastic waste from landfill to either coprocessing or incineration with energy recovery. The second subtype reflects a change in the end-of-life disposal and does not represent increased plastic waste collection and management or recycling. The third subtype targets activities that increase plastic waste recycling.

**TABLE 2:** Overview of plastic credit types

Main type	Upstream	Downstream		
Sub-type	Avoidance / Innovation	Collection and management	Landfill diversion	Recycling
Goal	Reduce plastic use	Reduce plastic waste in nature	Reduce plastic waste in landfill	Increase recycling of plastic waste
Possible activities	Eliminate or redesign packaging, reuse/refill systems, alternative materials (box 2)	Environmental cleanup activities, household collection and management of collected plastic	Recovery of plastic waste from waste dumps or landfills and management through coprocessing or recycling	Mechanical or chemical recycling (e.g., processing plastic waste into secondary raw material)
Stage	Conceptual	Operational		

Source: South Pole, 2022

All plastic credits currently consider all plastic types (e.g., PET, HDPE, PVC etc.) and applications (e.g., films, tubs, bottles etc.) to have equal weight when estimating the number of plastic credits from a project. However, the impact of plastic waste, and the cost to address it, varies with polymer type, application and location.<sup>25</sup> The introduction of a conversion factor that enables weighting per polymer type or application is under consideration. Plastic crediting programs currently monitor the specific features of plastic waste differently. For example, some programs require monitoring by

polymer type (e.g., PET, PP etc.), while others provide specific subcategories (e.g., flexible or rigid plastics, 'shoreline' or 'potential' ocean bound plastic waste).

Plastic credits currently target at the management of macro-plastics. There is no plastic credit type that specifically addresses micro-plastics (i.e., removal, reduction, or prevention of microplastics from the environment) due to absence of methodologies and high costs.

## 2.3 How are plastic credits issued and purchased?

Projects that address plastic waste avoidance or reduction may choose to issue plastic credits as an additional finance stream. Plastic credits are issued on plastic waste avoidance or reduction activities that have already occurred. Plastic credits can currently be issued directly by a plastic project (i.e., self-issued credits) or under third-party crediting standards. Projects that use third-party standards undergo a certification process to issue the plastic credit (see section 3.1). Third-party standards typically set a time limit known as the 'crediting period,' during which projects registered under the standard are eligible to issue plastic credits (e.g., one year, seven years). This process is considered to have greater transparency and credibility than self-issued plastic credits.

The plastic credit is then available for purchase by third parties. Public or private organizations can purchase plastic credits to financially support activities that reduce or avoid plastic waste and are outside their direct control. The credit buyer can choose to either resell the plastic credit or 'retire'<sup>26</sup> it from further use. After retiring a plastic credit, the buyer can make a claim on the environmental

benefit financed through the credit. In some cases, prepayments can be made for plastic credits (e.g., when upfront investment is needed to finance the credited activities), or demand is confirmed before the credit is issued and sold.

Plastic credits act as an additional form of revenue for projects that address plastic pollution. To avoid double counting of the same result, any claims on the results of the credited activity (e.g., the volume of plastic reduced, collected, and managed, or recycled) are separated from the physical plastic material. For example, a project collecting and managing plastic waste could sell the right to claim the volumes collected through a credit and sell the physical plastic material without any such claim to another buyer. A clear distinction between the environmental claim and the physical material is needed to ensure that the same impact is not sold twice. The revenue from the credit sale is then channeled to the project, either directly by the buyer or through an intermediary, such as the crediting standard setter or credit seller (see section 2.4 on stakeholder groups).

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<sup>25</sup> For example, rigid PET bottles may have a higher value in some recycling markets, and therefore the level of investment and finance required per ton may be low. Comparatively, the level of investment and effort required to collect and recycle flexible LDPE films will be significantly higher due to its lightweight, low value, and lack of recycling infrastructure.

<sup>26</sup> 'Retiring' a credit refers to the action of permanently removing a credit from use. Plastic credits can only be retired once. After being retired, a plastic credit can no longer be transferred to other parties.

Buyers of plastic credits can include private sector organizations, foundations, and philanthropists that wish to finance the plastic waste reduction activity and contribute to pollution reduction. The buyer may also choose to make specific claims around the activity, e.g.,

relating to the amount of plastic collected, recycled, or avoided being used (see section 3.1, table 4 on example claims). See box 1 for an example of a plastic crediting program.

### **BOX 1: Financing Waste Collection and Recycling in Thailand through Waste Credits**

Second Life is a social enterprise in Thailand. The project seeks to remove plastic waste from the environment and invest in the development of recycling solutions. Plastic credits are based on the results of the plastic waste collection and recycling activities it undertakes. The credited activities involve plastic waste collection from multiple sources and locations in Thailand, such as Ranong, Krabi and Chiang Mai. The plastic waste is collected by both informal marginalized and formal waste workers who receive above-market rates for removing waste that would otherwise remain in the environment.

Second Life was the first plastic project to complete registration under the Verra Plastic Waste Reduction Standard, in 2022. Second Life acted as the Project Developer. The project has issued 4,195 plastic credits as of January 2024 (Verra Registry). Plastic credit retirements are visible on the Verra registry. By purchasing plastic credits, producers can contribute to plastic waste collection and recycling in Thailand. Plastic credits can also be used as a voluntary tool to support brand marketing.

## 2.4 Key stakeholder groups

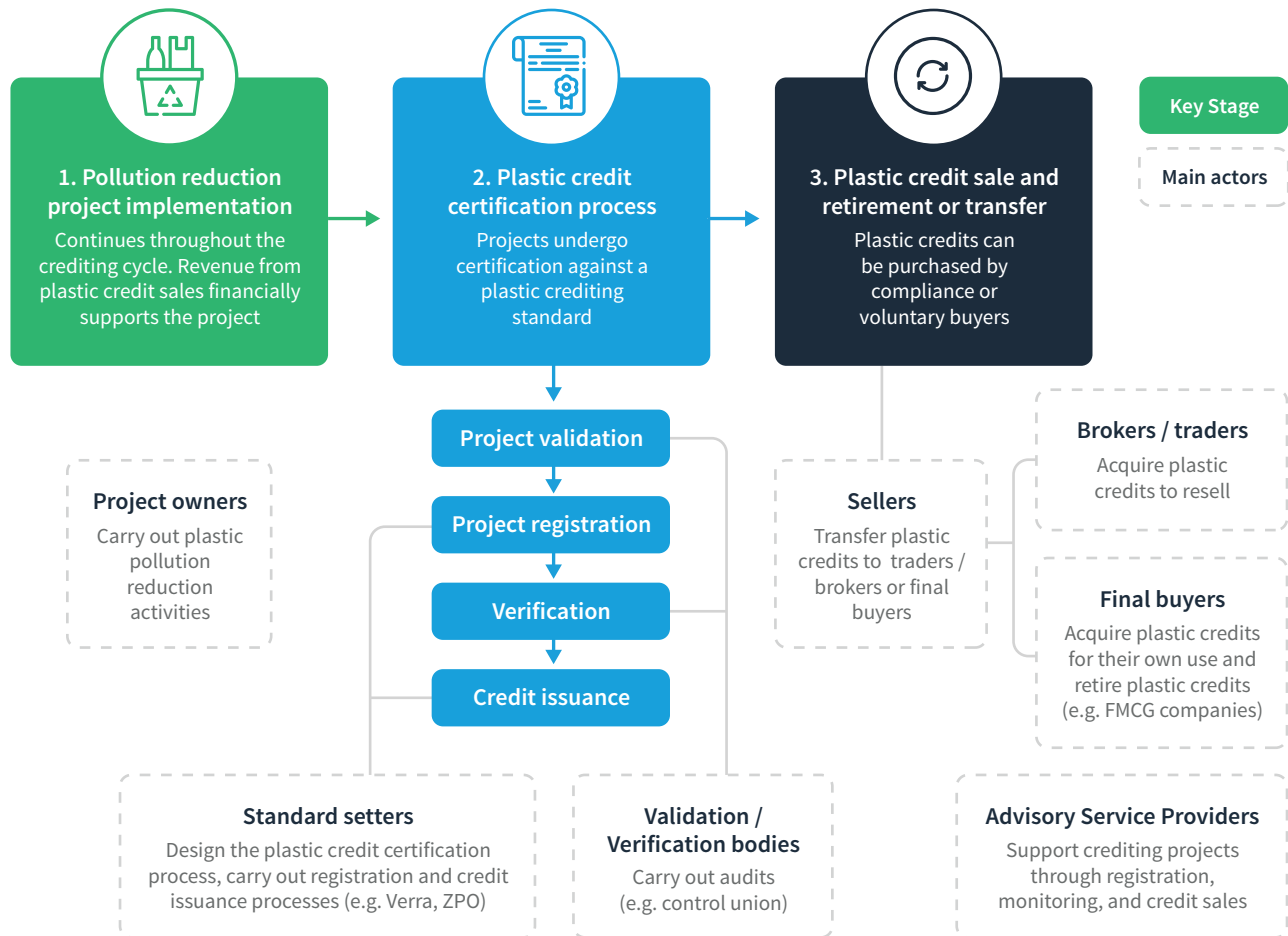
Currently, six key stakeholder groups are involved in the issuance, sale, and use of environmental credits: project implementers, crediting standard setters, validation/verification bodies (VVBs), advisory service providers, sellers, and buyers.

At this early stage of the plastic credit market, several actors are adopting multiple roles in parallel ([Circulate Initiative 2021](#)). For example, some crediting

standard setters are simultaneously involved in project development, certification, validation, and verification, as well as credit sales. Overlapping roles have created confusion in the operation of the plastic credit market.

These key stakeholder groups should be engaged throughout the future development of plastic credits. The key stakeholders and their interaction with the plastic crediting cycle are demonstrated in figure 4.

**FIGURE 4:** Key Stakeholders Involved in the Plastic Credit Process



Source: South Pole 2022.

## 2.5 Plastic Credit Market Governance and Best Practices

There is currently no universal governance system or regulatory body to oversee the development of plastic crediting programs, standards, or the use of plastic credits. Several plastic crediting programs exist, each with its own approaches, definitions, rules, and processes. Some programs include only independent

crediting standards and methods, while others provide end-to-end services (see section 3.1). Countries with national policies that include plastic crediting as a tool for compliance may set their own rules around eligible project activities and the crediting process (see section 3.3 on EPR and plastic crediting).

## Best-practice principles for plastic crediting programs

Given the variation in current approaches to plastic crediting, civil society organizations, such as the Circulate Initiative, have developed ‘Best Practices to Ensure Impact’ for certification programs, including crediting programs (figure 5). The Circulate Initiative calls for

programs to follow ISEAL Codes of Good Practice<sup>27</sup> and integrate transparency into their crediting programs in order to establish a reliable plastic crediting system (Circulate Initiative 2021).

**FIGURE 5:** Best Practices for Certification Programs to Ensure Impact

### Circulate initiative



Source: Circulate Initiative 2021.

27 ISEAL Codes of Good Practice provide a globally recognized framework for effective and credible sustainability systems. It is considered best practice for programs seeking to make a positive impact.

## Best-practice principles for plastic credit purchases

The 3R Initiative has also developed best-practice guidelines on how companies should seek to purchase and account for plastic credits (figure 6). The guidelines

recommend that claims around the use of plastic credits are based on the credit type and the project activity supported.

**FIGURE 6:** Key Principles for Plastic Credits

### 3R Initiative



**Real**

Project activities and plastic waste managed must be proven to have genuinely existed



**Unique**

Each plastic credit must be unique and assigned to one activity. No double counting of results or double claiming



**Measurable results**

Quantifiable activity using recognised measurement tools against credible baseline



**Transparent**

Public disclosure of information related to the project activity for informed decision-making



**Independently audited**

Project activity must be verified by an accredited body with relevant expertise



**Conservative**

Conservative assumptions, values and procedures must be used to ensure results are not overestimated

Source: 3RI 2021.





## 3. OVERVIEW OF THE PLASTIC CREDIT MARKET

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The concept of connecting private sector finance to waste management services through the exchange of certificates first emerged in Brazil in 2013 in the form of a reverse logistics mechanism. The mechanism enabled private sector companies to meet their compliance requirements for waste management by financing independent waste pickers known as Catadores to manage the ‘reverse logistics’ (e.g., collection and management or recycling) of their products.<sup>28</sup> The concept of plastic crediting progressed with the establishment of voluntary plastic crediting programs (e.g., rePurpose Global plastic neutral program, PCX

Solutions plastic neutrality program, Waste4Change) in the Asia-Pacific region from 2015, creating a mechanism for organizations to fund solutions to plastic pollution. In 2020 and 2021, the first official plastic crediting programs emerged (e.g., PCX Solutions PPRS, Verra Plastic Waste Reduction Program, Zero Plastic Oceans’ Ocean Bound Plastic Neutralization Program) to provide rules and accounting methodologies for plastic waste management projects to issue plastic credits. This section explores the current level of use of plastic credits and areas of development.

### 3.1. State of the current plastic credit market

#### Existing plastic crediting programs

The plastic credit market currently includes a range of crediting programs and credit-style initiatives that enable voluntary buyers to finance plastic pollution solutions. These level of transparency and approach to accounting varies among programs, from highly independent plastic credit programs that provide standards and crediting registries only, to credit-style initiatives that operate without project standards and are involved in multiple parts of the plastic crediting cycle (e.g., project implementation, project certification, and sales). The differences between programs are not widely understood and most credit programs likely appear the same to end-buyers.

For the purposes of this study, programs are classified under three main categories: 1) independent programs with independent standards and methods, 2) programs that include standards and may take the role of multiple stakeholder groups, and 3) other programs financing plastic pollution reduction that do not fall under categories 1 or 2. This classification seeks to highlight criteria for the development and governance of the plastic crediting programs. Table 3 presents an overview of existing programs within these categories based on publicly available information in January 2024.<sup>29</sup>

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28 The reverse logistics system operates as an instrument for companies to finance waste collection, also known as ‘reverse logistics services’ through payments per metric ton of waste collected. The system was developed to facilitate compliance with an obligation of reverse logistics which required producers or importers in certain sectors to ensure the products they sold were collected and disposed of responsibly. More information available [here](#).

29 This categorization does not reflect the ambition of programs, or integrity of the specific standards and methods developed by each program. The plastic credit market continues to evolve quickly, and programs are likely to continuously improve and adjust their operational procedures.

The first category, independent programs with public standards and methods, includes plastic crediting programs that provide standards that are consistently available to the public and that provide clear accounting methodologies through which plastic credits are calculated. The programs in this group are fully independent from the implementation, development, and sales of plastic credits; they are not engaged in project auditing, footprint measurement, or credit marketplaces. Such programs are considered to have the highest level of transparency because they have publicly available standards, methodologies, and project registries and require projects to undergo third-party verification at defined periods. These programs host credit registries that are open to the public and display project ID and serial number; quantity of credits issued and retired, retirement date, and reference period (e.g., month or year) at minimum. The standards in this group are developed with public and expert consultation, align with ISEAL best practices, and strive for continuous improvement. These programs often operate on a specific project cycle (e.g., one, seven, or 10 years), requiring projects to be reassessed at specific intervals. The GreenBlue Recycled Material Standard (RMS), Verra Plastic Waste Reduction Standard (PWRS) and Zero Plastic Oceans Ocean-Bound Plastic Neutralization Certification (OBP CN) (see table 3 for examples of programs in this category).

The second category refers to plastic crediting programs with public standards or methodologies and cover multiple roles in the value chain. The programs in this category require third-party verification of plastic credits as standard practice. They do not meet the same level of independence and transparency as programs

in category 1. For example, programs in this category may host credit retirements on a public registry without displaying credit issuances and retirements per projects, or they may be directly involved in project implementation, or credit sale transactions within the last three fiscal years. The standards in this group are developed with public and expert consultation, align with ISEAL principles, and strive for continuous improvement.<sup>30</sup>

The third group refers to programs that enable third parties to finance plastic pollution reduction activities through alternative methods that set a price per kg or t of plastic waste managed. These programs offer credit-like alternatives, such as direct payments for waste management services or blockchain-enabled transactions. The results of the activity are sold to a buyer as a results-based purchase (e.g., sponsorship for a defined weight (kg) of plastic waste collection and management). These solutions may be marketed as a 'credit' to buyers or given an alternative name (e.g., offsets, certificates, contributions, verified units). These programs are likely to set their own guidelines without a crediting standard or methodology. They also apply their own monitoring methods (e.g., through traceability platforms), can hold multiple roles (e.g., project implementation, result measurement and verification, and sales transactions), and follow their own payment processes. Programs in this category act as project developers for their own projects, applying either their own guidelines, or standards from programs under category 1 or 2. These programs tend to focus on specific project types (e.g., collection and management of multilayer plastics, or indigenous community projects) or on locations where they are based.

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30 For example, at the time of writing PCX solutions is reviewing its PPRS (version 8) and developing its own public project registry.

**TABLE 3:** Plastic Crediting Program Categories

Characteristics	Program Categories		
	1. Fully independent and transparent crediting programs	2. Programs with public standard or methodology and multiple roles in value chain	3. Other programs financing plastic pollution reduction
Program applies a crediting standard and methodology.	● Yes	● Yes	● Varies by program
Crediting standard and methodology are publicly available.	● Yes	● Yes	● No
Projects are listed on a public registry, including at minimum project ID or name; quantity of credits issued; serial number; quantity of credits retired; retirement date; and reference period (e.g., vintage month or year).	● Yes	● Varies by program <sup>31</sup>	● No
The program standard can be applied by third party project developers	● Yes	● Yes	● No
Third-party verification is standard practice.	● Yes	● Yes	● No
Crediting program aligns with ISEAL principles.	● Yes	● Yes	● Varies by program

31 The OBP and CAH host a project registry that includes credit project name, serial number, quantity of credits issued, issuance date, and supporting documents. Projects applying the PPRS are hosted on PCX Markets (a marketplace managed separately since 2022) and are listed without details on credit issuance, volumes, or vintage periods. Credit purchases and retirements for these programs are listed on a separate purchase or retirement registry displaying purchaser name, project name, serial number, project standard applied, and option to view supporting documents. The OBP registry refers to 'retirement blocks' instead of specific volumes retired.

Characteristics	Program Categories		
	1. Fully independent and transparent crediting programs	2. Programs with public standard or methodology and multiple roles in value chain	3. Other programs financing plastic pollution reduction
The program is independent from project implementation for at least five fiscal years.	● Yes	● Varies by program <sup>32</sup>	● Varies by program
The program is independent from the sales of credits (incl. financially, legally, and operationally) for at least five fiscal years.	● Yes	● Varies by program <sup>33</sup>	● Varies by program
The program or affiliated organizations are independent from project developers and/or auditors.	● Yes	● Yes	● Varies by program
Program owners provide advisory support for buyers (e.g., footprint calculation and claims).	● Varies by program <sup>34</sup>	● Varies by program <sup>35</sup>	● Varies by program
Programs are developed with multistakeholder input, including expert and public consultation.	● Yes	● Yes	● Varies by program

32 As of January 2024, BVRio co-implements projects with informal workers.

33 PCX Solutions, a not-for-profit organization that manages the PPRS, operates as a separate financial and legal entity to PCX Markets, which handles plastic credit sales. The two organizations share an origin story and separated financially and legally from 2020-2021.

