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REPORT BY THE SECRETARIAT ON POLLUTANT RELEASE AND TRANSFER REGISTERS IN LATIN AMERICA AND THE CARIBBEAN

CURRENT STATUS, GOOD PRACTICES AND RECOMMENDATIONS

UNITED NATIONS

ECLAC

This document contains the report by the Secretariat entitled “Pollutant release and transfer registers in Latin America and the Caribbean: current status, good practices and recommendations” prepared in accordance with paragraph 8 of decision III/1 of the Third Conference of the Parties to the Escazú Agreement. The Secretariat invites States Parties and observers to submit comments and observations by 1 June 2026. Thereafter, the final version of the document will be published.

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A. INTRODUCTION

Pollutant Release and Transfer Registers (PRTRs) are key instruments for guaranteeing access to environmental information, strengthening transparency, accountability and informed public participation in environmental decision-making processes. By systematizing and publishing verifiable data on the release of pollutants into the air, water, soil and subsoil from point and diffuse sources, and on their transfer away from the site of origin, PRTRs strengthen environmental governance, reinforce countries' institutional capacity to fully and effectively implement their regulatory frameworks, and facilitate a progressive improvement in environmental management and control. In this regard, PRTRs constitute strategic tools for addressing the structural development traps identified by ECLAC (2025), in particular the trap of weak institutional frameworks and the trap of low capacities, contributing to the strengthening of more coherent, efficient and sustainable development-oriented environmental policies.

In Latin America and the Caribbean, the adoption and implementation of PRTRs systems have followed varied trajectories, reflecting both the progress made and the structural, regulatory and technical challenges facing the region. Whilst some countries have consolidated operational systems with national coverage, others are in the early stages of design or have not yet developed specific instruments in this area. Nevertheless, there is a growing regional interest in strengthening these systems, driven by international commitments—including the Regional Agreement on Access to Information, Public Participation and Access to Justice in Environmental Matters in Latin America and the Caribbean (the Escazú Agreement), the Sustainable Development Goals and the standards promoted by the OECD regarding reporting, transparency and the management of chemicals—as well as by greater demands for governance, accountability and the preventive management of environmental impacts.

B. OBJECTIVE

This study, "Pollutant Release and Transfer Registers (PRTRs) in Latin America and the Caribbean: current status, good practices and recommendations", was prepared by the Secretariat of the Escazú Agreement in accordance with Decision III/1, adopted during the Third Conference of the Parties (COP3) held in Santiago, Chile, in April 2024. In paragraph 8, that decision:

> *"Requests the Secretariat to prepare, for consideration at the next ordinary meeting of the Conference of the Parties, reports on national good practices regarding the establishment, operation and content of a pollutant release and transfer register (Article 6, paragraph 4, of the Escazú Agreement) and on public participation in decision-making processes relating to environmental authorizations for projects and activities that have or may have a significant impact on the environment (Article 7, paragraph 2, of the Agreement)."*

Within this framework, the purpose of this report is to provide a comprehensive overview of the status of PRTRs in the region, identifying good practices and offering key recommendations for their implementation and improvement.

C. METHODOLOGY

The work was based on a mixed methodology that included a literature review, an analysis of PRTRs procedures used in the region and globally, interviews with various key stakeholders, as well as data collection via a questionnaire sent to countries in the region. The main methodological approaches used are detailed below:

1) Literature review

The first phase of the study consisted of a comprehensive review of the existing literature on PRTRs, both globally and in Latin America and the Caribbean. This included a compilation of reports, technical documents, academic articles, and publications from international organisations and regional bodies. The literature review provided a conceptual framework and enabled the identification of current trends, common challenges and good practices in the implementation of PRTRs in various contexts.

The literature review notably included consultation of **the Principle 10 Observatory in Latin America and the Caribbean**[1] , a regional platform administered by ECLAC that systematises information on the status of implementation of access rights—information, participation and justice—in the countries of the region. This source served as a key reference for analysing the regulatory and institutional framework relating to the PRTR in the context of the Escazú Agreement, providing up-to-date and comparable data on the progress made by States in the areas of transparency and access to environmental information.

2) Analysis of PRTRs systems used in the region and globally

In this phase of the study, a comprehensive analysis was carried out of the PRTRs implemented both in Latin America and the Caribbean and in other regions of the world. The main objective was to evaluate the characteristics of the systems in terms of the information they contain, access to that information, and the user-friendliness they offer.

3) Interviews with key stakeholders

To complement the literature review and the study of PRTRs systems, qualitative interviews were conducted with a wide range of key stakeholders. These included representatives from government authorities, private companies, non-governmental organisations (NGOs) and international experts in transparency and information systems.

The main objective of the interviews was to obtain qualitative insights into:

- The implementation processes of PRTRs, covering the enablers, challenges and obstacles encountered during the development of these systems.
- Good practices in the implementation and operation of PRTRs.
- The results achieved through these practices.
- The lessons learnt during their development.

[1] https://observatoriop10.cepal.org/es

Additionally, the aim was to assess the applicability of these experiences to the different countries of Latin America and the Caribbean, considering both States Parties and non-Parties to the Escazú Agreement.

4) Data collection via a questionnaire sent to the 33 countries in the region.

Finally, in order to obtain direct data from the countries of Latin America and the Caribbean, a structured questionnaire was designed and distributed to all 33 countries in the region, regardless of whether they are Parties to the Escazú Agreement or not. It was also shared with some countries outside the region that have operational and fully implemented PRTRs.

The Secretariat is grateful for the responses to the questionnaire received within the established deadline from 13 countries in Latin America and the Caribbean (Antigua and Barbuda, Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guyana, Mexico, Panama, Saint Kitts and Nevis, and Uruguay). For the other countries in the region, an additional search of public sources was conducted with the aim of ensuring the greatest possible representativeness of this report. However, in most cases it was not possible to determine the current status of implementation or to identify the potential challenges or enabling factors associated with it. Furthermore, a response was received from Canada, a country outside the region, which was considered in the section on good practices.

5) Analysis and synthesis of the information collected

Once data collection was complete, the information obtained was analysed and synthesised. Patterns, common challenges and good practices that can be extrapolated to the region were identified. The results have been consolidated in this report, which includes both a detailed assessment of the current status of the PRTRs and specific recommendations to strengthen their development and implementation. These recommendations are formulated in line with the Escazú Agreement's objective of ensuring the full and effective implementation of the rights of access to information, public participation and access to justice in environmental matters, by promoting robust, transparent and accessible information systems for all.

The methodology applied in this study was designed to provide a broad and multidimensional view of the state of PRTRs in Latin America and the Caribbean, using both qualitative and quantitative approaches. The combined use of a literature review, analysis of global systems, interviews with key stakeholders and a questionnaire sent to countries in the region enabled us to gain a deep understanding of the challenges and opportunities that exist for advancing the implementation of EPRs in the region.

D. THE PRTRs WITHIN THE FRAMEWORK OF THE ESCAZÚ AGREEMENT AND REGIONAL ENVIRONMENTAL GOVERNANCE

The Regional Agreement on Access to Information, Public Participation and Access to Justice in Environmental Matters in Latin America and the Caribbean — adopted in Escazú, Costa Rica, on 4 March 2018 and in force since 22 April 2021— has its origins in the United Nations Conference on Sustainable Development (Rio+20), held in Rio de Janeiro in June 2012, when ten governments from the region promoted the Declaration on the Implementation of Principle 10 of the Rio Declaration on Environment and Development. On that occasion, they reaffirmed their commitment to the rights of access to information, public participation and justice in environmental matters, expressed their willingness to move

towards a binding regional instrument, and requested the support of the Economic Commission for Latin America and the Caribbean (ECLAC) to act as Technical Secretariat. The Escazú Agreement is the first regional environmental treaty in Latin America and the Caribbean, the only binding agreement to emerge from Rio+20, and the first in the world to contain specific provisions on human rights defenders in environmental matters.

1) The PRTRs and Article 6.4 of the Escazú Agreement

The Escazú Agreement states in Article 6.4 that:

> *"Each Party shall take measures to establish a register of emissions and transfers of pollutants to air, water, soil and subsoil, and of materials and waste under its jurisdiction, which shall be established progressively and updated periodically."*

This provision constitutes a legally binding obligation for States Parties. In accordance with the Implementation Guide for the Escazú Agreement (ECLAC, 2023), Parties are obliged to demonstrate that they "are taking active measures with clear progress"[2] towards the establishment and periodic updating of the register. The wording "shall be progressively established" does not permit indefinite inaction: it establishes an obligation of continuous and verifiable progress that does not allow for setbacks once a certain level of implementation has been reached, in line with the principle of non-regression enshrined in Article 3 of the Agreement.

The Guidance explains that a PRTR is a database that enables the tracking of potentially harmful discharges or releases of pollutants into the environment through atmospheric emissions, discharges into water or soil, and the transfer, management or disposal of waste or hazardous materials. It emphasises that PRTRs "are one of the most important tools for disseminating environmental information"[3] , as they enable the public and authorities to make more informed decisions and create incentives for establishments to reduce or prevent pollution through better environmental management practices. The Guide also recalls that, since the 1992 Rio Declaration, there has been strong international recognition of the strategic value of access to environmental information, and that the progressive incorporation of the PRTR into the legislation and practice of States has been driven by the progressive development of international environmental law in this area.

2) The PRTRs within the framework of the Escazú Agreement

Article 6.4 is not an isolated provision: it forms part of the comprehensive regulatory framework of the Escazú Agreement, the aim of which is to ensure the full and effective implementation of the rights of access to information, public participation and justice in environmental matters, as a condition for the exercise of every person's right to live in a healthy environment. A well-designed and implemented PRTR contributes to the fulfilment of multiple, mutually reinforcing provisions of the Agreement.

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[2] Economic Commission for Latin America and the Caribbean (ECLAC), Regional Agreement on Access to Information, Public Participation and Access to Justice in Environmental Matters in Latin America and the Caribbean: Implementation Guide (LC/TS.2021/221/Rev.2), Santiago, 2023. Page 129.

[3] Ibid.

