



Course material prepared by adelphi research gGmbH

TRAINING OF TRAINERS

Extended Producer Responsibility (EPR) for plastic waste

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Berlin, 2025

www.promar.org

This guide to delivering capacity building for Extended Producer Responsibility (EPR) was developed as part of the PROMAR project, funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)



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List of Abbreviations

Abbreviation	Full Form
BMUV	German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection
BVI	British Virgin Islands
CPR	Collective Producer Responsibility
DRS	Deposit Refund Systems
EPR	Extended Producer Responsibility
IKHAPP	International Knowledge Hub Against Plastic Pollution
IPR	Individual Producer Responsibility
IRS	Informal Recycling Sector
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and Development
PET	Polyethylene Terephthalate
PRO	Producer Responsibility Organization/Operator
PROMAR	Prevention of Marine Litter in the Caribbean Sea
SIDS	Small Island Developing States
SME	Small and Medium-sized Enterprises
T&T	Trinidad and Tobago
ToT	Training of Trainers
WWF	World Wildlife Fund

1 Background – PROMAR and EPR

Managing waste has become an urgent challenge worldwide, particularly in countries facing rising consumption and inadequate waste infrastructure. Small Island Developing States (SIDS) and countries in the Global South struggle with unique obstacles due to their geographical spread, heavy reliance on imports, and the growing impact of tourism, which all contribute to increasing waste generation. With SIDS producing nearly 48% more municipal solid waste per capita than the global average, the need for sustainable solutions is more critical than ever (UN Environment, 2021).

Extended Producer Responsibility (EPR) offers a transformative approach to tackling this crisis by shifting the burden of waste management from local governments to producers. By making manufacturers responsible for the entire lifecycle of their products, particularly packaging waste, EPR not only reduces pollution but also promotes circular economy principles, encouraging sustainable design, recycling, and resource efficiency. Although EPR has gained renewed attention in recent years, it is not a new concept. First introduced in the late 1980s in response to the growing complexity and volume of plastic waste, EPR policies have since expanded globally (OECD, 2016). While many industrialized countries have successfully implemented EPR schemes, developing and emerging economies still face significant challenges in adapting them to their local context. In particular, countries facing increasing amounts of packaging waste and inadequate waste management infrastructure need to take action to prevent marine litter and other forms of plastic pollution (GIZ, 2018).

Recognizing these challenges, the Prevention of Marine Litter in the Caribbean Sea (PROMAR) project was launched to reduce plastic waste pollution in the Caribbean by promoting circular economy solutions in the Dominican Republic, Costa Rica, and Colombia, with additional participation from the British Virgin Islands, St. Kitts and Nevis, Trinidad and Tobago, Guyana, and Suriname. Funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection (BMUV) and led by adelphi, PROMAR supports countries by providing policy advice on waste management and promoting the adoption of EPR as a key strategy.

To strengthen local capacity, the PROMAR project has developed a two-day Training of Trainers (ToT) program designed to teach project partners and policymakers the fundamentals of EPR, its objectives, required institutions, and financial flows. Through collaborative learning, stakeholders work together to develop a shared understanding of EPR tailored to their country's context.

The aim of this toolkit is to support public sector stakeholders by providing background information on the status of circularity in the packaging sector, the needs and potentials in the context of the Global South, presenting and explaining different strategies and approaches along the value chain, equipping them with a technique for policy prototyping for circularity in plastics and packaging, and providing an overview of existing toolkits and best practice examples in the EPR context.

This toolbox serves as both an introduction to EPR and a practical guide for its implementation, particularly in countries with growing waste challenges. By understanding and adopting EPR schemes, policymakers, businesses, and communities can work together to build a more sustainable and waste-resilient future.

2 Purpose and Structure of the Training/Workbook

3.4 Purpose of this Workbook

This workbook provides a comprehensive overview of Extended Producer Responsibility (EPR) and its role in addressing marine plastic pollution. It covers key aspects such as EPR design options, complementary measures, institutional frameworks, and potential implementation models. Additionally, the workbook includes case studies to illustrate real-world applications of EPR.

Designed to accompany the EPR training program conducted by PROMAR and its partners in Caribbean countries, this workbook serves as a practical guide for both facilitators and participants. It provides detailed instructions for trainers and facilitators on how to effectively conduct the Training of Trainers (ToT) sessions.

The workbook includes:

- Step-by-step guidance on delivering the training
- Connections between EPR and the Circular Economy, highlighting how it supports sustainable waste management
- Detailed background texts on EPR and its implementation
- Instructions for interactive activities, including prototyping exercises for EPR system design
- A best practices repository, offering examples of successful EPR models and other existing toolkits for further reference

By combining theoretical knowledge with practical exercises and real-world examples, this workbook ensures that trainees gain both the conceptual understanding and practical skills necessary to implement EPR effectively in their local contexts. Overall, this workbook serves as a comprehensive guide that can be used to train other trainers, enabling them to effectively teach and implement EPR concepts in their respective contexts.

3.5 Structure of the Workshop and the aligned Workbook

Table 1: Workshop Agenda

Module 1: Understanding the Problem of Marine Pollution and how EPR can help	Module 4: What are complementary measures to EPR systems and how do they work?
Module 2: Introduction to EPR Basics	Module 5: Institutional Implementation of EPR
Module 3: Design Options of EPR Systems	Module 6: Case Studies

Like the workshop, the workbook is therefore structured in modules. It accompanies the training course and contains all the information that is important for the implementation of the course to serve as guiding material for the facilitators. At the same time, it also contains information on EPR in more detail and thus provides background knowledge for the participants.

If knowledge is already available, **it is possible to jump to individual modules** or use them as a reference book.

Depending on the target group, there may be different requirements / questions for an EPR system. It thus may be necessary to consult additional resources. Some of these are also linked in the workbook.

3.6 Learning objectives

The goal of this **Train of Trainers (ToT) workshop** on EPR is designed to empower participants with the knowledge, skills, and resources needed to effectively train others on the subject.

The key objectives of the EPR ToT workshop include:

- Enable participants to understand the principles and practical implementation of EPR systems
- Raise awareness about the problem of marine pollution and how EPR can help mitigate it
- Understand the variety and diversity of possible EPR policies
- Highlight the importance of engaging various stakeholders, including producers, waste management companies, local authorities, and the informal sector.
- Teach participants how to map actors and partners involved in EPR and define their roles and responsibilities.
- Guide participants in developing a roadmap for the implementation of EPR systems, from the idea to the execution

In which way should this be achieved?

- Foster a collaborative learning environment where participants and facilitators co-create content instead of frontal teaching only
- Encourage sharing of experiences (from the respective countries) and best practices among participants to enhance learning outcomes and make them more applicable
- Provide practical tools and interactive methods to help participants apply what they learn in real-world scenarios.

3.7 Applied tools and interactive methods

Didactics towards the end of each module:

Each **module** can end with a short reflection (10') on the didactics **if participants are trained to deliver the training themselves.**

1. Reflection on the Learning Process:

- What new information have I learned in this module?

2. Connection with Personal Experiences:

- How can I apply what I've learned to my own experiences or professional life?

3. Critical Examination and Discussion:

- Are there aspects of the topic that I haven't fully understood or that I want to learn more about?
- What questions do I have about the presented information or the introduced tools?

4. Application of Teaching:

- Are there specific actions or measures that I want to implement as a result of this module? Do I have feedback or suggestions for improving the module or the teaching methods?


What additional resources or information would help me better understand the topic or learn more effectively?

3 Modules

3.1 Module 1: Understanding the Problem of Marine Pollution and how EPR can help

Learning Objectives <i>After completion of this module, participants will be able to:</i>	Delivery Method(s) for Facilitators
<ul style="list-style-type: none"> • Understanding the problem of marine plastic pollution • Establishing EPR as a policy solution • Defining the status quo in the target countries 	Group activity, discussions, presentations
Resources required	Duration
Sticky notes, pinboard	online 30min; in person 60min
Further Resources: <ul style="list-style-type: none"> • https://www.giz.de/en/downloads/giz2022-en-epr-plastic-packaging-litter.pdf • https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2024.1363269/full • https://files.grida.no/wp-content/uploads/2024/10/ExtendedProducerResponsibility_EN.pdf 	

3.1.1 Didactics of Module 1


 **GROUP ACTIVITY TOWARDS BEGINNING OF MODULE 1 (10 MIN)**

Question: What do you know about marine litter and its effects? Which problems are caused by (plastic) packaging and its disposal? + Quiz in Canva

Participants: Discuss with each other and share insights from their community.

Facilitator: Writes down some of the common points on sticky notes and puts them on the pinboard.

Module 1



Role of EPR in a Circular Economy

How does EPR support a circular economy?

- Shift responsibility to consumers
- Ignore waste management
- Promote disposable products
- Encourages sustainable design and recycling

Absenden

● Live

What is a key organizational responsibility in waste management?

- Educate the public on proper disposal
- Fund Take-Back Programs for recycling
- Invest in waste management facilities.

Absenden

● Live

How can Small Island Developing States (SIDS) improve waste management systems?

- Exclude informal workers from waste systems.
- Involve informal waste workers in formal systems.
- Focus solely on international experts for management.

Absenden

● Live



GROUP ACTIVITY AT THE END OF MODULE 1 (10 MIN)

Questions:

- How is the Waste Management System (WMS) in your country? What are the primary challenges from your stakeholder perspective?
- What role does your stakeholder group play in advancing Extended Producer Responsibility (EPR) and Circular Economy (CE) initiatives?

Participants: Divide into groups representing different stakeholders, such as government officials, industry representatives, environmental NGOs, and community leaders. Each group discusses the current state of waste management systems, focusing on challenges and solutions relevant to their stakeholder role. They explore their contributions and responsibilities in promoting EPR and CE practices, sharing insights on collaborative efforts and potential improvements.

Facilitator: Encourages each stakeholder group to present their perspectives, highlighting unique challenges and potential solutions. Writes down key points and examples on sticky notes, arranging them on a pinboard under 'Stakeholder Challenges' and 'EPR/CE Roles'. Facilitates a discussion on how these diverse perspectives can inform a comprehensive strategy for sustainable waste management and pollution reduction.

3.1.2 What are the general reasons for the pollution problem?

Marine plastic pollution (MPP) refers to waste material from plastic that ends up in the oceans or in coastal environment. As plastics take up to 1000 years to degrade and even then do not fully break down completely but become microplastics (Carney Almroth & Eggert, 2019; Fava, 2022), they pose a serious threat to the environment. The Caribbean Sea is reported to have one of the highest levels of plastic pollution of any marine ecosystem, with an estimated 320,000 tons of plastic waste remaining uncollected yearly (World Bank, 2023).

It is therefore key to understand why and how plastics end up in the oceans. These are some of the main reasons for MPP:

- **Increase in plastic production and consumption:** Plastic-use worldwide, particularly single-use plastics such as plastic bags, bottles, and packaging which make up almost 50% of overall plastics production, has increased dramatically in the last decades and is projected to triple until 2040 under present conditions (Carney Almroth & Eggert, 2019; Tekman et al., 2022). The increasing quantities of litter being disposed of are leading to a stark increase in marine litter found at sea and on shores. Currently, an estimated 14 million tons of plastic enter the oceans every year (International Union for Conservation of Nature and Natural Resources [IUCN], 2024).
- **Inadequate management of plastic waste:** Around 80% of ocean plastic originate from land-based sources, with the rest being produced by the fishing industry (Copernicus Marine Environment Monitoring Service [CMEMS], 2025). Most MPP therefore results from inadequate waste management (OECD, 2022) at land. The lack of proper waste management infrastructures (for collection, disposal and recycling) increases the likelihood of plastic waste being improperly disposed of (e.g. dumped outside landfills or in leaking landfills) and thus contributes significantly to the problem (Ritchie, 2021). At the moment, almost three billion people lack proper waste services globally (ISWA, 2025) and improper disposal of plastic waste through dumping and littering is a widespread problem. Economic and financial constraints may hinder investments in sustainable waste management practices, infrastructure and recycling and can impede the development of comprehensive solutions to address plastic pollution.
- **Economic factors:** Often, improper or unsustainable waste management practices are a result of economic and financial constraints that hinder investments in infrastructure and recycling and

can thus impede the development of comprehensive solutions to address plastic pollution. The setup of the local economy also determines a country's likelihood to contributing to MPP. Certain sectors such as the tourism industry are main drivers of plastic pollution, as visitors may not be aware of or prioritize local waste management practices (CMEMS, 2025). The Caribbean, which is a popular tourist destination, is therefore particularly prone to generating large amounts of plastic waste.

- **Geographical factors:** Among other factors, proximity to coastal areas increases the likelihood that plastic waste reaches the sea. In addition, plastic debris from other regions can be washed ashore by ocean currents, adding to local pollution challenges (Ritchie, 2021). These factors make the Caribbean particularly susceptible to marine plastic pollution.
- **Lack of education and awareness:** Lack of awareness about the environmental impacts of plastic pollution and insufficient education on proper waste disposal contribute to irresponsible plastic waste management practices. Public awareness campaigns and educational initiatives are crucial in addressing this issue.
- **Inappropriate regulatory framework:** Insufficient law enforcement and penalties for such activities can result in a lack of accountability, allowing plastic pollution to persist.

3.1.3 What are consequences of marine plastic pollution?

Marine plastic pollution poses significant threats, not only to marine life but also to humans and the wider ecosystem with the impacts ranging from biological to economic and social impacts.

While **marine organisms** are most visibly affected by entanglement and ingestion, resulting in injuries, blockages, and death, the accumulation of microplastics and the dissolution of toxic chemicals from additives in oceans also disrupts existing structures and the functioning of **ecosystems** and threatens **biodiversity**, e.g. by introducing invasive species and destroying vital habitats like coral reefs and mangroves (IUCN, 2024; OECD, 2022; Thushari & Senevirathna, 2020; United Nations Environment Programme [UNEP], 2021). The negative effects of microplastics on plankton, by introducing invasive species and destroying vital habitats like coral reefs and mangroves (IUCN, 2024; OECD, 2022; Thushari & Senevirathna, 2020; UNEP, 2021). The negative effects of microplastics on plankton which are a key driver of oxygen production and carbon dioxide uptake in the oceans, means that MPP might also contribute to **climate change** beyond the increase of GHG emissions from plastic production (The Ocean Cleanup, 2024).

Although studied less rigorously, **human health** may be impacted by the contamination of microplastics, toxins and chemicals in seafood, drinking water and coastal soils. These substances may accumulate in the food chain and in water sources, impacting human health through the accumulation of substances in the body (Carney Almroth & Eggert, 2019; IUCN, 2024; Thushari & Senevirathna, 2020; UNEP, 2021).

In addition, marine plastic pollution has significant **socio-economic effects**. The disruption of ecosystems, including the aesthetic degradation of beaches and coastal areas due to plastic litter, lead to a decline in revenue for industries depending on marine resources. This significantly affects fishery and tourism, with particularly adverse consequences for coastal communities. Additional costs for waste removal and cleanup have been estimated at \$6-19bn USD globally. The Caribbean region is also particularly vulnerable to marine pollution due to its heavy reliance on tourism and fishing industries that rely on marine ecosystems (Fava, 2022; OECD, 2022; Thushari & Senevirathna, 2020; UNEP, 2021).

3.1.4 How can EPR address these problems?

EPR “is a policy approach that makes producers responsible for their products along the entire lifecycle, including at the post-consumer stage” (OECD, 2024). It thus shifts responsibility from local or national authorities and the public sector to the private sector, following the “polluter pays principle”. As it is often a lack of resources and expertise that lead to improper waste management and thus to marine plastic pollution, EPR can contribute significantly to its improvement.

By incentivizing sustainable design and making recovery and recycling obligatory, EPR contributes to an overall reduction of waste, effective waste management and better reuse of materials. EPR schemes therefore make it less likely for waste to leak into the environment, ultimately reducing the amount of

waste that ends up in oceans. With regard to marine plastic pollution, EPR is particularly promising as it addresses packaging waste. Although it cannot address the problem of waste that is washed ashore from other countries (Busch, 2023), EPR is therefore crucial to mitigate marine plastic pollution.

3.1.4.1 Objectives and positive effects of existing EPR schemes

Countries in Europe and other members of the Organization for Economic Co-operation and Development (OECD) have demonstrated the effectiveness of EPR in waste management. Here, EPR has been shown to have positive effects in the following areas (Gesellschaft für Internationale Zusammenarbeit [GIZ], 2018; OCED, 2023, 2024, 2025):

Sustainable resource use and waste prevention

- EPR seeks to **reduce the use of virgin resources and materials**. By encouraging the use of recycled materials, EPR helps to conserve natural resources and decrease the environmental impact associated with extracting and processing new materials.
- Another crucial objective of EPR is **waste prevention**. By minimizing the generation of waste at its source, EPR encourages manufacturers to design products that generate less waste. This is achieved through better product design and more efficient use of materials, ultimately resulting in a significant reduction in the overall amount of waste produced.
- By increasing the volume of separate collection of waste and material recovery (e.g. recycling rates), EPR also contributes to the **development of the recycling industry** that treats the waste that cannot be avoided. By creating a steady supply and demand for recycled materials, EPR helps build a robust recycling infrastructure.