34 ZPO operates a Producers and Users Standard for buyers of OBP credits. Buyers can apply to a OBP Neutralization certificate, which must be audited by an independent third party.

35 As of January 2024, PCX Solutions offers advisory services (e.g., footprint measurement) to buyers and acts as a Producer Responsibility Organization (PRO) under EPR law in the Philippines (e.g., providing guidance to obligated entities on footprint measurement and strategies to achieve compliance targets).

<b>Program Categories</b>			
<b>Characteristics</b>	<b>1. Fully independent and transparent crediting programs</b>	<b>2. Programs with public standard or methodology and multiple roles in value chain</b>	<b>3. Other programs financing plastic pollution reduction</b>
<b>Examples</b>	Recycled Material Standard (RMS), <sup>36</sup> Verra Plastic Waste Reduction Program <sup>37</sup> OBP Neutralization Certification <sup>38</sup>	BVRio Circular Action Hub (CAH) CCM, <sup>39</sup> PCX Solutions PPRS <sup>40</sup>	CleanHub, <sup>41</sup> Plastic Bank <sup>42</sup> Plastics for Change <sup>43</sup> rePurpose Global Verified Plastic Recovery Protocol, <sup>44</sup> Waste4Change <sup>45</sup>

Source: South Pole 2024.

All crediting programs include credits from plastic waste. One program (BVRio’s CAH) can also be applied to other material types (e.g., cardboard, glass). The RMS and the OBP Neutralization Certification apply only to specific project activities involving recycling and collection from “ocean-bound”<sup>46</sup> areas. Two programs specifically address environmental and social aspects (Verra PWRS and OBP Neutralization Certification), while all include some form of environmental and social safeguards (ValudCred 2021b). Crediting programs currently adopt either kg or t as the unit of measurement for a plastic

credit. In addition to project standards, some crediting programs provide certification standards for buyers seeking to make compensation claims. For example, two programs (Verra and OBP) refer to the Corporate Guidelines from the 3R Initiative (see figure 3). Other programs provide advice on possible claims, including footprint measurement and confirmation of achieving claims. Some plastic credit programs enable small projects to be grouped within the same country to generate credits together.

36 RMS (available [here](#)).

37 Verra PWRS (available [here](#)).

38 OBP Certification Program (available [here](#)).

39 CAH (available [here](#)). The Circular Credits Mechanism covers all recyclable materials, not only plastics.

40 PCX Solutions PPRS (available [here](#)). PCX Solutions governs the Program’s Standard (PPRS) only. PCX Markets hosts the credit registry for projects under the PPRS. The Marketplace also hosts projects from other credit standards and provides a plastic footprint calculator with third-party auditing services for plastic credit buyers. PCX Solutions and PCX Markets share a common origin; however, both organizations are managed separately since 2021.

41 CleanHub (available [here](#)).

42 Plastic Bank (available [here](#)).

43 Plastics for Change (available [here](#)).

44 rePurpose Global (available [here](#)).

45 Waste4Change (available [here](#)).

46 “Ocean-bound” areas are defined as being within 50 km of the nearest coastline (see full definitions [here](#)).

## Geographical distribution of plastic crediting programs

Plastic crediting programs are spread around the world; Australia (Plastic Collective), the Philippines (PCX Solutions), France (OBP), Brazil (BVRio), and the USA (Verra, GreenBlue, and rePurpose Global). Early development of certificates for waste management services emerged in 2013 with the reverse logistics crediting mechanism in Brazil. The increasing visibility of plastic waste in Asia, coupled with innovation

ecosystems and lack of public waste management infrastructure, sparked the first voluntary plastic crediting programs in the region. Plastic crediting programs were developed in India, Indonesia, the Philippines, and Australia by organizations seeking access to private sector financing for waste management from both national and international buyers.

## Geographical distribution of plastic credit projects

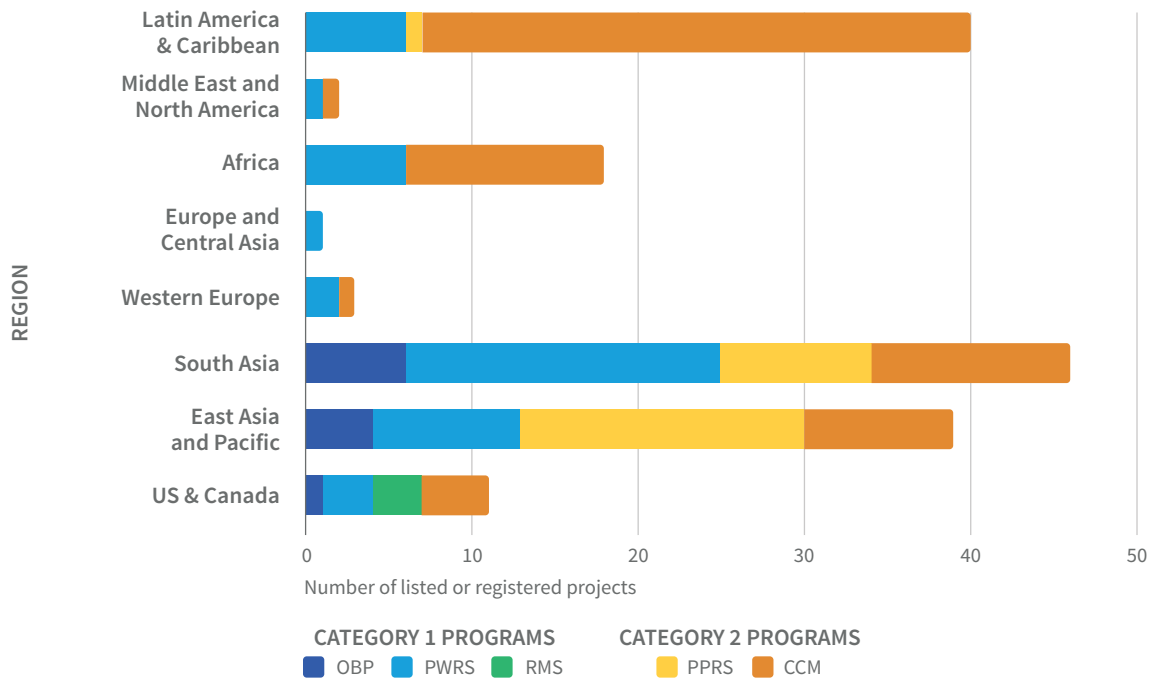
Plastic crediting programs do not place limits on the geographical region of plastic crediting projects; projects that meet defined eligibility criteria in the program's standards can apply. Some programs that historically focused on the country where they were headquartered (e.g., PCX Solutions PPRS in the Philippines) now include projects from other countries.

Two out of the five crediting programs (PPRS and CCM) were launched in 2020 and three programs (RMS, OBP and PWRS) were launched in 2021.

Approximately 160 projects are listed on project registries under category 1 and 2 programs (registered and preregistration, see figure 7); 61 are listed under category 1 only. The PWRS is the crediting standard under category 1 with the most listed projects. The CCM is the crediting standard with the most listed projects across programs in categories 1 and 2. Together, East Asia and the Pacific and South Asia host the highest number of projects (85 projects, 53 percent), followed by Latin America (41 projects, 25 percent) and Africa (18 projects, 11 percent).



**FIGURE 7:** Distribution of Registered and Listed Plastic Credit Projects across Programs and Regions



Source: [Verra n.d.](#); [OBP, n.d.](#); [BVRio n.d.](#); [PCX n.d.](#); [RMS n.d.](#)<sup>47</sup>

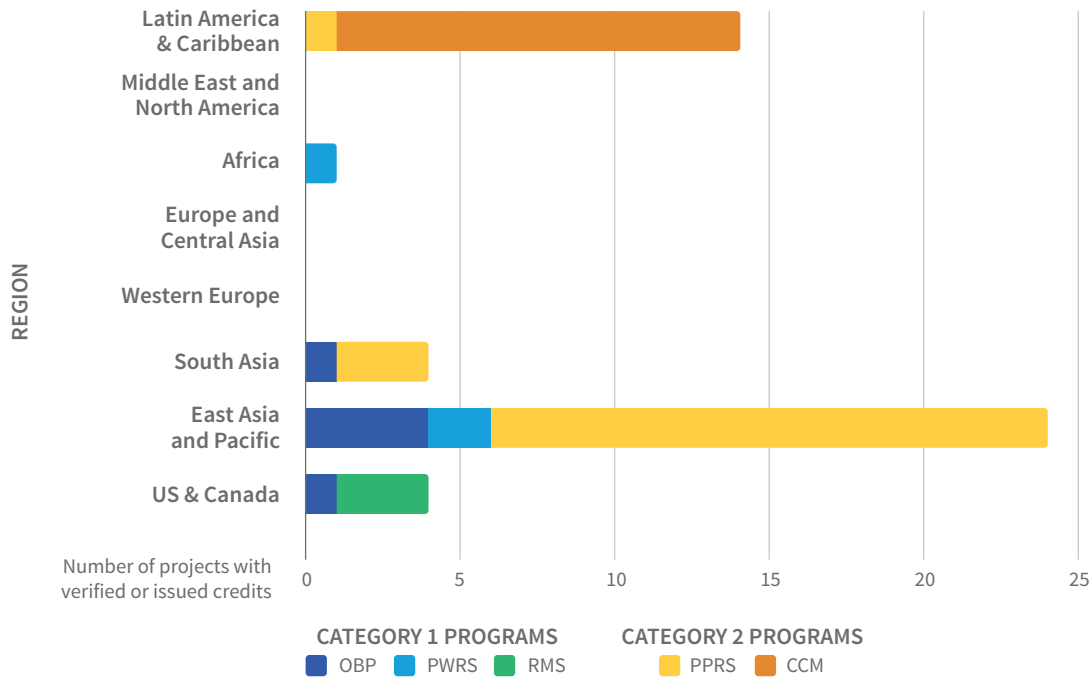
The presence of plastic credit projects in East Asia and the Pacific and South Asia reflects increasing global awareness of the region’s plastic waste challenge and an increasing level of financing needed by projects led by diverse private actors. For example, a series of studies in 2015–2021 identified rivers and coastal areas in Asian countries to be major entry points for marine plastics globally, with an estimated 81 percent of marine plastics being emitted from Asian countries (Jambeck et al. 2015; Lebreton 2017; Schmidt 2017; Meijer 2021). Among these, Indonesia, India, and the Philippines are considered high-priority countries with a high risk

of plastic leakage (Jambeck et al. 2015). See annex V for more information on plastic crediting in Southeast Asian countries.

The plastic credit projects are concentrated in developing countries. It may reflect the project actors’ motivation to access alternative financing mechanisms and the plastic pollution. Plastic credit projects with issued credits are predominantly located in East Asia and the Pacific (see figure 8). This reflects the early development of plastic crediting programs in the region.

47 This includes the projects pending registration or registered that are listed on the public plastic credit registries until December 2023.

**FIGURE 8:** Distribution of Plastic Credit Projects with Verified or Issued Credits across Programs and Regions



Source: [Verra n.d.](#); [OBP, n.d.](#); [BVRio n.d.](#); [PCX n.d.](#); [RMS n.d.](#)<sup>48</sup>

As of December 2023, 11,584 credits have been issued under category 1 programs, and 64,081 credits under category 2 programs (75,665 credits in total).<sup>48</sup>

## Types of plastic credits offered by crediting programs

Plastic credits are currently targeted at downstream plastic waste reduction activities and can be categorized into three types: 1) reduce plastic pollution in nature, 2) divert plastic waste from landfill, and 3) recycle plastic waste (see table 4). The most common plastic credit type is for activities that reduce plastic waste in nature and ensure the plastic waste will not reenter the environment. Waste Collection Credit (PWRS), OBP credit

(OBP), collection credit (PPRS), Circular Credit (CCM) and Plastic waste removal credit are examples of this credit type. For collection credits, the crediting standards under categories 1 and 2 set specific requirements for projects to demonstrate that the collected plastic waste should be delivered to an appropriate end destination and properly managed. The landfill diversion credit (PPRS) is currently the only example of a credit type for activities that divert

<sup>48</sup> Data included from crediting programs OBP, PWRS, RMS, CCM from December 2023. Data included from the crediting program PPRS from May 2023. Credits that have been verified and/or issued are included due to different processes (e.g., not all programs use 'issuance' language).



plastic waste from mismanaged landfill to an energy recovery process. The Waste Recycling Credit (PWRS) and Attribute of Recycled Content (ARC) represent the third

plastic credit type applying to activities that increase plastic waste recycling.

**TABLE 4:** Credit Types across Plastic Crediting Programs

Plastic crediting program	Credit type			
	Upstream		Downstream	
	Avoidance / Innovation	Reduce plastic waste in nature	Landfill diversion	Plastic recycling
<b>ARC (BlueGreen)</b>	–	–	–	Attribute of recycled content
<b>Circular Credit Mechanism (BVRio)</b>	–	Circular Credit <sup>49</sup>	–	–
<b>OBP (ZPO)</b>	–	Ocean Bound Plastic Credit	–	–
<b>PPRS (PCX Solutions)</b>	Avoidance credit (under review); Innovation credit (early design); Alternative credit (early design)	Collection Credit	Landfill diversion	Recycling Credit
<b>PWRS (Verra)</b>	–	Waste collection credit	–	Recycling Credit

Source: South Pole 2022.

Together, these credit types cover a range of benefits, including the collection and management of plastic waste, formalization, and improvement of working conditions for

the informal sector,<sup>50</sup> establishing household collection services, and increasing sorting for recycling.

<sup>49</sup> The Circular Credit can be applicable to all recyclable material, not only plastic.

<sup>50</sup> The Circular Credit includes automatic additionality for projects run by informal workers. The number of plastic credits is measured by the weight of plastic collected and managed without a baseline assessment.

Plastic crediting for upstream activities is still at an early conceptual stage. Two programs started exploring plastic crediting for upstream measures to reduce plastic use and pollution. The “Avoidance” credit is included in the PPRS by PCX Solutions. The “Upstream Innovation” credit was piloted by rePurpose Global in

2021 for a project using alternative materials like natural banana fibers to replace plastic materials (see details in box 2). No plastic credits have been issued for upstream activities. Significant work is required to develop robust methodologies for upstream activities.

## **BOX 2:** Plastic Credits for Upstream Activities

Upstream solutions can include activities that avoid or reduce the use of plastic through alternative materials, the elimination of plastic packaging, or the introduction of reuse and refill systems. Many upstream solutions operate in niche markets and cannot compete with plastics in price. Upstream solutions rely on markets with a lower price sensitivity. Furthermore, most avoidance project activities that aim to reduce plastic consumption require separate infrastructure, such as the segregation of biodegradable materials, composting schemes, and logistics for reuse and refilling. Introducing a crediting system for such project types could help to overcome financial barriers to their adoption through increased diffusion in the market.

Plastic crediting could provide a new mechanism to financially support these initiatives. However, the concept of plastic crediting for upstream activities that reduce plastic use and pollution remains theoretical. To date, only one concept pilot has been conducted (see below). Upstream activities are based on the estimated avoidance of plastic use. Both crediting programs that include an upstream credit type noted challenges in calculating the expected results of an upstream project. Accordingly, significant piloting and testing is required to enable the development of a robust methodology for upstream activities.

### **PLASTIC INNOVATION CREDITS (REPURPOSE GLOBAL)**

In 2020-2021, rePurpose Global conducted a pilot program in peri-urban India to test the concept of an upstream innovation credit from a project that substitutes petroleum-based plastic in sanitary pads with natural banana fibers. The project collaborated with Saathi Eco Innovations, sponsored by Dalberg Advisors, to address challenges related to menstrual waste and the limited financial support for biodegradable substitutes. The pilot program focused on menstrual hygiene management programs, providing education on safe menstrual practices, along with subsidized biodegradable sanitary pads made from banana- and bamboo-based materials.

The upstream innovation credit aimed to provide a new revenue stream for projects using alternative materials to reduce virgin plastic, thus reducing the price of these alternative solutions. A total of 472 kg of plastic was avoided by replacing synthetic plastic-based female sanitary pads with biodegradable

and plastic-free sanitary napkins during the pilot. The pilot project applied a mass-based calculation methodology and identified the need for further piloting to support the development of methodologies that can reliably calculate the results of a range of possible upstream interventions. The pilot also highlighted the potential for reuse/refill models with sound traceability compared to substitution models, which are more challenging to track and trace (rePurpose 2023). rePurpose Global acts as the project developer for projects, applying their internal guidelines (the Verified Plastic Recovery Protocol), supporting documentation preparation, and assisting with reviews. The pilot concluded that standards and frameworks are needed for this credit type, and that future pilots should explore reuse and refill models, leading to the launch of the Reuse Outcomes Fund.<sup>51</sup>

## PLASTIC AVOIDANCE CREDIT (PCX SOLUTIONS)

Version 7 of the PPRS by PCX Solutions introduced the framework for a new credit type: the Plastic Avoidance Credit. This credit is designed for projects that provide a solution for consumers to ‘opt out’ of plastics through refill services.

Plastic avoidance credits under the PPRS are measured in metric tons and are calculated using the direct output of the project. For example, an avoidance credit from a water refilling station is quantified based on the total volume of water delivered to the market. The corresponding credit is calculated based on the weight and type of plastic that would be used without the refill service (e.g., the weight of polyethylene terephthalate [PET] plastic bottles needed to provide an equivalent amount of water). This conversion rate is referred to as the “plastic avoidance conversion factor.” This factor must follow the national packaging standards in the country of operation and is mutually agreed upon at the accreditation stage, providing an opportunity for the plastic program to review the methods and calculations used by the project ([PCX 2022](#)).

PCX Solutions has not had a project that applies this credit type. The organization paused application of the Avoidance credit until proper mechanisms are in place to design and govern this credit type.<sup>52</sup> PCX Solutions is exploring two new credit types that will undergo a peer review process in 2024; a plastic innovation credit for the research and development of solutions that reduce virgin and single-use plastic production and improve recyclability, and a plastic alternative credit, to incentivize the use of market ready plastic alternatives.

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51 <https://repurpose.global/reuse-outcomes-fund>

52 See for example, “Guidance note: avoidance” in the PPRS version 7 (available [here](#)).

## Claims associated with plastic credits

Buyers of plastic credits are currently able to apply a range of claims when purchasing and using plastic credits (see table 5). The perceived credibility of claims varies, creating uncertainty among buyers around the benefits

of purchasing plastic credits.<sup>53</sup> Claims are often made in relation to the use of plastic credits for compensation of a plastic footprint.<sup>54</sup>

**TABLE 5:** Summary of Claims and Associated Results

Claim	Requirement	Associated results
Plastic neutral	Plastic credits equivalent to the total plastic footprint in a given year are purchased.	The impact of plastic use is considered neutralized.
OBP neutral	OBP plastic credits equivalent to the total plastic footprint in a given year are purchased.	The impact of plastic waste entering the ocean is considered neutralized.
‘Net Zero Plastic to Nature’	Plastic collection credits equivalent to the portion of the footprint not currently collected and well managed in a given year are purchased.	The use of ‘net’ implies that the impact of plastic entering the environment is mitigated, not canceled.
Net 100% Recycled at End of Life	Plastic recycling credits equivalent to the portion of the footprint not currently collected and recycled in a year are purchased.	The use of ‘net’ implies that the impact of plastic not being recycled is mitigated, not canceled.