- **Article 4: right to a healthy environment.** Article 4 of the Agreement recognises the right of every person, of present and future generations, to live in a healthy environment and to sustainable development and stipulates that each Party shall take the necessary measures to guarantee this right. PRTRs contribute directly to the realization of this right by generating verifiable information on sources, volumes and trends of pollution, enabling both authorities and the public to identify risks, demand prevention and reduction measures, and monitor compliance with environmental standards. In this sense, the information provided by PRTRs is an essential input for ensuring that the right to a healthy environment is enforceable and not merely declaratory
- **Articles 5 and 6: proactive transparency and access to environmental information.** Article 5 enshrines the right of access to environmental information in accordance with the principle of maximum disclosure, imposing on the Parties the obligation to ensure expeditious procedures, strict exceptions interpreted restrictively, and independent review mechanisms. By virtue of this principle, the information contained in the PRTRs must be available to any person without the need to demonstrate a particular interest or justify the request. Article 6, for its part, requires competent authorities to generate, collect, organize, update and disseminate environmental information in a systematic, proactive, timely, regular, accessible and comprehensible manner, in reusable and machine-readable formats, without restrictions on reproduction or use. In this regard, Article 6 not only enshrines the right of access but also sets precise technical standards—open data, accessible formats, interoperability—which determine what it means for an PRTR to be effective from the perspective of the Agreement. Furthermore, Article 6.6 requires that access be guaranteed to vulnerable individuals and groups, in the languages used in the country and through formats suited to their needs, which implies that PRTRs must be designed with a focus on equality and non-discrimination
- **Article 7: meaningful public participation.** Article 7 establishes the right to participate meaningfully in environmental decision-making processes, which requires the public to have sufficient, timely and accessible information prior to such processes. The data systematized in the PRTRs constitutes precisely this informational input: they enable communities, civil society organizations, academia and other stakeholders to participate in an informed manner in environmental assessment processes, the drafting of regulations, spatial planning and the formulation of emissions reduction policies. An up-to-date and accessible PRTR is, in this sense, an enabling condition for public participation to be genuinely informed and not merely formal.
- **Article 8: Access to justice in environmental matters.** Article 8 guarantees access to judicial and administrative mechanisms to challenge acts or omissions that affect the environment or infringe upon the right of access. The information contained in the PRTRs can constitute essential evidence in this context: by documenting, with official and verifiable data, the emissions and transfers of pollutants by facility, location and period, it provides affected individuals and communities with the necessary elements to substantiate requests, administrative claims and legal actions.
- **Articles 9 and 10: human rights defenders and capacity building.** Article 9 establishes specific protection obligations for human rights defenders working on environmental issues. A transparent PRTR that is publicly accessible helps to create a safer environment for environmental advocacy by reducing information asymmetries between communities and industrial operators and by providing an official database that supports the work of human rights defenders. In turn, Article 10 requires Parties to strengthen national e capacities for the implementation of the Agreement, which directly includes the design, operation and continuous improvement of PRTRs as environmental information systems.

Taken together, these principles and articles form the legal and human rights framework that should guide the design, implementation and continuous improvement of PRTRs. From this perspective, PRTRs are not limited to fulfilling a specific obligation under Article 6.4: their effective implementation contributes to the full exercise of the three rights of access that constitute the central focus of the Agreement and to the

fulfilment of the right to a healthy environment that underpins them (see Table 1). A well-implemented PRTR is not merely an information system: it is an institutional infrastructure for environmental democracy.

Table 1
The PRTRs and the regulatory framework of the Escazú Agreement

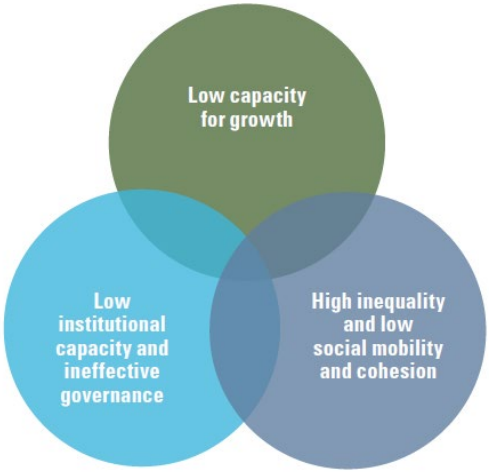
Article	Content	Link to EIRs
Art. 4	Right to a healthy environment.	The PRTR provides verifiable information on sources and trends of pollution, thereby making this right enforceable
Articles 5 and 6	Access to environmental information. Generation and dissemination of environmental information.	The PRTR is the specific instrument referred to in Article 6.4 and must comply with the standards of accessibility, open formats and maximum publicity set out in Articles 5 and 6
Art. 7	Public participation in environmental decision-making processes.	The data in the PRTR constitute the preliminary information that enables genuinely informed participation
Article 8	Access to justice in environmental matters	Information from the PRTR may form the basis for applications, administrative complaints and legal proceedings
Art. 9	Human rights defenders in environmental matters	A transparent PRTR reduces information asymmetries and supports the work of human rights defenders
Art. 10	Capacity building	The design and operation of the PRTR forms part of national capacity building to implement the Agreement

Source: Prepared by the authors.

3) PRTRs and the development traps in Latin America and the Caribbean identified by ECLAC

The countries of Latin America and the Caribbean face persistent structural challenges that constrain their development and limit their ability to transition towards more sustainable productive and environmental models. ECLAC has conceptualized these challenges as three development traps — high inequality and low social cohesion; weak institutions and ineffective governance; and low capacity for growth — understood as interrelated vicious circles that reinforce one another and hinder well-being, sustainable development and the guarantee of rights (see Diagram 1). Added to this are the growing environmental crises—climate change, pollution, biodiversity loss and ecosystem degradation—which exacerbate existing inequalities and put the sustainability of the regional development model under strain.

Diagram 1
The development traps



Source: Economic Commission for Latin America and the Caribbean (ECLAC), Latin America and the Caribbean Facing Development Traps: Essential Transformations and How to Manage Them (LC/SES.40/3-P/-*), Santiago, 2024.

In this context, PRTRs can serve as a strategic tool to tackle these traps simultaneously, by strengthening access to environmental information, improving the quality of public management and enabling evidence-based policies. From the perspective of the Escazú Agreement, PRTRs fall within the scope of States' obligations regarding active transparency (Articles 5 and 6) and promote enabling conditions for meaningful public participation, social scrutiny and accountability. Their contribution to each trap can be summarized as follows:

- **The trap of low capacity for growth.** A poorly diversified productive structure, low productivity and limited technological innovation constrain sustainable growth. PRTRs can support productive transitions towards sectors with lower environmental impact, promote resource efficiency and incentivise technological improvements. By providing systematic information on emissions, waste and transfers, these registers become a tool for identifying opportunities for cleaner production and the circular economy, and contribute to spatial planning, climate risk management and regulatory alignment with international standards.
- **A trap of high inequality, low social mobility and limited social cohesion.** Asymmetries in access to environmental information and in the distribution of pollution burdens disproportionately affect lower-income communities, rural areas, indigenous peoples and historically excluded groups. An accessible, up-to-date and spatially disaggregated PRTR makes environmental inequalities visible and ensures the public has the information needed to exercise their rights, participate in decision-making processes and demand mitigation, enforcement or remedial actions.
- **The trap of weak institutions and ineffective governance.** Data fragmentation, insufficient inter-institutional coordination and weak environmental enforcement systems hinder the design, evaluation and implementation of coherent public policies. PRTRs help to overcome this trap by promoting organized, interoperable information systems managed by a competent authority. By integrating data from multiple sectors and territories, they facilitate coordination between institutions, strengthen the State's technical capacities and enable more efficient oversight based

on risk and evidence. Furthermore, they increase public trust by enhancing the transparency and traceability of environmental information.

In short, PRTRs not only fulfil a specific obligation under Article 6.4 of the Escazú Agreement but can also become an essential component of the structural transformations required by the region to address development traps. By strengthening access to environmental information, improving institutional capacity and enabling evidence-based public policies, these registers facilitate progress towards building more sustainable, transparent and inclusive development models.

4) The PRTRs and multilateral environmental agreements (MEAs)

PRTRs also support compliance with the main multilateral environmental agreements (MEAs) on chemicals and hazardous waste. The data they systematize provide direct input for the national reporting mechanisms required by the Stockholm Convention on Persistent Organic Pollutants (2001), the Minamata Convention on Mercury (2013), the Rotterdam Convention on the Prior Informed Consent Procedure (1998) and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes (1989), by documenting the release, transfer and management of the substances regulated by each of these instruments. Furthermore, the information on industrial emissions collected by PRTRs is a key input for the preparation of national greenhouse gas inventories and the National Communications that States submit under the United Nations Framework Convention on Climate Change (UNFCCC, 1992). Other environmental agreements also benefit from the data generated by PRTRs: the Convention on Biological Diversity (1992), by identifying pressures on ecosystems; the Ramsar Convention on Wetlands (1971), by detecting sources of pollution affecting these ecosystems; and the Convention to Combat Desertification (1994), by documenting land-based discharges and sources of environmental degradation (see Table 4).

In all these cases, PRTRs improve the traceability of substances and emissions, enhance consistency between national environmental information systems, and strengthen compliance with the obligation set out in Article 6 of the Escazú Agreement to make environmental information available to the public in a systematic, organized and up-to-date manner. A well-designed PRTR can function as an enabling platform that reduces administrative reporting burdens, strengthens institutional capacity to meet international obligations, and contributes to more coherent and evidence-based environmental governance.

Table 2
Multilateral Environmental Agreements (MEAs) and their link to PRTRs

Year	MEA	Link to PRTRs (data, reporting and transparency requirements)
1989	Basel Convention on Hazardous Wastes	Requires annual reports on the generation, export, import, treatment and accidents involving hazardous waste. A PRTR can systematise data on hazardous waste and off-site transfers.
1998	Rotterdam Convention	Requires notifications regarding regulatory measures, exports and import responses for hazardous substances. PRTRs can support the monitoring of controlled chemicals.
2001	Stockholm Convention on POPs	Requires quadrennial reports on measures to eliminate persistent organic pollutants. PRTRs can record emissions and transfers of relevant POPs.
2013	Minamata Convention on Mercury	Requires comprehensive reports every four years and interim reports every two years on the management and release of mercury. PRTRs can include information on emissions and waste containing mercury.
1992	United Nations Framework Convention on Climate Change (UNFCCC)	Requires national GHG inventories and periodic reports. PRTRs can supplement information on industrial, energy and waste emissions.

1992	Convention on Biological Diversity	Requires information on biosafety, pollution and impacts on ecosystems. A PRTR can provide data on relevant sources of pollution.
1971	Ramsar Convention on Wetlands	Requires information on threats to wetlands. PRTR data can support the identification of pollution sources affecting these ecosystems.
1994	Convention to Combat Desertification	Requires monitoring of soil degradation. PRTRs can provide data on soil contamination and sources of pollution.

Source: Prepared by the authors.

5) PRTRs and the 2030 Agenda for Sustainable Development

Within the framework of the 2030 Agenda, PRTRs can play a cross-cutting role in monitoring multiple Sustainable Development Goals (SDGs) by providing environmental information that facilitates monitoring, evidence-based policy-making and informed public participation. Their contribution is particularly relevant to SDG 3 (good health and well-being, by reducing exposure to toxic pollutants), SDG 6 (clean water, through the identification of sources of water pollution), SDG 7 (affordable energy, by reporting on emissions from energy production and consumption), SDG 11 (sustainable cities and communities, by supporting urban planning based on pollution data), SDG 12 (responsible consumption and production, including target 12.4 on the environmentally sound management of chemicals and waste), SDG 13 (climate action, through data on greenhouse gas emissions) and SDG 16 (strong institutions, by operationalising the standards of the Escazú Agreement on access to public information and accountability, in accordance with target 16.10). Through their integration with other environmental registers and information systems, PRTRs help build national capacities to measure, monitor and report progress towards these goals in a consistent and verifiable manner.