ROLE OF EPR IN A CIRCULAR ECONOMY

EPR schemes support a circular economy by **reducing** the amount of waste generated and increasing the **reuse** of products and material through incentivizing more sustainable design. They also contribute to the improvement of **recycling** rates through enhanced waste management infrastructures. Increased consumer awareness and the fostering of collaboration between different stakeholders are positive side effects of EPR schemes that also positively contribute to the establishment of a circular economy.

Reduction of environmental impacts of waste

- EPR provides a strong **incentive for producers to design their products in a more sustainable way** to ultimately reduce waste (**eco-design**). EPR systems may incentivize or oblige producers to adopt principles that make products easier to recycle, use fewer resources, and have a lower environmental impact. This supports the principles of the circular economy and drives innovation in product design.
- Where the creation of waste cannot be avoided, one of the most significant objectives of EPR is the **reduction of waste going to landfills and the environment**. By managing waste more effectively and reducing improper waste management, EPR helps to reduce pollution and conserve land and water resources. This reduction in waste also leads to a decrease in methane emissions and mitigate climate change, as landfill gas is composed of 60% methane.

Economic and social benefits

- By shifting the responsibility of managing certain end-of-life products from municipalities and taxpayers to producers, EPR **reduces the financial burden on local governments and taxpayers** and thus creates social benefits.
- EPR also contributes to job creation. It generates **new employment opportunities** directly in the collection and processing of waste, and indirectly in administration, communication, and follow-up activities. This not only supports economic growth but also helps in developing a skilled workforce in the recycling and waste management sectors.
- The improvement in waste management leads to a **reduction of adverse economic impacts** on other industries. The **positive impact of EPR on the tourism industry** is one such benefit. It can help implement special collection schemes in areas with high tourist activity, thereby

enhancing the overall tourist experience and boosting the local economy as cleaner environments, with less visible waste, are more attractive to tourists

- Finally, **meeting customer expectations for environmentally friendly products** is increasingly important in today's market. EPR helps producers meet these expectations by ensuring that their products are designed and managed in an environmentally responsible manner. This not only satisfies consumer demand but also enhances the producer's reputation and competitiveness.

Other positive impacts such as:

- **improving transparency** regarding material and financial flows.
- **Creating environmental benefits**, by incentivizing or obliging producers to design their products in a more sustainable way to ultimately reduce waste and by reducing improper waste management through the improvement of waste management systems. However, in practice, there is often a lack of evidence demonstrating the direct impact of EPR on environmental outcomes, which can be attributed to the limited link between product design and the end product's lifecycle.

3.1.4.2 EPR in SIDS

Developing nations are beginning to adopt EPR frameworks with support from organizations like the World Wildlife Fund (WWF), which can provide guidance and best practices globally. Nevertheless, despite its success in many high-income countries, several announced EPR regulations have been abandoned in emerging economies, due to, among other reasons, weak institutions and resistance by stakeholders (OECD, 2022). This is also true for SIDS. It is therefore important to recognize the needs of these countries and pay special attention, for example, to the following needs:

- **Enhancement of the capacity of the public sector:** Training and supporting local waste management initiatives is often necessary to help build the necessary infrastructure and expertise to handle waste effectively and to enhance capacities for a sustainable and environmentally sound management of plastic waste (Busch, 2023)
- **Definition of clear roles and responsibilities:** EPR schemes need to address and engage stakeholders, including governments, businesses, and civil society, fostering collaboration for better waste management solutions. But at the same time, it is crucial that the respective stakeholders' roles and responsibilities are clearly defined to ensure effective implementation.
- **Creation of complementary measures and a coherent policy framework:** EPR alone cannot solve problems of marine plastic pollution and waste mismanagement. EPR schemes therefore need to be complemented for example by the phase out of single use plastics, product design standards and environmental standards for waste management (OECD, 2024)
- **Creation of inclusive EPR systems:** Informal workers such as waste pickers often already play a crucial role in waste management. To effectively address waste management problems, countries need to find ways to recognize this role and include waste pickers and other informal workers into their strategies. They can do so in the following ways:
 - Legal frameworks should acknowledge waste pickers as legitimate workers and thus formalize their roles.
 - Waste pickers should be integrated into EPR mechanisms through cooperatives and unions
 - Training and incentives can enhance waste pickers' efficiency and encourage better practices
 - Producers should collaborate with waste picker organizations to create innovative and effective waste management solutions.
 - include consultation with the informal waste management sector

Recognizing the role of the informal sector (and also of small and medium-sized enterprises) is necessary not only to improve the effectiveness of waste management systems. Without their inclusion, EPR schemes run the risk of adversely affecting these sectors. Inclusive EPR systems ensure solutions that safeguard the livelihoods and fundamental human rights of the people involved and therefore allow for a just transition that secure their positive contribution, while



mitigating environmental, health and social impacts (Busch, 2023; OECD, 2024; Talbott et al., 2022; WWF, 2020).

A more elaborated case study on EPR in SIDS can be found in Module 6 (more detailed in the presentation)!

3.1.5 Country-Specific information on PROMAR Phase II Countries

SIDS are disproportionately affected by marine plastic pollution litter and at the same time more vulnerable to its negative effects due to the relevance of the tourism, marine and fishing industries. To address these challenges, some Caribbean SIDS have adopted measures to reduce marine litter. While some have already started to implement EPR systems, others still lag behind (Diez et al., 2019; Watkins & Gionfra Susanna, 2019). The following sections will give a short overview of the status quo of waste management and EPR systems in Guyana, Suriname, St. Kitts & Nevis, the British Virgin Islands and Trinidad and Tobago.

3.1.5.1 Guyana

In Guyana, improper waste management and the use of single-use plastics contribute significantly to marine pollution. A study revealed that, if measured per capita, Guyana is the sixth-largest contributor to ocean plastic waste globally (Ritchie et al., 2023; Utility Bidder, 2023).

The country faces significant waste management challenges, including weak enforcement of environmental laws, limited technological capabilities, and the prevalence of uncontrolled open dumpsites (Margallo et al., 2019). The current waste management systems are underdeveloped, leading to improper waste disposal practices that impact marine environments (La Kanhai et al., 2022; Ministry of Local Government and Regional Development, 2013). Economically, the problem adversely affects the fishing industry and although the country is not a major tourist destination, it might pose a threat to the future development of the industry.

Nevertheless, the country is trying to tackle the problem, having adopted a comprehensive strategy for 2013-2024 (Ministry of Local Government and Regional Development, 2013). Under the Environmental Protection Act, the import, manufacture, and sale of polystyrene have been prohibited since 2015 and littering has been prohibited with penalties having been established (Environmental Protection Agency, 2013). A ban on single-use plastics has also been proposed but not implemented due to administrative changes. Recently, an agreement has been signed for a waste treatment plant and a project that was accompanied by the UN has seen successes in the building of waste management infrastructure and communication strategies.

Responsibility for the formulation of policies lies with the Ministry of Local Government and Regional Development, whereas regulations are mainly carried out by the Environmental Protection Agency (IDB, 2006). According to the Municipal and District Councils Act, each Council has the responsibility for solid waste collection and disposal (Riquelme et al., 2016). The current system typically involves weekly waste collection by trucks in most communities. However, this process lacks comprehensive monitoring and consistency. The collection and transportation procedures are often irregular and not standardized across different areas. Limited waste collection coverage, lack of waste treatment and recycling plants, inadequate transport services, and absence of waste separation increase the likelihood of illegal dumping (Oyedotun et al., 2021). There are also no waste reduction mechanisms and policies at the household level.

In theory, waste management is financed by waste collection fees on the municipal level and subsidies from the national government, but the collection of fees is not stringently enforced. Guyana had also introduced taxes on recyclable material, but these were not earmarked for the financing of waste management and have been abolished and not yet been reimplemented after a company sued the government.

3.1.5.2 Suriname

Suriname faces similar challenges, being the second-largest contributor to marine pollution from land-based activities (per capita) (Ritchie et al., 2023). Efforts are being made to ban single-use plastics and replace them with more sustainable alternatives (BCRC Caribbean, 2025).

In Suriname, waste collection services are primarily managed by local municipalities and private waste collection companies. However, waste collection coverage is inconsistent, especially in rural areas, where informal dumping is common. The majority of collected waste is transported to the Ornamibo landfill, which in practice is an open dumpsite that is managed by the government. Limited waste separation, insufficient landfill capacity, limited recycling activities and illegal dumping lead to waste being a major problem for the country. This is partly due to the fact that waste management in Suriname is underfunded, with limited government investment in infrastructure, collection services, and recycling programs. Although Suriname has legislation and environmental policies in place that can be used to manage packaging waste, these do not address the issue directly and enforcement of existing legislation and policies is nominal. Laws and regulations that directly and explicitly require producers and businesses to manage packaging waste responsibly are absent. As a result, public awareness is low.

Small steps are being made, with NGOs and private sector efforts for recycling and a ban on the import and sale of single-use Styrofoam food containers being issued by the Surinamese government in 2019.¹

3.1.5.3 St. Kitts & Nevis

On St Kitts & Nevis, the waste problem is highly problematic for the local economy in which the tourism sector contributes 25-30% of the Gross Domestic Product (GDP) and serves as the primary employer (Green Climate Fund, 2022). Fishery and other industries that are dependent on coastal and marine ecosystems and landscapes are also relevant for the islands.

Despite this high rate of waste generation, residents have limited access to recycling services, and the islands' landfill capacities are strained (Ministry of Sustainable Development, Government of St. Kitts and Nevis, 2023; St. Kitts & Nevis Information Service, 2022). The islands' existing landfills are being outpaced by waste production, and the improper handling of industrial waste has further degraded ecosystems. The absence of a centralized sewage system or treatment plan poses a significant risk of water contamination. Package sewage treatment plants are insufficient to curb the increased dumping of solid waste, particularly in St. Kitts (Dransfeld, 2022). While 95% of households benefit from public solid waste collection and most businesses employ private collection systems, the improper lining and sealing of waste disposal sites on both islands results in the leaching of toxic materials into groundwater and ecosystems such as mangroves (Ministry of Sustainable Development, Government of St. Kitts and Nevis, 2023).

But the islands government is highly active to combat the problem, has been actively participating in international conferences to address marine pollution and is part of several international and regional partnerships to strengthening its waste management capacities and capabilities. The government has also implemented policies to ban single-use plastics and is working on public awareness campaigns to combat marine pollution (CS Global Partners, 2025; St. Kitts Nevis Information Service [SKNIS], 2024).

The cornerstone of the nation's waste management legislation is the Solid Waste Management Act (SWMA) (SWMA, 2019/Revised Edition). Through the act, private companies have been established as responsible for the collection and operation of landfills and oversight is shared between different ministries with inspections being possible (Saint Kitts and Nevis Diaspora Digest, 2024b) (Saint Kitts and Nevis Diaspora Digest, 2024a). The SWMA further defines liability and ownership of waste, prohibits the import of waste, establishes waste collection zones and implements licenses and waste haulage permits. License holders are responsible to collect waste in defined zones and can be held responsible in the case of a threat for safety, human health or the environment caused by negligent misconduct. It further defines requirements for waste handling and storage and defines fines and penalties for misconduct. The SWMA is complemented by the National Conservation and Environmental management Act (NCEMA), which establishes penalties for pollution offenses (St. Kitts & Nevis

¹ Ministerie van Handel, Industrie en Toerisme, *Beschikking van de Minister van Handel, Industrie en Toerisme van 25 april 2019 no. 910, houdende nadere wijziging van het Besluit Negatieve Lijst*, 2019. (Suriname: S.B. 2019 no.44.), <https://www.milieuwetten.com/wp-content/uploads/2022/12/afval-bsk-SB2019no44.pdf>

Information Service, 2024). As part of the national transformation towards sustainability, the Plastic Waste Reduction and Environmental Protection Act (PWREPA) was announced in March 2024, which aims to reduce the amount of waste generated through the use of single use plastic items – of which various are about to be banned (Observer News, 2024)

Investments have also been made to the waste management infrastructure, partnering with private companies to acquire collection vehicles and implement transfer stations to improve the efficiency of industrial and commercial waste collection. Among other projects, together with the Government of Taiwan, the SWMC set up recycling collection points on the island to reduce the amount of recyclable waste going to the landfills. Additionally, it launched several awareness raising campaigns to educate and engage citizens and businesses to engage in waste minimizing and avoiding activities. The project aims to increase recycling rates and reduce the amount of plastic and aluminium waste (plastic bottles, plastic caps, aluminium cans) as well as paper recycling ending up in landfills or being dumped illegally (Saint Kitts and Nevis Diaspora Digest, 2024c). As part of the country's broader strategy to stabilize electricity costs and reduce environmental impacts associated with landfill use, there is also a project on waste-to-energy conversion (St Kitts & Nevis Observer, 2022).

Waste management is being financed mainly by an environmental levy collected from passenger departing St. Kitts and Nevis, which is complemented by a haulage fee for waste transportation and services. Revenue from these measures is directly going to the companies being responsible for waste management. This system is supported by the revenue from penalties and fines as well as by government provisions and grants.

3.1.5.4 British Virgin Islands

Like other Caribbean SIDS, the BVI struggles with marine plastic pollution and waste management in general. In the BVI, public awareness campaigns, educational initiatives, and new legislation banning single-use plastic items are being implemented. For example, in March 2013, the BVI introduced a 15-cent charge for plastic bags at grocery stores as part of a voluntary agreement (Diez et al., 2019).

The island has adopted a Litter Abatement Act (Government of the Virgin Islands, 2018) and a Waste Management Strategy (Agency for Resilience, Empowerment and Development, 2019). However, the BVI face complex waste management challenges, and the effectiveness of these measures is limited, largely due to outdated and fragmented legislation that inadequately regulates waste activities and fails to meet international obligations. This legal framework results in partial compliance and a lack of enforcement. In addition, reliable data on waste generation is scarce. Inadequate infrastructure also contributes to the problem, resulting in substantial amounts of plastic waste entering the marine environment. Although fees exist for the improper disposal of waste, the lack of monitoring leads to problems in complying with the regulations.

Waste prevention schemes are non-existent as there are no technical standards or emission limits and there are no legal requirements in place for monitoring, reporting, or providing public access to information related to waste. Consequently, the island faces high volumes of waste and high costs for waste management which is carried out by the private sector and entirely dependent on government subsidies because there is no legislation in place which enables the Department of Waste Management to recover fees and producers are not included in the management of waste. In theory, the responsibility for waste management lies with the Ministry of Health and Social Development which governs the Department of Waste Management, but other ministries are involved as well and a clear separation of roles and responsibilities missing.

Recently some recycling initiatives have been started by NGOs but due to the lack of a comprehensive collection and processing infrastructure, the potential for recycling remains underutilized (Green VI, 2023).

Overall, the BVI is taking steps towards improving waste management and reducing marine litter through legislative reforms, public education, and strategic initiatives. However, further efforts are needed to strengthen enforcement, enhance infrastructure, and establish comprehensive EPR systems to effectively tackle plastic pollution and waste management challenges.

3.1.5.5 Trinidad and Tobago

Trinidad and Tobago has been listed as the third-largest per-capita contributor to marine plastic waste globally and faces severe issues from marine plastic pollution and (Ritchie et al., 2023). This high volume of waste, combined with limited resources for treatment, directly impacts two crucial elements of the country's economy, mainly tourism and fishing (United Nations, 2024).

The country faces significant limitations in several key areas of waste management, including data collection, institutional coordination, and technical capacity. Infrastructural and data gaps, combined with financial and resource constraints, create significant obstacles in implementing effective waste management strategies and monitoring progress in reducing marine litter (David Simmons and Associates Limited, 2024a, 2024b).

At the national level, while Trinidad and Tobago has multiple statutes addressing different aspects of waste management, until recently, there was no comprehensive legislation specifically governing plastics or plastic pollution (Shah et al., 2019; Trinidad and Tobago Newsday, 2024). But a number of laws and initiatives are in place that aim to change the situation. The Litter Act 2016 provides legal measures to prevent and manage litter in public places by establishing enforcement mechanisms through litter prevention wardens, requiring proper waste disposal facilities, and imposing penalties for violations, all of which help prevent debris from entering the marine environment (Litter Act, 2016). Significant advancement in the policy landscape came in July 2024 with the launch of the Revised Policy Framework for Municipal Solid Waste, that establishes a comprehensive approach to sustainable waste management in Trinidad and Tobago, aiming to promote human health and wellbeing, environmental conservation, and economic development through improved governance, development strategies, and sustainability measures. Among other measures, it strengthens institutional arrangements, promotes recycling and introduces deposit return scheme for beverage containers, thus introducing initial steps for an EPR scheme (MPU, 2024b)


Trinidad and Tobago is also making progress in terms of waste management financing, with the Resource Recovery Fund (RRF) that will be established under the Solid Waste Management Corporation Act, representing a cornerstone of the financial strategy for waste management (MPU, 2024a). In addition, government financial support centres on the Green Fund, which is filled with the Green Fund levy that serves as Trinidad and Tobago's national environmental fund and also supports projects with regard to sustainable waste management.