Source: WWF 2021; Zero Plastic Oceans n.d.; 3RI 2021.

The most popular claim to date is ‘plastic neutral,’ implying that the impact of using plastic is neutralized through the purchase of plastic credits. Plastic neutrality is based on the concept of carbon neutrality. Plastic credits are often used interchangeably with the term ‘plastic offsets,’ perpetuating the idea that it is possible to neutralize a plastic footprint. Plastic pollution

presents unique challenges that are not comparable to the management of greenhouse gasses. For example, the impact and cost to remedy plastic pollution varies by plastic type, application and location of the pollution. Given the physical presence of plastic, removing 1 t from one location does not remove the same plastic items that the buyer used from the environment. Therefore,

<sup>53</sup> Insights from interviews and Focus Group Discussions with Project Owners, Crediting Standards, Sellers and prospective Buyers.

<sup>54</sup> A plastic footprint is defined by the Plastic Footprint Network as “the assessment of the effect that plastic leakage associated with a product / company / activity / country has on the environment and human health” (available [here](#)).

the plastic used by the credit buyer may remain in the environment, even when an equivalent weight is addressed through a purchase of plastic credits. There is now general agreement among stakeholders, particularly NGOs, that plastic neutrality can be misleading to consumers and the concept of ‘offsetting’, where an impact is considered to be neutralized through purchase of certificates, may not be applicable for plastic pollution.<sup>55</sup>

Other claims such as ‘Net Zero Plastic to Nature’ are more specific and focus on a specific part of a footprint. Claims including the word “net” imply that an equivalent result was achieved, rather than suggesting that the plastic was eliminated. Similarly, there is growing emphasis on the potential for use of plastic credits for compensation or mitigation of a plastic footprint, in place of offsetting.<sup>56</sup> It is important that claims used around plastic credits accurately reflect the impact achieved and do not oversimplify key concepts such as additionality in wider communication.

Drawing on lessons learned from carbon markets as the most mature environmental commodity market, developing clear claims that accurately reflect the outcomes achieved will be fundamental to the responsible use of plastic credits. Within carbon markets, the existence of standards that define specific claims, carbon neutrality (i.e., [PAS 2060](#)), and net zero (i.e., Science Based Targets initiative (SBTi)) provide clarity on the actions required to achieve each claim and a means to increase the ambition of claims over time. Guidance on credible claims focuses on being transparent, accessible, true, and able to substantiate with evidence to shareholders (WWF 2021). The 3R Guidelines for Corporate Accounting provide good practices for plastic accounting for specific claims of Net Zero Plastic to Nature and Net 100% Recycled at End-of-Life (3RI 2021).<sup>57</sup> These include requirements around plastic credit types and quantities used for each claim, and recommendations to match the plastic credit project to the location of the plastic footprint as far as possible.

## 3.2 Trends in the plastic credit market

### Majority of projects in developing countries

The study finds that the number of plastic credit projects has been increasing significantly over the past few years (see section 3.1). This trend is likely to continue as project actors and private sector organizations become increasingly aware of the plastic crediting mechanism.

The majority of plastic credit projects are located in developing countries. The geographical spread is linked to the availability of criteria pertaining to crediting standards for projects to demonstrate that their activities

go beyond ‘business-as-usual’ (BAU) and demonstrate additionality (see annex I). Projects in states where the collection and recycling of plastic is not widespread are more likely to meet the additionality criteria as there is more readily available evidence to demonstrate that these activities would not occur without the financing from plastic credits. For example, specific legislation to address plastic waste is often absent or in the early stages of development; projects in these locations can easily demonstrate that their activities are not required by law.

55 For example, <https://www.euronews.com/green/2023/11/11/plastic-solution-or-greenwashing-risk-how-giving-plastic-credits-for-crisp-bags-could-save>; <https://time.com/collection/time-co2-futures/6691961/companies-offsetting-plastic-waste/>

56 Insights from interviews and focus group discussions with experts including NGOs, plastic credit standard setters, and advisory groups.

57 The 3R Guidelines were adopted by the Plastic Footprint Network and are currently under revision.

If plastic collection and recycling rates are known to be low in a country, projects are more likely to demonstrate that their activity is not common practice. In some cases, projects that meet specific characteristics can be considered additional, e.g., noncommercially recyclable plastics (e.g., OBP), the location of activities (e.g., Least

Developed Countries, or Small Island Developing States), or the involvement of informal workers. In countries where collection and recycling rates are typically high, only specific project types are likely to pass these criteria.

## Emphasis on the involvement of the informal sector

Plastic crediting programs often emphasize the importance of the informal sector in waste management and as a valuable stakeholder in plastic crediting programs. Several crediting programs follow a simplified credit issuance to facilitate the involvement of informal workers and small-scale projects. For example, the CAH provides a simplified

approach for the informal sector by including projects with informal waste workers on a positive list to demonstrate additionality.<sup>58</sup> Many crediting programs include specific requirements and safeguards to improve working conditions for all waste workers, avoid child or forced labor, implement health and safety measures, and provide additional social benefits.

## A dominant voluntary market

The plastic credit market is predominantly voluntary. Plastic credits are purchased by private sector companies seeking to demonstrate their commitment to addressing plastic waste as a Corporate Social Responsibility (CSR) activity in response to growing consumer demand for greater action to address plastic pollution. In many cases, credits are used to compensate for an organization's plastic footprint and make specific claims, the most common claim being plastic neutrality. Buyers of plastic credits are predominantly national branches of large, fast-moving consumer goods (FMCG) companies, pharmaceutical organizations, and personal

care brands looking to compensate for their plastic footprint. Small- and medium-sized businesses also purchase plastic credits to achieve neutrality claims or link product purchases to a specific amount of waste collection and management (e.g., for every product purchased, a kg of plastic waste is removed from the environment). Travel companies, recruitment agencies, and social enterprises are among credit buyers. Plastic credit buyers with traceable locations are geographically distributed in North America (57 percent), Western Europe (36 percent), East Asia and the Pacific (5 percent), and South America (2 percent).<sup>59</sup>

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58 Additionality and Positive Lists, Guidance Note, Circular Credits Mechanism (Available [here](#)).

59 Data taken from public plastic credit registries for programs in category 1 and 2. Percentages indicate the number of plastic credit buyers and does not reflect the size of credit purchases by buyers in these locations. This data does not include buyers from undisclosed locations (which represent 43 percent of all recorded plastic credit buyers).

## Plastic credit prices can vary widely in the absence of a pricing structure

There is no set price or pricing structure for a plastic credit. Prices are currently set by project owners, plastic credit sellers and buyers. Prices can vary between plastic credit types, across geographies and crediting programs. Plastic credit pricing has ranged from USD 140 USD / t to USD 670 / t.<sup>60</sup> Drawing on lessons from

existing environmental markets, price volatility can create significant problems in the early development of the market (e.g., as seen with carbon credits). A clear pricing structure for plastic credits should be established to ensure pricing is fair, transparent, and sufficient to address plastic pollution.

## The demand trajectory is uncertain

While the supply of plastic credits is increasing, data on the demand for plastic credits is limited. In Southeast Asia, there is an estimated financing gap of USD 28–40 per t for plastic waste collection services and a gap of USD 24–40 per t across plastic recycling value chains in Indonesia, the Philippines, Thailand, Vietnam, and China ([Lewis 2019](#)). Plastic credits could play a role in filling the financing gap if interested buyers emerge.

To date, the size of plastic credit purchases varies widely. Purchases vary from equivalents to 1 t of plastic waste, ranging to 100s to 1,000s of plastic waste credits (t equivalents). Approximately 11,584 plastic credits were retired on all public registries since 2021.<sup>61</sup> Approximately 23,445 credits were verified or issued since 2021.<sup>62</sup> This figure is likely to increase as the number of projects completing registration or issuing credits increases. The demand is very uncertain due to the novelty of the plastic credit market.

## The role of plastic credits as a mitigation option versus contribution

Uncertainties around the perceived credibility of plastic crediting are preventing buyers from openly purchasing them. Several voluntary corporate plastic reporting initiatives exist (e.g., Ellen MacArthur Foundation Global Commitment, CDP plastic questionnaire). However, there is no target setting framework for plastic waste

outlining the potential use of plastic credits within a holistic reduction strategy (for example, like the Science Based Targets Initiative (SBTis) for the use of carbon credits). Credibility has been further affected by the recent backlash from NGOs and civil society around the legitimacy of claims using plastic credits,

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60 Price range shown for projects listed under plastic crediting program categories 1 and 2.

61 This figure was calculated using the total number of projects and credits listed on plastic credit registries under categories 1 and 2 in August 2023 (credit numbers are shown in equivalence to t of plastic waste). This includes issued plastic credits under the RMS, Verra PWRS, and OBP programs, as well as plastic credits available for sale on PCX Marketplace and CAH.

62 This figure was calculated using the total number of projects and credits listed on plastic credit registries under categories 1 and 2 in August 2023. Projects under category 1 standards had issued 10,023 credits, while projects under category 2 standards had issued 17,086 credits (credit numbers are shown in equivalence to t of plastic waste). This includes issued plastic credits under the RMS, Verra PWRS, and OBP programs, as well as plastic credits available for sale on PCX Marketplace and CAH.

such as plastic neutrality.<sup>63</sup> Plastic credits are currently referred to interchangeably as plastic offsets, a term that perpetuates the misunderstanding that plastic credits can neutralize a plastic footprint. There is also discussion among stakeholders around the validity of accounting for plastic credits as compensation for an organization's plastic footprint. The use of plastic crediting as a method to financially contribute to plastic

pollution reduction initiatives beyond a company's own value chain is accepted by a range of stakeholders. In the absence of uniform agreement on the role of plastic crediting and associated claims, the divergence in the type of credits, and uncertainties around the credibility of each program, further hinder uptake by potential buyers.

## Plastic crediting is being explored as a regulatory instrument

Legislative measures for addressing plastic pollution are being introduced at local, regional, and transnational levels. Amid this backdrop, plastic crediting systems are being explored as a potential measure to support compliance with EPR schemes. Ensuring compliance by obligated organizations is currently a challenge for both voluntary and regulatory EPR schemes. Plastic crediting mechanisms have been introduced as a tool to support compliance with EPR in Brazil, India, and the Philippines. In 2023, 33 percent of plastic credits retired under the PPRS

were purchased to meet waste management obligations under the Philippines EPR scheme (PCX Markets, n.d.). Crediting mechanisms were also used as the compliance mechanism within EPR schemes in the UK and Poland. In addition, if deemed suitable and appropriate, plastic crediting may be considered as a potential mechanism to mobilize financing in the context of the INC on plastic pollution (See box 3). Section 3.3 provides a more detailed analysis of the interaction between EPR schemes and plastic credits as an example of compliance.

### 3.3 Extended producer responsibility schemes and plastic crediting

Prominent regulatory frameworks addressing plastic pollution include EPR systems designed to hold producers accountable for their products post-consumption (Johannes HP et al. 2021). EPR schemes provide a means for governments to set regulatory frameworks and targets for companies to address waste from the plastic they distribute. EPR systems exist in Europe since 1994, leading to a 42 percent increase in the recycling rate in 2017 (EU 2020). Several Southeast Asian states are exploring and/or implementing EPR

schemes. Indonesia and Vietnam led the introduction of EPR systems for packaging (Kenji 2022), while the Philippines passed an EPR scheme into law in July 2022 (3E 2022). EPR frameworks are under consideration in Malaysia and Thailand, while Cambodia and Laos are developing a comprehensive regulatory framework to combat plastic pollution. EPR schemes can apply a range of methods for companies to meet their obligations.

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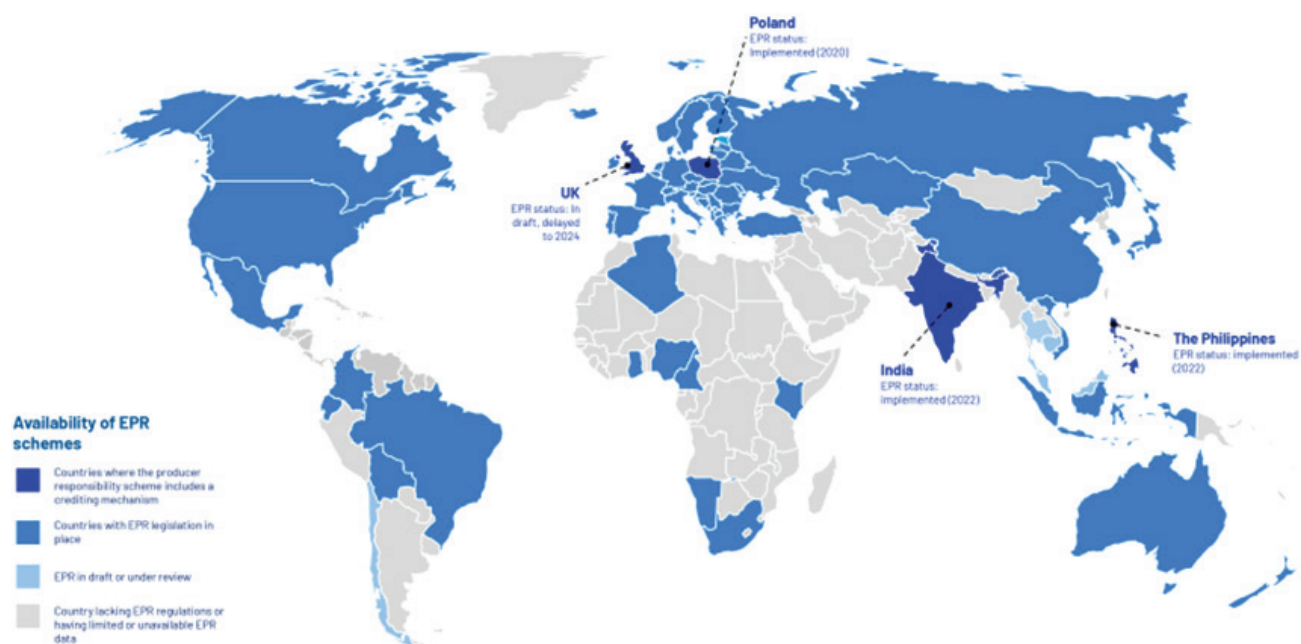
63 For example, WWF Position Plastic Crediting and Plastic Neutrality (2021), and media articles such as: <https://www.eco-business.com/news/plastic-neutrality-claims-face-greenwashing-scrutiny-in-india/>; <https://grist.org/accountability/companies-are-claiming-to-be-plastic-neutral-is-it-greenwashing/>; <https://www.greenpeace.org/southeastasia/press/45221/activists-send-plastic-waste-back-to-nestle-call-out-company-for-greenwashing/>; <https://www.forbes.com/sites/jamiehailstone/2022/01/13/are-plastic-offset-schemes-the-next-big-thing-in-sustainability/>.



Early examples of crediting as a method to support compliance for waste management obligations come from the UK and Brazil. Figure 9 provides an overview of EPR development and schemes with plastic crediting mechanisms. As plastic crediting is a relatively new concept, there are limited examples of its adoption for compliance. In some cases, plastic crediting initiatives were developed after the producer responsibility initiatives were established to facilitate compliance

(e.g., France). Voluntary plastic crediting initiatives are also developed by private organizations and are separate from the government agencies that develop the EPR legislation. This section presents an overview of how EPR schemes and plastic crediting schemes may interact. It presents two case studies and lessons learned for the potential use of plastic crediting as a regulatory instrument.

**FIGURE 9:** Overview of Extended Producer Responsibility Schemes with / without a Crediting Mechanism

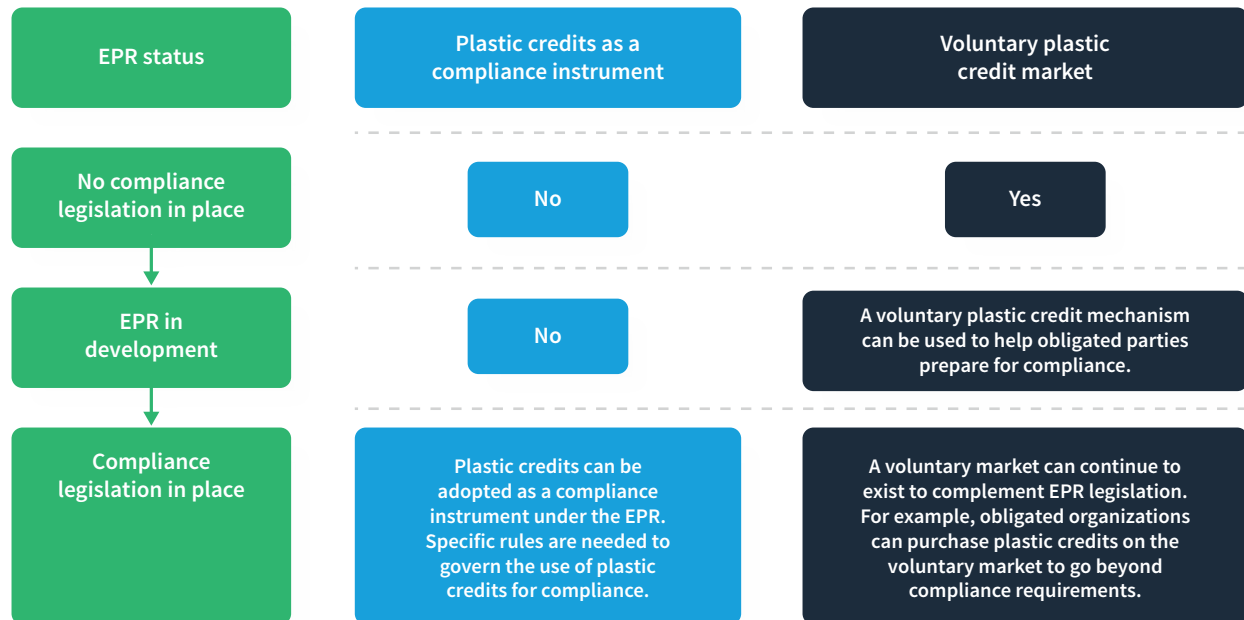


Source: [Resource Recycling 2019](#); [WWF 2019](#); [Lorax EPI n.d.](#); [OECD n.d.](#)

## The interaction of EPR and plastic crediting

EPR schemes and plastic crediting schemes may interact during EPR development and implementation. A voluntary crediting scheme can be complementary to EPR legislation and exist in parallel to national EPR schemes. A voluntary crediting scheme may be used

to prepare obligated parties for compliance during the transition to EPR. A plastic crediting mechanism may be applied as one regulatory tool under the EPR scheme (see figure 10).

**FIGURE 10:** Overview of Possible Interactions between EPR and Plastic Crediting**Interaction of EPR and plastic credits**

Source: South Pole 2023.

**In countries without EPR, a voluntary plastic crediting scheme can allow businesses to finance plastic collection and recycling activities worldwide.** Plastic crediting schemes provide a method for companies to finance these activities before obligations are implemented. The existence of a voluntary crediting mechanism does not displace the need for an all-encompassing EPR scheme.