6) PRTRs as infrastructure for environmental governance

Effective environmental governance requires accurate, accessible and well-structured information. By integrating with other environmental and socio-economic databases, PRTRs enable decision-makers to use them for various purposes: spatial planning, risk assessment, analysis of resource consumption and the transition to a circular economy. Their integration with other registers and information systems not only avoids duplication of reporting and reduces the administrative burden on obligated establishments but also improves data quality and provides a comprehensive view of pollutant emissions and transfers in relation to other environmental, social and economic variables.

In particular, PRTRs can contribute to: the formulation of evidence-based environmental policies, by enabling the identification of trends in environmental impacts and damage; the assessment of risks to human health and the environment arising from emissions and waste; the prevention of pollution and the evaluation of the effectiveness of measures adopted; informed spatial planning based on the environmental and social risks of different economic activities; environmental compliance and enforcement, by providing verifiable information that can serve as input for applications, administrative claims or legal proceedings; the promotion of sustainability and the circular economy, by integrating data on resource consumption, production and waste management; and meaningful public participation, by raising awareness among communities about the environmental impact of industrial activities and facilitating the exercise of their rights in accordance with the Escazú Agreement.

For this potential to be realised, it is essential to establish unified, accessible and reliable registers that centralise information on emissions, environmental impacts and production data. Digitalisation plays a

crucial role by enabling the integration of national PRTRs with other information systems. Cooperation between the technical teams responsible for PRTRs and those tasked with implementing the conventions on hazardous chemicals and waste—Basel, Rotterdam, Stockholm and Minamata—is also essential to ensure effective coordination at national and international levels.

E. DEFINITION, FUNCTIONING AND ESSENTIAL COMPONENTS OF A PRTR

Pollutant Release and Transfer Registers (PRTRs) are public environmental information systems that collect, process and disseminate verifiable data on releases of pollutants into the air, water, soil and subsoil, and on transfers of substances and waste off-site for final disposal, treatment, recycling or recovery. Unlike other environmental management tools, PRTRs are designed to be publicly accessible, free of charge and unrestricted, so that the public, authorities, academia and other relevant stakeholders can access, analyse and use information on the sources and volumes of pollution within their territory. In this sense, PRTRs are not merely technical monitoring tools: they are instruments of active transparency that give effect to the right of access to environmental information enshrined in the Escazú Agreement.

1) Definition

Emissions and waste registration and monitoring systems vary in name, approach and methodology depending on the regulatory frameworks and institutional practices of each country or region, although all share the function of collecting, organising and making available to the public verifiable information on the emissions of pollutants into the air, water, soil and subsoil, as well as on the transfer and management of waste towards its final disposal, treatment, recycling or recovery.

In Latin America and the Caribbean, the term Pollutant Emissions and Transfer Register (PRTR) predominate, whilst in Europe and Japan the term Pollutant Release and Transfer Register (PRTR) is commonly used. Meanwhile, some countries use inventory-type systems that fulfil similar functions but follow a different terminological tradition: in the United States, the equivalent system is called the Toxics Release Inventory (TRI); in Australia, the National Pollutant Inventory (NPI); and in Canada, the National Pollutant Release Inventory (NPRI) (see Table 3 and Map 1).

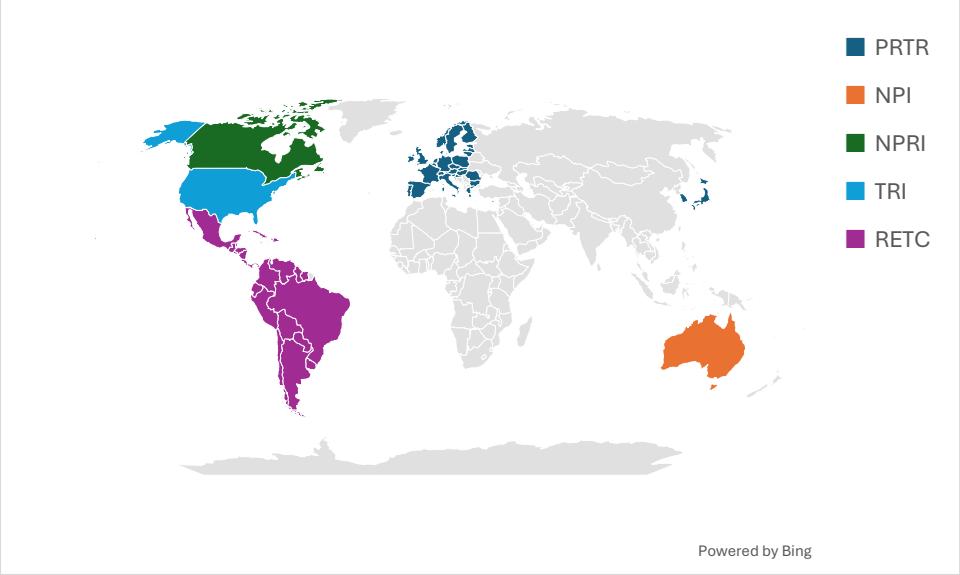
It is worth noting that, beyond traditional terminology, there is a technical and legal distinction between the concepts of inventory and register within the framework of environmental governance. Whilst an inventory is defined by proactive management on the part of the authority—which assumes the responsibility of compiling, uploading or estimating the information (as is typically the case with diffuse sources)—, a register is based on a paradigm of passive reception, contingent upon periodic and mandatory reporting by regulated entities. From a legal perspective, the effectiveness and consolidation of a register-type system lies not only in the systematization of data, but in the existence of a coercive regulatory framework that links reporting obligations to incentives or sanctions derived from the legal duty to declare.

Table 3
Names of emissions and pollutant transfer registration systems

Region / Country	Acronym	Name
Latin America and the Caribbean	**RETC**	Registro de Emisiones y Transferencia de Contaminantes
Europe (European Union)	**E-PRTR / PRTR**	Pollutant Release and Transfer Register
Japan	**PRTR**	Pollutant Release and Transfer Register
United States	**TRI**	Toxic Release Inventory
Canada	**NPRI**	National Pollutant Release Inventory
Australia	**NPI**	National Pollutant Inventory
United Kingdom	**PRTR**	Pollutant Release and Transfer Register
South Korea	**PRTR**	Pollutant Release and Transfer Register

Source: Prepared by the authors.

Map 1
Names of pollutant release and transfer register systems



Source: Prepared by the authors.
Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

Given that these systems vary in terms of terminology and methodology, they also differ in their operational scope and the information they collect. Some focus exclusively on point sources; others also include diffuse sources. In several countries, the systems incorporate the transfer of solid and hazardous waste to treatment or final disposal sites, as well as information related to extended producer responsibility. The regulated sectors and reported pollutants also vary between countries, adapting to their production realities, institutional capacities and environmental priorities. Some systems include contextual information on water, energy or fuel consumption, and data on production volumes. In most countries, reporting is mandatory, whilst in a few it is voluntary.

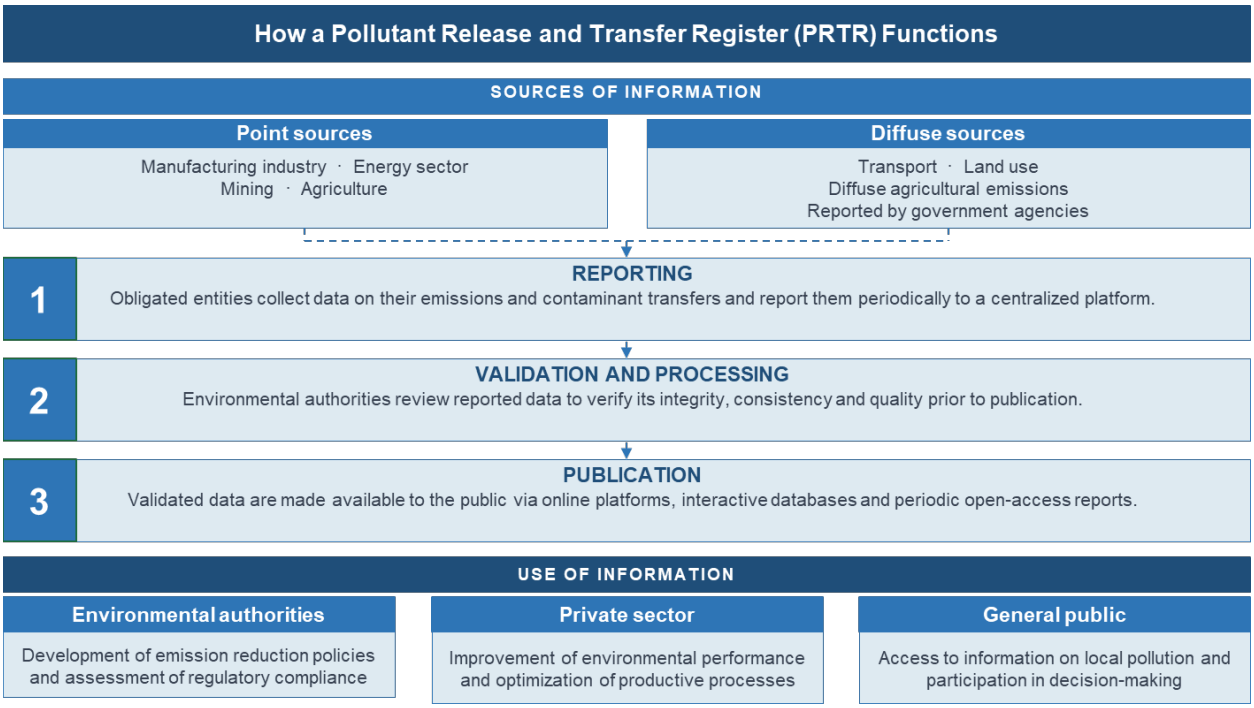
2) Operation

PRTRs enable the collection, organization, and public availability of verifiable and standardized information on emissions of pollutants to air, water and soil, as well as on the transfer and management of waste to final disposal or treatment. Their operation follows a systematic structure encompassing the collection, validation and publication of data from various industries and emission sources. The main stages in the operation of a PRTR are as follows:

i. **Reporting by responsible parties.** Establishments subject to environmental obligations collect data on their pollutant emissions and transfers and report them periodically to a centralized platform, generally administered by a government body. The pollutants included depend on national regulations and may cover substances emitted to air, water and soil, as well as waste transferred to disposal or treatment sites. In systems that include diffuse sources, sectoral government agencies are usually responsible for uploading the information, given that these emissions do not come directly from industrial facilities but from sectors such as transport, agriculture or other activities dispersed across the territory.
ii. **Validation and processing of information.** Environmental authorities review the reported data to ensure its integrity, consistency and quality. Depending on each country's institutional framework, this stage may include automated verification mechanisms, internal audits or external reviews, with the aim of guaranteeing the reliability of the data.
iii. **Publication of information.** Once validated, the data is made available to the public via online platforms, interactive databases or periodic reports. In several countries, these systems incorporate georeferenced maps, comparative graphs and analytical tools that facilitate access to, understanding of and use of the information by different audiences.
iv. **Use of information by different stakeholders.** Environmental authorities use the data to assess regulatory compliance, design emission reduction policies and set maximum permissible limits. Companies can use the information to improve their environmental performance and optimize their production processes. Citizens, communities, civil society organizations and academia access this information to ascertain pollution levels in their local areas, substantiate requests or complaints, and participate in environmental consultation and decision-making processes.