Another strength of Trinidad and Tobago's marine litter prevention efforts lies in its community-based initiatives and the activities of NGOs (David Simmons and Associates Limited, 2024a, 2024b). For example, the Recyclable Solid Waste Collection Project (iCARE), the first national recycling initiative, which was launched in 2015 with funding from the Green Fund, successfully promotes voluntary public participation in beverage container recycling (PET plastic bottles, drink cartons, aluminium cans and glass bottles) (Environmental Management Authority, 2021).

3.2 Module 2: Introduction to EPR Basics


Learning Objectives <i>After completion of this module, participants will be able to:</i>	Delivery Method(s) for Facilitators
<ul style="list-style-type: none"> • Understanding the principles of EPR • Realizing the benefits and key preconditions of an EPR system • Recognizing country-specific adaptations for EPR 	Stakeholder group discussions, presentations
Resources required: Mentimeter, sticky notes, pinboard	Duration: Online 30min; in-person 60min
Further Resources: <ul style="list-style-type: none"> • https://www.wwf-akademie.de/catalog/view/course/id/215 	

3.2.1 Didactics of Module 2

 **GROUP ACTIVITY TOWARDS BEGINNING OF MODULE 2 (10 MIN)**

Mentimeter question: What is your understanding of EPR? **and/or**

Discussion in plenary: What is your knowledge on EPR? What are the best practices that you know about?

 **GROUP ACTIVITY AT END OF MODULE 2 (10 MIN)**

Questions:

- Identify waste characteristics – which waste streams would be suitable for EPR?
- Adapt to the country-specific circumstances – now consider your institutional landscape, infrastructure, etc. and assess if it would be possible to process the waste streams identified under the current status quo.
- Define stakeholder roles – Who would be the main stakeholders to include in the system?

Participants: Divide into groups representing different stakeholders, such as government officials, industry representatives, environmental NGOs, and community leaders. Each group discusses the questions from their stakeholder perspective. They identify relevant waste streams, assess feasibility under current conditions, and map out stakeholder roles (and responsibilities). Groups take notes on flip charts or shared digital tools to organize their findings.

Facilitator:

1. Before the Activity: Set up the room with flip charts, markers, or online collaboration tools if working digitally. Provide a quick recap of key concepts from Module 2 to ensure everyone is on the same page.

2. During the Activity: Move between groups to clarify questions, provide guidance, and encourage deeper thinking. Ask prompting questions like: "What makes this waste stream manageable under EPR?", "What specific barriers exist in your country's system?", "How can stakeholders collaborate to overcome these challenges?"
3. After Group Work: Facilitate group presentations (5 minutes each). Write down key points on sticky notes or a pinboard under categories like "Suitable Waste Streams," "Challenges," and "Stakeholder Roles."
4. Wrap-Up: Summarise key insights from the presentations. Highlight common challenges and innovative ideas. Link the discussion to the next module, which will explore detailed EPR design options.

3.2.2 Principles and Essentials of EPR

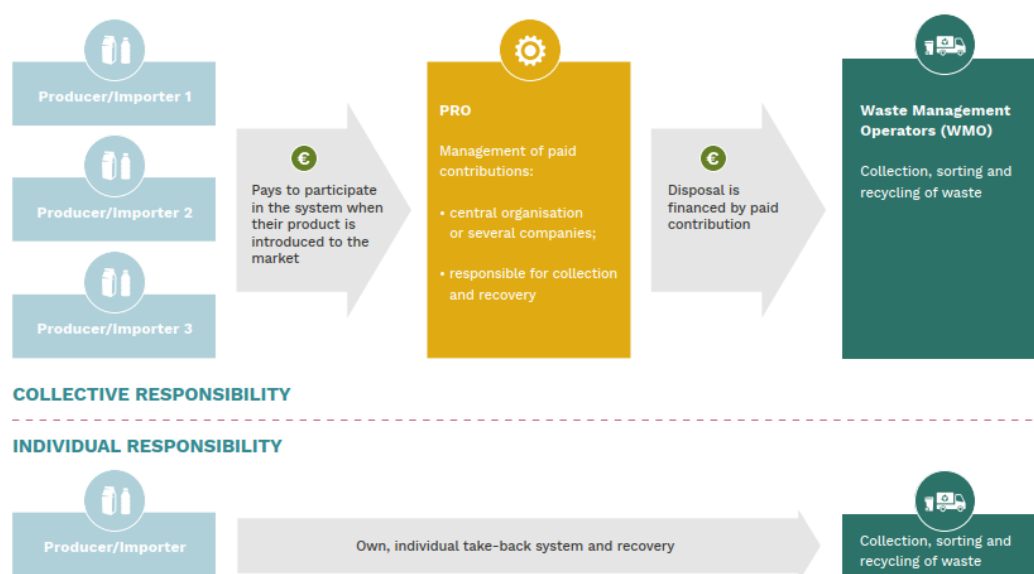
EPR is an environmental policy approach that extends producer responsibility for a product to the post-consumer stage of a product's life cycle. This means that producers must take responsibility for the management of their products after they become waste. The application of the 'polluter pays' principle thus shifts the responsibility and financial costs of environmental externalities to the producer (OECD, 2024). This responsibility extends to the collection, sorting and recycling or disposal of the waste generated by the product and its packaging. It encourages producers to take greater responsibility for the entire lifecycle of their products, promoting more sustainable practices and reducing the environmental impact of products, especially plastics.

3.2.3 Organization of waste management in an EPR scheme

Under the EPR system, each producer or importer is required to pay fees proportional to the amount of materials (product & packaging) they place on the national market. These fees cover the costs of collection, sorting and recycling. A '**producer**' is defined as any company that either produces or imports a product, including its packaging, into a national market where the product is consumed, and its residues and packaging are disposed of. It does not matter whether the product is domestically produced or imported (OECD, 2024).

In general, there are two main sets of options to set up an EPR system. The 'obliged companies' are legally bound to participate in the EPR scheme. This obligation can be fulfilled either by the companies on an **individual** basis when the company takes over responsibility for the management of its waste itself. Or the responsibility for operating the system is organized as a **collective** EPR scheme where a third party – a Producer Responsibility Organisation/Operator (PRO) – is established that is taking over the responsibility for the obliged companies to manage the system. The second decision to be made in setting up the EPR system is whether it should be **voluntary** or **mandatory**. The choice will depend on the country's circumstances, but also on the outcomes that the EPR system is intended to achieve (Dimitropoulos et al., 2021; P. Facco et al., 2022; OECD, 2024; PREVENT Waste Alliance, 2020).

➔ *More information on different design options for the EPR system can be found in Module 3!*

Figure 1: Comparison of an individual and collective EPR scheme

Source: (PREVENT Waste Alliance, 2020).

3.2.4 Types of responsibilities allocated through EPR

A key factor for the success of EPR is the clear and unambiguous allocation of responsibilities. The way in which these responsibilities are allocated to the different stakeholders varies with each EPR system and depends on the institutional landscape in each country, the waste streams and the structural circumstances (Brown et al., 2023; OECD, 2024; PREVENT Waste Alliance, 2020):

- **Financial responsibilities:** EPR schemes create a system in which financial responsibility for the past consumer stage of waste is covered by producers (or importers), often in the form of fees. This means that dedicated, ongoing and sufficient funding is available to waste management operators for the organization of the collection, treatment and proper disposal of waste, for example through establishment or improvement of waste management infrastructure and recycling facilities
- **Physical/organizational/operational responsibilities:** Instead of obliging producers to provide the funds for the above operations, they can also be made responsible for organizing collection, processing/recycling and disposal of waste, developing and investing in the necessary waste management facilities, increasing collection, sorting and recycling rates, and to design more sustainable products.
- **Informational responsibilities:** EPR schemes can also include measures for raising awareness such as programs to educate the public on proper disposal practices, for improved transparency through reporting of waste management data or for the establishment of best practices that help adopt effective strategies.

➔ *More information on the allocation of responsibilities can be found in Module 3!*

3.2.5 Policy instruments for the implementation of EPR schemes

As a policy instrument, EPR aims to organize and finance specific waste streams. Due to the diversity of approaches, there is a broad range of policy instruments that are used for the implementation of EPR schemes (GIZ, 2018; OECD, 2025), for example:

- **Economic and market-based instruments** such as fees
- **Product take-back requirements** that are used to oblige retailers to establish take-back programs

- **Regulations and performance standards** such as minimum recycling standards and environmental standards or eco-modulated fees that incentivize the sustainable improve of products at the design stage
- **Information-based instruments** that require certain actions with regard to e.g. reporting, the labelling of products or the communication with customers

The EPR system needs to be integrated into a broader waste management and circular economy policy framework.

➔ *More information on regulatory policies can be found in Module 4!*

3.2.6 Preconditions and Needs

To ensure a sustainable waste management system, several preconditions need to be in place:

- Reliable organizational structures and legal framework
- Stable financing
- Clear allocation of responsibilities (OECD, 2024)

EPR systems are one approach to meet these requirements. Its functionality is dependent on the creation of a level playing field (fairness in the set up that has no impact on market competition) and the trust and cooperation of producers/importers. As there are different waste streams and circumstances in the respective country, EPR systems need to be set up differently to ensure their suitability.

For waste, for which no single producer can be held responsible, as for example residual or organic waste, EPR system hard to implement. EPR systems are best applicable for waste, that is introduced to the market by one party that can be identified. This is usually the case for packaging waste, electronic waste or portable batteries or cars.

3.2.6.1 Necessary stakeholders and their roles and responsibilities

A clear distribution of roles and responsibilities among stakeholders is essential for the effective implementation of an EPR system. The specific responsibilities depend on the design of the EPR system and the framework conditions in the respective country of implementation. In addition to defining stakeholder roles, other critical aspects of the institutional setup must be considered to ensure the system's success. These include:

- **Governance Structure:** Establishing a framework for oversight and coordination, including the role of public authorities and the supervision of Producer Responsibility Organisations (PROs).
- **Legal and Regulatory Framework:** Creating and enforcing laws and regulations that define obligations for producers and other stakeholders.
- **Operational Mechanisms:** Setting up systems for waste collection, sorting, and recycling, as well as mechanisms for financing and reporting.

The roles and responsibilities of involved stakeholders depend on the design of the EPR system and the circumstances/framework present in the respective country of implementation. Key stakeholders include (PREVENT Waste Alliance, 2020):

- **Raw material suppliers, manufacturers and converters** supply packaging materials to manufacturers and importers.
- **Producers and importers (obliged companies)** place packaged goods on the market and manage the associated packaging waste.
- **Distributors and retailers** act as intermediaries between producers and consumers, manage packaging take-back and educate consumers.
- **Consumers** who should properly dispose of waste.
- **Waste management companies** collect and recycle waste.
- **Local authorities/municipalities** facilitate communication and support waste collection.

- **Government and public authorities:** Establish and monitor the legal framework and supervise the EPR system and PROs.

➔ A more detailed description of the stakeholders, their roles and responsibilities including the PRO can be found in Module 5.



WHAT IS NOT AN EPR SYSTEM?

1. Traditional Waste Collection and Disposal Services

Municipal waste collection and disposal services, such as those provided by local governments, are not EPR systems. These services typically involve:

- Collecting waste from households and businesses.
- Transporting waste to disposal sites.
- Final disposal in landfills or incineration facilities.

These systems are typically not EPR because the responsibility and financial burden fall on municipalities and taxpayers, not producers. However, these collection and disposal services can be connected to EPR schemes by:

- Outsourcing responsibilities to a Producer Responsibility Organisation (PRO): Municipalities can collaborate with a PRO funded by producers to manage specific waste streams (e.g., packaging or electronics).
- Leveraging existing infrastructure: Municipal systems can handle residual waste while EPR schemes focus on targeted waste streams, such as packaging or batteries.

2. Voluntary Recycling Programs

Voluntary recycling programs, often led by local governments, NGOs, or private organisations, rely on public participation and aim to reduce waste. However, they are not EPR because:

- They do not mandate producer responsibility.
- The financial and operational burden falls on consumers and local authorities.

Nevertheless, these programs can support EPR schemes by:

- Providing collection points: Voluntary programs can establish infrastructure (e.g., collection bins) that EPR systems can adopt or expand.
- Raising public awareness: These programs educate consumers about proper disposal, complementing EPR efforts.
- Transitioning to mandatory systems: Voluntary programs can serve as pilots for EPR schemes, demonstrating feasibility before legal mandates are introduced.

3. Deposit-Refund Schemes (DRS)

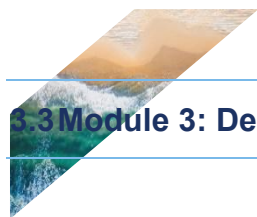
Deposit-refund schemes encourage recycling by requiring consumers to pay a deposit when purchasing a product, which is refunded upon returning the empty container. While effective, DRS is not EPR because:

- Producers are not directly responsible for managing the waste.
- These schemes are often run by governments or private companies.

However, DRS can be integrated into EPR schemes by:

- Involving producers in funding and management: Producers can finance and operate DRS as part of their EPR obligations.
- Targeting specific waste streams: DRS can focus on high-value or problematic waste streams (e.g., beverage containers) within a broader EPR system.

These examples illustrate various waste management measures that, while effective in their own right, do not qualify themselves as a full-fledged EPR system, but are rather supportive and connected measures of an EPR system.



3.3 Module 3: Design Options of EPR Systems

Learning Objectives <i>After completion of this modules, participants will be able to:</i>	Delivery Method(s) for Facilitators
<ul style="list-style-type: none"> • Understand the governance principles for designing effective EPR systems. • Explore the design elements of EPR systems, such as product scope, producer definition, and responsibility allocation. • Compare mandatory and voluntary EPR systems and their implications for sustainability and compliance. • Analyze the advantages and challenges of individual versus collective EPR systems. • Evaluate PRO design options 	<ul style="list-style-type: none"> • Presentation and facilitated discussion. • Facilitated debate or role-playing exercise to explore perspectives. • Case study analysis and group discussion.
Resources required: Flipcharts, sticky notes, task sheets for group work	Duration: Online 60min; in-person 90min
Further Resources: <ul style="list-style-type: none"> • https://wwfint.awsassets.panda.org/downloads/wwf_15_basic_principles_2020_final_with_layout_1130.pdf • https://www.iswa.org/epr-library/?v=3a52f3c22ed6#menu/?v=3a52f3c22ed6&view_76_page=2 	

3.3.1 Didactics of Module 3

GROUP ACTIVITY TOWARDS BEGINNING OF MODULE 3 (5 MIN)

Questions: Quiz in Canva

Participants: Discuss with each other and share insights from their community.

Facilitator: Select the right answers in Canva quiz and facilitate discussion. Encourage the participants insights, especially from the SIDS perspective.



GROUP ACTIVITY AT END OF MODULE 3 (10 MIN)

- **Design a pilot EPR scheme tailored for a SIDS context, with a focus on creating and presenting a graphic that outlines stakeholder roles, financial flows, and the system structure.**

Participants' Instructions

- **Form Groups (5 minutes):** Divide into small groups (4-5 people); Each group acts as a task force designing a pilot EPR project.
- **Step 1: Case Study Presentation (5 minutes)**
Facilitator presents a real-world case study of a successful EPR system, including a graphic showing: Stakeholder roles (e.g., producers, government, waste collectors); Financial flows (e.g., producer fees funding a PRO); The PRO's role in managing the system.
- Use the graphic as a template for your design.
- **Step 2: Develop Your Graphic (25 minutes)**
 1. Define Focus and Scope: Decide if the system is voluntary or mandatory; Select a packaging waste stream (e.g., plastic bottles); Choose a geographical area (e.g., city, island).
 2. Create the Graphic: Map stakeholder roles and responsibilities; Show financial flows (e.g., fees, subsidies); Indicate whether a PRO will be created and its role (e.g., coordinating waste collection, compliance monitoring).
- **Step 3: Present Your Graphic (10 minutes):** Prepare a 2-minute presentation to explain stakeholder roles and interactions, financial flows and system structure, key features of the PRO (if applicable).

Instructions for Facilitator

- **During Group Work:** Help assigning the groups; Present the case study and graphic (5 minutes) and hand out task sheets; Guide groups as they develop their graphics, asking questions like:
"Who are the key stakeholders?"
"How will financial flows be managed?"
"What role will the PRO play?"
- **After Group Work:** Facilitate group presentations (2 minutes each); Highlight creative or practical solutions during the wrap-up.

Additional step if there is more time in a specific setting:

- **Role play:** Assign the different roles of stakeholders present in the graphic developed randomly. Let them discuss how the EPR system would be beneficial/negative for them and let the others develop counterarguments.

3.3.2 Design Options Background

Building on the insights from Module 2, EPR emerges as a versatile policy mechanism that assigns producers the accountability for their products throughout their entire lifecycle, with a particular focus on the post-consumer phase. The successful implementation of an EPR system necessitates its adaptation to the unique context of each country. This involves a thorough assessment of the existing institutional landscape, national and international policy frameworks, and the integration of EPR into broader waste management and circular economy strategies.