**In countries where EPR is expected or under discussion, an existing voluntary plastic crediting scheme can be used as a temporary measure during the transition to EPR.** Early engagement through plastic crediting can allow businesses to prepare for their obligations and accelerate the development of infrastructure needed to reach EPR targets. Businesses that engage with plastic crediting in the transition to EPR should see benefits from early voluntary adoption. Close

coordination between the voluntary crediting program and the government agency developing the EPR scheme would be needed to align crediting processes and prices to expected EPR requirements.

**In countries where an EPR scheme exists, a plastic crediting mechanism can be used as a regulatory instrument for EPR compliance.** The use of plastic crediting as a method for compliance should be carefully considered and assessed for adoption.

**In countries where an EPR scheme exists, a voluntary plastic credit can be purchased when the company wants to exceed the legislative requirement** (e.g., supporting a plastic type or activity that is not required under the EPR). In this scenario, the plastic credits do not contribute to the EPR requirements. Voluntary crediting initiatives that cover an additional scope

(e.g., different plastic types) may exist in parallel to EPR schemes, enabling obligated entities to purchase plastic credits from the voluntary market and go beyond EPR requirements. Nonobligated entities may also choose to

purchase plastic credits to support plastic projects. This may not be required if the EPR scheme is all encompassing and well implemented.

## How can plastic crediting be used within EPR schemes?

A plastic crediting mechanism can be integrated into EPR schemes as one instrument for obligated entities to meet compliance requirements. Depending on the country's context, the use of a crediting mechanism within EPR schemes may aid compliance by providing a system to connect obligated organizations with a ready pool of projects requiring finance.

The success of integrating a plastic crediting mechanism to support EPR compliance and address plastic pollution will rely on a well-designed and enforced EPR scheme at its core. Rules and requirements for a plastic crediting scheme that aligns with good practices are needed to

achieve an effective crediting system within the EPR scheme. The rules and requirements can be developed by the government body tasked with EPR design for the purpose of the EPR scheme. Alternatively, existing crediting standards can be used to meet compliance requirements. If a country decides to use plastic crediting as a compliance method within the EPR scheme, there are two approaches: they may choose to develop a national crediting standard specific to the EPR scheme, or they can adopt existing crediting standards into EPR rules. Table 6 outlines the benefits and challenges of developing a national crediting standard compared to adopting existing crediting standards.

**TABLE 6:** Developing National Crediting Standards Versus Adopting Existing Standards

Approach	Develop a national crediting standard	Adopt existing crediting standards into EPR rules
<b>Description</b>	The government body tasked with EPR design also establishes rules and requirements for the crediting mechanism.	The government body tasked with EPR design selects one or more of the existing crediting programs under category 1 for the purpose of crediting under the EPR scheme. Obligated entities can then purchase plastic credits issued under these programs to meet their compliance requirements. Eligible programs and standards should be clearly outlined in national EPR guidelines.

Approach	Develop a national crediting standard	Adopt existing crediting standards into EPR rules
<b>Benefits</b>	<p>The body designing the standard has the flexibility to establish standards that reflect the national context (e.g., focusing on specific activities or affected groups).</p>	<p>Category 1 crediting programs have established crediting standards that include robust calculation, and validation methods, as well as safeguards to avoid double counting.</p> <p>The use of robust standards allows for consistent measurement approaches, enabling regional and global comparability. This approach will avoid the development of a multitude of national crediting standards.</p>
<b>Challenges</b>	<p>The government body tasked with EPR must establish rules and requirements for crediting and have the resources to oversee their implementation. This includes defining eligible project type, credit type, and standards and processes (e.g., third-party audit).</p> <p>There is a risk that national standards and data collected will not be comparable across regions.</p>	<p>Requires a specific arrangement between the EPR scheme and the existing crediting program to manage credit transfers and avoid double counting.</p>
<b>Examples</b>	<p>UK examples of national crediting standards come include packaging waste recycling notes (PRNs) and packaging waste export recycling notes (PERNs) system; India also has a crediting mechanism.</p>	<p>One related example is the use of carbon credits within South Africa’s carbon tax scheme: projects registered under international carbon credit standards that meet specific principles can be purchased by national stakeholders to meet their requirements and reduce applicable taxes (<a href="#">Government Gazette 2019</a>).</p>

Source: South Pole 2023.

## Case studies – EPR schemes and crediting mechanisms

Early examples of crediting as a method to support compliance for waste management obligations come from the UK and Brazil. A crediting mechanism was

included in the UK Producer Responsibility Obligations (Packaging Waste) Regulations in 1997 to facilitate compliance. A voluntary reverse logistics system

emerged in Brazil in response to lack of compliance with the national EPR scheme. The introduction of this reverse logistics system that enabled the sale of certificates by waste management providers is considered to have increased the compliance rate by providing a clear and straightforward method for obligated parties to meet their EPR obligations, although it is not officially included in the EPR scheme ([CAH n.d.](#)). In 2021, plastic crediting was included as an optional method for compliance within

India's EPR scheme following extensive feedback from national stakeholders that the measure would facilitate compliance. This crediting program is in the first year of its implementation and is being monitored by the Central Pollution Control Board (CPCB). In the Philippines, plastic credits (referred to as offsets) have been included in the nation's EPR scheme published in 2022. This section dives into the crediting mechanisms in the UK and India.

## Case Study 1: A crediting mechanism to increase recycling in the UK

The UK Producer Responsibility Obligations (Packaging Waste) Regulations of 1997 included a crediting mechanism as a method to facilitate compliance. The mechanism was introduced to bridge the gap between producers who struggled with operationalizing waste management and stakeholders operating collection and recycling. Obligated businesses were required to pay an annual fee for recycling based on their packaging volume. This payment could occur through the purchase of Plastic Recycling Notes (PRNs) and Plastic Export Recycling Notes (PERNs). Obligated industries could purchase PRNs/PERNs solely from accredited re-processors and exporters. The system is credited with facilitating an increase in recycling since its introduction.

The design and role of the crediting mechanism system have recently been subject to a high degree of criticism. Concerns over price volatility, transparency, potential for fraud, and risk of enhanced waste exports through PERNs led to a review of the crediting system. Pricing

of PRNs and PERNs was considered by recyclers to be significantly less than the cost of waste management, presenting a challenge to fully fund needed infrastructure (DEFRA, 2022). Furthermore, the recent development of a national deposit return scheme, due to be managed by the same stakeholders responsible for issuing PRN/PERNs, will require measures to avoid double counting. This highlights the importance of implementing clear monitoring measures for waste flows through processing facilities and establishing eligibility criteria that prevent one entity participating in multiple programs.

In the absence of an alternative financial mechanism, a set of reforms for the PRN/PERN system will be adopted and the scheme itself reviewed by the UK government again in 2026/2027 ([House of Commons n.d.](#); [DEFRA 2022](#)). The PRN/PERN scheme will be applied as a temporary compliance scheme as the UK moves toward a system of payments to local authorities based on the cost requirements of handling waste in each authority under a new EPR scheme.<sup>64</sup>

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64 An Extended Producer Responsibility Scheme is being developed as a key part of the UK's 25 Year Environment Plan (2018) and Resources and Waste Strategy for England (2018) (HM Government 2018).

## Case Study 2: EPR crediting as a tool for compliance in India

The Indian government introduced an EPR system for electronic waste in 2012. The scope of the EPR was extended to include plastic waste management in 2016 and wider packaging categories in 2019, before being updated in 2021. The EPR legislation now sets out minimum recycling targets of 30–50 percent by 2024–2025, increasing each year to reach 60–80 percent by 2027–2028. The EPR packaging framework targets producers, importers, and brand owners (PIBOs). Each industry and packaging type has its own targets, including compostable plastic packaging.

The EPR system includes credits as a compliance option, following extensive feedback from national stakeholders that the measure would help to improve compliance by reducing the complexity of participation. The crediting model also enables waste management projects across India to access financing; both Indian urban local bodies and producer responsibility organizations are limited and geographically concentrated ([Pani and Pathak 2021](#)).

The crediting model allows PIBOs to purchase certificates for plastic waste recycled by accredited third-party processors or exporters. Every PIBO must purchase certificates equivalent to its total plastic footprint. All transactions take place on an EPR portal managed by the CPCB, enabling a central entity to monitor compliance. Since it first launched in April 2022, approximately 5,000 brands and 2,000 waste processors have registered.

India's EPR legislation provides an example of an integrated waste management system, where credits provide one method of compliance in addressing plastic packaging waste. The scheme is only in the first year of its implementation and more time is required to determine its success. Initial feedback indicates positive participation from companies obligated to comply with the EPR scheme via the plastic crediting model. Further advancements may include increasingly stringent monitoring and evaluation of plastic credit projects to ensure waste reduction has taken place. In the development process, multi-stakeholder dialog was key to identify challenges from diverse perspectives.

## Key considerations for plastic crediting as a regulatory instrument

The following section presents the key considerations for the use of plastic crediting as a regulatory instrument within EPR schemes.

### 1. Benefits are highly context specific

The benefits of crediting mechanisms for compliance depend on the goals of the EPR scheme, availability of projects, the capacity of the governing entity to monitor such a scheme, and the willingness of stakeholders to participate. Some argue that a compulsory credit will

work less effectively compared to plastic taxes which are designed to disincentivize plastic use and waste generation ([Packaging Insights, 2022](#)). However, there is a risk that organizations will continue business-as-usual once taxes are paid. Plastic crediting can play a distinct role, enabling finance to be directed toward specific activities through a transparent accounting framework. As a results-based financing mechanism, plastic crediting allows producers to fulfill producer obligations with a verified unit of impact. This can reduce the implementation burden on the responsible government agency and provide additional proof of results.

There are still several potential limitations. Plastic projects will require financial and technical assistance to participate in the scheme. A plastic crediting mechanism may displace current financing (e.g., from a previous responsibility scheme) if alternative funding is also stopped. Stringent additionality checks are needed to demonstrate that all projects under both EPR and crediting schemes contribute to a net increase in plastic waste management activities.

## **2. The scope of EPR may be wider than plastic crediting**

Plastic crediting mechanisms can be integrated into EPR schemes for compliance as one component of the wider scheme. Plastic credits are not designed to be all-encompassing nor cover the full scope of an EPR scheme. A crediting mechanism may help to facilitate compliance with the right conditions; the crediting mechanism will need to be well designed and regulated, and directly relate to the EPR objectives. A crediting mechanism can be utilized when EPR schemes require companies to finance plastic waste management activities for a specific timeframe. Plastic crediting schemes provide a system for organizations to increase the availability of recycled material by financing recycling projects to scale recycling capacity; however, crediting will not be a substitute for a direct reduction in plastic waste generation. Additional taxes or levies could be applied to disincentivize the use of virgin content and set targets to increase the use of recycled content in products and packaging. Plastic crediting is not designed to displace existing funding or future commitments to fund waste management. EPR schemes that include plastic crediting should consider it a tool to achieve a specific, time bound financing goal, in addition to existing commitments by central or regional governments to cover the operational and maintenance costs of waste management services.

Current methodologies of plastic crediting allow for monitoring by plastic type. In EPR schemes that include several material types (e.g., paper, glass, and plastic), plastic crediting would only be applicable to the plastic component (e.g., plastic packaging). Clear requirements around the credit types, location, and polymer types of projects that can be supported through plastic credits are key to ensuring the projects financed align with the objectives of the EPR scheme. Crediting mechanisms within EPR schemes may have a greater impact when they require companies to match the polymer and the location of projects to their plastic footprint.

## **3. Standards and methodologies need to be robust**

The concept of a plastic crediting should be well defined, with standards and methodologies introduced to confidently measure results, and safeguards to avoid double counting. Third-party audits and public registries will be essential to enable transparency and confidence in the system. EPR schemes that integrate a plastic crediting mechanism for compliance should align with the good practices adopted by crediting programs in category 1. The current use of crediting schemes in EPR follows crediting programs under categories 2 and 3.

The safeguards that exist within voluntary plastic credit programs under category 1 avoid double counting and the registration of non-additional projects.<sup>65</sup> Such safeguards would help to ensure that activities financed through EPR schemes enable action beyond a BAU scenario. The monitoring, accounting, and reporting framework provided by these programs can also help to increase the accuracy and transparency of results within EPR requirements. As seen in the UK, it is important to integrate review mechanisms into the crediting scheme to enable evaluation of the effectiveness of the tool as the scheme is implemented and policy objectives change.

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<sup>65</sup> For example, projects can be required to demonstrate that the activity is not common practice (i.e., extended beyond the existing norm of implementation in the region or country). To do so, a predefined criterion, like a positive list (a shortlist of project activities or technologies that are considered automatically additional), could be established to determine activities or technologies that can be considered automatically to be additional in the region.

#### 4. Early stakeholder engagement is critical

National stakeholders and crediting experts should be engaged early in the process to inform the development of an effective crediting mechanism that supports the EPR goals. Multistakeholder dialogue during the design of the EPR system enables the development of stronger legislation and compliance methods that respond to local circumstances, are economically viable, and increase the level of compliance. Government agencies responsible for EPR should engage with stakeholders from plastic crediting programs under category 1 for guidance when developing their own crediting standards or assessing the integration of existing crediting programs into the EPR.

#### 5. The role of independent standards in compliance schemes needs to be clear

In countries where legally required EPR schemes are in place, the interaction with existing independent plastic crediting standards should be considered. If there is a crediting option, the EPR scheme should explicitly state whether plastic credits from independent standards can be used for compliance purposes. The rules around the use of credits from independent standards should be clear to all stakeholders (e.g., applicable crediting programs, additionality requirements, measures to avoid double counting, and credit retirement procedures).

#### 6. Voluntary initiatives can exist in parallel to EPR schemes

In countries where there is a legally required EPR scheme, plastic credits issued under existing plastic credit schemes may still be purchased for voluntary use. For example, an entity obligated under the EPR may

purchase plastic credits issued under an independent crediting program to finance more activity than the EPR requires, or a different type of plastic pollution mitigation. A non-obligated party may also purchase plastic credits for voluntary purposes. Several plastic crediting programs already include regulatory surplus requirements to avoid a scenario where the same project is financed by both EPR fees and plastic credits. This means that only activities which fall outside of the scope of the EPR, or instances of widespread non-compliance with the EPR, are eligible to issue plastic credits under existing independent standards. This is not an explicit requirement in all crediting programs. Such requirements may require revision once EPR schemes are in place.

#### 7. Financial impacts on the public sector should be considered

In a typical EPR fee model, finance flows to national or municipal agencies that can then use the funding for waste management or other purposes of public value. A plastic crediting mechanism enables dedicated finance for public or private plastic pollution reduction activities. Depending on the EPR model adopted, the introduction of plastic credits for compliance could potentially reduce EPR fees collected, and redirect capital directly towards plastic credits project owners. A central fund could be established to enable regional or municipal authorities to collect credit fees before redistributing this among priority projects in the area. In this scenario, it is essential to ensure full transparency on the methodology used to calculate the financial contributions as well as the distribution of funds to the projects.



## 3.4 Benefits, risks, and challenges

This section lays out the main benefits, risks, and challenges of plastic crediting that are identified through the study.

### Benefits of plastic crediting

Plastic crediting can channel additional finance to initiatives that address plastic pollution. Additional finance is particularly important for activities that are not commercially viable or attractive for current public or private sector finance. The price-per-unit model puts a value on pollution reduction. Several crediting standards provide results-based accounting methods

that can be applied to increase the transparency and accuracy of financial reporting. The standards applied to plastic credits also present an opportunity to integrate requirements and safeguards to improve social and environmental conditions, incorporate SDGs, and link with other environmental attributes. To summarize, plastic crediting offers four main benefits.

### Key benefits

- **Benefit 1:** Provides financing for plastic pollution reduction initiatives and makes solutions economically viable and scalable.
- **Benefit 2:** Place a price or value on plastic waste reduction or reduction of plastic consumption (including environmental externalities).
- **Benefit 3:** Provides a framework for traceable results-based accounting that can enhance monitoring of evaluation of plastic pollution initiatives and increase the accountability and transparency of impact reporting.
- **Benefit 4:** Marginalized groups, including the informal sector, can be recognized as an important stakeholder in waste management, opening the door to benefit sharing among actors and improving social and environmental conditions.

#### 1. Provides financing for plastic pollution reduction initiatives and make solutions economically viable and scalable.

One of the greatest benefits of a plastic crediting system is in providing an alternative mechanism to finance solutions for a circular economy. To reduce plastic pollution, plastic waste generation needs to be avoided and existing waste needs to be managed in an environmentally sound manner. Alongside upstream solutions that directly reduce plastic production and waste generation, downstream initiatives play a critical role in capturing and responsibly managing plastics currently leaking into the environment. To achieve a fully circular economy, activities that recirculate materials back into the economy for production must also be incentivized. Plastic credits can be applied to initiatives that facilitate the collection and management, sorting, and recycling of plastic waste that escape waste management systems. The finance directed through plastic credits can be used to address this waste management gap and increase the availability

of recycled plastics, enhancing plastics circularity. A plastic crediting mechanism could be adopted as a short- to medium-term financing tool to stimulate investments in local waste management systems, helping to bridge the current funding gap to expand or introduce new infrastructure until EPR systems are put in place (PREVENT Waste Alliance 2022; UNEP 2022). For example, financing from plastic crediting could be channeled to initiatives that address the international transport of plastic waste and legacy plastic pollution (see section 2.6). In some cases, plastic crediting schemes may provide a complementary role to EPR schemes, providing additional finance to activities not covered under the scheme. Plastic credits should be designed and used in a complementary way to future EPR.

Enabling international payments through plastic crediting could expand the possibilities for financing projects that address the 140 million t of plastic waste estimated to be present in the environment. Furthermore, plastic crediting may enable finance to follow the international trade of plastic polymers, packaging, and waste. Approximately 50 percent of plastic polymers are traded internationally, while more than a third of plastic packaging moves across borders (Charles 2021). The export of plastic waste from high-income countries to middle- and low-income countries amounted to 3.5 million metric tons in 2016 (Pew 2020). Plastic crediting could bring approximately 10 million USD of financing to plastic pollution interventions from the sale of existing plastic credits and could grow to approximately 30 million USD annually within the next two years.<sup>66</sup>

The scale of financing needed to create a circular economy requires access to a range of fiscal instruments. Plastic crediting operates with a tradable asset that can provide a return on investment. Distinct from taxes and levies, which are effective at prohibiting specific activities and changing behaviors, credit financing can help to mobilize financing for specific activities aligned

with policy objectives. Plastic crediting mechanisms adopt a results-based approach, where projects receive finance after achieving specific results. The responsibility of achieving pollution reduction results is transferred to the project actor, rather than the funder. In some cases, plastic credits could be used as an alternative to grant funding and to de-risk investments for traditional investors who may be more willing to take on the potential risk with a potential return on investment through the tradable asset. For example, the World Bank has launched a new outcome bond, the Plastic Waste Reduction-Linked Bond, that will channel up-front financing from private sector investors where the financial return is linked to the plastic and carbon credits issued from two plastic projects (see Box 4)<sup>67</sup>.