The following diagram (Diagram 2) schematically illustrates how a PRTR operates.

Diagram 2
How a PRTR system works



Source: Prepared by the authors.

3) Essential components of a PRTR

For the purposes of this report, a system is recognized as a PRTR if it contains the essential components established by two international regulatory frameworks: the Escazú Agreement, which establishes principles and obligations relating to access to environmental information and environmental information systems, and the Kiev Protocol on Pollutant Release and Transfer Registers (UN, 2003), which defines the minimum technical requirements for the structure, operation and disclosure of these systems.

The Escazú Agreement, for its part, establishes the binding obligations and rights-based approach that underpin its implementation. Both instruments are, in this sense, complementary and equally necessary to guide the effective development of PRTRs in the region. The Kiev Protocol constitutes an internationally recognized technical reference that guides the Parties to the Escazú Agreement in the design, strengthening and operation of their national PRTR systems:

These components are organized into four dimensions (see Table 4):

i. Content and scope of information

- List of pollutants or wastes. The PRTR must have a defined list of pollutants and, where applicable, wastes that are released into the environment or transferred off-site (Escazú, Articles 6.1, 6.2 and 6.4; Kiev, Article 4(c)).

- Multi-media coverage. The system must provide for the reporting of emissions and transfers to air, water, soil and subsoil, ensuring comprehensive coverage that allows for the assessment of pollutant flows within the territory under jurisdiction (Escazú, Art. 6.4; Kiev, Art. 4(d)).
- Reporting by source type. The system must cover data from point sources (industrial facilities) and, where applicable, from diffuse sources (transport, agriculture and other dispersed activities) (Escazú, Art. 6.4; Kiev, Arts. 4(a) and 4(b)).
- Off-site transfers. It must include data on off-site transfers of pollutants or waste for treatment, recovery or disposal, facilitating environmental traceability and the monitoring of flows to receiving facilities (Escazú, Art. 6.4; Kiev, Art. 4(e)).
- Detailed breakdown of information. The PRTR must allow for the presentation, search and retrieval of information by facility —including geographical location, economic activity and operator— as well as by reported pollutant or waste, receiving environment (air, water, soil) and destination of transfers, ensuring sufficient disaggregation to support public management and social control (Escazú, Art. 6.4; Kiev, arts. 4(a), 4(c) and 5(1)(2)).

ii. Data quality and updating

- Mandatory periodic reporting. The PRTR must be based on a system of periodic and mandatory reporting—generally annual—that ensures the continuity, updating and comparability of the reported data (Escazú, Art. 6.2; Kiev, Arts. 4(f) and 8).
- Standardized, consistent and verifiable data. The data must be standardized and based on consistent methodologies—including measurements, calculations or estimates—that ensure consistency, verifiability and credibility, in line with States' obligations to generate reliable environmental information (Escazú, arts. 6.1 and 6.2; Kiev, art. 4(g)).
- Strict and exceptional confidentiality. The register may only provide for strictly limited exceptions to confidentiality, interpreted restrictively and duly justified, ensuring at all times the public interest in the disclosure of environmental information (Escazú, Art. 5.4, Kiev, Arts. 4(g) and 12).

iii. Accessibility and use of information

- Public access to environmental information. Data in the PRTR must be made available in a timely, comprehensible and accessible format—preferably via electronic means—without the need to invoke any particular interest, in compliance with the obligation of States to guarantee access to environmental information (Escazú, arts. 5.1, 5.2 and 6.3; Kiev, art. 4(h)).
- User-friendly and comprehensible system. The register must be coherent, accessible and user-friendly, enabling both experts and the general public to search for, locate and use environmental information effectively (Escazú, arts. 5.1 and 6.3; Kiev, art. 4(h)).

- Interconnected databases and institutional management. The register must consist of one or more structured and interconnected databases, managed by a competent authority, and linked to other national environmental information systems (Escazú, arts. 6.1, 6.3, 10 and 12; Kiev, art. 4(j)).

iv. Participation and governance

- Public participation in the development and updating of the system. The register must provide adequate opportunities for public participation in its design, review and modification, ensuring timely and inclusive engagement with prior access to the necessary information (Escazú, arts. 7.2, 7.3 and 7.14; Kiev, arts. 4(i) and 13).

Table 4
Key components of a PRTR

Essential Component (based on the Kiev Protocol)		**Escazú Agreement (Links and citations)**	**Similarities between the Kiev Protocol and the Escazú Agreement**
Content and Scope	**List of pollutants**	Art. 6.4: Pollutant release and transfer registers.	Both require the identification of the pollutants covered, although Escazú does not specify the list.
	Comprehensive coverage (air, water, soil)	Art. 6.4: Explicit reference to "air, water, soil and subsoil".	Substantive convergence in environmental coverage.
	Point and non-point sources	It does not explicitly mention this, but Art. 6.3(d) includes "a list of contaminated areas, by type of pollutant and location" (which may stem from both sources).	The Kiev Protocol is more specific in requiring reporting on point and non-point sources; Escazú focuses on environmental information.
	Off-site transfers	Art. 6.4: "Transfer of materials and waste".	Similar concept in both instruments. Kiev requires reports on off-site transfers for disposal, recovery or treatment.
	Breakdown by location and responsible party	Art. 6.3(d): "List of contaminated sites, by type of pollutant and location". Art. 6.3(i): "Estimated list of waste by type, volume, location and year".	The Kiev Protocol is more specific (facility, location, activity, operator, pollutant, receiving environment); Escazú focuses on outcomes (sites/waste/pollutants).
Quality and Updating	**Mandatory periodic reporting**	Art. 6.4: "It shall be updated periodically".	The Kiev Protocol is more specific regarding reporting cycles. Escazú does not specify frequency.
	Standardized and updated data	Art. 6.2: Information that is "reusable, processable and in accessible formats".	Escazú emphasizes accessibility and open formats; Kiev, technical standardization (standardization, thresholds and verifiability). Both frameworks are complementary.
Accessibility	**Public access**	Art. 5.1 and 5.2: The right to access environmental information as a human right and a State obligation.	Escazú frames this as a human right, giving it normative content (principle of maximum publicity); Kiev defines requirements to ensure the operational accessibility of the Register.

	Ease of use	Art. 6.3: Information systems accessible to all persons.	Kiev sets out usability requirements; Escazú guarantees universal access without specifying the system's design.
	Interconnected databases	Art. 6.2: Environmental information must be organized "in a comprehensible, reusable, processable and accessible format". Art. 6.3: "Properly organized" information systems.	There is agreement. Kiev requires structured and interconnected databases under the authority of the competent body.
Public Participation	**Involvement in the design of the PRTR**	Art. 7: Participation in environmental decision-making (applicable to EIA policies).	Escazú broadens the scope to cover all environmental decisions.

Source: Prepared by the authors.

These essential components make it possible to clearly identify whether a system constitutes a PRTR system, regardless of the name it is given. There are systems which, although they do not explicitly include the term 'PRTR'—such as the TRI in the United States or the NPI in Australia—fully comply with these components. On the other hand, some environmental systems may be called emissions registries without having the comprehensive approach, mandatory reporting and transparency that characterize a PRTR.

Table 5 presents a comparative table illustrating the main differences between a PRTR, an emissions registry and other environmental information systems.

Table 5
Comparison: PRTR – Emissions Register – Other Environmental Information Systems

Criterion	PRTR	Emissions Register	Other Environmental Information Systems
Comprehensive Coverage	Includes information on emissions and transfers of pollutants to air, water and soil, and off-site for recovery, treatment or disposal.	Focuses on emissions to a specific medium, such as air or water, and does not necessarily include off-site transfers of pollutants.	It may cover a wide range of environmental topics but does not necessarily integrate information on pollutant emissions and transfers as comprehensively as the PRTR.
Point and Diffuse Sources	Covers both point sources (e.g. industrial facilities) and diffuse sources (e.g. agriculture and transport).	It generally focuses on point sources and does not always include diffuse sources.	Varies by system but may include various sources depending on the specific objective.
Public Accessibility	The data is accessible to the public, promoting transparency and public participation in environmental decision-making.	Public accessibility may be more limited compared to PRTRs, depending on national legislation and policies.	Accessibility and use can vary widely, from public databases to internal reports for environmental authorities.
Periodic Reporting	It is based on a system of mandatory periodic reporting, usually annual.	The frequency of reporting may vary and is not always annual.	This varies depending on the system and the specific objective.
Detailed Breakdown	It breaks down the information by facility, pollutants, receiving environments and off-site transfers.	It may not break down the information to the same level of detail as the PRTRs.	This varies depending on the system and the specific objective.

Various Objectives	Primarily focused on emissions and transfers of pollutants.	Focused on emissions to a specific environment.	May have specific objectives, such as air quality, waste management, or biodiversity.

Source: Prepared by the authors.

F. DIAGNOSIS OF PRTRs SYSTEMS IN LATIN AMERICA AND THE CARIBBEAN

Overview of the Status of PRTRs Implementation in the Region

To date, progress in the implementation of PRTRs in Latin America and the Caribbean presents a mixed picture and, in many cases, is still in its infancy. For methodological purposes, six stages of PRTR implementation are distinguished: **(1) full implementation; (2) partial implementation; (3) initial phase; (4) regulatory framework established but not implemented; (5) no reported implementation; and (6) no information available.**

Within the first category, it is observed that only **Chile** and **Mexico** have fully implemented PRTRs: operational systems with mandatory reporting and public access. Both countries also have significant experience in their implementation, having been among the first to begin establishing their registers in 2007 and 2005, respectively.

In the second category, **Colombia** and **Ecuador** stand out as countries with partially implemented PRTRs. In the case of Colombia, the system was formally established, but in 2025 only the manufacturing sector was required to report. The first data will be available in November 2025, and it is projected that the other economic sectors will be integrated in 2026. In Ecuador, meanwhile, the PRTR has been operating on a voluntary basis since 2020, and currently neither the publication nor public access to the reported data is guaranteed, which limits its functionality.

Nine countries are in the initial phase, which includes various stages of the PRTR development process, such as conceptual design, the implementation of pilot projects, and initial roll-out. This category includes **Antigua and Barbuda**, **Brazil**, **Costa Rica and Uruguay**, which are at the design stage, as well as **Argentina**, which has already launched a pilot implementation. As for **Peru and Honduras**, they have an established regulatory framework and related information that can be viewed on official websites. However, it has not been possible to verify the current status of implementation; there are indications that they have initiated processes linked to the design and implementation of a PRTR. For its part, **Belize** began work towards its establishment in 2010, although due to capacity constraints it was unable to complete the implementation of its PRTR.