To facilitate a seamless implementation of an EPR scheme, government bodies can consider several key features. These include establishing clear objectives, engaging stakeholders in the policy development process, and ensuring transparency in the system's governance. The design of an EPR scheme should serve as a foundational step for governments and industries, providing a comprehensive understanding of the possibilities within the framework. The specific design elements adopted will largely depend on the national context, influenced by factors such as geography, socio-economic conditions, and political climate.

3.3.2.1 Governance Principles for Designing EPR Systems

When designing an EPR system, it is essential to follow certain governance principles to ensure its effectiveness:

- **Clearly Define Objectives:** The objectives of the EPR system should be clearly defined through analysis and consultation with all relevant stakeholders. This ensures that everyone involved understands the goals and can work towards them collectively.
- **Ensure Consistency and Coherence:** The EPR system should be consistent and coherent with related policies. A life cycle approach is recommended to ensure that all stages of the product's life are considered.
- **Scope and Characteristics:** The scope of the EPR should be clearly defined, taking into account the unique characteristics of the product, product category, or waste stream. This includes considering the durability and composition of the product, primary and secondary markets, and distribution networks and supply chains.
- **Definition of Producers:** It is important to clearly define who the producers are. This ensures that the right entities are held responsible for the EPR obligations.
- **Consultation Process:** A thorough consultation process enhances the acceptability, transparency, and effectiveness of the EPR system. Engaging all stakeholders in this process is crucial.
- **Communication Strategy:** A clear communication strategy should be developed for all stakeholders. This ensures that everyone is informed and understands their roles and responsibilities.
- **Reporting and Monitoring Mechanisms:** Mechanisms for reporting and monitoring the EPR system should be established. This helps in tracking progress and making necessary adjustments.
- **Enforcement Mechanisms:** If the EPR system is based on law, appropriate enforcement mechanisms and sanctions should be in place to ensure compliance.

The table below shows different design elements that can be used for creating a fitting EPR design.

While a detailed explanation follows for specific aspects under 'System Scope'—including product definition, producer definition, and the distinction between mandatory and voluntary schemes, as well as individual versus collective schemes—a concise overview of responsibility allocation topics is provided in the table without going further into detail.

Table 2. Different design elements of EPR

Design element	Description	Options
System Scope		
Product definition	The product(s) to be covered by EPR must be clearly defined.	Definitions should include the type of product, categories/sub-categories if appropriate, materials, and type of consumer (e.g., household and/or commercial/business waste).
Producer definition and registration	All affected producers should be registered and treated equally.	All producers should face the same requirements/obligations, whilst not adversely affecting small and medium-sized enterprises (SME).

Mandatory vs. Voluntary	Defines whether the EPR scheme is enforced by law or adopted voluntarily by producers.	Mandatory schemes are legally binding and require compliance, while voluntary schemes are typically industry-led and may offer flexibility in implementation.
Individual vs. collective schemes	Schemes can be either individual producer responsibility (IPR) or collective producer responsibility (CPR).	<p>There may be one single collective scheme or competing schemes.</p> <ul style="list-style-type: none"> • IPR: Individual producers take responsibility for their products – direct link between producer and waste management • CPR: Producers join a collective PRO that takes on the responsibility of all its members. Collective schemes tend to be more efficient and cost-effective (due to pooled resources, economies of scale, etc.)
Responsibility Allocation		
Type of producer responsibility (obligations)	The obligations placed on producers (i.e., their responsibilities) should be clearly defined. Various approaches can be taken.	<ul style="list-style-type: none"> • Simple financial: Obligation only to finance existing waste management • Financial with municipal contracts: Producers set up waste management contracts with municipalities • Financial and partial organizational: E.g., municipalities still responsible for waste collection but with financial support from producers, producers responsible for other activities (e.g., sorting, secondary material sales) • Financial and full organizational: Producers have direct contracts with waste operators or may own (parts of) the waste infrastructure
Setting targets and responsibilities	Realistic, but also reasonably ambitious and measurable, targets should be set for waste collection and management and periodically reviewed.	<p>Targets should consider mandatory (legislative) targets set by governments, technical and economic feasibility, existing/needed infrastructure, geographic and demographic characteristics, etc.</p> <ul style="list-style-type: none"> • Targets are most often set based on product weight since it is relatively easy to measure how much by weight producers place on the market • Targets should be in line with the waste hierarchy (e.g., prioritizing reuse and recycling over recovery where possible) • Targets may also be set on eco-design (e.g., use/non-use of certain materials) to promote waste prevention and minimization
Setting fees and cost coverage	PROs should ideally set fees to cover the full net costs of waste management for their products, including separate	Any revenue from sales of secondary materials or reusable products should be subtracted from the costs.

	collection, transport, disposal, administrative, and communication costs.	<p>Product-related fees should also be established per product, per category/sub-category, and/or per material, as appropriate. Again, they are typically paid annually, based on the amount each producer places on the market</p> <p>Fees can also be modulated (i.e., varied) according to certain product features (e.g., recyclability, hazardousness). Schemes that directly target product characteristics in this way provide the most direct incentives for eco-design changes</p>
Information provision	Adequate information must be provided by governments and/or PROs to consumers and stakeholders to support the good functioning of the EPR scheme.	<p>Dialogue among stakeholders (PROs, producers, government, local municipalities, waste companies, consumers, nongovernmental organizations (NGOs)) should be encouraged.</p> <p>Information to consumers can include labelling on products and publicity (posters, leaflets, television/radio media spots)</p> <p>Information to stakeholders can include guidance documents on participation in EPR schemes, provision of information on responsibilities, etc.</p> <p>Governments and/or PROs can facilitate networking platforms/events between stakeholders</p>
Transparency, monitoring, and enforcement	Much information should be made publicly available. EPR schemes should be adequately monitored, and rules enforced, by public authorities and the obligated producers.	<p>Publicly available information (e.g., in annual PRO reports) can usefully include collection, recycling, and reuse rates achieved by EPR schemes, fees charged to producers, costs incurred, revenues from resale, etc.</p> <p>Monitoring and enforcement should include detecting 'free riders' (producers who do not pay fees but still benefit from an EPR scheme); identifying anti-competitive practices by producers, PROs, and waste management companies; monitoring compliance with targets; ensuring sound financial management of EPR schemes; compliance with legislation by all stakeholders involved</p>

Source: Based on Watkins and Gionfra Susanna (2019), Bünemann et al. (2020); Pruess (2023)

3.3.2.2 Challenges in Implementing an EPR System:

Implementing an EPR system comes with its own set of challenges. During the start-up phase, there is often uncertainty about waste volumes and the need for large capital investments in collection and treatment facilities. The role of the government is crucial in this phase, as it may need to provide support and guidance.

Another challenge is the delegation of decision-making authority. It is important to clearly define who has the authority to make decisions and ensure that this authority is exercised effectively.

In conclusion, designing and implementing an EPR system requires careful consideration of various factors and adherence to good governance principles. By engaging all stakeholders in a transparent

and inclusive process, and by establishing clear objectives, communication strategies, and enforcement mechanisms, an effective EPR system can be developed and implemented.

3.3.3 EPR Design Options

3.3.3.1 Product Definition

When initiating the implementation of an EPR scheme, it is often unclear which materials should be prioritized. EPR systems have historically targeted specific product sectors rather than materials like plastics. Over the years, the range of products covered by EPR systems has expanded. Starting with producer-funded deposit refund systems for beverage containers in the 1970s, EPR policy instruments for packaging emerged in the 1990s. By the 2000s, the EU had implemented directives requiring EPR for Waste Electronic and Electrical Equipment (WEEE), batteries, accumulators, and vehicles, while encouraging EPR for packaging (OECD, 2024).

The legal framework must clearly define which types of packaging produced by the obliged companies are covered by the scheme. This includes specifying whether the scheme encompasses all types of materials, such as plastics, paper, metals, and glass, or if it only applies to specific categories of packaging, like household, commercial, or industrial packaging waste (Bünemann et al., 2020). The framework can also include specifically defined types of packaging, such as certain single-use plastic items, with any specific inclusions explicitly listed in the relevant legal documents. Additionally, the legal framework should clarify whether all material fractions are to be collected from the start of the EPR system or if the scheme will initially only cover certain fractions, particularly those with an established recycling market.

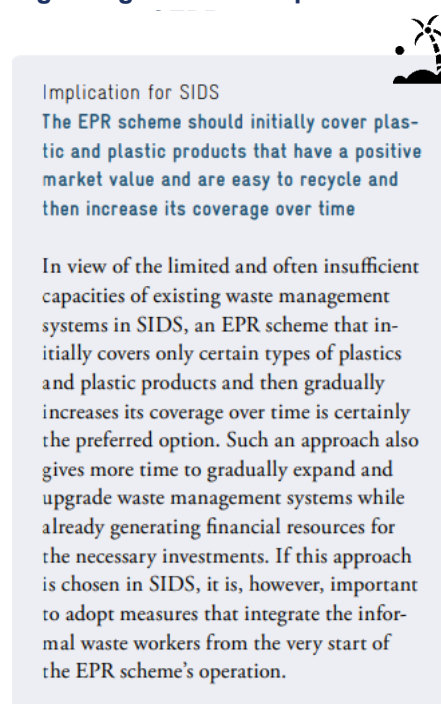
Plastic waste typically serves as a starting point for EPR schemes, particularly in SIDS, where existing waste management systems often have limited and inadequate capacities and technologies. It is crucial that EPR schemes in these regions progressively increase the minimum market shares for reusable and recyclable plastics and plastic products. This approach not only reduces the disposal of plastic waste but also sends a strong message to the private sector about the growing demand for and profitability of reusable and recyclable plastics, along with the associated technologies and business models (Busch, 2023).

It is also a crucial decision whether to encompass all materials within a single system or to focus on selected materials. The table below shows some aspects which can ease the decision.

Table 3: All materials versus selected materials

	All materials	Selected materials
Description	<p>All materials are handled in one EPR system</p> <p>System for all materials: plastic, paper, carton, metal, glass, etc.</p> <p>One EPR scheme for all wastes: PRO has to set up one system to collect, sort, recycle etc. the different waste types</p>	<p>Only selected materials are part of the EPR scheme (and thereby “system-relevant”)</p> <p>Possible if waste streams are clearly identifiable and can be separated. PRO can be set up to manage solely the respective waste material streams (e.g. one PRO for plastic, one for glass, etc.)</p>

Figure 2: Implication for SIDS regarding material/product



Source: (Busch, 2023)

		Producers only need to pay a fee if their product/packaging are made of the specific material(s) Downside: undesired substitution effects caused by producers switching to materials not covered by EPR system (because they do not have to pay a fee)
Financial aspects	Less dependent on external events due to diversity of materials (internal cross-subsidies)	Highly dependent on external developments affecting the price of the material
Organizational aspects & practicalities	Producers/importers can register for all materials at one PRO	Producers/Importers that handle different materials have to register at several PROs (higher administrative burden), To avoid unwanted switching between materials used for products and packaging, prices for materials need to be balanced out
Free rider issue	No difference between the models	
Monitoring and enforcement	Less specific but in-depth monitoring at company level possible	Monitoring more difficult, deeper level of control possible

Source: Bünemann et al. (2020)

3.3.3.2 Producer Definition

In the context of EPR systems, defining the roles and responsibilities of producers is crucial for the effective implementation and operation of these schemes. A clear understanding of which companies are obligated to contribute is essential, as it ensures accountability and traceability within the packaging lifecycle. Typically, these obligations fall on those who introduce packaged goods into the market, as this stage allows for efficient tracking of packaging materials. This includes both importers and domestic producers.

Producers, encompassing manufacturers, consumer goods companies, and retailers/distributors, are responsible for fulfilling government-set targets and responsibilities. This involves establishing and managing EPR schemes, which may include the creation of PROs, administering scheme operations, setting and collecting registration and product fees, and engaging with waste collectors and processors. Additionally, they must report on collection and recycling rates and, in some cases, manage the take-back of waste packaging. It is vital that all producers are registered and treated equally under the scheme, ensuring that requirements do not disproportionately impact SMEs, thereby maintaining fairness across the board.

3.3.3.3 Mandatory or voluntary system?

When discussing EPR systems, it is essential to understand the differences between voluntary and mandatory approaches. This understanding helps in selecting the most appropriate system for managing waste, especially plastics, and ensuring environmental sustainability.



Voluntary EPR System

A voluntary EPR system is typically advocated by regulated and potentially regulated industries. This system operates without legislative regulations, meaning there are no set goals that companies must achieve. This lack of a legal framework can be seen as a disadvantage because it does not ensure

compliance across the board. However, voluntary systems can serve as a good way for companies to gain initial experience in specific waste management-related topics. They allow businesses to explore and understand the complexities of waste management without the pressure of legal obligations.

Voluntary EPR systems are often tied to the interests of individual companies. This means that the initiatives are usually driven by the potential profitability of taking back certain materials. Producers and importers are more likely to set up these systems if they see a financial benefit. While this can lead to innovative and efficient practices, it also means that the scope and impact of the system can be limited by the specific interests of the participating companies.

 **Mandatory EPR System**

In contrast, a mandatory EPR system assigns specific tasks and responsibilities by definition. This approach is better suited for implementing large-scale systems for the collection, sorting, and recycling of waste in the long term. The mandatory nature of this system ensures that all producers and importers comply with the regulations, leading to a more uniform and comprehensive waste management strategy.

One of the key components of a mandatory EPR system is the installation of a PRO. The PRO plays a crucial role in managing the collective responsibilities of producers and importers, ensuring that the system operates efficiently and effectively. By having a legal framework in place, mandatory EPR systems can achieve higher compliance rates and more significant environmental benefits.

Conclusion

While voluntary EPR systems offer flexibility and can be a good starting point for companies, mandatory EPR systems provide a more structured and reliable approach to waste management. The choice between the two depends on the specific goals and context of the waste management strategy being implemented.

Which approach is suited best for setting up a national system?

When comparing voluntary and mandatory EPR systems, it is essential to understand the differences in their potential outcomes and effectiveness in managing waste.

A **voluntary** EPR system relies on the willingness of companies to participate in waste management initiatives. However, this approach often yields limited results. Since participation is not mandatory, there are no enforceable claims against the system, which can lead to its shutdown once the initial funding is exhausted. Voluntary systems can also struggle to move beyond the status quo due to regulatory capture, poor monitoring, free riding by non-participants, and high transaction costs. These challenges hinder the system's ability to achieve ambitious policy targets, making it limited in scope and transparency.

In contrast, a **mandatory** EPR system can develop a sustainable waste management infrastructure that is both comprehensive and effective. This system mandates the participation of all market players, ensuring a robust collection system and recycling infrastructure. It supports the creation of a high-quality, profitable industry focused on environmentally friendly disposal practices. Additionally, mandatory EPR systems require market participants to meet specific waste disposal requirements, contributing to better education, provision of information, and communication about waste management.

National systems can significantly differ based on whether they adopt a voluntary or mandatory EPR approach. Voluntary systems may place participating companies at a competitive disadvantage since not all companies are required to bear the costs of waste management. This can lead to inconsistent

Figure 3: Voluntary or Mandatory Scheme - Implication for SIDS



Implication for SIDS
A mandatory EPR scheme is most suitable

Against this background and given the specific context and challenges of SIDS in waste management, the development, adoption and implementation of mandatory EPR schemes are certainly the preferred option for SIDS. Such schemes are more likely to help SIDS in establishing new or expanding, upgrading and improving existing waste management systems by creating favourable conditions for the necessary investments. Mandatory schemes usually mobilise considerably more financial resources than voluntary ones and do so on a more consistent, reliable and predictable basis. Moreover, the existing DRS in SIDS are usually mandatory. Voluntary EPR schemes might be applied if the market for the targeted plastic or plastic product is highly concentrated and affects only a few and economically powerful companies.

Source: Busch (2023)

participation and effectiveness across the industry. On the other hand, mandatory EPR systems can be designed to cover entire countries, provided there is a solid legal framework in place. Such systems facilitate the establishment of a uniform collection system for all waste materials, ensuring comprehensive and efficient waste management across the nation.

To conclude, while voluntary EPR systems may offer some benefits, their limitations in scope, transparency, and enforceability often hinder their success. Mandatory EPR systems, with their comprehensive and obligatory nature, are better suited to achieving sustainable waste management goals and creating a more equitable and effective framework for managing waste on a national level.