The revenue channeled through the crediting system can be used by plastic projects to overcome the financial barriers to operating and scaling up. For the participating projects, credit financing can act as a form of grant financing: there are no repayment requirements or interest charges, no expectations of a financial return, and no dilution of ownership. This is particularly relevant for activities that do not have a direct return on investment (e.g., collection and management of low-value plastics or historical pollution), technologies that are not yet commercially viable, or activities that are cost prohibitive compared to existing solutions (e.g., access to reusable containers). The plastic crediting mechanism can also provide a means for initiatives to receive finance from multiple actors, across geographies, and over multiple years (e.g., crediting periods may be one, seven, or 10 years). The plastic crediting mechanism provides a ready pool of projects to help financiers easily identify projects that address plastic pollution. The transferability of plastic credits enables projects to sell to intermediaries that can resell plastic credits, instead of selling to multiple buyers. The sale of plastic credits to intermediaries allows the project to access financing.

66 Estimation made using average price and number of plastic credits available on the market in 2023. Projection with triple of current market size.

67 <https://www.worldbank.org/en/news/press-release/2024/01/24/world-bank-s-new-outcome-bond-helps-communities-remove-and-recycle-plastic-waste>

## **2. Place a price or value on plastic waste reduction or reduction of plastic consumption (including environmental externalities).**

Following the ‘polluter pays’ principle, plastic crediting provides the opportunity to assign a value to plastic pollution avoidance and reduction activities. The cost of plastic pollution has largely been externalized to society. Placing a price on plastic credit activities that reduce or avoid plastic waste provides a means to acknowledge the environmental and social cost of plastic use and waste. Private and public organizations can choose to address this externality by purchasing plastic credits. In doing so, they create an internal price on plastic use and waste generation, as well as an internal incentive to reduce plastic use and associated pollution.

To realize this benefit, the price of plastic credits must reflect the true cost of addressing plastic waste. This includes fair remuneration and safe working conditions for all workers, especially marginalized groups. Pricing of plastic credits is likely to be market driven, creating the possibility for higher quality credit projects (i.e., environmental integrity, co-benefits, SDG impacts) receiving higher prices. However, there is also a risk that pricing will be not sufficiently high to reflect the costs of pollution, and, without guidance or requirements, buyers may seek the cheapest credits instead of the best quality. Establishing floor prices and alignment with expected EPR fees will be especially relevant when plastic crediting systems are applied as a compliance tool to avoid the generation of low-quality credits (i.e., a ‘race to the bottom’). High plastic credit prices could help to address the historically low price of virgin plastic that has often benefited from subsidies and rendered the use of alternative materials or recycled plastic too expensive in comparison.

## **3. The standards and methodologies used for plastic crediting can provide a framework for traceable results-based accounting that can enhance monitoring and evaluation of plastic pollution initiatives and increase the accountability and transparency of impact reporting.**

The emergence of accounting methods within plastic crediting standards provides an opportunity for a robust and consistent approach to measuring plastic pollution. For example, several crediting standards provide accounting methods to calculate the number of plastic credits based on the plastic waste managed. Under the Verra PWRS, it is already possible for projects to apply the methodologies for accounting purposes only. This methodology was applied to a project in Indonesia in 2022 to measure and monitor the project’s plastic waste reduction results. The adoption of these methods for project accounting could help to increase the quality and transparency of results from financing for plastic pollution reduction initiatives. Taken together with existing national data, the information gathered through crediting programs could address current data gaps in the value chain, from collection to end disposal or recycling.

A robust monitoring system will help to increase the credibility of plastic credits. Nonetheless, this goal is not easily obtained as there is wide variation in the accounting methods and level of transparency among current crediting programs. Alignment is needed to include third-party audits, public registries, and regular monitoring as minimum requirements. The associated monitoring and reporting requirements could present a capacity-building opportunity, particularly around data collection and digital literacy, and support the collectivization of marginalized informal workers (Araiza 2022; UNEP 2022). However, these data requirements may present an additional burden for project actors, particularly marginalized workers and microenterprises. Further, a common unit of a credit is needed to create a common accounting language and obtain comparable datasets globally.

#### **4. Marginalized groups, including the informal sector, can be recognized as an important stakeholder in waste management, opening the door to improving social and environmental conditions.**

A significant opportunity presented by a plastic crediting mechanism is the ability to improve wages, working conditions, and social benefits for waste workers, especially marginalized groups (UNEP 2022). Informal and marginalized waste workers play an important role in waste management<sup>1</sup> and can be supported to access the potential revenue from the plastic credits. The informal sector contributes to the collection of 27.4 million t of plastic waste globally (Velis et al. 2022)—a contribution that often goes unrecognized. Sitting outside of formalized structures, waste workers are more likely to be underpaid and exposed to unsafe working conditions (WEF 2020). Informal marginalized actors can include waste collectors, scrap shop owners, and aggregators. Women are another marginalized group within the waste management sector, often involved in specific tasks, such as collection and sorting only. Women typically receive lower wages than men, are typically absent in leadership roles, and can be prevented from work due to childcare responsibilities or lack of access to safe facilities such as gender-segregated toilets (UNEP 2019a).

Enabling informal and marginalized groups to benefit from plastic crediting systems could provide greater visibility around their role in waste management and support a just transition. This benefit is still largely theoretical and will require further piloting and development to realize its full potential. Increasing project revenues may help to address some of the challenges faced by marginalized groups. It is critical that marginalized groups can directly access credit finance, for example by acting as project implementers or collaborators, and that financial flows among project actors are transparent. For example, enabling the distribution of funds to women may help improve their overall independence and support their families more widely (UNEP 2019a). Marginalized groups are

likely to require capacity-building programs to be able to participate in crediting programs. Fair remuneration in line with living wages could be supported by plastic credit pricing based on the number of hours worked to achieve a targeted volume (see ValueCred 2021a; UNEP 2022). Finance from a crediting system can also be used to provide health and safety equipment and training, women-only toilets, and daycare facilities for mothers.

Most existing crediting standards and programs recognize the importance of marginalized workers and of improving working conditions. Many include specific safeguards to avoid the marginalization of vulnerable groups and their displacement. Safeguards still vary among programs, with some addressing child or forced labor, requiring projects to meet international health and safety requirements, implementing grievance mechanisms for key stakeholders, and encouraging additional social benefits for workers (e.g., healthcare and daycare support). These safeguards can be built upon to include specific program requirements around working conditions, and transparent and fair benefit-sharing among project actors. The active monitoring of these requirements could help improve the livelihoods of marginalized waste workers.

Plastic projects can also bring several positive environmental benefits, including a) pollution reduction (soil, water, air); b) climate change mitigation and adaptation; and c) biodiversity. Some crediting standards include safeguards that encourage projects to reduce adverse impacts on GHG emissions and biodiversity, and to use water efficiently. Taking this one step further, projects could be encouraged to measure related impacts to better understand and report their environmental benefits. While circular economy solutions will not always equal a direct reduction in GHG emissions, understanding their relative impact is important. At present, there are only three plastic crediting programs that explicitly recognize the link between plastics and climate change. There is also an opportunity to include the monitoring and verification

of projects' contributions to the UN SDGs (see table 7) within crediting standards. Appropriate methodologies need to be developed to accurately measure these

attributes within crediting systems and enable effective monitoring.

**TABLE 7:** Examples of Sustainable Development Goal Attributes from Plastic Pollution Reduction

<b>Project attribute</b>	<b>Associated SDG</b>	<b>Explanation</b>
Improved working conditions and wages	SDG 1: No poverty	Improving worker wages can help lift workers out of poverty. Particularly relevant for marginalized workers.
Plastic waste avoidance, reduction, and waste management	SDG 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	Avoiding the use of plastic prevents it from being at risk of entering the environment.
	SDG 12: Responsible consumption and production	Avoiding the use of plastic is an important step in achieving responsible consumption.
Improved plastic waste management and recycling	SDG 11: Sustainable cities and communities	The project may establish improved waste management services, contributing to sustainably managed cities and communities.
Plastic waste recycling	SDG 13: Climate action	Recycling plastic can result in lower GHG emissions compared to virgin materials, depending on the technology.

Source: South Pole 2023

## Risks and challenges of plastic crediting

Plastic crediting is in the early stage of development. The lack of a common definition and wide variety of approaches taken by existing standards and programs causes public and private sector stakeholders to highlight the risks and challenges in adopting plastic crediting. Without careful design, there is a risk that plastic credits may be used for greenwashing or as a disincentive action to reduce plastic use. Additionally, there is a risk that plastic crediting will only focus on

downstream plastic waste management activities. Further consideration is required to determine how to overcome the technical barriers that may prohibit the involvement of the informal sector and the risk that informal sector workers may not benefit directly from crediting systems. The following section summarizes these risks and challenges and considers how they may be addressed.



## Challenges and risks

- **Challenge/risk 1:** Plastic crediting programs vary greatly in terms of quality and robustness and lack common definitions and alignment on key principles.
- **Challenge/risk 2:** In the absence of alignment between programs and clear governance to ensure market integrity, the results of some plastic pollution activities may be double counted and not result in a net increase in plastic pollution management.
- **Challenge/risk 3:** While the supply of projects is increasing, the current market demand for plastic credits is mostly voluntary and ad-hoc. Lack of sufficient, sustained, and predictable demand, as well as a risk of low prices for plastic credits, could start to hinder project uptake.
- **Challenge/risk 4:** Plastic credits purchased for corporate offsetting purposes may disincentivize ultimate plastic reduction and be misused as a tool for greenwashing and misleading claims in the absence of clear rules around credit usage and claims.
- **Challenge/risk 5:** Technical complexity, transaction times, and costs associated with the plastic crediting process may deter project developers, particularly marginalized informal workers and small businesses, from directly accessing the mechanism.
- **Challenge/risk 6:** Plastic crediting programs' current focus on downstream solutions risks overshadowing upstream plastic reduction measures if the latter are not considered equally.

### 1. Plastic crediting programs vary greatly in terms of quality and robustness, and lack common definitions, principles, and alignment on key principles.

There are concerns around the validity of plastic credits and the results they represent. To address this challenge, it is critical that common principles and definitions for plastic crediting are agreed upon and adopted.

The plastic credit market developed through voluntary initiatives and is fragmented. Plastic crediting approaches vary widely, with each standard or program offering its own definition of a plastic credit; type of credits; accounting units and methodologies; environmental and social criteria; and certification processes. For example, key design features of accounting methodologies such as project boundaries, measures to prevent double counting, demonstrating additionality, and third-party auditing measures for transparency vary or are absent (see annex I). Several crediting programs also cover multiple stakeholder roles, from project implementation to certification and sales, raising concerns over the impartiality and credibility of these programs. Only a few plastic crediting programs are developed and managed independently (see table 3).

The differences between programs are not reflected in the plastic credit terminology. The term 'plastic credit' can encompass a wide range of scenarios. This variety drives mistrust in the plastic credit market and concern that credits will be issued from activities that would have occurred anyway (i.e., not meet additionality requirements).<sup>68</sup> As it is not possible to directly compare each credit type between the various programs, communications associated with a purchase of plastic credits are also scrutinized.

68 Insights from interviews with Project Owners, prospective Buyers and NGOs.

**2. In the absence of alignment between programs and clear governance to ensure market integrity, the results of some plastic pollution activities may be double counted and not result in a net increase in plastic pollution management.**

Plastic crediting programs will also need to be well enforced and monitored to create a high-integrity system. Without alignment between crediting programs, there is a risk that some plastic credit projects do not result in a net increase in solutions to address plastic pollution. Any crediting system has the challenge to demonstrate that the desired result has occurred. For plastic credits, this means demonstrating that the credit has resulted in a net increase in plastic waste collection and management, or recycling. First, there is a risk that projects receiving finance from multiple sources may be double counted across programs or by funders. Some plastic crediting programs include specific measures to avoid double counting of activities across crediting programs (e.g., assigning a unique serial number to issued credits, requiring disclosure of funding sources), however these should be standardized and uniformly applied. Plastic credit registries should be publicly available and include information on project scope (e.g., activity type, polymer type), location, project owner, and methodology (e.g., additionality, baseline), as well as credit issuances, vintages and retirements.

For the credibility of the plastic credit market, it is also necessary to demonstrate that permanent removal or avoidance has occurred for every credit issued. Thus, as far as possible, credits should be attributed to results that have already occurred, i.e., the weight of plastic waste removed from the environment and responsibly managed can be proven. Downstream projects follow this approach.<sup>69</sup>

There is also a risk that project owners may ‘play the system’ to be eligible for plastic credits, without delivering a net increase in measures to address plastic pollution. For example, a project could choose to close their activities for a set time or move their activities from one area to another to register as a new project without necessarily increasing the project capacity. Specific checks are required by some crediting programs (e.g., specific definitions of ‘well-managed,’ checking the history of the project owner, understanding historic waste management in the project area etc.) and will need to be expanded to other programs. Addressing these significant differences is integral to building a high-integrity plastic credit market that provides credible and reliable results.

Waste management projects that do not implement health and safety measures and provide protective equipment can pose a health and safety risk to individuals, particularly informal and marginalized workers. Robust Measurement, Reporting, and Verification (MRV) systems will be needed to monitor safeguards and enforce requirements around occupational health and safety, as well as the avoidance of child labor, forced labor, and provision of equal pay, and social inclusion. These measures along with grievance redress mechanisms will need to be adopted by all crediting programs to avoid creating social risks. Over time, it may be appropriate for crediting programs to encourage projects to follow the waste management hierarchy and prioritize the most effective waste management solution for each plastic type addressed.

**3. While the supply of projects is increasing, the lack of sufficient, sustained, and predictable demand, and a risk of low prices for plastic credits could start to hinder project uptake.**

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<sup>69</sup> Plastic credits from downstream projects are calculated based on the amount of actual plastic waste collected and managed, diverted from landfill, or recycled over a specific monitoring period. Projects must provide evidence to demonstrate that the results have occurred. This approach may not be possible for all projects, such as upstream innovation projects, which avoid plastic use and require a theoretical calculation. Methods to calculate results should be specific to the project activity, tested, and monitored to ensure they represent accurate results. All methods and forecasted results should be reviewed periodically.



Insufficient demand, partly driven by mistrust of the current market, prevents plastic credits from serving their function of harnessing capital to stimulate plastic pollution reduction efforts. The potential for demand in plastic credits to fluctuate will mean that they will not present a stable or reliable income stream and limit the benefits for project actors. If plastic credits are undervalued or priced down in the credit market, it will insufficiently cover the true cost of action on plastic pollution reduction.

There are uncertainties around the level of demand for plastic credits. The market is still predominantly voluntary. Consumer-facing brands, seeking to demonstrate their contribution to address plastic pollution to end-consumers, are a predominant type of buyer. Public and private sector buyers may also purchase plastic credits as a method to finance pollution solutions. However, the perceived value of purchasing plastic credits is linked to the general perception of whether plastic credits are a credible method to finance plastic action. Accordingly, the discrepancies in current crediting approaches, standards, and programs are perpetuating questions around the legitimacy of plastic crediting as a financing mechanism and restricting potential buyer interest. Addressing the fragmented variations in the plastic credit market could serve to build confidence in crediting as a viable financing tool and consequently build demand. Without alignment on crediting approaches, there is a risk that challenges will continue to prevent wider uptake of plastic credits as a method to certify project results and finance plastic pollution solutions. If credit financing is uncertain and cannot be sustained, it creates an additional risk for projects and may prevent more from participating in a credit system. The temporary or potentially unsustainable nature of plastic crediting is concerning for marginalized informal groups that want to access the credit system as a regular income stream to balance fluctuating prices for recyclables.

There is also a risk that prices of plastic credits will be too low to achieve meaningful results. The concept of plastic credits stems from the need to adequately

finance activities that were typically underfunded. Moving forward, it is critical that plastic credits develop with an emphasis on securing high-quality results for a range of plastic pollution reduction activities that support a just transition, rather than the cheapest options. At present, there is no transparency around how plastic credit projects are priced. Free market competition without clear distinction between project types or standards may enable a ‘race to the bottom’ where the cheapest plastic credits are prioritized over high-quality results. The tradable nature of a plastic credit also means that projects can choose to sell plastic credits directly or through intermediaries such as project developers, crediting programs, traders, and brokers. The involvement of intermediaries may also increase the price of the final plastic credit without a corresponding increase in the benefit to the project.

#### **4. Plastic credits purchased for compensation may disincentivize ultimate plastic reduction and be misused as a tool for greenwashing and misleading claims, in the absence of clear rules around credit usage and claims.**

There is a risk that voluntary buyers may misuse plastic credits as a tool for greenwashing and carry on BAU. There are currently no global limitations on virgin plastic production or universal reduction targets to ‘turn off the plastic tap.’ In this context, there is an inherent risk that companies will choose to finance solutions beyond their value chain through plastic crediting without taking steps to reduce plastic waste within their own value chain. A plastic credit may represent a reduction in plastic waste, but it does not represent a reduction in plastic waste generation, nor provide a right to generate an equivalent amount of plastic waste. Plastic crediting alone will not solve the plastic pollution crisis.

The impact of using plastic and generating waste is felt most strongly in the location where it is disposed of, and will vary by polymer type (e.g., PET, LDPE, PVC etc.) and product or packaging application (e.g. tubs, bags,

bottles, toys etc.).<sup>70</sup> There are no requirements for buyers that aim to make compensation claims to purchase plastic credits that address the plastic types they use in the locations where this plastic becomes waste. This creates a risk that buyers could achieve a compensation claim without addressing the challenges specific to their own value chain.<sup>71</sup> Placing geographical and polymer-matching stipulations on all credit purchases will require a highly complex plastic credit market. This may prevent adoption by buyers and projects in the early stages as credit projects are not yet available in all geographical regions (see section 3.2 for geographical distribution of credit projects).

In the absence of universally agreed rules and supporting frameworks, there is a risk that buyers could see the purchase of plastic credits to be sufficient to claim that their impact was ‘offset.’ NGOs highlight that plastic credits are not suitable for offsetting purposes; the physical plastic waste generated by the credit buyer will remain unmanaged with its own environmental and social impacts, even with the purchase of plastic credits (e.g., WWF 2021). Buyers can apply a range of claims, some of which are not well-defined and are openly questioned. For example, experts consider plastic neutrality to be misleading; it implies that there is no remaining harm from plastic waste generated after companies invest in plastic waste collection and management equivalent to their plastic footprint. However, the specific waste items generated by the buyer could still be in the environment (see section 3.1 on claims). Plastic pollution can persist in the environment for decades to hundreds of years unless it is directly removed (Chamas et al. 2020).

No organization is tasked with monitoring the use of plastic credits or associated claims, creating further mistrust in their use. Concerns could be addressed with governance frameworks and universal agreement on the responsible use of credits and claims. When

plastic credits are utilized within EPR schemes (e.g., as a compliance tool), the EPR framework itself can provide rules on the potential use of plastic credits. For example, limits can be set on the number and type of plastic credits that an organization can use for compliance purposes each year, and guidance provided on eligible claims. Ensuring the price of plastic credits is sufficiently high to reflect the true cost of pollution may prevent them from being seen as an easy solution and potentially act as an incentive for companies to reduce their own footprint. A clear governance framework and universal alignment on the responsible use of plastic credits are needed.