Based on publicly available sources, it could also be considered that **Jamaica** has begun its establishment, as its National Environment and Planning Agency states on its website[4] that a PRTR was launched in 2017. However, no further information was found and the current status of implementation could not be verified.

The fourth category includes **the Bahamas, Cuba, Saint Kitts and Nevis**, and **Trinidad and Tobago**. In all four cases, there are regulations mandating the establishment of a PRTR or components thereof as part

[4] https://www.nepa.gov.jm/environment-management

of a broader environmental register. However, no information regarding their initiation or current status has been found in publicly available sources.

The fifth category includes **Barbados**, **Guyana and Panama**, which, as indicated in their questionnaires, have not begun the design or implementation of a PRTR, with no institutional progress currently reported.

As for the remaining countries in the region, **no official information was received** via the questionnaire. However, a review of publicly available online sources **revealed no evidence indicating the existence of a PRTR** in operation or under development. Consequently, it is not possible to confirm whether these countries have initiated any process for the design or implementation of a PRTR.

Map 2 shows that **Bolivia, Dominica, El Salvador, Grenada, Guatemala, Haiti, Nicaragua, Paraguay, the Dominican Republic, Saint Vincent and the Grenadines, Saint Lucia, Suriname, Venezuela** and[5] are classified as 'no information' regarding the design or implementation of a PRTR. This categorization reflects the lack of public or institutional data demonstrating verifiable progress in the creation or implementation of these systems and does not necessarily indicate the absence of unreported or ongoing internal initiatives.

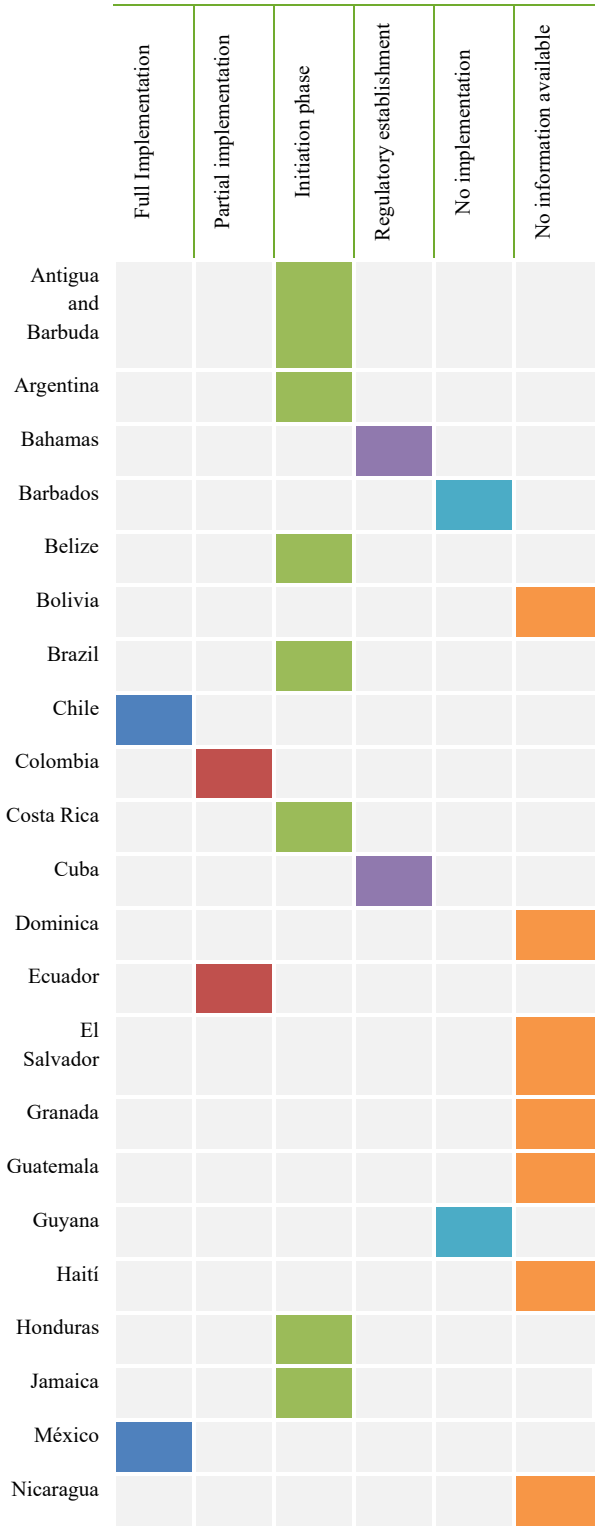
As for the countries that already have an PRTR system in place, whether fully or partially, it is worth noting that **all, with the exception of Ecuador, have established mandatory systems** with **publicly accessible and transparent information**, which represents a significant step forward in terms of access to environmental information in the region.

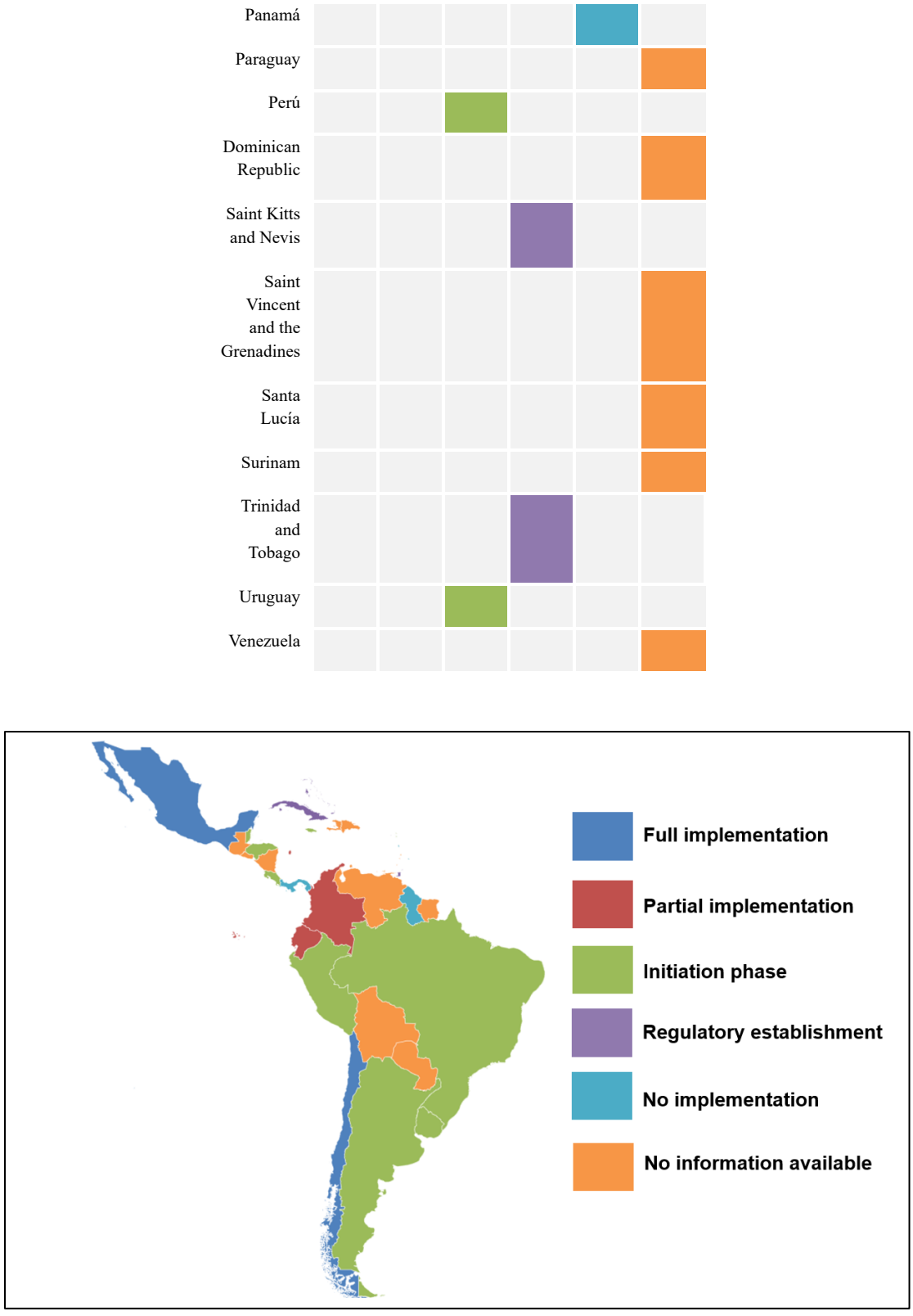
From a technical perspective, the PRTRs of **Mexico** and **Colombia** provide **comprehensive coverage of environmental media**, reporting emissions to **water, air and soil**. In contrast, **Chile** and **Ecuador** do not include **soil** in their systems, thereby limiting the comprehensive view of environmental impacts. Furthermore, only **Chile** includes **diffuse emission sources** within its scope, whilst the other systems **focus exclusively on point sources**. It is worth noting that **all existing systems also cover waste transfer**, which broadens the scope of pollutant flow monitoring and allows for better tracking of waste management.

Map 2 presents a graphical summary of the current state of implementation of PRTRs in the region.

[5] Although countries such as Belize, El Salvador, Guatemala, Panama and the Dominican Republic initiated preliminary activities on PRTR in the early 2010s with support from the SAICM Quick Start Programme Trust Fund, UNITAR and the Central American Commission on Environment and Development (CCAD), no significant subsequent progress has been identified. https://unitar.org/about/news-stories/news/designing-pollutant-release-and-transfer-registers-prtrs-central-america

Map 2
Status of implementation of PRTRs in the region





Source: Prepared by the authors.

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

Table 6 below presents a regional summary of the status of implementation of the PRTRs in Latin America and the Caribbean, systematizing for each country the essential components of the system in accordance with the standards identified.

Table 6

Regional summary of the status of implementation of PRTRs in Latin America and the Caribbean

Country	Mandatory reporting	Air	Water	Soil	Point sources	Diffuse sources	Waste	Facility	Location	Pollutants or waste	Receiving medium	Free public access	Public participation
Chile	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Mexico	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Colombia	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Ecuador		✓	✓		✓		✓	✓					
Antigua and Barbuda	✓	✓	✓	✓	✓	✓							✓
Argentina	✓	✓	✓	✓	✓		✓	✓				✓	✓
Belize	✓					✓							✓
Brazil	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Costa Rica	✓	✓	✓	✓	✓							✓	✓
Honduras	✓	✓	✓		✓	✓							✓
Jamaica	✓	✓	✓	✓	✓		✓					✓	✓
Perú	✓	✓	✓	✓	✓		✓	✓				✓	✓
Uruguay	✓	✓	✓	✓	✓								
Bahamas	✓	✓	✓		✓					✓		✓	
Cuba	✓	✓	✓	✓						✓	✓	✓	✓
Saint Kitts and Nevis	✓									✓			
Trinidad and Tobago	✓	✓			✓								

Key:

Full implementation | Partial implementation | Initiation Phase | Regulatory establishment

Source: Prepared by the authors.