Table 4. Criteria for mandatory and voluntary EPR schemes

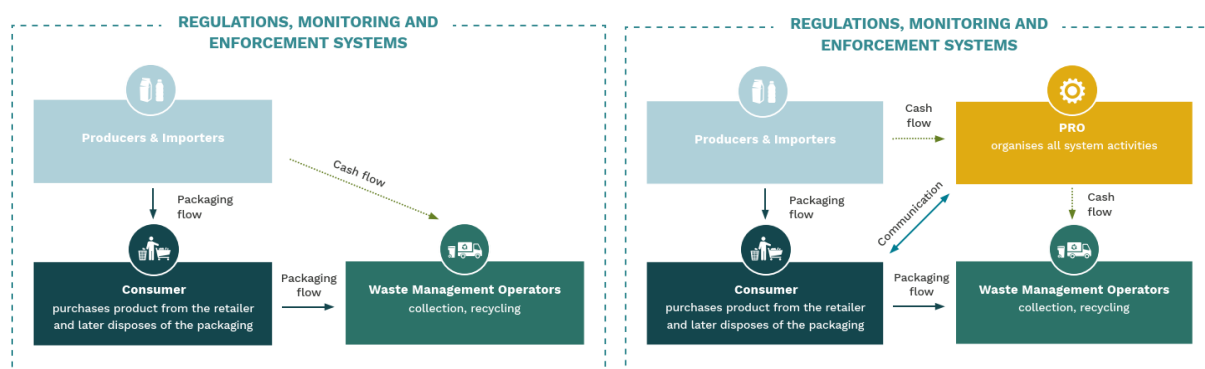
	Mandatory	Voluntary
Financial aspects & sustainability	Reliable legal basis for running costs to be covered over the long term (pro) Financial contributions from all producers/importers of products (pro) Costs are normally incorporated in product prices (pro)	No guarantee that running costs are covered (as each producer/importer decides itself whether they want to participate and to what extent) (con) Financial contributions tend to be smaller than in a mandatory EPR system (con) Limited in product groups / products (con)
Competition	Fair as all obliged companies have to participate under the same circumstances No impact on competition as all companies have to pay (pro)	Companies that participate voluntarily may have a disadvantage in competition (con)
Monitoring & enforcement	Compliance with legal requirements can be monitored closely (if state authorities have sufficient resources to do so) Can cover whole countries, if legal framework is set up accordingly (and solid) (pro) Allows to set up a collection system for all waste materials (pro)	Limited availability of data (con) Only voluntary declarations and disclosures possible, no official monitoring system in place to check compliance, development Country-wide collection system covering all waste materials is not possibly (con)

Source: Bünemann et al. (2020)

3.3.3.4 Individual or collective system?

There are two primary systems through which producers can fulfill their EPR obligations: individual responsibility and collective responsibility. Understanding the differences between these systems is crucial for effective waste management and compliance with environmental regulations.

Figure 4. Individual Responsibility vs Collective Responsibility



Source: Bünemann et al. (2020)

Individual EPR Systems

An individual EPR system is the simplest form of EPR where producers take direct responsibility for the waste generated by their products. In this system, producers either collect the waste themselves or pay a fee to a waste management operator to fulfill their take-back obligations. This approach is often viable in markets where the product distribution is concentrated, allowing producers to efficiently manage the take-back process.

However, for an individual EPR system to be effective, companies must have precise knowledge of the amount of waste materials they introduce to the market, its locations, and how to access these areas for collection. This requirement can be challenging, especially with household waste, which typically contains mixed waste from various sources and brands. Therefore, individual EPR systems are generally more suitable for industrial (packaging) waste rather than household waste.

Collective EPR Systems

In contrast, collective EPR systems transfer waste management responsibilities to a third party, known as a PRO. The PRO organizes all waste management activities within the system, simplifying the process for individual producers. One significant advantage of collective systems is that they do not require sorting waste by producer, which reduces costs and logistical challenges.

Most countries adopt collective EPR systems for managing household waste due to their efficiency and cost-effectiveness. These systems generate economies of scale, reduce costs for participants, share risks, simplify operations, and reduce administrative burdens. Additionally, they provide a means for governments to manage waste generated by orphan products (products whose producers are no longer in business or cannot be identified).

Conclusion

Both individual and collective EPR systems have their advantages and limitations. Individual systems may incentivize producers to a higher degree to reduce waste and design recyclable or reusable products and packaging (eco-design). However, they may not be feasible for managing household waste. Collective systems, on the other hand, offer significant operational and economic benefits, making them the preferred choice for many countries, especially for household waste management but would need to implementation of a third party, the PRO, to run the system. Understanding these differences is essential for trainers and participants to effectively implement and manage EPR systems.

Table 5. Criteria for individual and collective EPR schemes

	Individual	Collective
Financial aspects & sustainability	Direct payment by producers/importers to waste management operators	PRO receives fee by producers/importers and pays the waste management operators

Organizational aspects & practicalities	Logistical challenges as the producers need to know where their products & packaging are distributed (especially with small quantities)	PRO carries out all operational activities on behalf of the producers/importers --> reduced costs and logistical efforts
Monitoring and enforcement	Monitoring needs a state agency that supervises every individual producer/importer that they fulfil their responsibilities Reporting obligations and monitoring efforts are higher as more entities needs to be controlled	PRO fulfils all tasks and responsibilities, performance is monitored by a third party (e.g. governmental body or external auditor) Reporting and monitoring efforts lie on fewer entities (per sector) hence are lower

Source: Bünemann et al. (2020)

3.3.3.5 PRO design options under a collective EPR system:

When designing an EPR scheme in a collective way, one crucial step is setting up a **PRO**. As we have learned, a PRO is an entity that helps implement the EPR program by taking on the responsibilities of producers, such as collecting and recycling waste products. Understanding the different options for designing the EPR scheme and setting up the PRO is essential for creating an effective and efficient system.

The creation of a PRO depends on several factors. First, the **policy instrument** selected for the EPR scheme plays a significant role. Different policy instruments, such as regulations, voluntary agreements, or economic incentives, can influence how the PRO is structured and operates.

Another important factor is the type of **product group and type of secondary material** covered by the EPR scheme. Different products, especially plastics, have unique characteristics, collection, sorting, and recycling needs, which are different from the ones for metal, paper or other materials. Therefore, the PRO must be tailored to handle the specific requirements of the product group it is responsible for.

The **number of producers and importers** involved in the EPR scheme also affects the setup of the PRO. A larger number of stakeholders may require a more complex and robust organizational structure to ensure effective coordination and management.

By examining these factors during the design stage, it is possible to create a PRO that effectively supports the implementation of the individual EPR program, ensuring that waste products are properly managed and recycled and fitting to the circumstances.

Monopolistic (single & non-profit) or competitive (multiple & for-profit) PRO Setup

EPR schemes can be structured to include either a single PRO or multiple PROs serving product markets. The choice between these models can significantly impact the competitiveness and efficiency of the EPR system. In a single-PRO model, a single organization manages the collection, sorting, and recycling of waste for all producers within the EPR scheme. This can lead to efficiencies of scale but also risks creating monopolistic conditions where the PRO can exert undue influence over market dynamics.

To counter these potential monopolistic tendencies, some countries have implemented multiple-PRO systems. This approach introduces competition among PROs, which can drive improvements in service quality, cost efficiency, and innovation in waste management practices. For instance, Germany has transitioned from a single, non-profit PRO model to a system with several for-profit PROs competing with each other. This shift aims to enhance the overall performance and responsiveness of the EPR scheme, ensuring that producers have the flexibility to choose a PRO that best meets their needs.

Table 6. Monopolistic vs. Competitive PRO Scheme

Monopolistic (non-profit)	Competitive (for profit)
---------------------------	--------------------------

	<p>Singular PRO (non-profit mostly) doing all collection and coordination</p> <p>PRO is owned by producers/importers & industry representatives</p> <p>Operates most fairly if there is only one PRO (monopolistic)</p>	<p>In some cases, law requires direct competition between multiple PROs</p> <p>Operates most fairly if several PROs compete against each other for customers (producers)</p> <p>Approach should be supported by coordination bodies collectively established by PROs</p>
Financial Aspects	<p>Fees reflect the costs for implementing and operating the system</p>	<p>High price pressure caused by competitions. PROs can make gains and losses (and become insolvent)</p>
Organizational aspects & practicalities	<p>No economic interest (from PRO) that allow high transparency</p>	<p>Less transparency</p> <p>Each PRO is responsible for organizing itself</p>
Free rider issue	<p>Easy to identify free-riders (as there is only one PRO) --> companies not paying fees can easily be uncovered</p>	<p>More difficult to identify free-riders (fees are paid to one of many PROs),</p> <p>PROs compete for producers/importers to use their services</p>
Monitoring	<p>Lower monitoring level than in for-profit systems</p>	<p>High monitoring level as there are many PROs and in general a lower transparency</p>

Source: Bünemann and Brinkmann (2019)

Industry- or state-led PRO

The PROs can be either industry-led or state-led, each with distinct characteristics and operational frameworks.

Industry-led PROs are primarily established by private sector entities such as companies, associations, or other organizations. They operate independently from direct governmental control, though they remain under the supervision of public authorities to ensure compliance with their roles and responsibilities. This model is predominant, as it aligns closely with the original concept of producer responsibility, encouraging companies to manage the waste generated from their products. By maintaining a degree of separation from public authorities, industry-led PROs minimize the risk of their funds being diverted for non-related governmental purposes, thereby ensuring more efficient and focused waste management practices.

Conversely, **state-led PROs** are operated by public authorities, often as departments within government ministries. Examples of such systems include the Eco-Lef system in Tunisia and Taiwan’s Waste Recycling Management Fund (Bünemann & Brinkmann, 2019). While state-led PROs can ensure alignment with national policies and provide a structured approach to waste management, they may also face challenges related to bureaucratic inefficiencies and potential fund misappropriation. The close integration with the tax system in state-led models can sometimes lead to financial resources being redirected away from waste management objectives.

Both models aim to achieve effective waste management and sustainability, yet they differ in their approach to balancing public oversight with operational independence. Choosing between industry-led and state-led PROs involves considering factors such as efficiency, accountability, and alignment with broader environmental goals.

Table 7. Industry-led vs. state-led PRO

	Industry-led	State-led
	System is established and organized/supervised by organizations of the private sector (companies, associations of other organizations, etc.) and supervised by public authorities Everyday business is not connected to public authorities	System is set up and monitored by a public authority (e.g. becomes a department within a governmental ministry)
Financial aspects	Fees not connected to public funds Fees reflect costs of running the EPR system Funding must be transparent and traceable (for internal and external monitoring activities)	System needed to ensure PRO funds are only used for the PER system (and not used for other purposes, e.g. that they are not treated like taxes) (fees are usually collected using a central fund)
Organizational aspects & practicalities	Companies have to take the lead to establish the PRO High effort required in relation to interactions with private stakeholders and public authorities	Public administration needs to have sufficient capability, expertise and resources to set up the required structured, collect the funds (from producers/importers) No scope for highly motivated private companies to contribute with industry initiatives
Free rider issue	Avoiding free riding is in the interest of the PROs	High risk of corruption (especially in countries with high corruption rates)
Monitoring	Done by an outside party (e.g. public agency)	No independent party to supervise and enforce sanctions

Source: Bünemann and Brinkmann (2019)

3.3.4 Case Studies for different design options

Bünemann and Brinkmann (2019) deliver a comprehensive overview of various case studies that illustrate different approaches to implementing EPR systems. These case studies offer practical insights and strategies that have been employed across different regions, highlighting the flexibility and adaptability of EPR frameworks.

Below is a summary of the key options explored in these case studies:

Phased Implementation Approach

In this method, a nationwide EPR law is enacted, but only a specific fraction of the population is included in the initial phase. For example, the system might start with 20% coverage of the population, gradually increasing to full coverage over a decade. This phased approach allows stakeholders to adjust to the system progressively, ensuring smoother transitions and adjustments.



Region-Specific EPR Systems

This option focuses on implementing EPR laws in particular parts of a country. Companies are required to participate based on where their products are consumed. This can involve either clearly defined areas where companies must track and report their packaging distribution or a broader approach where contributions are calculated based on national revenue, reflecting the overall market share.



Targeted Packaging Regulations

Some case studies highlight regulations that apply only to specific types of packaging within certain areas. For example, a law might mandate that only companies participating in a return system for bottles can sell beverages in a designated historical site. This approach targets waste management in sensitive or high-traffic areas, ensuring that packaging is effectively collected and recycled.



Event-Specific Return Obligations

This strategy involves implementing return obligations for packaging used during special occasions, such as sports events or concerts. Producers are required to collect and recycle packaging post-event, ensuring that temporary increases in waste are managed sustainably.



3.3 Module 4: What are complementary measures to EPR systems and how do they work?

Learning Objectives <i>After completion of this modules, participants will be able to:</i>	Delivery Method(s) for Facilitators
Explore different supporting EPR instruments and incentives, such as e.g. product-take-back requirements, financial incentives, regulation and performance standards, information-based instruments and informal sector support	Presentation of examples, Quiz at the end of module
Resources required: Canva presentation	Duration: Online 60min; in-person 90min
Further Resources: <ul style="list-style-type: none"> • Extended producer responsibility and economic instruments OECD • 30-YEARS-OF-OPTIMUM-EPR-HOW-TO-MAKE-THE-BEST-OUT-OF-IT-4.pdf 	

3.4.1 Didactics of Module 4

GROUP ACTIVITY TOWARDS BEGINNING OF MODULE 4 (5 MIN)

Questions:

- *Recap: Reflect on the current situation in your country. What policies, initiatives, voluntary measures, or regulations are already in place that support the development of an EPR system?*
- *What gaps exist? Consider the areas where additional measures, regulations, or initiatives are needed to create a fully functioning EPR system.*

Participants: Discuss amongst each other and share insights from their community.

Facilitator:

- Write down the most important and commonly mentioned points on a flipchart.
- Use this as a transition to introduce Module 4 by highlighting: Some measures, like Deposit Refund Schemes (DRS), are not EPR systems on their own but are common supporting instruments. Explain that the next module will explore these supporting instruments in detail and how they enhance the effectiveness of an EPR system.



GROUP ACTIVITY AT END OF MODULE 4 (5 MIN)

Questions: Quiz in Canva

Participants: Discuss amongst each other and share insights from their community.

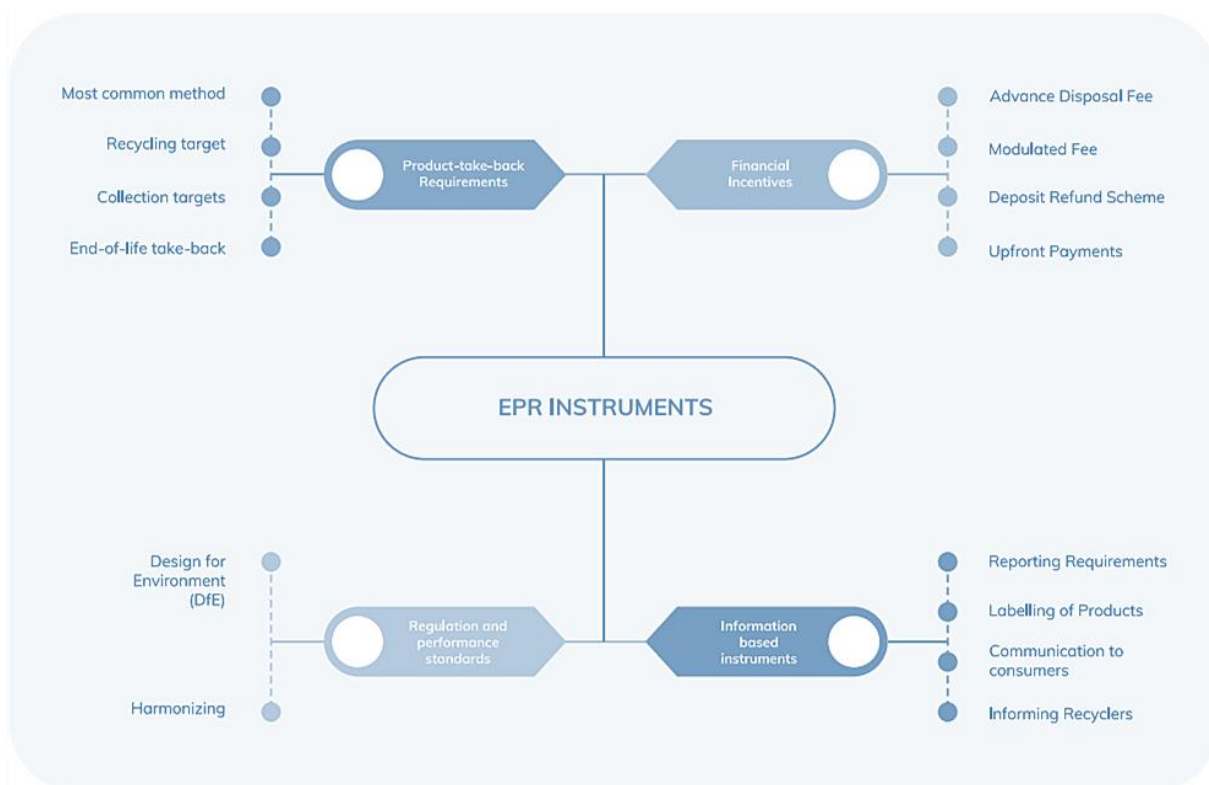
- **Facilitator:** Select right answers in Canva quiz and facilitate discussion. Encourage the participants insights, especially on the SIDS perspective.

3.4.2 Regulatory policies and supporting instruments

The concept of EPR, recognized as a policy principle rather than a direct policy instrument, provides a framework that does not specify the selection of particular tools for its implementation (Mallick et al., 2024).