#### **5. Technical complexity, transaction times, and costs of the plastic crediting process may prohibit project developers, particularly marginalized informal workers and small businesses, from benefiting.**

A robust and transparent plastic crediting system relies on robust and credible standards, methods, and monitoring systems. Small and informal actors will require support to access and benefit from a plastic crediting system. There is a risk that the crediting system increases dependencies on marginalized workers without bringing direct benefits.

The technical complexity required to establish a robust crediting system may act as a barrier preventing smaller or informal organizations from benefiting directly. Taking a project through the registration and credit issuance process requires significant resources and extensive technical knowledge, creating a barrier to entry for smaller or less experienced project actors. Plastic pollution reduction initiatives are often run by poor communities and marginalized informal groups that usually operate on a small scale and have limited capacity to achieve the level of transparency and monitoring requirements needed to generate a credit

<sup>70</sup> For example, polymers such as PET used in rigid bottles have a higher economic value and are considered recyclable in most markets. By comparison, LDPE and flexible packaging (e.g., films) have a low economic value, are challenging to recycle, and may leak into the environment

<sup>71</sup> The Guidelines for Corporate Plastic Stewardship recommend plastic credit buyers to match the purchase of plastic credits to the plastic that needs to be mitigated. This includes a material type match, a regional match. More information [here](#).

under robust standards. These projects may choose to work with third-party service providers to participate in the crediting scheme, whereby service providers lead the work for the project in exchange for a fee or choose not to participate at all. Some crediting programs (e.g., BVRio) operate a simplified crediting process to facilitate access to marginalized informal groups.

Furthermore, the high costs associated with certification may limit the scope of projects that can benefit from the system. There is a risk that projects which require high investment or operational costs may not be able to recover their costs through a plastic credit mechanism. Projects that address specific plastic types, such as microplastic removal from the environment, or removal of plastic from remote environments (e.g., open ocean) are likely to have a high cost per kg or ton of plastic avoided or removed. This may result in prices that are too high to be attractive to buyers, or not high enough to cover the project costs.

For the credit system to be available to a wide range of stakeholders, marginalized stakeholders will need to be supported to access crediting programs without reducing the level of integrity and quality.

#### **6. Plastic crediting programs currently focus on downstream solutions, which risks overshadowing upstream plastic reduction measures if not considered equally.**

Downstream activities are still the focus of crediting systems. Design challenges need to be overcome before plastic credits can be used effectively to support upstream initiatives to reduce plastic use and waste generation. More pilot initiatives are required to test and develop upstream methodologies before rolling out this solution.

At present, downstream activities, including the collection, sorting, and management of plastic waste, are the focus of plastic crediting initiatives. This reflects the need for capital to fund the removal of plastic from the environment and infrastructure, to collect and manage plastic waste going forward, and to direct reduction in total plastic use. However, if a company chooses to purchase plastic credits, it will only be able to finance downstream activities. There is concern among NGOs that this emphasis on downstream activities by crediting programs may be reflected in wider policies without corresponding upstream measures. Financing of downstream activities is necessary but does not displace the need for upstream measures to reduce plastic waste generation. This could be addressed by establishing clear guidance and rules (see also challenge/risk 3 above).

Plastic credits for upstream solutions are being explored. However, robust methodologies need to be codeveloped, tested, and approved by key stakeholders. The main challenge in developing an upstream credit is establishing methods and metrics that are reliable, achievable, and comparable. Upstream projects could issue credits based on the plastic that will be avoided and will require a more theoretical approach to the calculation of the credit. Calculating this 'avoidance' figure will require estimation of the type and weight of plastic used in the alternative scenario, the expected project lifetime, and the number of uses. Additional considerations, such as the project boundary and safeguards to ensure the alternative solution can be managed or recirculated after use, also need to be explored. It is important that stakeholders first align on the definition of an upstream credit and the principles behind accounting methods. Further piloting and multistakeholder input are required to support the effective design of plastic credits for upstream activities.



## 4. RECOMMENDATIONS

Plastic crediting provides one possible tool to direct public and private sector finance into plastic pollution interventions, particularly downstream solutions. However, the ability of a plastic crediting system to help address plastic pollution and realize the benefits identified in section 3.3 depends on effective implementation of the system. Further work is required to address the identified risks and challenges. Establishing a clear governance framework will be key to realizing

the potential benefits of a plastic crediting scheme. Proposed mitigation measures are provided in Table 7. The following section presents recommendations to address the identified challenges and risks associated with a plastic crediting system, and to realize the identified benefits. Recommendations are first provided for the plastic crediting system in general, followed by specific recommendations for plastic crediting within ASEAN countries.

**TABLE 8:** Proposed mitigation measures to address identified challenges and risks

Challenges/risks	Mitigation measures
<p><b>Challenge/risk 1:</b> Plastic credits are in the early stages of adoption. Programs vary greatly in terms of quality and robustness, lack common definitions, and are not aligned on key principles.</p>	<p>Establish minimum requirements and common principles for plastic crediting programs and protocols for the use of plastic credits. Further work is required to establish such a framework and ensure adoption across crediting programs.</p> <p>In the interim, plastic credit programs should ensure that robust calculation methodologies and environmental and social safeguards are in place.</p> <p><i>See Recommendation 1</i></p>
<p><b>Challenge/risk 2:</b> In the absence of alignment between programs and clear governance to ensure market integrity, the results of some plastic pollution activities may be double counted and not result in a net increase of plastic pollution management. Plastic waste collected are not properly disposed or treated.</p>	<p>Robust measures to ensure additionality, a net increase in plastic waste management and avoid double counting should be applied across crediting programs (e.g., thresholds per activity, material, or location thresholds, assigning unique serial numbers, requiring responsible management of plastic waste in all cases<sup>72</sup>Robust measures to ensure additionality, a net increase in plastic waste management and avoid double counting should be applied across crediting programs (e.g., thresholds per activity, material, or location thresholds, assigning unique serial numbers, requiring responsible management of plastic waste in all cases , and disclosing credit transactions on public registries).</p>

72 In locations where plastic is at risk of re-entering the environment after collection, alternative management options should be supported (e.g., establishing a new recycling center, or transporting to the nearest managed landfill).

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**Challenges/risks**
**Mitigation measures**


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Some plastic credit programs require projects to demonstrate that plastic waste has been properly disposed or treated permanently before credits can be issued. Such measures that ensure end-to-end management of plastic waste from collection to final disposal or recycling should be applied to all programs (e.g., specific requirements for disposal sites and measures to demonstrate permanence of waste management). A strong governance framework is needed to monitor effective implementation and ensure independent verification.

In the absence of a common governance framework, credit buyers should review project documentation and crediting programs to understand measures to avoid double counting and ensure additionality.

*See Recommendation 1*

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**Challenge/risk 3:** While the supply of projects is increasing, the current market demand for plastic credits is mostly voluntary and ad-hoc. Lack of sufficient, sustained, and predictable demand, and a risk of low prices for plastic credits could start to hinder project uptake

A fund or pre-purchase facility could address some of the challenges of plastic crediting (e.g., provide technical assistance for marginalized groups, further developing methodologies), and offer financial security to prospective projects.

Establish pricing guidelines and categories to reflect activity type, location, material type and co-benefits.

*See Recommendation 2*

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**Challenge/risk 4:** Plastic credits purchased for corporate offsetting purposes may be misused as a tool for greenwashing and misleading claims, and/or as a disincentive to reduce plastic pollution given the absence of clear rules around plastic credit usage and claims. Plastic credits may be misused to displace efforts from governments or private sector actors to establish extended producer responsibility systems and/or proper waste collection systems.

Develop best practices to promote the responsible use of plastic credits to fund specific activities during a transition period within a wider plastic action framework.

Alignment is needed on the distinction between plastic credits, a tool to finance activities beyond a company's value chain, and activities that directly reduce plastic use within a company's value chain. Guidance is also needed on suitable claims surrounding credit purchases.

A public disclosure platform where buyers report plastic use, mitigation activities within their own supply chain and use of plastic credits will enable monitoring.

Plastic crediting can be utilized as an additional financing tool and should not displace the long-term sustained efforts and commitments from public and private sector actors.

*See Recommendation 1*

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Challenges/risks	Mitigation measures
<p><b>Challenge/risk 5:</b> Technical complexity, transaction times, and costs associated with the plastic crediting process (e.g., project validation and registration, credit verification and issuance) may deter project developers, particularly marginalized informal workers, and small businesses, from directly accessing the mechanism.</p>	<p>Provide technical assistance for early-stage and projects with informal marginalized workers. This may include exploring options to simplify data-collation, and benefit sharing mechanisms for marginalized workers.</p> <p><i>See Recommendation 4</i></p>
<p><b>Challenge/risk 6:</b> Plastic crediting programs' current focus on downstream solutions risks overshadowing upstream plastic reduction measures if not considered equally.</p>	<p>If robust protocols for plastic crediting are established, explore crediting for upstream solutions through extensive piloting and stakeholder engagement.</p> <p><i>See Recommendation 5</i></p>

## 4.1 General recommendations for plastic crediting

### 1. Develop centralized, independent, and neutral governance

The diversity and inconsistencies within the current plastic credit market indicate the need for consistency, minimum standards, and common principles to address the challenges and risks and consequently enable the realization of potential benefits. Multistakeholder initiatives have emerged to address some of the challenges associated with plastic crediting (e.g., PREVENT Waste Alliance,<sup>73</sup> Plastic Footprint Network,<sup>74</sup> 3R Initiative<sup>75</sup>). However, alignment is needed on: (i) a common definition of a plastic credit; (ii) credit units and project types; (iii) core principles; (iv) protocols and minimum requirements for crediting standards;

and (v) the emphasis placed on plastic types and legacy plastics. Guidelines on the components needed for robust calculation methodologies, the use of plastic crediting as a beyond-value-chain mitigation mechanism for buyers, and associated communications and claims, would increase trust in the market. These guidelines and protocols could be grouped under a common governance framework for plastic crediting. The WWF Position Paper highlights several areas to be considered by such a framework (WWF 2021).

A cross-section of key stakeholders can be engaged to achieve high-level alignment and consensus globally for a governance framework. The implementation of international best practice can be supported by regional

<sup>73</sup> <https://prevent-waste.net/our-topics/>

<sup>74</sup> <https://www.plasticfootprint.earth/>

<sup>75</sup> <https://www.3rinitiative.org/>

frameworks to contextualize global guidelines to regional needs. An independent governance body could be established to monitor standards, the involvement of third-party auditors, and the use of credits, in order to address concerns around transparency and build confidence in a plastic credit market. Continuous monitoring of ongoing pilots and funding for new pilots to apply the lessons learned is needed before scaling of a plastic crediting system. Looking at existing environmental markets, the Integrity Council for the Voluntary Carbon Market (ICVCM) prepared the Core Carbon Principles and Assessment Framework to provide a quality standard for high-quality carbon credits in the voluntary market (ICVCM 2023). A similar entity could be developed to support the effective development of a plastic credit market. Taken together, these actions would help address the wide variation in crediting programs, the risk of credits being used as a greenwashing tool, concerns around credit pricing, and risks for marginalized informal workers. Establishing a robust framework for plastic crediting, with consistency, minimum standards, and common principles would also help build trust in the credit market over time.

Moving toward a set of common principles and protocols will require substantial collaboration between crediting standard setters, project implementers (both formal and informal), NGOs, and academic institutions, as well as local governments and industries. In the near term, the INC on Plastic Pollution process may provide a necessary arena for such discussion (see box 3). Once a global policy objective and target are set, plastic crediting can operate as one mechanism to finance plastic pollution solutions complementary to measures that reduce plastic waste generation, regulated by an independent nonprofit organization. While a common framework is being designed, actors seeking to use the plastic credit system should carefully assess plastic crediting programs to understand their standards, methods and procedures particularly around additionality, double counting, environmental and social safeguards.

### **BOX 3: Moving Toward Standardization for Plastic Crediting: The Relevance of the INC Process for Plastic Crediting**

The UNEP INC on Plastic Pollution is working toward establishing an international legally binding instrument for plastic waste.<sup>76</sup> The instrument intends to provide a comprehensive approach that addresses the full life cycle of plastic. This is a significant opportunity to set the international policy direction that addresses plastic pollution and achieves a circular economy.

INC negotiators are considering a range of measures to promote the sustainable production and consumption of plastics, from product design to waste management, and diverse means of implementation. Core obligations under discussion include strengthening waste management; eliminating the release and emissions of plastics to water, soil, and air; and addressing existing plastic pollution. If deemed suitable and appropriate, negotiators could consider plastic crediting as a tool to support financing of



core obligations. To do so, an accepted definition of plastic credits and agreement on the role that plastic crediting could play in fulfilling core obligations are needed. With a plastic crediting system adjusted to ensure the flow of capital to informal and marginalized waste workers, a crediting system may support possible obligations to facilitate a just and inclusive transition. Under the financial assistance element, the concept of crediting could be expanded from carbon credits (UNEP 2023a) to include plastic crediting as a results-based tool. The potential of plastic crediting to support hybrid financial assistance from private and public stakeholders across global regions could be considered. The role of crediting within national policies or EPR schemes should be reviewed carefully with the support of technical experts in plastic crediting before considering their adoption, to explore measures that could effectively address potential risks (see section 3.3). Guidelines on EPR may benefit from shared guidance on plastic crediting contextualized to national requirements.

Critically, the INC process brings together several key stakeholders involved in the plastic crediting value chain, including civil society representatives, policymakers, and the private sector from UN member nations. The INC process provides a much-needed space for multistakeholder discussions to review the potential role of plastic crediting to support the resulting goals and consider the establishment of an independent governance framework. This discussion could also occur under alternative forums. These additional platforms could supplement the efforts made during the INC process, providing more opportunities for comprehensive dialog and action.

### **1.1. Establish common core principles and protocols for plastic crediting programs**

Crediting standards set the framework through which plastic pollution interventions are assessed and verified, and how plastic credits are issued. As the foundation of a plastic credit system, robust standards and methodologies are critical to inspiring confidence within a credit market. A core set of principles and minimum requirements for plastic crediting programs, their standards and methodologies are needed to address the current inconsistencies around plastic crediting initiatives that range from independent standards to all-encompassing crediting programs where actors adopt multiple roles in the plastic crediting process. With a core set of principles, standards can be developed to fit regional and solution-specific needs, while also adhering to international best-practice principles. The Guiding Principles by the Circulate Initiative, and Core

Carbon Principles and Assessment Framework can serve as a starting point for plastic crediting programs (Circulate Initiative 2021).

Common principles should cover the governance, development, design, and continuous improvement of standards. Robust standards and methodologies should include (i) baseline measurement, (ii) demonstration of additionality, (iii) monitoring parameters, (iv) social and environmental safeguards, (v) and measures to avoid double counting (see annex I). Additionality, which requires projects to demonstrate that the project impact would not have occurred without the credit finance, is critical to ensuring that finance goes beyond BAU activities and should be addressed by all standards. Specific measures already adopted by some programs can be expanded across programs, such as setting additionality thresholds that respond to the activity, material or location, requiring checks on project

funding sources and historic waste management in the project area.

Common definitions and requirements to achieve ‘well-managed’ plastic waste (e.g., through managed landfill, recycling etc.) and proof points are needed to ensure that plastic crediting activities across all programs lead to the permanent results. In locations where plastic is at risk of re-entering the environment after collection (e.g., due to lack of ‘well-managed’ disposal facilities), alternative management options should be supported (e.g., establishing a new recycling center, or transporting plastic waste to the nearest managed landfill). Limiting plastic credits to new project activities or those with expanded capacity and implementing checks on the historical management of plastic waste in the project location and the activity history of project owners, can avoid credits being issued on pre-existing activities. Time-bound restrictions are applied by some crediting programs and can be expanded to others (e.g., registration within a certain date, limited number of renewals or registrations). Transparent processes, including publicly available methods, monitoring protocols, third-party verification, and public registries that track the issuance, transfer, and retirement of a plastic credit, are needed to ensure that one credit is issued per unit of plastic. Clarifying the roles and responsibilities of parties engaged in a plastic crediting system with a regional or global body will create accountability and instill greater trust and transparency. Ensuring that standards strive for continuous improvement will enable their adjustment based on feedback and regional needs over time.

To fully realize the potential of plastic credits, it is critical that marginalized groups benefit from crediting projects, particularly projects on plastic waste collection and sorting. Standardizing monitoring requirements and enabling more frequent reporting (e.g., every three months instead of every year), alongside training, guidance, and templates, could be considered to support informal workers to access the crediting system without reducing the integrity of reporting requirements. To avoid displacement of the informal sector and encourage the realization of valuable social benefits, standards

can include specific requirements when informal or marginalized groups are affected and additional safeguards around fair remuneration and distribution of credit finance between project actors. Specific requirements could include contractual commitments to proportionately distribute credit finance to informal and marginalized workers, and social security nets in adherence to local jurisdictions.

Plastic crediting programs can also consider enhanced measures to address low value plastic waste and legacy pollution which are often unattended, for example, differentiating or placing greater weights to plastic types and reduction activities that are more challenging or costly to address. The expansion of plastic credits to include other types of waste can also be considered. The development of crediting standards needs to align with global and regional policy priorities, providing methodologies for pollution interventions that are considered most critical.

### **1.2. Protocols for the voluntary use of plastic credits and associated claims**

Strict protocols are needed to mitigate risks of greenwashing by credit buyers. Companies should be required to publicly disclose plastic-use mitigation activities within their own supply chain and any purchase of plastic credits. These disclosures are an important first step to monitor the use of credits and limit the risks of credits being used as a greenwashing tool. The existence of best practices can promote the responsible use of credits and enable monitoring and improvement of the market over time. Drawing on lessons learned from carbon markets, the accounting framework provided by the Greenhouse Gas Protocol ([GHG Protocol n.d.](#)), alongside standards for claims such as carbon neutrality (e.g., [PAS 2060](#)) and net zero (e.g., SBTi), and a disclosure platform under CDP, provide a framework to guide the use of voluntary carbon credits and measure the validity of claims. In particular, the GHG Protocol sets out that the purchase of carbon credits is not equivalent to a direct reduction in GHG emissions. The Voluntary Carbon

Markets Integrity Initiative (VCMI) has also developed a Claims Code of Practice to address concerns around misuse of carbon credits, and provides a rulebook on credible use of high-quality carbon credits and associated claims ([VCMI 2023](#)). Together, these initiatives provide best-practice guidance for voluntary use of carbon credits.

In the case of plastic credits, the launch of the Plastic Footprint Network to align practitioner methodologies on plastic disclosure, the expansion by the CDP to include plastics under its Water questionnaire, and the WWF ReSource Footprint Tracker demonstrate momentum in corporate plastic disclosure. Recent work by the WBCSD proposes convergence on plastic-related metrics and the foundations for enabling a global corporate accountability framework.<sup>77</sup> Alignment is also needed on the role of plastic credits as a mitigation activity to finance activities beyond a company's own value chain, distinct to a direct reduction in its own plastic footprint. The 3RI Guidelines provide good practices that can serve as a basis for further development, including considerations around project type, plastic type, and location of financed activities (see also annex II). Requiring companies to substantiate communication claims with mitigation activities would also prevent greenwashing. However, without a regulatory framework, there is still a risk that companies will purchase and account for credits irresponsibly. Ultimately, the effectiveness of voluntary guidelines relies on their adoption and monitoring. Establishing a disclosure platform and an independent body to monitor participation would likewise help to track and avoid the potential for greenwashing.