The map above reflects significant variation in the status of implementation of the PRTRs across the region. However, the assessment also reveals encouraging signs that are worth highlighting, particularly within the framework of the Escazú Agreement.

Finally, the regional assessment also reveals encouraging signs within the framework of the Escazú Agreement, with a clear prioritization of PRTRs among the States Parties. The eight States Parties that have drawn up or are finalizing their Roadmaps for national implementation have incorporated actions relating to Pollutant Release and Transfer Registers (PRTRs) into their national implementation roadmaps, positioning this instrument among the most common priority actions in the region. The commitments undertaken reflect varying levels of progress and ambition. Argentina, Panama and Uruguay have expressly committed to establishing or implementing a PRTR; Chile and Ecuador, which already have full and partial implementation respectively, have included actions aimed at strengthening and improving their systems; whilst Belize has incorporated a commitment to redesign its register, and Grenada and Saint Kitts and Nevis have committed to assessing its feasibility.

Taken together, these commitments constitute a concrete basis for regional monitoring, technical cooperation and progressive advancement in the implementation of PRTRs, in line with the standards for access to environmental information established by the Agreement.

Table 7

Priority actions relating to PRTRs in the roadmaps for national implementation of the Escazú Agreement

Country	Description
Argentina	Implement a Pollutant Release and Transfer Register (PRTR)
Belize (*)	Restructure the PRTR system
Chile	Strengthen the PRTR system
Ecuador	Strengthening the PRTR system
Grenada	Conduct an assessment to determine the appropriate approach for establishing an EHR system
Panama	Establish a Pollutant Release and Transfer Register (PRTR)
Saint Kitts and Nevis	Conduct an assessment to determine the appropriate approach for establishing an EHR system
Uruguay	Implement a Pollutant Release and Transfer Register (PRTR)

Note: (*) In the process of being published.
Source: Prepared by the authors.

The following presents an analysis of the systems currently in operation, the starting conditions and opportunities for advancing their implementation in countries that have initiated the process, as well as the

limiting and enabling factors for all of them, including those that have not yet begun establishing the system. This analysis is based on information received through questionnaires and publicly available information.

1) Fully implemented PRTR systems

To date, two Latin American countries have officially implemented a PRTR: **Chile** and **Mexico.** In both cases, the system is formally known as the "Pollutant Release and Transfer Register" and is mandatory for certain regulated sectors, with annual reporting covering the full calendar year.

i. Scope and Coverage of Chile's PRTR

Chile implemented its PRTR in 2007[6] . Its legal basis is found in Law 19.300 on General Environmental Principles. Article 70(p) and (q) of the Act mandates the Ministry of the Environment to administer the PRTR and to establish a public information system on compliance with environmental regulations, accessible electronically. Furthermore, Supreme Decree No. 1 of 2013 of the Ministry of the Environment approves the PRTR Regulations, setting out specific provisions for its organization, operation and implementation.

The legal nature of the PRTR in Chile has been considered to be of a mixed nature, given that the obligations to report emissions and the transfer of pollutants derive mainly from sectoral regulations. These regulations are administered by various institutions with environmental responsibilities, and within this framework it is determined what information must be reported by the different productive sectors and regulated activities.

The PRTR regulations, together with the Single Window platform, enable these sectoral reports to be integrated into a common register, thereby facilitating the consolidation and standardization of the instrument based on the data reported by establishments. In other words, the PRTR is fed by information generated pursuant to sectoral obligations, rather than from a direct and autonomous duty of the regulated entities with regard to the register itself.

Furthermore, the PRTR incorporates non-regulatory information, such as estimates of emissions from diffuse sources, which are included to enhance transparency and broaden the availability of environmental information to the public. These do not have defined sectoral regulations and, therefore, do not constitute a report in the strict sense of the sources.

Regarding **coverage**:

- Environmental media: Includes air and water. Soil is not included, as there is currently no associated emission standard.
- Types of sources: Covers both point sources and diffuse sources.
- Types of data: It collects information on emissions, waste transfer and treatment, use of inputs (water and energy) and corporate environmental performance indicators.

As for the **sectors** required to report, these depend on current sector-specific regulations regarding emissions and transfers, as well as on the criteria defined for estimating pollutants and non-regulated

[6] Available at https://retc.mma.gob.cl/.

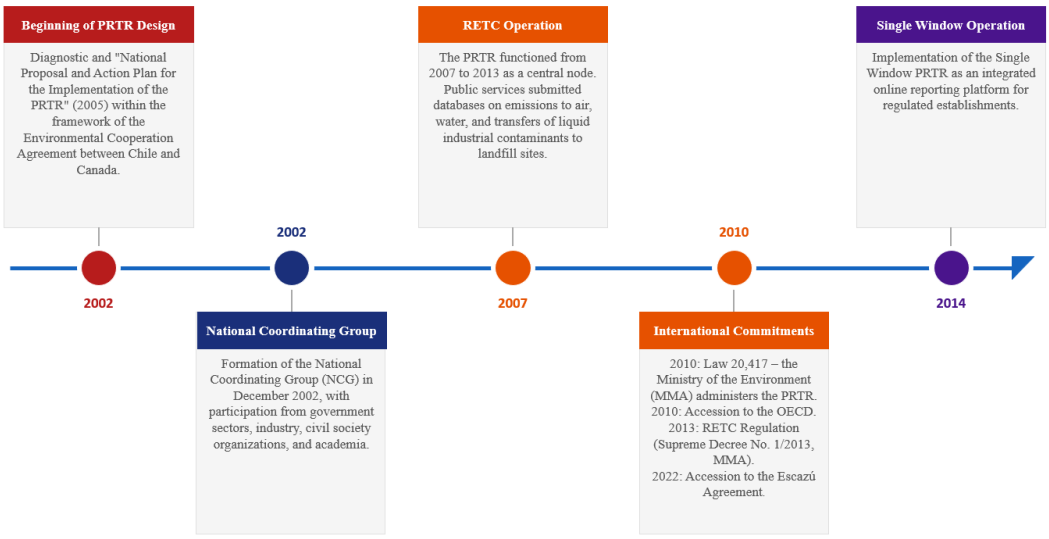
sources. In practice, the system does not cover all sectors included in the OECD's 'Short Report List' or in Annex 1 of the Kiev Protocol on PRTRs.

Chile publishes annually a list of 15 **priority pollutants,** selected from over 200 substances contained in the PRTR, including: mercury, benzene, PM10 and PM2.5, NOx, h, SOx, CO, CO_2, ammonia and lead, amongst others. Currently, Chile's PRTR does not cover all the chemicals on the OECD's 'Short List of Chemicals' or in Annex II of the Kiev Protocol.

The information contained in the PRTR is in the public domain, except for that classified as confidential in accordance with criteria relating to commercial confidentiality or national security. The system's website makes emissions and transfers data available to the public, along with a wide range of value-added products, including consolidated reports, database access, application programming interfaces (APIs), visualization tools, guidance documents, tutorials and user feedback forms.

The implementation of the PRTR in Chile has been made possible by a series of **enabling factors** that reflect a sustained commitment to strengthening environmental management. Firstly, **the progressive development of environmental regulations**—including the adoption of increasingly stringent emission standards—laid the technical and regulatory foundations for advancing the monitoring and reporting of pollutants. Added to this is **access to resources from international cooperation**, which facilitated both the design and the initial operation of the system. The country has also demonstrated a clear **institutional commitment to advancing transparency and access to environmental information**, aligning itself with key international commitments such as accession to the OECD and ratification of the Escazú Agreement. These elements have enabled the PRTR to be consolidated as a strategic tool for emissions control, accountability and public participation in environmental decision-making. The following diagram shows the most relevant design and implementation milestones of the PRTR system in Chile.

Diagram 1
Key milestones in the design and implementation of the PRTR system in Chile



Source: Prepared by the authors.

The implementation of the PRTR in Chile has enabled significant progress in terms of transparency, environmental management and regulatory compliance. However, its consolidation and continuous improvement present significant challenges, whilst also offering opportunities to strengthen environmental information management and evidence-based decision-making. The key challenges and opportunities for strengthening the operation and expansion of the PRTR in Chile are analyzed below.

- **Challenges**

Despite significant regulatory progress and the momentum generated by cooperation agreements and international instruments, there remain areas requiring attention to fully consolidate the PRTR. Among the most significant challenges are the strengthening of the technical and institutional capacities necessary to ensure the quality, consistency and completeness of reported data. It is also essential to continue making progress in the development of digital infrastructure and information management to improve the traceability, interoperability and timely updating of information. Furthermore, the need for standardized methodologies across sectors and more robust criteria for data management and validation constitutes a key challenge in ensuring the reliability of the system. There is also a valuable opportunity to further deepen the generation and dissemination of environmental information, promoting data that is increasingly accessible, understandable and useful for the various stakeholders involved in environmental management and decision-making.

In November 2024, the Escazú Agreement's Implementation and Compliance Support Committee (CAAC) undertook its first official visit to Chile, as part of its mandate to support States Parties in the effective implementation of their obligations. During the visit, the Committee held meetings with public institutions, the private sector and civil society, with the aim of gaining a deeper understanding of the functioning of the PRTR and its use by various stakeholders.

The Committee acknowledged the existence of a system with a consolidated regulatory framework and recent advances in accessibility — including open data platforms, georeferenced maps and updated methodological guidelines. At the same time, it identified gaps that limit its full integration into environmental management processes: the limited comprehensibility of technical data for non-specialist audiences, the digital divide affecting equitable access to information, and the absence of indicators to assess the level of PRTR use by institutions, businesses and the public. The Committee also noted that bodies such as the Environmental Assessment Service, the Superintendency of the Environment and some Environmental Courts acknowledge limitations in the integration of the PRTR into their institutional processes.

These observations reinforce the need to make progress along the lines already identified: accessible explanatory material, more intuitive visualization tools, training programmes for officials, and systematic mechanisms for monitoring access to and use of the register.

- **Opportunities**

The current institutional and regulatory framework, together with political will and the availability of resources—including international cooperation—offers a favorable environment for strengthening and promoting the PRTR as a strategic tool for environmental management. Data integration and inter-institutional coordination represent key opportunities to improve the quality, coverage and accuracy of

information, whilst the incorporation of advanced technologies would enable the automation of processes, improve traceability and facilitate public access to information in a more efficient and timely manner.