To effectively choose and evaluate suitable policy instruments, it is essential to first clearly define the objectives of the EPR scheme. Policymakers face challenges such as balancing simplicity and complexity, as well as managing high administrative and monitoring costs when selecting specific policy instruments. According to the OECD (2016), the successful operation of an EPR system is supported by **four main categories of policy instruments**, alongside responsible actors. These categories are designed to complement and enhance each other's implementation.

The following graph gives an overview of the four categories of policy instruments that can be used to facilitate the functioning of the EPR scheme. We will quickly dive deeper into each of the instrument categories, but for more detail please have a look at the EPR Manual developed by adelphi consult (Paolo Facco et al., 2023), Dimitropoulos et al.'s (2021) paper on design, functioning and effects of EPR and Busch's (2023) analysis of EPR schemes and their implementation in SIDS.

Figure 5. Different Instruments to support EPR

Source: Dimitropoulos et al. (2021)

3.4.1.1 Product Take-Back Requirements

Product take-back requirements are a fundamental aspect of EPR systems, mandating producers to reclaim their products at the end of their lifecycle. This approach ensures that producers are directly involved in the waste management process, promoting recycling and sustainability. Producers may employ various strategies, such as direct collection, consumer awareness initiatives, or deposit refund systems, to meet these requirements. These methods not only encourage recycling but also foster a circular economy by promoting sustainable product lifecycle management. The product take back requirements can be supported by a collection quota as they mandate producers to reclaim products at the end of their lifecycle, ensuring a specified amount of waste is collected (Bünemann et al., 2020).

3.4.1.2 Economic and Market-Based Instruments

Economic instruments, such as **Deposit Refund Schemes (DRS)**, **Advanced Disposal Fees (ADF)**, and **taxes**, and modulated fees, play a pivotal role in incentivizing sustainable practices. DRS schemes mandate a deposit at purchase, encouraging the return of products, and often differentiate rates to promote environmentally friendly options (Dimitropoulos et al., 2021). ADFs, while covering operational costs, do not incentivise upstream changes like recyclability. Modulated fees, on the other hand, directly address this gap by adjusting financial contributions based on specific product characteristics, such as recyclability, reusability, or the presence of hazardous materials. These fees encourage producers to design more sustainable products by linking costs to environmental performance. Taxes on specific materials disincentivize their use in manufacturing, encouraging the use of recycled or less hazardous materials. Public procurement policies can favor recycled products, aligning with EPR goals. Additionally, plastic credits have emerged as a complementary economic instrument supporting EPR schemes (Busch, 2023). These credits represent a tradable certificate for a specified amount of plastic waste collected for recycling, allowing companies to offset their plastic footprint. By integrating plastic credits into EPR frameworks, they can provide a financial mechanism to enhance waste management infrastructure and promote circular economy practices. Plastic credit systems can potentially undermine EPR schemes by providing companies with an argument against more stringent EPR regulations, and by competing for resources and waste collection, which may hinder the effectiveness of EPR initiatives.

However, when integrated properly, plastic credits can complement EPR schemes by mobilizing resources to develop waste management infrastructure and by incentivizing the collection of difficult-to-recycle plastics, thereby enhancing overall waste reduction efforts.

3.4.1.3 Regulation and Performance Standards

Regulation and performance standards are pivotal in strengthening the effectiveness of EPR systems by ensuring that products are designed with sustainability as a fundamental principle. These standards, which include Design for Environment (DfE) strategies and Minimum Recycling Content quotas, mandate the use of eco-friendly materials, optimize production techniques, and minimize environmental impacts. Harmonizing these standards globally, particularly for traded products, yields substantial environmental benefits. The adoption of these standards, whether mandatory or voluntary, encourages innovation in product design, leading to reduced waste and enhanced recycling processes.

Recycling quotas, similar to collection quotas, place additional pressure on producers to actively engage in recycling practices rather than opting for energy recovery facilities or incineration. These quotas are crafted to improve product performance by ensuring a certain percentage of materials are recycled, thereby advancing a circular economy and bolstering the EPR system.

3.4.1.4 Information-Based Instruments

Information-based instruments are essential for the successful implementation of EPR schemes, focusing on educating stakeholders about environmental impacts and waste management. Reporting requirements, product labeling, and communication strategies disseminate information about product sustainability, recyclability, and producer responsibility. These instruments empower consumers to make informed decisions and encourage proper product disposal. By informing recyclers about material composition, these tools enhance the efficiency of recycling processes. Overall, information dissemination strengthens the EPR framework by promoting transparency and accountability among producers and consumers.

3.4.1.5 Summary and support for choice

The table below provides a detailed overview of how various policy instruments within an EPR scheme can influence different aspects of product innovation and lifecycle management. It categorizes the instruments into regulatory, economic, performance standards, and information-based tools, highlighting their impact on product innovation, redesign, material use, and consumer behavior. Each instrument is assessed for its potential to drive changes across these dimensions, offering a glimpse into the strategic setup of an EPR scheme. This assessment is crucial once the EPR scheme has been legislated, providing insights into the practical application and effectiveness of the chosen instruments in achieving the desired environmental outcomes.

Figure 6: Effect of specific EPR instrument on product innovation and consumer behavior

	No product innovation	Product innovation	Product redesign	Modified material use	Consumer behavior change
Regulatory instruments					
Take back requirements			●	●	●
Economic instruments					
ADF	●				
Modulated fee		●	●	●	
DRS	●			●	●
Regulation and performance standards					
DfE		●	●	●	
Information based instruments					
Labelling of products		●			●
Reporting requirements	●				
Consumer communication	●				●
Others					
Voluntary schemes		●		●	●

Source: (Paolo Facco et al., 2023; OECD, 2004)


3.4.2 Integration of the informal sector

It is crucial for sustainable development to integrate the informal sector into waste management. The informal sector, including waste pickers and small businesses, plays a vital role in the collection, sorting, and recycling of waste, particularly plastics (Pariaker, 2024). Their activities not only reduce the environmental impact of waste but also contribute to the economy by providing livelihoods for many individuals.

EPR schemes benefit from the skills, knowledge, and organizational capabilities of informal workers, which can lead to improved waste collection and recycling processes. Moreover, informal workers often operate without charging fees, making waste management services more accessible to households and businesses. If they are not integrated, their contribution and benefits are lost and might even negatively affect the EPR scheme. Informal waste workers might compete with the scheme by collecting the types of waste that it covers without feeding the waste back to the scheme, thereby hindering its goal and reducing its revenues. To maximize the benefits of integrating the informal sector, several strategies can be employed.

1. First, **formal recognition and legal support** for informal workers can empower them and improve their working conditions.

Figure 7: Info Box SIDS Informal Sector.



Implication for SIDS
The integration of informal waste workers is indispensable for an effective EPR scheme

Given that informal waste workers play an important role in waste management, any EPR scheme can only operate effectively if informal waste workers are integrated and their contribution in particular to waste collection is recognised and built upon.

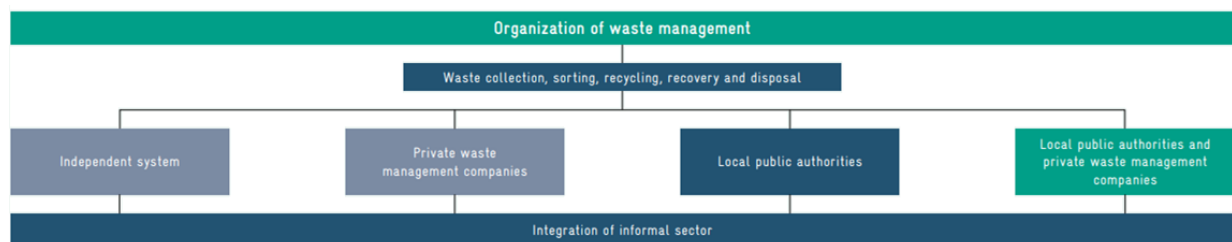
Source: Busch (2023)

2. Second, **offering incentives for formalization** and partnership with waste management companies can enhance their participation in EPR schemes.
3. Third, **addressing market failures by focusing on less economically attractive waste streams** can prevent competition with existing informal value chains
4. Finally, establishing a **mechanism for informal workers to voice their interests** can ensure their needs are considered in waste management policies.

Checklist for Integrating the Informal Sector in SIDS

- Legal Recognition
 - Ensure legal rights and protections for informal waste workers.
 - Establish affordable and attainable registration or licensing requirements.
- Partnership and Formalization
 - Provide incentives for informal workers to partner with formal waste management companies.
 - Support the formalization of informal businesses through legalization and tax registration.
- Market Focus
 - Design EPR schemes to address waste streams with market failures, such as low-value plastics.
- Stakeholder Engagement
 - Institutionalize consultations with informal workers during the design and implementation of EPR schemes.
 - Create a platform for informal workers to express their interests and concerns.

Figure 8. Organization of waste management in SIDS including the informal sector




Source: Busch (2023)

3.5 Module 5: Institutional Implementation of EPR



Learning Objectives <i>After completion of this modules, participants will be able to:</i>	Delivery Method(s) for Facilitators
<ul style="list-style-type: none"> • The institutional set-up of EPR systems • Financial aspect, costs and potential financing options • Supervision of the system • A potential roadmap on the way 	Add (e.g. Groupwork, presentations, ...) Role play
Resources required: Canva Presentation, Task Sheets, Sticky Notes	Duration: Online 60min; in-person 90min
Further Resources: <ul style="list-style-type: none"> • https://adelphi.de/system/files/document/Latest-EPRManual-14.02.23%20%28004%29_2.pdf • https://caribbeanbiodiversityfund.org/wp-content/uploads/2025/02/250128_EPR-Training_CBF.pdf 	

3.5.1 Didactics of Module 5



GROUP ACTIVITY TOWARDS BEGINNING OF MODULE 5 (10 MIN)

Questions: Quiz in Canva

Participants: Discuss with each other and share insights from their community.

Facilitator: Select the right answers in Canva quiz and facilitate discussion. Encourage the participants insights, especially from the SIDS perspective.

**GROUP ACTIVITY AT END OF MODULE 5 (10 MIN)**

Objective: Create a customized EPR roadmap for a fictional or your own SIDS, addressing local challenges and opportunities.

1. Each group represents a SIDS. Assign roles:

- Government Officials: Draft regulations and funding mechanisms.
- Producers/Importers: Ensure compliance with packaging regulations.
- Consumers: Represent residents and tourists.
- Waste Management Operators: Include formal and informal sectors.

2. Analyze & Brainstorm

- Review a selected case study
- Discuss strengths, weaknesses, and adaptations for your fictional SIDS.

3. Design the Roadmap

- Use the 12-step framework to outline your EPR system.
- Identify key stakeholders, financial flows, and challenges.
- Create a simple visual (e.g., timeline or flowchart) like Figure 15.

4. Role Play & Present

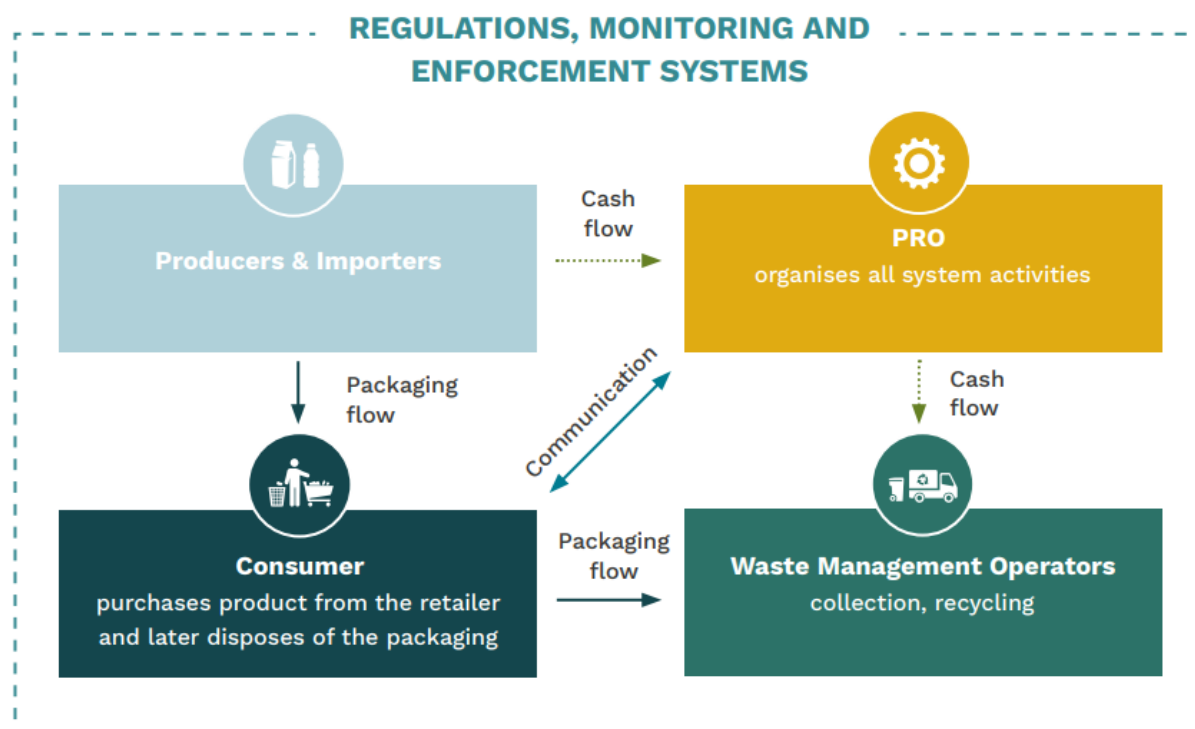
- Simulate negotiations between informal workers, PROs, and government officials.
- Present your roadmap, explaining key decisions and trade-offs.

Facilitator Tasks:

- Provide role descriptions, case study summaries, and templates.
- Guide discussions, observe role plays, and give constructive feedback.

3.5.2 Institutional Set-Up

As described above, there are different varieties of EPR system. Because of the complexity of the systems, the institutional set-up can be described in general terms but may vary depending on the form of the respective EPR system. Figure 9 gives an overview of the most individual institutional players.

Figure 9. Institutional Set-Up of an EPR System.

Source: Bünemann et al. (2020)

Producers are the main target group of the EPR policy concept, as responsibility is transferred to them. **Producers** of packaging are companies who handle sales packaging generally in the following ways:

- Companies who fill the packaging themselves
- Companies who commission a third party to fill the packaging
- Companies who import packaged goods into the country

As already outlined in previous chapters, the **PRO** is a third-party entity that coordinates and operates the collection, sorting and recycling systems for packaging within an EPR system. It is the central and most important actor in an EPR system, responsible for meeting the collection and disposal obligations of individual obligated companies. The PRO has the following **key responsibilities**:

- **System Management:** The PRO manages the establishment, development and maintenance of the waste management system and take-back obligations for responsible producers and importers.
- **Take-back obligations:** It fulfils all take-back obligations of producers/importers.
- **Fee collection:** It collects fees from obligated industries to fund the EPR system.
- **Fund management:** The PRO manages the funds collected, including billing, invoicing, accounting and cash flow management.
- **Registration and compliance:** It manages the registration of all companies obliged to participate, prevents free-riding and ensures fair fees that do not affect competition.
- **Communication and information:** The PRO is responsible for communication, information and research and development (R&D).
- **Documentation and reporting:** The PRO documents all activities undertaken and provides information to regulators to demonstrate compliance.
- **Monitoring and auditing:** It monitors the services provided under the EPR system, including performance audits of waste management operators.
- **Tender and contract management:** The PRO manages tenders and contracts for all activities that are part of the EPR system.
- **Education and awareness:** The PRO educates producers/importers and consumers about the importance of environmentally sound waste management systems and separate collection.

In addition, the PRO carries out the following tasks

- **Member management:** The PRO manages the members of the EPR system.
- **Interaction with authorities:** The PRO interacts with the relevant authorities.
- **IT system operation:** The PRO operates the IT systems and ensures that they meet the needs of all members.

The PRO needs to be supervised by an external party, such as a government or state body (e.g. ministry of environment) or an external supervisor appointed by the ministry (OECD, 2024).

The success of the PRO depends on an effective and efficient organizational structure, sufficient funding, effective administration, and monitoring and enforcement of the EPR system.

Waste management operators play a pivotal role in the effective collection, sorting, and recycling of waste materials, ensuring that the system functions smoothly and achieves its environmental objectives. These operators are responsible for managing the logistical aspects of waste handling, which includes organizing the collection of waste from various sources, transporting it to processing facilities, and overseeing the sorting process to separate recyclables from non-recyclables. Waste management operators often collaborate with PROs to meet specific recycling targets and ensure compliance with EPR regulations. Their role is crucial in maintaining the integrity of the waste management chain, from the point of collection to the final processing and recycling stages.

Legislative authorities establish the foundation for an EPR system by creating a comprehensive legal framework. This framework, often based on national laws, sets out the responsibilities and obligations of all stakeholders involved in the EPR system. It may also delegate the responsibility of monitoring and compliance to a specific authority.