## 2. Address market dynamics and demand levers

A clear signal about the potential viability of a plastic crediting system can help to address uncertainties at this early stage of plastic crediting. The current discrepancies in plastic crediting standards, concerns around greenwashing, and uncertainties around the

potential direction of a credit market are inhibiting the effective development and implementation of the financing tool.

The early stages of the carbon credit market experienced similar challenges—the mechanism was unknown to potential buyers and investments to participate were considered risky. Lessons can be drawn from carbon crediting. Features unique to plastic waste, including material type and the current waste market dynamics, must be considered for a plastic credit market to be effective.

### 2.1. Foster market development

In the early stages of the carbon credit market, a Prototype Carbon Fund was developed to further test the concept and build awareness among stakeholders ([World Bank n.d.](#)). The fund played a crucial role in both developing the first methodologies and purchase agreements and gave confidence to an emerging system. Overall, the program enabled the implementation of pilot activities to demonstrate the potential impact of the carbon crediting mechanism and identify lessons learned.

The establishment of a fund or prepurchase facility for plastic credits could have a similar effect. A fund for plastic credits could focus on the piloting of a specific activity (e.g., waste collection and management), use case (e.g., the use of credits within national policies such as EPR), or the development of new methodologies (e.g., for upstream activities that avoid waste generation). A fund could also focus on supporting informal and marginalized groups' access to a crediting system, including technical assistance and testing payment models (e.g., living wages for workers, proportional income distribution, pricing as a fee for hours worked over metric tons collected). The implementation of projects under a centralized fund would enable testing of methodologies, price floors, and social safeguards, and offer opportunities to familiarize

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<sup>77</sup> Enabling Corporate Plastics Disclosure: opening the debate for the adoption of universal metrics, WBCSD (available [here](#)). Enabling Corporate Plastics Disclosure: building a corporate accountability system for plastic pollution (available [here](#)).

buyers with prospective projects, setting the course for the plastic credit market. A prepurchase facility, where commitments are made to purchase plastic credits from early-stage projects, would provide financial security to prospective projects.

Outcomes bonds could also be utilized to provide up-front financing to plastic projects, in return for future plastic credits. The Plastic Waste Reduction-Linked Bond

launched by the World Bank is an example of this. The Bond provides investors with a return on investment through Plastic Collection and Recycling credits, as well as Verified Carbon Units, issued under Verra Plastic and Carbon Standards. The two selected projects will receive finance over a 7-year period. The projects, in Indonesia and Ghana aim to reduce and recycle plastic waste in vulnerable communities and expand local capacity (see Box 4)<sup>78</sup>.

#### **BOX 4: Enabling action through a Plastic Waste Reduction-Linked Bond**

The Plastic Waste Reduction-Linked Bond enables capital market investors to finance plastic waste reduction and climate action, with a financial return linked to the issuance of Plastic and Carbon Credits.<sup>79</sup> Through the Bond, investors will provide \$14 million in up-front financing to one project in Indonesia and one project in Ghana. In this way, the Bond is able to provide up-front financing that enables the projects to achieve their plastic waste reduction goals. The Bond structure enables the investors to receive a return through the issuance and sale of issued and sold credits. Plastic credits act as a tradeable product, providing a means to measure results.

The project in Ghana will use this finance to operate and scale a community-based project to expand the number of waste collection and recycling sites in Accra. The project enhances waste collection networks and empowers women entrepreneurs to build their own social enterprises. The project in Indonesia will use this finance to scale efforts to reduce ocean-bound plastics in Surabaya. The project empowers coastal communities by providing training, employment, and price premiums to incentivize collection of ocean plastics. The projects also contribute to reducing associated health impacts of plastic pollution and create jobs for marginalized communities. The two projects will implement the ZPO Social Plus standard to alleviate waste picker poverty, provide education on plastic circularity, and build capacity around community health and sanitation.

The projects will be registered under the Verra Plastic Waste Reduction Standard and the Verra Verified Carbon Standard. Citi acted as the Lead Manager for the transaction and has purchased future carbon credits. Plastic Collective is the project developer and seller of plastic credits. Plastic credits will be sold to companies seeking to mitigate their plastic footprint. ASASE Foundation is the Project Owner in Ghana. Greencore is the Project Owner in Indonesia.

78 <https://www.worldbank.org/en/news/feature/2024/01/25/tackling-the-plastics-pollution-crisis-by-channeling-private-capital-to-projects-that-reduce-plastic-waste>

79 Ibid.

An auction format could also support market adoption and test price floors for plastic credits. An example of this format comes from the Pilot Auction Facility for Methane and Climate Change Mitigation (see annex III), where price guarantees are granted to project developers who purchase a “put option” that gives them the right (not the obligation) to sell their carbon credits at a minimum price to the auction manager. An auction approach could be adapted for plastic credits to provide certainty to project actors hesitant to start the credit process over concerns about lack of demand or low prices.

## 2.2. Plan for plastic crediting as a transition mechanism

Plastic credits are a financing tool designed to support the transition to a circular economy, and therefore it is important to plan for a plastic credit system that will be time limited and reduced over time (as plastic pollution reduces over time). A planned phaseout also corresponds to the concept of ‘additionality,’ whereby crediting projects must demonstrate that they go above and beyond BAU. Utilizing plastic credits as a long-term income stream, rather than a transition mechanism to accelerate finance into waste management infrastructure, would go against this fundamental concept. The specific time requirements should be dictated by regional priorities and circumstances. Plastic credits can be developed as a time-bound solution, enabling financing for a specific set of activities that align to national, regional, and global priorities around plastic pollution reduction.

## 2.3. Develop and strengthen mechanisms for appropriate credit pricing

Appropriate pricing of plastic credits is fundamental to their successful implementation. Plastic credits need to be priced to reflect the true cost of addressing plastic pollution and providing all workers (including informal and marginalized groups) with fair wages for the number of hours required to collect and manage waste. The price of a plastic credit will internalize the cost of plastic

waste within an organization and serve as an incentive to reduce waste generation. There is currently no guideline for plastic credit pricing. The volatility of prices for carbon credits serves as an example of the challenges associated with pricing that must be overcome. Establishing pricing guidelines including possibly a minimum price and key factors for price determination.

Ultimately, the pricing of plastic credits will depend on: (i) the activity type (e.g., collection, sorting, recycling); (ii) location (e.g., rural areas may have higher logistics and transport costs than urban centers (Mihai and Taherzadeh 2017); (iii) material type (e.g., low-value and lightweight plastics may require more time per kg collected than higher value items such as rigid PET and HDPE); and (iv) co-benefits (e.g., improved working conditions, GHG emissions reductions, biodiversity benefits). Establishing common project categories, including co-benefits, could help to standardize and increase transparency around pricing (McKinsey 2021). Developing categories for the specific social, environmental, and economic co-benefits, and key indicators including UN living wages and fair distribution of income among actors, could enable these otherwise ‘invisible’ costs and attributes to be accounted for (UNEP 2022). Alternative pricing models that enable workers to be paid per hour worked instead of weight collected can also be explored (ValuCred 2021). Project actors, civil society, and the private sector (e.g., potential buyers, recyclers, and waste management companies) will need to be involved in the development of pricing categories and guidelines.

## 3. Develop guidelines to inform the interaction of EPR and plastic crediting

Guidelines are needed to support the development of EPR schemes against a background of existing voluntary plastic crediting programs and their standards. This may include the use of a plastic crediting mechanism for compliance within the EPR scheme, or the interaction of a voluntary plastic credit market with a mandatory EPR scheme.

Countries that are developing national policies and EPR schemes for plastic waste may consider a plastic crediting mechanism as one possible tool to enable compliance. The creation of a compliance market would serve to stimulate demand for plastic credits, placing them within a holistic framework to address plastic pollution. The use of plastic crediting as a method for compliance should be carefully considered and adopted only when considered to bring significant benefits to the specific EPR scheme. The use of a plastic crediting mechanism can help to connect obligated parties with a ready pool of projects requiring finance. The success of plastic crediting as a tool to enable compliance relies on a strong EPR framework with clear objectives, a well-defined role of plastic crediting, and high standards for credit-generating projects with independent assessments. Countries seeking to integrate plastic crediting into EPR schemes should follow international best practices, including robust requirements for all projects to demonstrate additionality; clear monitoring frameworks; independent audits of projects; and public registries to track the issuance, transfer, and retirement of plastic credits. Plastic crediting programs under category 1 provide an example and may be used by EPR schemes. Establishing minimum pricing and self-regulating mechanisms will be crucial to continuously improve over time. It is important that stakeholders, including crediting experts, project actors, and obligated entities are engaged early on to support the design of effective crediting programs. Independent voluntary crediting standards provide a starting point in the absence of a uniform guideline.

In countries where EPR schemes are in development and voluntary plastic credit projects already exist, close coordination between the two will be fundamental to avoid plastic credits displacing the EPR system. It is important to recognize that plastic projects will require financing over different timescales, and many will require financing beyond plastic crediting. For example, projects that produce a marketable end-product (e.g., reusable packaging, refillable solutions, recycled pellets) may benefit from credit financing for a short time only until they become financially independent. Meanwhile, activities that do not have a final product (e.g., municipal

collection and management) will require sustained financing from central or municipal governments, and the private sector to cover operational and maintenance costs. Prices for voluntary plastic credits should be aligned with expected EPR fees. Clear rules around the interaction of voluntary and compliance schemes will be needed. For example, buyers may wish to purchase plastic credits under voluntary crediting programs to meet or go beyond compliance requirements. The recent developments with Article 6 of the Paris Agreement demonstrate the importance of establishing clear rules around the interaction of voluntary and compliance schemes (see Annex IV). While Article 6 does not regulate voluntary action, it does provide guidance for the voluntary carbon market (VCM) to be Paris-aligned, including key principles for crediting standards, rules preventing credits from the voluntary market being used toward national targets (i.e., NDCs), and safeguards to reduce the risk of gaming. Similar guidance could be established for the interaction of voluntary plastic credits and EPR schemes.

#### **4. Provide technical assistance for early-stage and informal projects**

The criteria and stringent protocols required to create a robust plastic crediting standard can result in high technical and financial barriers to entry. In their present pay-for-services model, plastic credits are best suited to projects that have sufficient capital to start and require support to scale. Small-scale projects and those involving marginalized and informal workers will require assistance to overcome technical barriers such as project registration, monitoring, and credit issuance costs. A range of technical assistance will be required to avoid reducing the level of assurance provided by a plastic credit. For example, data-collation options such as open-source software, simple data-collation interfaces for real-time tracking, or easy-to-use manual systems that would allow these small project actors to continuously monitor their activities would help these project types achieve certification under crediting standards and issue plastic credits.

A benefit-sharing mechanism for informal and marginalized workers will also enable these groups to directly benefit from credit financing. Governments and investors can play a pivotal role in providing upfront capital for project implementation and credit certification through forward transactions to secure a stable future supply or structured credit deals with buyers over multiple years (Aera 2022). The upfront capital required for project implementation and credit certification can, in some cases, be secured by pre-financing in the form of forward transactions or guaranteed offtake agreements. The Pilot Auction Facility provides an example of how this could be addressed. Priority projects that require technical assistance could receive a guaranteed price and option to sell their credits to an end-buyer and participate in a coordinated technical assistance program.

## 5. Future prospect: pilot upstream solutions

Achieving a circular economy requires both upstream and downstream efforts. The concept of plastic crediting could support upstream initiatives that reduce plastic use and waste generation, although significant efforts are required for methodology development and pilot implementation. Methodologies for plastic credits from upstream initiatives will require careful design to consider eligible project types, project boundaries, project lifetimes, methods to calculate baseline rates, and project results. The recommendation is to explore

methodologies for upstream initiatives once the challenges and risks of the current plastic crediting mechanism have been addressed. Early private sector involvement could be beneficial since upstream solutions are likely to be driven by private sector actors (e.g., small-to-medium enterprises operating alternative delivery or reuse systems). The relevance of plastic crediting for initiatives that address microplastics, both upstream and downstream, could also be considered for future development.

Developing methodologies for an upstream plastic crediting will require a thorough and credible process. Due to the hypothetical nature of an avoidance credit, robust piloting will be needed to test and develop methods. Calculating ‘avoidance’ will require comprehensive data about the type and weight of plastic used in the alternative scenario, together with the expected project lifetime and the number of uses. Defining eligible project categories will support the development of methods and best practices to capture a range of possible solutions. Additional considerations, such as the project boundary and safeguards that ensure the alternative solution can be managed or recirculated after use, also need to be explored. Key considerations for methodologies of upstream plastic credits are presented in annex V. Taking one step at a time will ensure a solid foundation of a robust plastic credit market before venturing into upstream solutions.

## 4.2 Proposed actions

Plastic crediting can serve as a complementary tool to accelerate plastic pollution reduction efforts, alongside other legal, fiscal, and voluntary measures. A robust plastic crediting model requires coordinated actions between key stakeholders, aligning on models of best practice. Several challenges must be overcome if policymakers aim to adopt a plastic crediting mechanism. Careful consideration should be given to the role of plastic crediting within wider plastic action and the limits

of a crediting system. As national and regional legislation addressing plastic pollution develops, voluntary plastic crediting schemes will need to adapt to support policy objectives and safeguards to prevent double counting or false claims will be needed.

The following recommendations are provided for key actors and are summarized in table 8.

## FOR POLICYMAKERS AND THE ONGOING INC PROCESS

- Policymakers should assess the suitability and readiness of plastic crediting, develop relevant policies and regulations, create an enabling environment to promote private sector engagement, consider social impacts (especially on informal workers), and establish a central governance framework.
- If considering EPR, policymakers should develop clear and well-thought guidelines to inform the interaction of EPR and plastic crediting.
- The INC process could facilitate stakeholder discussions on accounting and disclosure frameworks, helping establish the operating environment for the responsible use of plastic credits.
- The process could also provide and establish a much-needed space for stakeholders to align on best-practice principles, as well as monitoring, reporting, and validation and verification requirements. If such a group is established through the INC, it could hold a similar role to the UNFCCC CDM Executive Board, which supervises the Kyoto Protocol's CDM and is accountable to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol.

## MULTILATERAL ORGANIZATIONS

- Multilateral organizations can play an important role in building confidence in the early days of the plastic credit market through establishing prepurchase facilities that foster market development.
- Multilateral organizations could help overcome the barriers that small-scale projects and activities led by informal marginalized groups operate through establishing technical assistance facilities for early-stage projects.

## PLASTIC CREDITING PROGRAMS AND STANDARDS

- Plastic crediting programs will need to align on definitions, methodologies, and minimum standards to develop a universal plastic crediting system.
- Plastic crediting programs can consider measures to support small projects and marginalized groups to access the crediting system.
- Programs will need to engage with multiple stakeholders to align on robust accounting methodologies for upstream plastic credits and undertake pilot initiatives.

## CIVIL-SOCIETY ORGANIZATIONS

- Civil society organizations have an important role to play in defining the role of beyond-value-chain measures, including plastic credits within wider plastic action frameworks, and align on best practices for claims associated with plastic credits.
- To ensure plastic credit prices are high enough to achieve meaningful impact, civil society organizations could develop guidelines on how to achieve fair pricing for plastic credits, including research on waste management fees.

## PRIVATE SECTOR ACTORS

- Private sector actors can play important roles in the plastic crediting process (e.g., project owner, seller, buyer, broker, and auditor).
- Private sector actors in the waste management value chain, including waste management operators, recyclers, and credit buyers, play an important role in shaping the plastic credit market, including the development of clear pricing guidelines and addressing market uncertainties.



- Private sector actors should be consulted during the development of plastic credits, including the EPR-crediting interface.
- The private sector, including small- and medium-sized enterprises, are likely to lead the development of upstream solutions. They should be engaged in the piloting and development of plastic crediting methodologies for upstream plastic reduction or avoidance activities.

**TABLE 9:** Summary of Recommended Actions for Key Stakeholders

Measures to use plastic crediting effectively	Risk addressed	Action required	Key stakeholders	Timeframe
<b>Action category 1: Centralized, independent, and neutral governance</b>				
A centralized governance framework to establish best practice, and to monitor and regulate plastic credit providers and users	Mistrust in the plastic credit market	Establish a central governance forum of plastic credits for key stakeholders to align on key criteria	Policymakers	Priority action
Alignment on core principles for plastic crediting programs and their standards	Plastic credits vary and lack validity without common principles/ opportunity for results-based accounting	Initiate collaborative dialog to agree on minimum requirements and accounting methodologies for plastic credits	Plastic crediting programs	Priority action
Protocols for claims associated with plastic credits	Plastic credits used for greenwashing, disincentive to direct reduction	Define the role of beyond-value-chain measures, including plastic credits within wider action frameworks and standards for claims	Civil society organizations	Priority action
<b>Action category 2: Address market dynamics and uncertainties</b>				
Foster market development through a fund or prepurchase facility	Lack of demand and uncertainty	Establish a fund or prepurchase facilities with clear rules and safeguards to support projects and buyers	Multilateral organizations	Short term

Measures to use plastic crediting effectively	Risk addressed	Action required	Key stakeholders	Timeframe
Clear pricing guidelines and categories	Pricing will be too low to finance change	Develop guidelines on how to achieve fair pricing for plastic credits, including research on waste management fees	Civil society organizations; Private sector	Short term
<b>Action category 3: Develop guidelines to inform the interaction of EPR and plastic credits</b>				
Stringent rules around plastic crediting are needed when they are integrated into EPR schemes	Plastic credits used for greenwashing, pricing will be too low to finance change	Establish clear rules around eligible standards and projects, including measures around additionality and avoiding double counting	National governments	Medium term
<b>Action category 4: Technical assistance for early-stage and informal projects</b>				
Mechanisms for early-stage and informal project actors to be supported and integrated into crediting systems	Address technical barriers for early-stage and informal project actors	Establish technical assistance facility for early-stage projects	Multilateral organization	Medium term
	Insufficient, irregular, and unpredictable demand	Establish a pilot auction facility to support these project types	Multilateral organization	Medium term
<b>Action category 5: Upstream interventions</b>				
Development of methodologies for upstream plastic projects	Plastic crediting focus on end-of-pipe solutions only; opportunity for upstream	Undertake pilot testing with upstream plastic credit projects	Plastic crediting programs; Private sector actors	Long term
		Participate in roundtables to develop robust methodologies	Plastic crediting programs; Private sector actors	Long term

Source: South Pole 2023.

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# ANNEX I

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## Key components of a crediting standard

Plastic projects may apply standards and methodologies to validate their results and issue plastic credits. Key concepts for a robust crediting standard and methodology are presented here.

### PROJECT CREDITING PERIOD

The crediting period is a defined number of years during which the project can issue credits. Projects undergo an in-depth project certification process at the start of this period and issue monitoring reports during this time. This provides a set timeframe during which projects can plan to receive credit finance. Projects that wish to issue credits are required to repeat the certification and determine whether their project is still eligible.