Furthermore, Chile is well-placed to take an active role in the methodological harmonization of PRTRs at the regional level, which would contribute to data comparability and the development of common standards that foster a comprehensive view of environmental impacts from a regional perspective. It is equally important to make progress in identifying the ways in which different stakeholders have used PRTR information, which would enable an assessment of its usefulness in the formulation and monitoring of environmental policies, the environmental performance of productive sectors, the identification of potential risks to human health and the environment, and the promotion of cleaner technologies. Furthermore, this type of analysis can provide evidence on how the PRTR has contributed to ensuring regulatory compliance and strengthening the private sector's environmental accountability.

ii. Scope and Coverage of Mexico's PRTR

The development of the PRTR in Mexico forms part of international commitments adopted during the 1990s, in particular Agenda 21 of the United Nations Conference on Environment and Development (1992), the United Nations Framework Convention on Climate Change (1992) and the recommendations promoted by the OECD regarding pollutant release and transfer registers from 1996 onwards. Its institutional origins date back to 1994, when a National Coordinating Group (GNC) was formed, comprising representatives from industry, academia, government, civil society organizations and the public, with the support of the United Nations Institute for Training and Research (UNITAR). This group established the protocol for selecting the substances to be included in the first PRTR list.

The formal development of the system began in 2001, with the amendment of Article 109 Bis of the General Law on Ecological Balance and Environmental Protection (LGEEPA), which established the obligation of the Ministry of the Environment and Natural Resources (SEMARNAT), as well as the governments of the states, Mexico City and the municipalities, to establish a PRTR. In 2002, the Federal Law on Transparency and Access to Public Government Information was enacted, strengthening the institutional framework for the disclosure of environmental information. In 2004, the Regulations of the LGEEPA on the PRTR (RLGEEPA) were published, setting out the technical guidelines for the collection, verification and consolidation of reports, as well as for the creation of the national register. The system officially began in 2005 with the publication of a list of 104 substances subject to reporting, the adoption of an electronic reporting format, the signing of various ministerial agreements and the establishment of mandatory reporting for regulated sectors.

As a member country of the OECD, Mexico has progressively aligned its PRTR with the international standards promoted by that organization, particularly regarding reporting, methodological harmonization and public access to information. SEMARNAT remains the entity responsible for the implementation and operation of the system at the federal level.

The distribution of responsibilities follows the framework of concurrent jurisdiction set out in the LGEEPA. At the federal level, SEMARNAT is responsible for regulating the PRTR with regard to the eleven industrial sectors classified as fixed sources under federal jurisdiction (FFJF), major generators of hazardous waste,

and establishments discharging wastewater into nationally owned receiving bodies. State and municipal governments are responsible for sources not reserved for the Federation, which includes sectors not covered by Article 111 Bis of the LGEEPA, the management of small-scale hazardous waste generators, and discharges into the sewerage system. To ensure the compatibility of methodologies and integrate information from the different levels of government into a unified national system, the RLGEEPA provides that SEMARNAT shall enter into coordination agreements with the competent local authorities.

In terms of its scope, the system covers:

- Environmental media: air, water and soil.
- Types of sources: point sources; diffuse sources are not currently considered.
- Types of data: emissions, waste transfer and treatment, production volume, use of inputs (water and energy) and information relating to pollution prevention practices.

The system currently covers emissions from eleven industrial sectors under federal jurisdiction, including mining, energy, manufacturing, chemicals, petrochemicals and the automotive industry. It should be noted that the system does not yet cover all sectors on the OECD Short List of Reporting Sectors, nor those covered by Annex I of the Kiev Protocol on Pollutant Release and Transfer Registers. The substances subject to reporting are defined in Mexican Official Standard NOM-165-SEMARNAT-2013, which establishes the official list of pollutants that obligated facilities must declare annually via the Annual Operating Certificate (COA), the official format of which was established by an agreement published in the Official Gazette of the Federation on 14 August 2015. NOM-165-SEMARNAT-2013 supersedes the original list of 104 substances defined in 2005 and does not cover all the chemicals on the OECD Short List of Chemicals or those listed in Annex II of the Kiev Protocol.

The information is accessible to the public via the PRTR's institutional web platform[7] , which provides technical guides, institutional presentations, frequently asked questions and supporting documentation for regulated entities and the public. The platform allows users to download raw data files, consult aggregated records and disaggregated data by facility, substance or sector, and access information on the methodologies used to estimate emissions and transfers — including direct monitoring, mass balance, specific emission factors and engineering calculations — as well as to make contact via telephone, email or online forms.

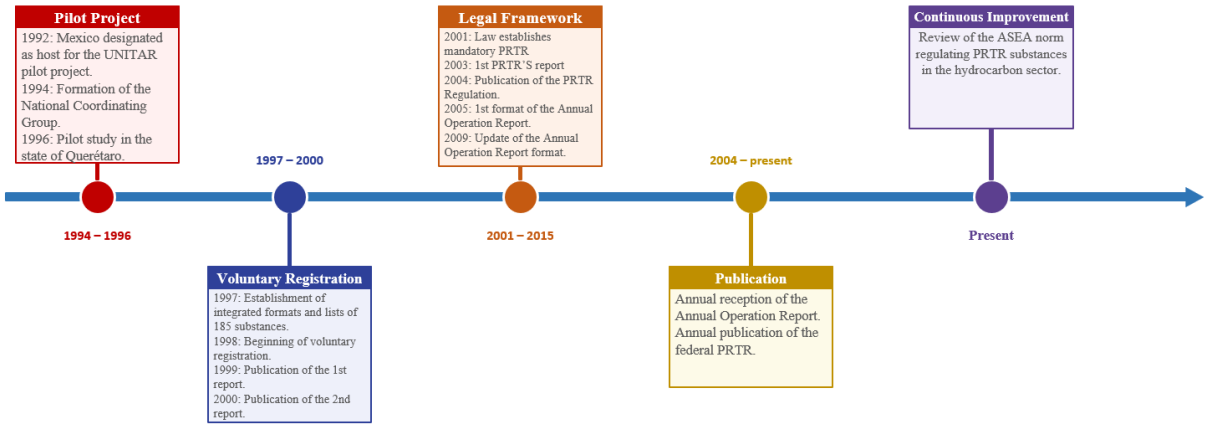
A notable feature of the system is its pre-publication mechanism. Once the annual database has been compiled, SEMARNAT notifies the legal representatives of the establishments of the availability of a preliminary version for review, granting them a period of 30 calendar days to submit written clarifications. These are usually classified into three categories: errors in data reported via the COA, omissions of pollutants not included in that instrument, and data excluded for failing to exceed the thresholds established in NOM-165-SEMARNAT-2013. Where timely corrections are not submitted, the information is classified as 'inconsistent data' and presented in a specific section of the platform.

The following diagram shows the most relevant design and implementation milestones of the PRTR system in Mexico.

7 Available at http://sinat.semarnat.gob.mx/retc/retc/index.php.

Diagram 3

Key design and implementation milestones of the PRTR system in Mexico



Source: Prepared by the authors.

The implementation of the PRTR in Mexico has enabled significant progress in terms of transparency, environmental management and regulatory compliance. However, its consolidation and continuous improvement present significant challenges, whilst offering concrete opportunities to strengthen environmental information management and evidence-based decision-making. The main challenges and opportunities for the operation and expansion of the system are analyzed below.

Challenges

Mexico has made significant progress in implementing its PRTR, but there are still areas for improvement that could strengthen its operation. One of the main challenges is updating the list of reportable substances, a process currently carried out through standardization, and which can take up to two years. SEMARNAT is evaluating more streamlined mechanisms for updating NOM-165-SEMARNAT-2013, with the aim of harmonizing the lists with those of the United States and Canada, which are generally updated every two years. In addition, the Agency for Safety, Energy and the Environment (ASEA) is drafting a specific standard for the hydrocarbons sector that will incorporate thirty new substances, thereby expanding the system's coverage.

Another significant challenge is the lack of a modern platform for georeferenced visualization and interactive consultation of emissions and transfers. Plans are in place to develop a new digital tool, which will be interoperable with systems in the United States and Canada, facilitating standardized access for stakeholders such as civil society, local governments and academia.

In terms of data quality, the time required to receive, review and process the Annual Operating Statement (AOS) continues to hinder the efficient verification and validation of information. Mexico is working alongside the Commission for Environmental Cooperation (CEC) and its counterparts in the United States and Canada to exchange good practices that will optimize these processes without compromising technical autonomy. In this regard, the COA Web platform, which has been in operation for over a decade, requires modernization. In response to the needs identified by companies and users, the General Directorate of Industry, Clean Energy and Air Quality Management (DGIELGCA) and the Environmental Commission of the Megalopolis (CAME) are promoting the project "Identification of needs for optimization and improvement of the processes for capturing, reviewing and processing COA data".

Finally, the structural challenge of consolidating the integration of federal entities and municipalities into the national PRTR system persists. This requires strengthening intergovernmental coordination and institutional capacities across all three levels of government, in order to ensure a more uniform and efficient implementation throughout the national territory.

Opportunities

In the face of these challenges, significant opportunities are emerging to consolidate and position the PRTR as a strategic environmental management tool. International cooperation—particularly through the CCA—is an essential facilitator for advancing the modernization of the system, updating its regulatory framework, incorporating new digital technologies and promoting methodological harmonization among the countries of North America.

The modernization of digital platforms—both those designed for reporting information and those focused on data consultation, visualization and traceability—represents a key opportunity to improve operational efficiency, enhance public accessibility and strengthen engagement with various stakeholder groups. Moving towards a more dynamic regulatory framework—capable of adapting to new substances, sectors and technical standards—will consolidate the PRTR as a fundamental tool for evidence-based decision-making, to the direct benefit of environmental authorities, the productive sector and the general public.

In this context, strengthening institutional capacities, deepening coordination between levels of government and promoting international technical exchange are fundamental steps towards consolidating a more robust, transparent PRTR system that is aligned with international good practices.

Table 8 below summarizes some key characteristics of the PRTR systems in Chile and Mexico:

Table 8
Summary of key characteristics of the PRTR systems in Chile and Mexico

Characteristic	Chile	Mexico
Year of implementation	2007	2005
Public access	Yes: free of charge and no prior registration required	Yes: free of charge and no prior registration required
Media covered	Air, Water	Air, Water, Soil
Sources of emission	Point and diffuse	Point sources only

Transfers and residues	Yes	Yes
Other data (inputs, performance)	Yes: Information on input use; information on corporate environmental performance; information on estimates of diffuse sources.	Yes: Production volume information; input usage information; pollution prevention information.
Pollutants	Approx. 200, of which 15 are published.	209 substances subject to federal reporting requirements.
Sectors covered	In accordance with national sectoral regulations	Mining, energy, manufacturing, chemicals, hazardous waste treatment, petrochemicals, glass, cement and lime, pulp and paper, automotive, paints and inks, hydrocarbons and asbestos.
Languages	Spanish	Spanish
Participatory processes	Yes, through the National Coordinating Group (GNC)	No

Source: Prepared by the authors.

Chile and Mexico have developed regulatory frameworks and platforms that enable the generation, organization and public availability of relevant environmental information, in accordance with the principles of maximum disclosure, accessibility and reusable formats set out in Articles 5 and 6 of the Agreement. Although the PRTRs differ in design—Chile through the integration of sectoral reports and Mexico through a federal framework with unified guidelines—both systems are making progress in implementing active transparency mechanisms and in consolidating structured and accessible environmental information, providing useful examples of the different ways in which States Parties can meet the standards for organization, public access and regular updating set out in the Escazú Agreement.