The following table summarizes the stakeholders and their respective roles:

Table 8: Stakeholder roles

Stakeholder	Roles & Responsibilities in an EPR System
Raw material suppliers, manufacturers, and converters of packaging material	Provide packaging materials, using either virgin raw materials or recycle. Packaging design is crucial for reusability and recyclability, aiding the circular economy.
Producers, and importers of packaged goods obliged companies	Introduce packaged goods to the market. Producers and importers can influence packaging design and require recycled materials. This applies to household and similar waste (e.g., restaurants, hospitals). They demand improvements in packaging design for recyclability.
Distributors & retailers of packaged goods	Supermarkets and stores connect the private sector with consumers.
Consumers	Consumers must dispose of packaging correctly, ideally by separating the waste at source to ensure high-quality recycling.
Waste management operators	Collect and recycle packaging in accordance with the highest possible standards, thus ensuring high-quality recycling. This responsibility also extends to companies operating in the informal sector.
PRO	Coordinate the collection, sorting, and recycling of packaging waste. They register obligated companies, collect fees to fund waste

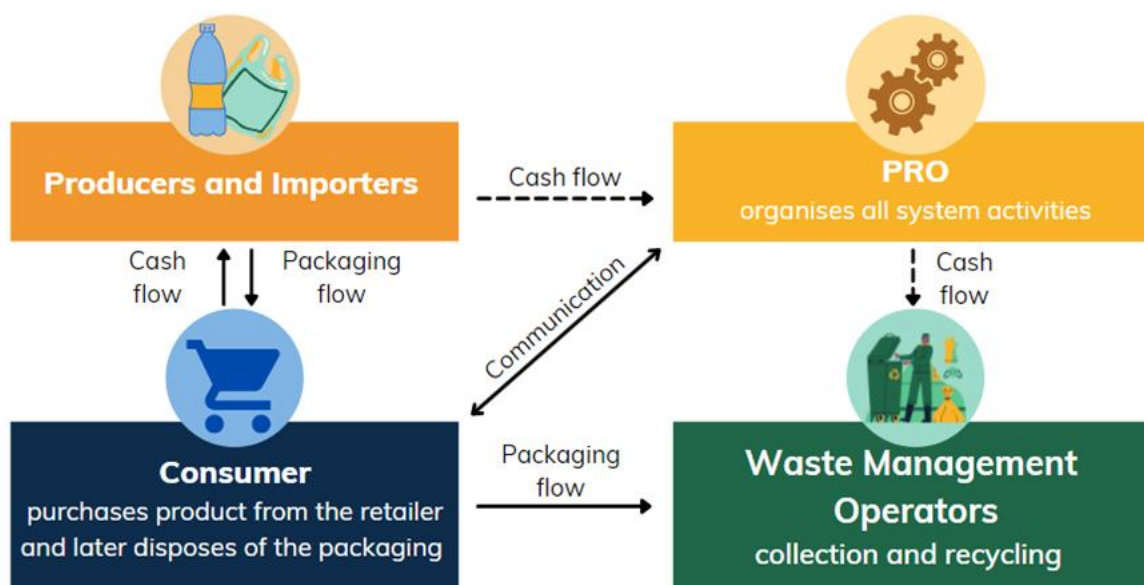
	management, and ensure compliance with EPR regulations.
Local authorities/ municipalities	Provide linkages between consumers and waste management operators through communications and the provision of information, and by supporting collection
Government and other public authorities	Responsible for legislation governing the EPR system, and for supervising its operation

Source: PREVENT Waste Alliance (2020)

3.5.3 Financial flows

The graphic below illustrates the financial flow within an EPR system with collective responsibility. When consumers purchase items, such as a plastic water bottle, the producers are required to pay a licensing fee to the PRO based on the amount of packaging they sell. This fee is determined by the quantity of packaging reported by the producers. Typically, these costs are factored into the price of consumer products, effectively passing them on to the consumer. The PRO, tasked with overseeing the EPR system, then allocates funds to waste management operators to cover the costs of collecting and recycling the packaging waste. In certain scenarios, local municipal authorities may also play a role, receiving funds from the PROs and subsequently distributing them to the waste management operators. This collaborative financial flow ensures that all parties contribute to and benefit from efficient waste management and recycling practices. (Monier et al., 2014)

Figure 10: Financial flows between EPR stakeholders



Source: Bünemann et al. (2020)

3.5.4 Costs and financing options

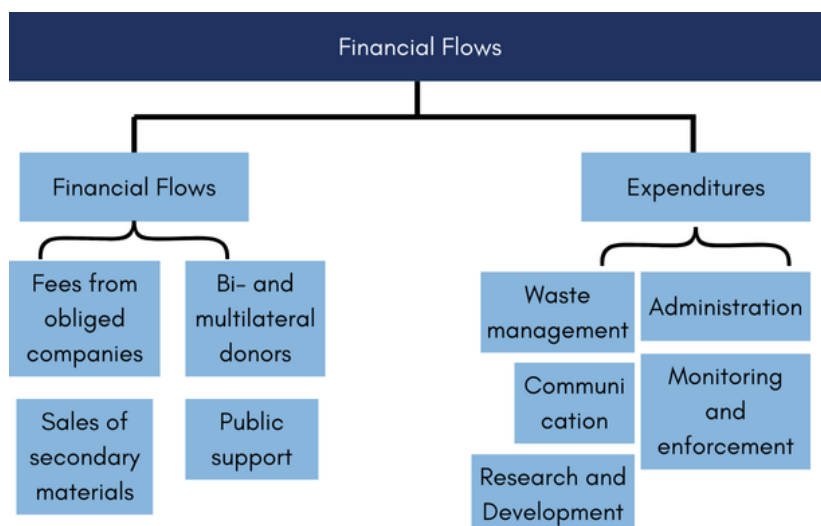
The costs and financing options for EPR systems vary by country and the specific PROs involved. Typically, EPR fees for packaging materials are publicly accessible, with different rates applied per ton for materials like paper, glass, and various plastics. These fees are designed to cover all operational costs incurred by the PROs, as outlined in the legal framework. The majority of the costs, often around 50-70%, are allocated to waste collection, sorting, and recycling processes, which form the backbone of EPR schemes. Administrative costs, including compliance monitoring and reporting, can account for

approximately 10-20%. Awareness campaigns and educational initiatives to promote recycling and sustainable practices may represent another 5-10%. The remaining costs are often used for research and development to improve recycling technologies and product eco-design, which can range between 5-15%, depending on the specific goals and maturity of the EPR (Sachdeva et al., 2021).

Key aspects of the financial flow include: (Ahlers et al., 2021)

- **Waste Collection Costs:** Involves expenses for vehicles, fuel, labor, and maintenance required to collect waste from households, businesses, and public space
- **Sorting and Recycling:** Waste must be sorted, either manually or through automated systems, which require significant technological investment. Recyclable materials are processed in recycling plants, incurring costs for operation, energy, and labor. Non-recyclables are disposed of through landfill or incineration, both of which have associated costs.
- **Administrative Expenses:** Running an EPR system involves costs related to regulatory compliance, reporting, auditing, and stakeholder communication. PROs often invest in public awareness initiatives, including campaigns and workshops, to educate the public on waste disposal and recycling benefits.
- **Fee Structure:** EPR fees are based on the quantity and recyclability of packaging materials:
 - Incentives: Easily recyclable materials may receive reduced fees, while difficult-to-recycle materials incur higher fees.
 - Influencing Factors: Fees are influenced by the type of collection system, waste volume, material composition, organizational structures, and contributions from local authorities.
- **Adjustments and Incentives:**
 - Fees are adjusted based on local circumstances, such as the recovery infrastructure and mandatory recycling quotas.
 - During the initial implementation phase, costs may rise as the system matures, necessitating regular fee adjustments.
 - Some systems apply modifications like bonuses for recyclability or specific labeling, and unit-based fees, to better align with system needs and incentivize eco-friendly practices. This structured approach ensures that the EPR system remains financially self-sufficient while promoting sustainable waste management practices.

Figure 11: Financial sources and expenditures in an EPR system



Source: Own representation according to GIZ (2024), p. 7

In an **Individual EPR system** the Producers/importers pay fees directly to the waste management companies. However, in a **Collective EPR system** the design of the financial flows can depend on the circumstances in place. In the following the most used cases are presented, but other variations are possible as well:

Producers/importers pay fees to PRO:

1. Option: PRO contracts waste management companies

- Option: Local authorities contract waste management companies and PRO pays fee to local authorities

Figure 12: Cash flows in a collective EPR System



Source: PREVENT Waste Alliance (2020)

3.3.5 Supervision, monitoring and enforcement

An effective EPR system requires a clear legal framework that defines the tasks and responsibilities of all actors involved. The EPR regulations are monitored and enforced by state supervisory authorities, which ensure that all obligated companies fulfill their obligations. These authorities have the right to carry out inspections, request information and impose sanctions in the event of violations. A central register maintained either by a government agency or a PRO plays an important role in monitoring and documenting data on packaging waste.

A primary function of such a register is to ensure that companies are registered and to prevent free-riding. That means companies who bring packaging into the market, but do not pay licensing fees, in spite of their legal obligation to do so. Registers also provide information on the quality and material composition of the obliged companies' packaging. Obligated companies must report their packaging volumes and the packaging materials they use, and this information should be recorded in order to determine exactly how much each company must pay to the PRO.

Also, municipalities or authorities need to check that the PRO is meeting its obligations to set the specifications for the relevant infrastructure and to provide appropriate notifications. Legislators may also want to monitor progress towards recycling targets across the country and ensure that individual companies are complying with the scheme. Hence, public authorities play a key role in enforcing and monitoring the EPR system. The competent public authorities and their roles and responsibilities must be clearly listed in the legal framework and provided with sufficient resources to fulfill their tasks. (Monier et al., 2014)

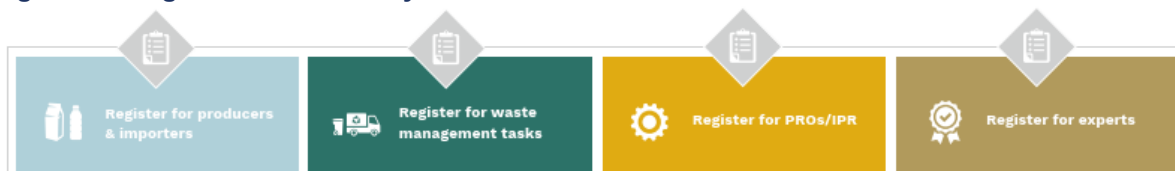
Data needs and management:

To run an EPR system effectively, a relatively large amount of data needs to be collected and managed. While setting up an EPR scheme it is important, to set up several registers to help organizing a sustainable waste management system, monitor the activities within the EPR system and to avoid free riding. Registers should be set up for the following:

- Register for **obliged companies** (producers & importers): besides information on the company/organization it should include data on the products introduced into the market, their materials and their quantity
- Register for **waste management operators**: this register should contain information about the company itself, the activity they are fulfilling in the waste management activities and the technology they are using. This will help to create transparency, provide a basis for choosing suitable/recognized recycling technologies, and to monitor and maintain standards of treatments and recycling for packaging waste

- Register for **PROs**: this is important if several PROs are operating
 - Register for **experts** for monitoring/supervising the PROs
- ➔ All tasks, powers, committees and supervisory bodies associated with the registers should be clearly described in the relevant legal framework

Figure 13: Registers in an EPR system



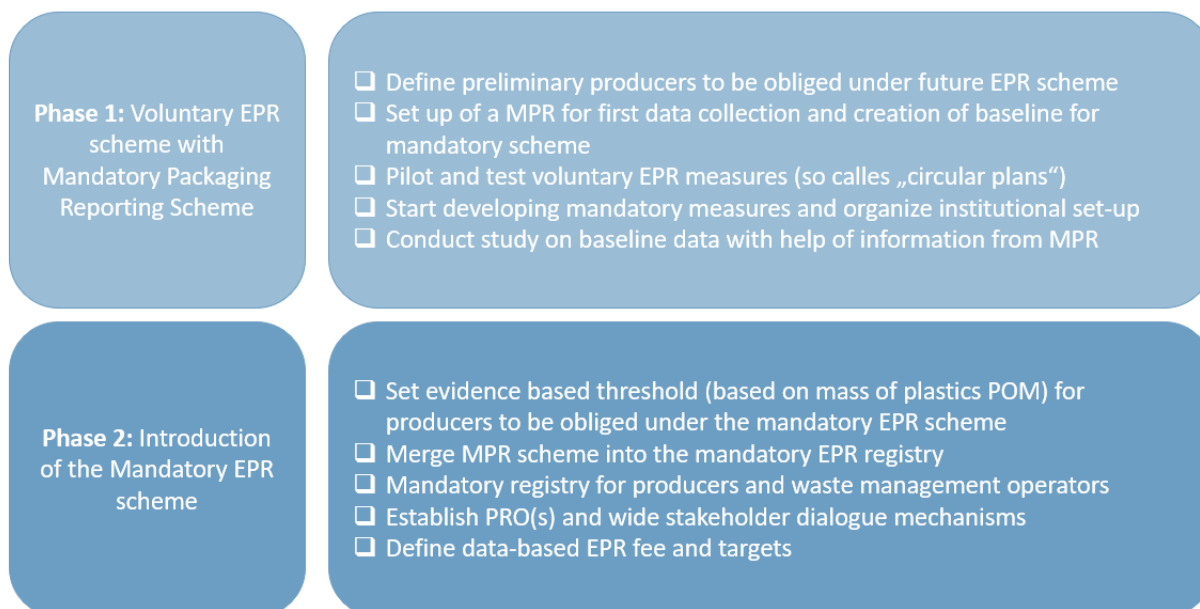
Source: PREVENT Waste Alliance (2020)

Phased Implementation of EPR Systems in SIDS: Building a Strong Data Foundation

In many Small Island Developing States (SIDS), the current state of data collection and management is inadequate. A potential approach could involve starting with a voluntary scheme complemented by mandatory data collection. This would allow for the establishment of a robust baseline before transitioning to a mandatory scheme. A similar phased approach was proposed to the Maldivian government for the development of an Extended Producer Responsibility (EPR) system.

Under this two-phase system, data collection would begin during the initial voluntary phase. Once the mandatory EPR scheme is introduced, the collected data would seamlessly integrate into a centralised mandatory EPR registry (see figure below). This step-by-step approach ensures a smoother transition and a well-informed implementation process.

Figure 14. EPR implementation and data collection in different phases.



Source: own presentation based on past project on EPR in the Maldives

3.3.6 Informal sector as additional stakeholder

Informal waste workers, often referred to as waste pickers, operate without legal employment contracts, work permits, or access to social security and healthcare. Their activities are crucial in low- and middle-income countries where they handle a significant portion of waste collection, sorting, and recycling. However, these workers face vulnerabilities, including irregular income, lack of safety equipment, and exposure to hazardous conditions (Nguyen, 2022).

Integrating informal waste workers into an EPR system is a multifaceted process that requires careful planning, stakeholder engagement, and the establishment of supportive legal and social frameworks. The integration process aims to formalize the activities of informal waste workers, ensuring they are recognized, protected, and fairly compensated for their contributions to waste management and recycling.