### PROJECT ELIGIBILITY CRITERIA

Project activities that can apply to issue plastic credits are defined by the crediting standard. This can include parameters around the type of activity, (e.g., collection or recycling), the location of the activity, or specific material types, (e.g., plastic types or ocean-bound plastic).

### ADDITIONALITY

The concept of additionality is one of the most important metrics to determine the eligibility of a plastic crediting project, yet it is one of the most complex to validate. It requires projects to demonstrate that their activities would not occur without the credit finance during the

project-crediting period. This requires an understanding of the current situation as well as an estimate of how this may change during the crediting period. Accordingly, it is vital to have and to communicate robust methods to demonstrate additionality and thereby maintain trust in any crediting system. Methods to demonstrate additionality for plastic credits can be drawn from three main methods under existing carbon standards:

- **Positive list:** a shortlist of project activities or technologies that are considered automatically additional. There is high certainty that the project activities are not profitable without the credit finance. Standards are required to monitor the relevance of listed projects.
- **Common practice:** project activities or technologies are not widely adopted and require additional financing to be adopted at scale. These methods typically set a threshold that requires analysis and updates based on the changing environmental situation.
- **Financial or investment analysis:** projects are required to demonstrate the financial need for credits, providing an overview of their expenditure and revenue.



## BASELINE

The baseline determines the status quo scenario without the project activities and is used to calculate the number of credits that a project can issue. The baseline can be determined using data from the years preceding the project start date, or from the same year. Measurement of the baseline is often theoretical as it assumes a hypothetical status quo throughout the project crediting period. Baselines are reestablished if the project reapplies for plastic credits after the initial crediting period. Self-regulating mechanisms from carbon standards can be adapted for plastic credits; the baseline must be reassessed at set periods or after the set crediting period, and future credit issuances are reduced if the baseline was estimated to be higher than actual performance. This enables projects to even out their impact over time.

## PROJECT RESULTS

Project results refer to the amount of plastic waste that is avoided, collected, or recycled by a project. This figure is measured against the baseline to determine the number of credits that can be issued each year by a project.

## MONITORING

Monitoring parameters are set by crediting standards to track and record the amount of plastic waste that is avoided, collected, or recycled by the project. Monitoring methods should be consistent and provide as high a level of assurance as possible. Monitoring reports are completed at set periods determined by the standard. Establishing fixed monitoring parameters and exploring digital monitoring may help to reduce the reporting burden for small-scale and informal projects.

## SOCIAL AND ENVIRONMENTAL SAFEGUARDS

Safeguards can be included to ensure minimum compliance with social and environmental laws. They provide an opportunity to improve the working conditions for staff and surrounding communities. Safeguards can include, for example, measures to avoid marginalization of minorities (e.g., women or ethnic minorities), to avoid child labor, to provide health and safety training and equipment, and to include the informal sector in benefit sharing.

## ANNEX II

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### Incentivizing private sector investment through the pilot auction facility

The Pilot Auction Facility for Methane and Climate Change Mitigation (PAF) is a results-based mechanism that aims to incentivize private sector investment and action on climate change by providing a guaranteed floor price on emission reductions in the form of carbon credits. The PAF auctions are supported by Germany, Sweden, Switzerland, and the United States. Three auctions were completed to date and, through these auctions, the PAF has allocated up to USD 54 million with the potential to abate 20.6 million t of carbon dioxide equivalent (CO<sub>2</sub>e) ([PAF n.d.](#)).

The PAF provides price guarantees to projects and project developers that purchase a “put option” that gives them the right (not the obligation) to sell their credits at a predefined minimum price to the World Bank. The impact is transferred to the donors purchasing the credits. This enables projects to secure a minimum return if prices in the market drop significantly and reduces the risk of a volatile voluntary market. Projects still have the option to sell their credits on the open market if pricing has improved.

The PAF setup includes several safeguards to ensure impact. Projects can trade unused “put options” to other projects. This reduces the risk of non-delivery from projects that were not able to complete their impact, or that sold credits on the open market. The PAF

works best when there is both a clear policy objective setting the direction of travel toward a specific project type and demand from governments to achieve this. Risks are shared between public and private investors. The eligibility criteria are determined by the PAF and are based on agreed and accepted standards (e.g., the Clean Development Mechanism (CDM), Verified Carbon Standard, and Gold Standard). Funds are only transferred once the credit is verified by a third party. The PAF has held four auctions, each targeted to different project types.

Climate auctions can help policymakers achieve mitigation results in line with their NDCs and direct incentives to kick-start mitigation investments in key sectors. As they rely on limited public funding, they can provide a starting point to determine minimum pricing, which can help unlock finance more widely. Moreover, by providing price assurances, climate auctions support national policymakers in building viable project pipelines to meet their national targets. Auctions can also help to build private sector capacity and willingness to engage in carbon pricing schemes by providing incentives to stimulate investments in key sectors before they are subject to mandatory pricing ([World Bank 2019](#)). By leveraging finance into targeted projects, they ultimately help strengthen market infrastructure to achieve reductions ([World Bank 2015](#)).

## ANNEX III

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### The Paris Agreement and Article 6

The objective of the Paris Agreement is to facilitate collective action toward keeping global temperatures well below an increase of 1.5°C or 2.5°C above preindustrial temperatures and to aid mitigation and adaptation to climate change (Seddon et al. 2019). Each signatory sets their nationally determined contributions (NDCs) to cut emissions and adapt to climate change in line with the Paris Agreement (United Nations Framework Convention on Climate Change [UNFCCC] n.d.(a)). The carbon market is one mechanism for funding global climate action in line with the Paris Agreement. Article 6 of the Paris Agreement regulates the development and trade of carbon assets in the compliance market.

Article 6 provides clarity on project development guidelines, the use of carbon assets (i.e., carbon credits) in meeting national emissions reductions targets, and the trade of carbon assets for use in emission-reduction accounting internationally. To avoid double counting, emission reductions achieved by projects are either accounted for against one country's NDCs or claimed by the corporate buyer or host country.

While Article 6 does not regulate voluntary action, it does provide guidance for the voluntary carbon market (VCM) to be aligned with the Paris Agreement. Thus, some VCM standards may update their standards to align with Article 6 principles (e.g., corresponding adjustments). Demand for VCM credits may also be impacted by updated national requirements from host governments and buyers for Paris Agreement alignment.

While projects may still choose to participate in voluntary credit markets, credits from the voluntary market cannot be counted toward NDCs. This means that some countries may struggle to meet their NDCs using credits, while others may be able to sell their surplus credits or internationally transferred mitigation outcomes (ITMOs) to countries still needing to reduce their emissions. This was critiqued for a risk of gaming, as countries may set lower or unambitious targets to be able to meet such targets or to profit from an increased volume of ITMOs sold. This is currently being addressed by including reporting and technical review processes under the Paris Agreement's Enhanced Transparency Framework for evaluating NDC achievement and revisions.

## ANNEX IV

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### Methodological considerations for upstream plastic credits

To develop a reliable upstream credit, all projects are required to measure the output of the project in a meaningful function unit that can be compared to the baseline.

#### ACTIVITY TYPES

- **Avoidance:** projects that opt out of using plastic or packaging without the need for replacement (e.g., refill systems or alternative delivery services)
- **Reuse:** projects that replace single-use plastic with a reusable alternative (e.g., reusable cups)
- **Replace:** projects that decrease the use of petroleum-based plastic with the need for a plastic replacement (e.g., a packaging solution with a lighter weight)
- **Reduce:** projects that use an alternative material to displace the use of petroleum-based plastic (e.g., bio-based plastics or natural fibers)

Examples of potential project activities are provided in table A1V.1.

#### PROJECT BOUNDARY

The boundaries of the crediting project may vary by project and should include, at minimum, the stage when the activity replaces the usage of plastic in the baseline. In projects that focus on reducing the weight of plastic used, it is necessary to include the plastics' production

stage. The point when the material enters its use phase can be considered the main measurement point. The mass of plastic could be measured as a meaningful functional unit (e.g., a liter of water, a pallet wrap, or a portion of takeaway). Projects that provide a reusable alternative to single-use plastic may also need to measure the number of usage cycles of their alternative reusable solution.

#### QUANTIFICATION OF PROJECT IMPACT

Measuring the impact of the project requires an understanding of 1) the baseline impact, 2) the project's plastic material use to calculate, and 3) the net project impact.

##### 1. Baseline

The baseline represents the conventional amount of plastic that would be used in the absence of the upstream project activity. To determine the mass of plastic avoided, the plastic intensity per functional unit needs to be established. The baseline scenario should be calculated using the plastic type and packaging or product application that the solution is replacing. For example, if a reusable bottle program intends to displace disposable PET bottles, the baseline should establish the number of times that the PET plastic bottle would be used before disposal. This is likely to be challenging for initial projects as public data may be limited. This credit type may benefit from additional piloting to develop project-specific measurement guidelines.

## 2. Project plastic material use

The amount of plastic used by the project should be calculated. It is recommended that projects measure the following:

- project plastic material usage in each year (kg),
- plastic intensity of the project's product (kg plastic/functional unit), and
- number of functional units sold by the project in the accounting period (e.g., each year).

## 3. Net project impact

The impact of avoidance activities can then be calculated by comparing the project's plastic or component material use against the baseline. This can be calculated per year or another specific period of time which aligns with the usage cycle, such as a number of reuse cycles within the packaging lifetime ([WEF 2021](#)).

## ADDITIONAL SAFEGUARDS FOR CIRCULARITY

Crediting programs that integrate upstream projects will need to consider safeguards to avoid creating a different environmental or waste problem (see table AIV.1 for examples of upstream projects). In reuse, reduction, or replacement projects, the alternative packaging solutions adopted should be able to integrate easily into existing waste management infrastructure in the location where they are sold. This means that any waste generated needs to have an equal or higher recycling or composting rate than the waste generated in the baseline. For example, bio-based or biodegradable plastics are currently considered to be popular substitutes to petroleum plastics. However, for these substitutes to be effective solutions, they need an effective socio-technical regime ([Beltran et al. 2021](#)). For bio-based biodegradable plastics, this means having segregated collection and organic composting facilities. Without this supporting infrastructure, these solutions are likely to be sent to landfill or further complicate recycling waste streams. Furthermore, bio-based plastics, whose raw material is often agricultural produce, should neither interfere with food security nor include materials that are toxic to humans. Bio-based materials manufactured from agri-waste should be prioritized as substitutes. Bio-based plastics that are not biodegradable may also contaminate existing plastic waste streams for recycling. The activity by the crediting project is intended to displace the use of plastic. Additional evidence may be needed to demonstrate that the solution will be adopted and lead to an overall reduction in plastic consumed. In all cases, projects should be able to indicate that the project has no negative impact on circularity.

**TABLE AIV:** Examples of Upstream Plastic Project Activities

Upstream activity	Hypothetical examples: potential rationale	
<b>Avoidance</b>		<p><b>Zero Waste Bali, Indonesia:</b> grocery stores selling goods in bulk without packaging, avoiding the use of plastic packaging and bags. Reusable glass jars can be used by consumers.</p> <p>Potential rationale for credits: products sold in bulk are often more expensive than packaged alternatives, while the business model is limited. Credit finance could help to scale and replicate the model. across regions.</p>
<b>Reuse</b>		<p><b>Muuse, Singapore:</b> reusable packaging services for cafés and food-delivery services across Singapore.</p> <p>Potential rationale for credits: consumers still find reusable packaging services less attractive due to their current limitations, such as the limited locations where these are offered, and the higher upfront costs required. Financing would help scale the project, removing these barriers to access and expanding the services to more customers.</p>
<b>Replace</b>		<p><b>Avani, Indonesia:</b> Avani offers products made of plant-based material, such as cassava and bagasse.</p> <p>Potential for plastic credits: packaging made from alternative packaging has limited demand as it is significantly more expensive than virgin plastic. Financing plastic credits could help reduce costs for consumers.</p>

Source: [Zero Waste Bali n.d.](#); [Koinpack n.d.](#); [Muuse n.d.](#); [Biopak n.d.](#); [Avani n.d.](#)

## ANNEX V

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### Landscape of plastic crediting in Southeast Asian countries

There is currently an unequal level of understanding on plastic credits across Southeast Asian countries. States where plastic crediting programs have gained traction have a greater understanding of plastic crediting as a voluntary initiative. For example, in the Philippines, the headquarters of plastic crediting program PCX Solutions is most advanced in its consideration of plastic crediting; several Philippine FMCG brands have voluntarily purchased plastic credits, and the Philippines

government recently included a crediting mechanism as a compliance tool within its EPR scheme. Comparatively, Indonesia and Cambodia are in an exploratory phase of applying the plastic crediting model, with several plastic projects registered under crediting programs in categories 1 and 2 and interest rising in plastic crediting initiatives. Table AV.1 outlines the development of plastic credit projects and the status of EPR in Southeast Asian countries.



**TABLE AV:** Overview of Plastic Credit Projects and EPR in Southeast Asian Countries

Country	Number of projects	Crediting programs	EPR status	Does EPR law include plastic crediting
<b>Cambodia</b>	1	OBP Neutralization Certification	None	N/A
<b>Malaysia</b>	1	OBP Neutralization Certification	Voluntary EPR	No
<b>Philippines</b>	16	PCX Solutions, BVRio CCM	Mandatory EPR in force since 2023	Yes - “plastic offsetting” permitted
<b>Thailand</b>	5	PCX Solutions PPRS, Verra PWRS, BVRio CCM	Under consideration	Unknown
<b>Indonesia</b>	17	OBP Neutralization Certification, PCX Solutions PPRS, Verra PPRS, BVRio CCM	Mandatory / Voluntary EPR in force since 2020	No - plastic crediting compatible with obligations <sup>80</sup>
<b>Lao People’s Democratic Republic</b>	0	N/A	None	N/A
<b>Vietnam</b>	4	OBP Neutralization Certification, PCX Solutions PPRS, BVRio CCM	Mandatory EPR since 2022	No - plastic crediting compatible with obligations <sup>81</sup>

Source: [Verra n.d.](#); [OBP n.d.](#); [PCX n.d.](#); [RMS n.d.](#); [Resource Recycling 2019](#); [WWF 2019](#); [Lorax EPI n.d.](#); [OECD, n.d.](#)<sup>82</sup>

80 Plastic crediting is not explicitly mentioned in the EPR legislation in Indonesia. Plastic credits may still be used to meet requirements to fund waste management.

81 Plastic crediting is not explicitly mentioned in the EPR legislation in Vietnam. Plastic credits are one method that obligated entities can use to meet compliance requirements to finance third party services. See UNEP (2022).

82 This table represents data from plastic crediting programs in October 2023.



## Deep dive on plastic crediting in the Philippines

Plastic credit projects have been available in the Philippines since 2020, coordinated primarily by PCX Solutions, a plastic crediting program headquartered in the Philippines. This program has supported plastic waste collection and sorting initiatives that divert waste from unmanaged landfills to co-processing and recycling, while creating livelihoods and providing alternative income streams for waste workers.

During the development of EPR legislation, plastic credits were reviewed and considered a viable mechanism for compliance. Plastic credits are included as “plastic offsets” within the EPR Act RA 11898. The inclusion of plastic crediting aims to address the major problem of flexible packaging in the Philippines while gradually targeting rigid packaging. Obligated enterprises (OE’s) can use plastic credits to meet their obligations in recovering the required packaging volume. Plastic credits to be used in the scheme are expected to come from projects within the Philippines, while obligated parties are expected to offset their plastic footprint against similar polymer types, starting with 20 percent of the year 2022’s total plastic output; there is a year-on-year increase in the percentage companies will have to account and take responsibility for. Commencing in 2024, the EPR target will be applied to OEs.

The Philippines could set a precedent for other member states in ASEAN, because it recognizes the potential of plastic credits as an effective modality for implementing EPR and has taken strides to integrate plastic credits into the EPR Act. This EPR Act lapsed into law in July 2022. At this early stage of implementation, the government is currently focusing on OE’s registration and developing guidelines for footprint measurement. The guidelines for using plastic offsetting for compliance are not yet available but are planned for future development. Thus, the recommendations below are as much for the Philippines, which is in the process of integrating credits into mandatory compliance, as they are for other

member states with voluntary plastic credit markets and EPR schemes in varying stages of enactment.

The following recommendations are provided to maximize the effectiveness of plastic credits within the Philippines’ EPR system.

### **INCLUSION OF CRITERIA AND PROTOCOL FOR PLASTIC CREDITS WITHIN EPR ACT RA 11898**

The current reference to “plastic offsets” as a viable modality for compliance can be expanded upon to ensure plastic credits are effective in their objective to reduce an obligated enterprise’s plastic pollution. An additional amendment in Act RA11898 should define the role of credits, including robust calculation and reporting methods; standards on certification authorization; the authentication of claims for EPR; as well as the inclusion of parameters to ensure additionality and prevent double counting. This would set the stage both for a more effective and implementable EPR scheme and the viability of credits as an effective modality for compliance. Claims via credits should be made clear and transparent to stakeholders, demonstrating the percentage of the footprint that is managed as a mode of compliance rather than making broad claims on neutrality which may be misleading to stakeholders.

For this to take place, multiple stakeholders must convene to develop local standards that consider existing international and local standards, and work to bridge the divide between the high requirements of international standards and the realities on the ground in a local context. Management criteria and geographically and demographically representative bodies to monitor and govern implementation, and the adaptation of standards through an iterative process, will be key to developing standards that move from paper to practice.

## INCLUSIVITY OF SMALL-SCALE, REMOTE PROJECTS WITH SOCIAL SAFEGUARDS

As an archipelago, the needs of projects in Metro Manila, Luzon, may differ from those in rural areas of Luzon or the other populated islands. Plastic crediting could be an effective method to track pollution and reduction efforts in these less accessible, and therefore less visible, parts of the country, particularly for the 11 most populated islands. For remote projects to participate, support programs in the form of technical guidance for data collection and certification, and access to funds for certification, should be made available. The same can be said for activities that are community-led or based around informal workers. Integrating social safety nets for the informal sector while supporting these remote projects to participate will require additional consideration, for example, avoiding displacing activity from one group of informal participants to another group of formal participants. It should provide means for inclusion of informal workers and have alternate roles that are both safe and provide secure sources of income if their activities are displaced by the mechanization of waste sorting.

## A BRIDGE TO INCLUDE SMALL PROJECTS IN LARGE-SCALE INVESTMENTS AND DEVELOPMENT FINANCE

Funds are increasingly becoming available to combat plastic pollution in the region. However, institutional investment and development funds often lack the appetite for risk that small-scale projects present. Regardless of their impact, these small-scale projects are often ineligible for the size of investments sought by traditional institutions. Development banks and impact investors can treat plastic crediting as a financing mechanism that can bridge this gap and de-risk investments in these high-risk, high-impact projects. Since plastic credits provide a direct channel for capital to flow to a unit of impact on the ground, they would provide the capital and data collection necessary for a project to get operations off the ground and collate the data through impact metrics that would be appealing to an impact fund. Furthermore, producer responsibility organizations (PROs) in the Philippines, for example, can cluster small projects together and issue credits. This would also enable the necessary sizing and scaling up sought by institutional investment.

# UNLOCKING FINANCING TO COMBAT THE PLASTICS CRISIS

Opportunities, Risks, and  
Recommendations for Plastic Credits

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June 2024