Integrating the Informal Sector

The informal sector plays a pivotal role in waste management in SIDS, particularly in resource recovery and recycling. To integrate informal workers into the EPR system, the following steps should be taken:

1. **Legal and Social Recognition:** The first step is to legally recognize informal waste workers and their contributions. This involves including them in regulatory frameworks and providing them with identification cards, which can protect their rights and facilitate their inclusion in formal systems.
2. **Formation of Cooperatives:** Organizing informal workers into cooperatives can enhance their bargaining power and provide a structured way for them to engage with formal waste management systems. Cooperatives can enter into formal agreements with PROs or local authorities to manage waste collection and sorting.
3. **Capacity Building and Training:** Providing training and capacity-building programs is essential to improve the skills of informal workers. Training should cover safe waste handling practices, the use of protective equipment, and business management skills. This can help workers transition smoothly into formal roles within the EPR system.
4. **Access to Social Services:** Ensuring access to healthcare, social security, and other welfare benefits is crucial for the well-being of informal workers. This can be facilitated through partnerships with NGOs and government agencies that provide these services.
5. **Inclusion in Decision-Making:** Informal workers should be represented in decision-making processes related to waste management policies and EPR systems. This can be achieved by including their representatives in governance mechanisms of PROs and other relevant bodies.
6. **Formal Agreements and Contracts:** Establishing formal agreements between informal workers or their cooperatives and PROs can provide stability and security. These agreements should outline the roles, responsibilities, and compensation for the services provided by informal workers. (PREVENT Waste Alliance. 2020b)

3.5.5 Implementing EPR: Step-by-Step

1. **Initial Assessment:** Begin by evaluating the current waste management landscape to identify existing challenges and opportunities. Engage with key stakeholders, including producers, waste management companies, local authorities, and community groups, to gather insights and establish a collaborative foundation. Consider the types of waste streams to target, whether focusing on multiple packaging types or concentrating on a single stream, based on market demand, feasibility, and environmental impact.
2. **Objective Setting:** Clearly define the goals of the EPR system, focusing on specific targets for waste reduction, recycling rates, and environmental impact. Establish whether to address multiple packaging types or concentrate on a single waste stream, considering factors like market demand, feasibility, and potential environmental benefits. Ensure that objectives align with the principles of the circular economy, emphasizing the reduction, reuse, and recycling of materials

3. **Stakeholder Engagement:** Foster active participation from all stakeholders in the planning and decision-making processes. This includes organizing workshops and consultations to ensure that the system is tailored to local needs and capacities, enhancing buy-in and cooperation. Assign clear roles and responsibilities across the packaging value chain to ensure accountability and efficient operation.
4. **System Design:** Choose between individual or collective EPR schemes and determine whether participation will be voluntary or mandatory. Consider the advantages of each approach, such as the efficiency of collective schemes or the flexibility of voluntary participation and align the choice with the defined objectives. Establish a PRO to coordinate and manage waste collection, sorting, and recycling activities.
5. **Financial Planning:** Develop a transparent fee structure to fund the EPR system, ensuring that it covers operational costs while incentivizing sustainable practices. Explore options for modulated fees based on recyclability or environmental impact and ensure that the financial model supports long-term sustainability. Consider the use of economic instruments like deposit-refund systems and advanced disposal fees to further encourage responsible waste management.
6. **Implementation:** Establish the necessary infrastructure and legal frameworks to support the EPR system, including the creation of PROs where applicable. Ensure that all logistical and administrative aspects are addressed to facilitate smooth operation. Develop high-quality recycling and sorting processes to maximize the recovery of materials.
7. **Monitoring and Evaluation:** Implement robust mechanisms for tracking progress, compliance, and outcomes. Regularly assess the system's effectiveness and make adjustments as needed to optimize performance and address emerging challenges. Ensure transparency and accountability through regular reporting and stakeholder communication. (Bünemann et al., 2020)

3.5.6 Roadmap for Establishing an EPR System in SIDS: A Phased Approach

Why SIDS Require Special Consideration

SIDS often lack the infrastructure, data systems, and institutional capacity required for large-scale EPR implementation. The informal sector frequently plays a critical role in waste management, and integrating these workers into formal systems is essential for equitable and effective outcomes. Moreover, the small population size and dispersed geography of many SIDS can make achieving economies of scale challenging. These circumstances emphasize the need for careful preparation, stakeholder engagement, and incremental implementation to ensure success.

Phased Implementation Roadmap

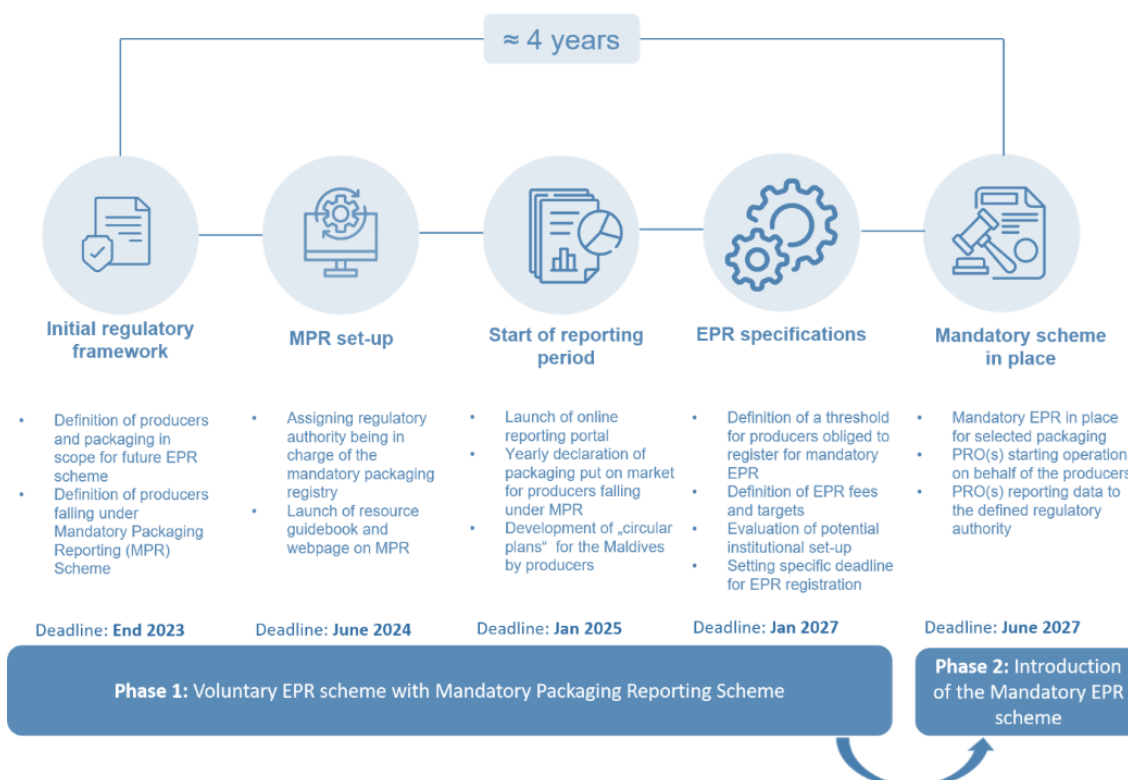
The roadmap for implementing an EPR system in SIDS consists of several key steps (GreenForest Solution, 2025). It is important to note that these steps can be adjusted and reordered based on the specific context of each SIDS. For instance, in some cases, initiating mandatory packaging reporting as a means of data collection may be a priority. Once this system is in place and operational, the formation and development of EPR working groups can then be explored in greater detail.

1. **EPR Scheme on the Political Agenda:** Begin by securing political commitment and raising awareness among policymakers about the benefits of EPR. This step establishes the foundation for future actions.
2. **Stakeholder Engagement and Communication Plan:** Develop a strategy to involve all stakeholders, including producers, importers, waste management operators, and the informal sector. Early engagement fosters buy-in and builds trust.
3. **Creation of EPR Supervision Authority:** Establish a dedicated body to oversee the implementation and monitoring of the EPR system. This authority ensures accountability and compliance.

4. **Formation of EPR Working Groups:** Create task forces with representatives from key sectors to address specific challenges and design tailored solutions.
5. **Assessment of National Context:** Conduct a comprehensive analysis of waste streams, infrastructure, and socio-economic conditions to inform system design.
6. **Data Collection System:** Develop a system to collect baseline data on packaging waste and related streams. This step is crucial for tracking progress and identifying gaps.
7. **Socio-Economic Assessment:** Evaluate the potential impacts of EPR on different stakeholders, including economic, environmental, and social considerations.
8. **Policy Development with Stakeholders:** Draft the EPR policy in collaboration with all stakeholders to ensure it is practical, equitable, and effective.
9. **Policy Adoption:** Secure formal approval of the EPR policy by both public and private sectors.
10. **Data Recording and Monitoring:** Establish mechanisms to track economic, environmental, and social impacts, ensuring transparency and continuous improvement.
11. **Implementation of Supporting Programs:** Introduce complementary measures such as regulatory policies, financial incentives, and public awareness campaigns.
12. **Measure, Evaluate, and Learn:** Regularly assess the EPR system’s performance and adapt based on lessons learned to improve its effectiveness.

The figure below illustrates a phased implementation roadmap for an EPR system, using the Maldives as an example. It highlights the initial steps, beginning with the introduction of a Mandatory Packaging Reporting Scheme (MPR). Under this scheme, designated producers are required to report specific types of packaging, enabling the collection of critical data. This preparatory phase lays the groundwork for a comprehensive mandatory EPR system by gathering valuable insights and building the necessary infrastructure for its successful implementation.

Figure 15. Example of EPR Roadmap developed for the EPR scheme on the Maldives by adelphi & ZWM



Source: own presentation based on past project on EPR in the Maldives

3.6 Module 6: Case Studies

Learning Objectives <i>After completion of this modules, participants will be able to:</i>	Delivery Method(s) for Facilitators
<ul style="list-style-type: none"> • Understand the challenges and opportunities for implementing fair and inclusive EPR schemes in the Global South. • Analyze specific case studies to identify key strategies for EPR implementation in diverse contexts, including SIDS and large urban areas. • Recognize the role of the Informal Recycling Sector (IRS) in EPR systems and the benefits of formalizing their participation. • Compare Deposit Refund Systems (DRS) with traditional EPR models to assess their role in supporting EPR goals, especially in Small Island Developing States (SIDS). 	<p>Visual storytelling through Canva, supported by participant discussions and facilitator-led explanations.</p>
<p>Resources required: Canva presentation materials with detailed case studies.</p>	<p>Duration: This module does not need to be fully integrated into the main training content. Instead, the case studies can be selected for group work activities as needed. Beyond that, this module should function as an "after-training repository" for participants to explore and reference independently.</p>
<p>Further Resources:</p> <ul style="list-style-type: none"> • https://adelphi.de/en/system/files/mediathek/bilder/adelphi_study_Analysis_of_EPR_Schemes_July_2021.pdf • wwf_malaysia_epr_policy_review_booklet.pdf • https://cibgp.com/au/index.php/1323-6903/article/view/877 • Extended Producer Responsibility RKC-MPD • 4-1-exsum-paper-register-eng-giz-rev.pdf • https://www.wwf.id/sites/default/files/2023-11/WWF-EPR-Guideline-2022-ENG-final.pdf • https://a0971afe-cb6d-41c9-a34a-81a6731b8e5c.usrfiles.com/ugd/a0971a_ea63e367cc2c49eabf22fc03ebeeaa228.pdf • https://alpha.rkcmpd-eria.org/extended-producer-responsibility/legal-framework/Indonesia • https://eldia.com.do/consulta-exige-responsabilidad-a-productores/ • https://codoca.gob.do/wp-content/uploads/2023/12/REP-y-ley-225-20.pdf 	

3.6.1 EPR or other examples for SIDS

The escalating global waste crisis, particularly plastic pollution, disproportionately impacts the Global South. Extended Producer Responsibility (EPR), a policy approach that holds producers accountable for the end-of-life management of their products, has gained traction as a solution. Yet, implementing fair and inclusive EPR systems in the Global South presents both challenges and opportunities (IKHAPP, 2024). The International Knowledge Hub Against Plastic Pollution (IKHAPP) emphasizes the need for integrating the Informal Recycling Sector (IRS), addressing SIDS-specific vulnerabilities, and ensuring equitable distribution of responsibilities and human rights protections.

The case studies in this module highlight diverse EPR implementation pathways across the Global South. Examples from the Philippines, Indonesia, Malaysia, the Dominican Republic, South Africa, and several Small Island Developing States (SIDS) illustrate varied policy approaches, regulatory maturity, and stakeholder engagement levels. Core implementation barriers include weak enforcement, limited infrastructure, and fragmented coordination. Simultaneously, the cases also reveal innovations in financial instruments, informal sector integration, and community-driven governance. Detailed case studies are available in the accompanying Canva presentation for further exploration.

Broader Global South Examples

- **Philippines:** The EPR Act of 2022 mandates recovery targets for plastic packaging waste. Over 947 companies have registered EPR programs, surpassing initial recovery targets. However, challenges include low SME awareness, infrastructure gaps, and reliance on voluntary Producer Responsibility Organizations (PROs) like PCX Solutions.
- **Indonesia:** With 57% of plastic packaging waste uncollected, Indonesia's EPR roadmap targets a 30% reduction in waste by 2029. The system emphasizes collaboration with the informal sector but faces challenges such as funding gaps and insufficient alignment between formal and informal sectors.
- **Malaysia:** Transitioning from a voluntary to a mandatory EPR scheme by 2025, Malaysia's roadmap focuses on stakeholder engagement through platforms like the Malaysia Plastic Pact. Recommendations include clear legal frameworks, quantitative recycling targets, and the integration of informal actors.
- **Dominican Republic:** Law No. 225-20 promotes shared responsibility among producers, merchants, and importers, with a focus on priority waste streams like packaging and electronics. Voluntary systems like NUVI serve as precursors to formal PROs, emphasizing the role of private sector stakeholders.
- **South Africa:** Transitioned to a mandatory EPR system in 2021. Producers are required to conduct LCAs and register with PROs like PETCO and POLYCO. The system explicitly includes informal reclaimers and promotes stakeholder co-design for equitable implementation.

SIDS-Specific Challenges and Opportunities

SIDS face distinct waste management challenges due to small landmasses, geographic isolation, limited resources, and vulnerability to climate change and natural disasters. These challenges are exacerbated by high levels of imported inorganic waste due to reliance on tourism and imports of basic goods. Despite these constraints, EPR offers potential benefits for SIDS, including integrating informal workers, promoting sustainable production, and building local capacities.

Although not EPR systems themselves, Deposit Refund Systems (DRS) are important instruments that can facilitate the implementation of EPR. Therefore, the DRS systems for Kiribati and Palau are included in these case studies to provide insights into how such mechanisms can support broader EPR goals:

- **Kiribati:** As the first Pacific Island to implement a DRS, Kiribati charges importers a deposit on PET bottles, with partial refunds to consumers upon return. Challenges include high government involvement, costly waste exportation due to geographic isolation, and limited recycling markets.
- **Palau:** Palau's DRS aims to combat marine litter from tourism, with importers paying a disposal fee and consumers receiving partial refunds upon returning bottles. However, the system faces limitations such as heavy government responsibility and dependency on external recycling markets like Taiwan.

High-Income Country Benchmarks

Although Germany and South Korea are not part of the Global South, their inclusion in this module provides valuable insight. These countries serve as benchmarks for effective policy design, infrastructure, and behavioral mechanisms that have contributed to high recovery rates, system transparency, and public participation, key components of a successful EPR framework. Despite differences in institutional capacity and available resources, the design principles and implementation strategies used in these contexts offer practical lessons for countries in the Global South that are in the process of shaping or scaling their own EPR systems.

- **Germany:** Operates the Pfand system, a fully mandatory deposit refund scheme for beverage containers. Return rates exceed 97%. Features include reverse vending machines, centralized barcode tracking via DPG, and mandatory retailer participation.
- **South Korea:** Implements a voluntary refund scheme for transparent PET bottles. Refunds are paid to apartment managers for clean sorting. The system is driven by market incentives, not EPR fees, and emphasizes high-quality recycling.

Key Strategies for Fair and Inclusive EPR Systems

Based on the case studies, the following strategies are crucial for designing and implementing EPR systems:

1. **Formalizing and integrating the IRS:** Recognize and integrate informal waste pickers into formal waste management systems, ensuring fair wages, safe conditions, and access to social security.
2. **Tailoring EPR to Local Contexts:** Adapt EPR strategies to specific regional and local conditions, considering economic, social, and environmental factors.
3. **Strengthening Governance and Enforcement:** Establish robust governance structures to enforce regulations, ensure producer accountability, and promote transparency.
4. **Promoting Stakeholder Collaboration:** Foster active dialogue among governments, producers, recyclers, civil society organizations, and communities to ensure equitable reforms.
5. **Investing in Capacity Building:** Enhance the skills and knowledge of stakeholders, particularly within the IRS, to improve efficiency and effectiveness in waste management.
6. **Comprehensive Guidelines:** Develop step-by-step guidelines for EPR compliance, ensuring clarity and consistency across stakeholders.

The transition to sustainable waste management in the Global South requires a fundamental shift in perspective and practice. By implementing fair and inclusive EPR systems, the Global South can not only reduce waste and combat pollution but also create economic opportunities, improve livelihoods, and foster a more sustainable future for all (IKHAPP, 2024). Recognition and inclusive policy frameworks, incorporating waste pickers into formal systems, ensuring their rights, fair wages, and access to social security will also help improve fair and inclusive EPR. The key lies in recognizing the crucial role of the IRS, adopting context-specific solutions, and embracing collaborative governance models that empower all stakeholders to participate in shaping a cleaner, healthier, and more equitable world.

4 Additional Material – After training

4.1 Closing Session



GROUP ACTIVITY TOWARDS BEGINNING OF MODULE 5 (10 MIN)

- 10' Recap of Key Learning Points
- 20' Participant Feedback and Evaluation
- 15' Discussion: What to do with the learning “back home”

4.4.1 Didactics

1. Critical Examination and Discussion:

- Are there aspects of the topic that I haven't fully understood or that I want to learn more about?
- What questions do I have about the presented information or the introduced tools?

2. Application of Teaching:

- What additional resources or information would help me better understand the topic or learn more effectively?

4.2 Feedback

Feedback is essential for development and improvement of such formats. It can provide valuable insights, constructive criticism, and encouragement. By fostering open communication, feedback cultivates a culture of collaboration and innovation. We can take learning from one module into the next one.

Different forms to gather feedback:

1. 15' write your feedback on sticky notes (5' introduction + 10' feedback on sticky notes).
 - What did you like?
 - What do I want so to see more in a next session, what do I want different?
2. Feedback Form via Google Forms:
3. We created a template for a feedback of PROMAR events via google forms, which can be used as a baseline to create your feedback survey:

https://docs.google.com/forms/d/11MI_LBL0JmW0AgLfXaKiiWDkl-ewLtiB47IGEGBd4k/edit



Contact information

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