2) PRTR systems with partial implementation

i. Scope and Coverage of Colombia's PRTR

Colombia's Pollutant Release and Transfer Register is the region's most recent system and is currently in its implementation phase. Its regulatory framework is **Resolution 0839 of 2023** of the Ministry of Environment and Sustainable Development, which replaced Resolution 0941 of 2009 in relation to the Information Subsystem on the Use of Renewable Natural Resources (SIUR), the Single Environmental Register (RUA) and the PRTR itself[8] .

The implementation timetable stipulates that mandatory reporting for the manufacturing sector will begin in 2025, with the first publication of data scheduled for November of that year. From 2026 onwards, reporting will be extended to the rest of the productive sectors, with the corresponding publication of data around November.

Regarding **coverage**:

- Environmental media: Includes air, water and soil.
- Types of sources: Limited to point sources; diffuse sources are not currently considered.
- Types of data: Emissions, waste transfer and treatment, production volume, use of inputs (water, energy) and information on pollution prevention.

[8] The system is accessible to regulated establishments via https://rua.ideam.gov.co/rua/login.jsf.

With regard to the **sectors required to report**, the RUA – an instrument of which the PRTR forms an integral part – must be completed by all natural or legal persons who, under current environmental regulations, require an environmental license, an environmental management plan, permits, concessions or other authorizations for the use and/or exploitation of renewable natural resources. Likewise, waste generators registered in the hazardous waste system are required to report. In this context, all productive sectors—including the services sector—are subject to reporting in the PRTR. The Colombian system covers all sectors defined in the OECD's "Short List of Reporting Sectors" and/or in Annex I of the Kiev Protocol.

Although Colombia has largely aligned itself with these international standards, not all substances contained in the OECD's "Short List of Chemicals" or Annex II of the Protocol are currently included. The initial list of substances subject to PRTR reporting is set out in Annex 1.2 of Resolution 0839 of 2023 of the Ministry of Environment and Sustainable Development and may be updated as the country's environmental regulations evolve.

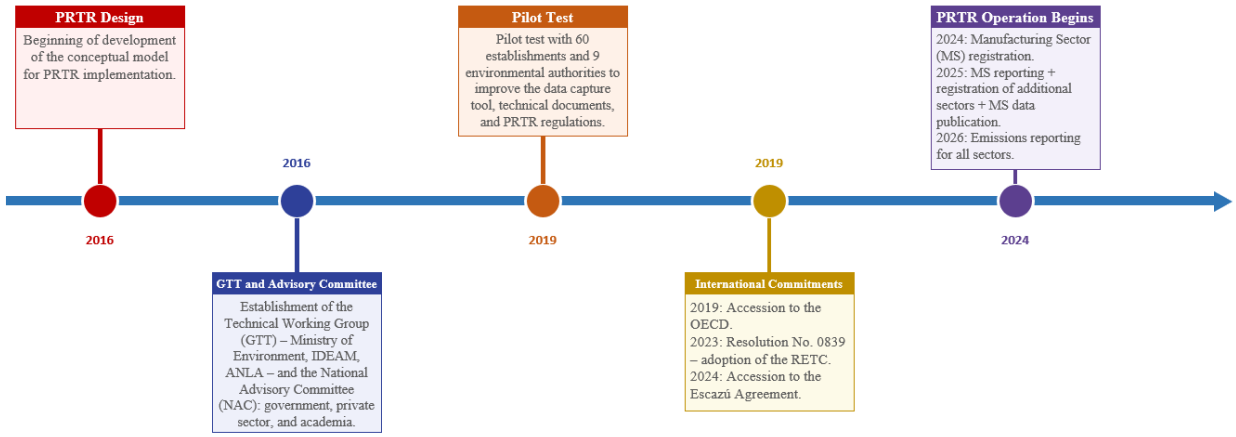
The PRTR information will be public, with the exception of that declared confidential in accordance with Law 1712 of 2014 and Andean Decision 486 of 2000 on industrial property. However, as in other international systems, emissions and transfers of pollutants are always considered public information. The Colombian PRTR will provide resources designed to facilitate access to and understanding of environmental information, including aggregated and disaggregated reports by geographical unit, substance or sector; interpretative guides, graphical visualizations, interactive maps and analytical tools currently under development.

The process of designing and launching the PRTR in Colombia is notable for its robust participatory approach. In 2016, the PRTR Technical Working Group (GTT) and the National Advisory Committee (CCN) were established, comprising government institutions, trade associations from the productive sector and academia. This model facilitated the development of the PRTR's conceptual framework and the implementation of a pilot trial in 2019–2020 involving 60 establishments and 9 environmental authorities, the lessons from which were fundamental to the final design.

The implementation of the PRTR in Colombia has been made possible by a series of **enabling factors** that have gradually taken shape over time. Among these, the existence of previous instruments such as the RUA and the Register of Hazardous Waste Generators stands out, as they provided a technical and operational foundation upon which to build the system. The use of SIUR systems as the official mechanism for data collection was also a key step. At the political and regulatory level, the approval of CONPES 3868 of 2016 —which established programmes such as the Management of Industrial Chemicals (PGSQUI), the Prevention of Major Accidents (PPAM), and the PRTR as a cross-cutting priority— marked a milestone in the integration of the PRTR into environmental management strategies. This process was strengthened by the country's adherence to international commitments such as its accession to the OECD in 2020, the ratification of the Escazú Agreement in 2024, and its participation in the Open Government Partnership (OGP), which promoted greater transparency and access to environmental information.

Finally, the recent regulation of the PRTR through Resolution 839 of 2023 consolidated the regulatory framework necessary for its implementation. The diagram below details the most significant milestones in the design and implementation of the PRTR system in Colombia.

Diagram 5
Key milestones in the design and implementation of the PRTR system in Colombia



Source: Prepared by the authors.

The key challenges and opportunities for strengthening the operation and expansion of the PRTR in Colombia are analyzed below.

- **Challenges**

Colombia has made significant progress in building its PRTR, supported by a progressive strengthening of the regulatory framework and the incorporation of tools such as the RUA and the SIUR. These advances have been supported by public policies on the management of hazardous chemicals, and by international commitments, such as accession to the OECD and the ratification of the Escazú Agreement, which have promoted transparency, accountability and the improvement of environmental information systems.

However, as it is in an early stage of implementation, the PRTR faces key challenges to its consolidation as a fully operational, interoperable and user-centred system. These include the need to strengthen technical support for establishments required to report, particularly during the transition to the new system; improving the interoperability of IT platforms (SIUR, RUA and other sectoral systems), ensuring the quality, consistency and accessibility of data, and generating processed, comprehensible and value-added information that facilitates its use by authorities, the productive sector, academia and civil society. It is also essential to have adequate and sufficient human and financial resources to maintain and update technological tools, and to strengthen technical and institutional capacities at national and regional levels, taking into account the effects of staff turnover and gaps in technical capabilities.

- **Opportunities**

The Colombian institutional context offers favorable conditions for a robust and sustainable PRTR. The experience accumulated in pre-existing systems – including the register of hazardous waste generators, the RUA and the SIUR itself – constitutes a solid institutional foundation upon which to strengthen the operation of the PRTR. Furthermore, the gradual implementation envisaged by the regulations allows for

the progressive development of capacities, opening up key opportunities to (i) deepen inter-institutional coordination, strengthening cooperation between environmental authorities, productive sectors and local authorities; (ii) strengthen technical and institutional capacities through training programmes, technical assistance and international cooperation; (iii) modernize digital platforms and analytical tools, expanding the scope for visualization, traceability and strategic use of data; and (iv) expand the accessibility and understanding of environmental information by generating public products that facilitate informed public participation and the design of evidence-based policies.

Furthermore, the country is well-positioned to contribute to regional cooperation by exchanging experiences and good practices with other countries in the region, thereby promoting the development of a regional community of practice on PRTR and contributing to the strengthening of common standards in Latin America and the Caribbean.

ii. Scope and Coverage of Ecuador's PRTR

Ecuador launched its PRTR in 2020. The regulatory framework underpinning this instrument is set out in Ministerial Agreement No. 061 of 2015, Article 52 of which establishes the obligation of the National Environmental Authority to create a register covering emissions and transfers of pollutants to the air, w , soil and subsoil, as well as hazardous materials and waste, amongst others. In addition, Ministerial Agreement 097-A, in section 4.5.10, sets out guidelines for the preparation of a report with minimum content, valid until the mandatory system comes into force, which must be submitted annually.

In terms of coverage, the system considers:

- Environmental media: Includes air and water. It does not currently cover soil.
- Types of sources: Limited to point sources. It does not currently cover diffuse sources.
- Types of data: Annual declaration of hazardous and/or special waste, the use of chemicals, reporting on resource consumption in the production process, and notification of events such as emergencies or spills.

The reporting is managed via a specific submenu within the Single Environmental Information System (SUIA)[9] . To access the system, users must hold an environmental administrative authorisation previously approved through the SUIA itself.

Although operational, the PRTR is **voluntary in nature**, which has resulted in low reporting rates by establishments and a lack of representativeness in the data. Furthermore, the **reported information is not publicly accessible**. The absence of fundamental components, such as mandatory reporting, transparency and public access to environmental information, prevents this system from being considered, strictly speaking, a fully consolidated PRTR in accordance with the standards identified in Chapter I.

The following section analyses the main challenges and existing opportunities for strengthening the development, consolidation and effective operation of the pollutant emissions and transfers reporting system in Ecuador.

[9] Available at the following link: https://regularizacion-control.ambiente.gob.ec/suia-iii/start.jsf.

- **Challenges**

Although Ecuador has an operational platform for the voluntary reporting of pollutant emissions and transfers, the system lacks several of the essential components defined in Chapter I. Among the main challenges are the absence of a robust regulatory framework establishing mandatory reporting for regulated establishments, as well as access to environmental information. For a more detailed analysis of the regulatory framework and other legal background relating to access rights in environmental matters, see ‘ . This lack of regulatory support results in low levels of participation by facilities and, consequently, a lack of representativeness in the available data.

Added to this are budgetary constraints on the system, which hinder institutional strengthening, the implementation of technological improvements and the development of the technical capacities necessary for its sustainable operation.

- **Opportunities**

Despite these limitations, the system presents significant opportunities to move towards a more robust and functional PRTR. The existence of an operational platform provides a foundation upon which gradual improvements could be introduced, particularly if the regulatory framework supporting its mandatory nature and long-term continuity can be strengthened.

International technical cooperation and participation in regional initiatives offer valuable opportunities for the exchange of experiences, methodological harmonization and access to technical and financial resources that could contribute to strengthening the system. Furthermore, improving coordination between environmental authorities, the productive sectors and civil society would allow for the system’s coverage to be expanded and its usefulness explored as a tool for environmental management, accountability and the design of evidence-based public policies.

Table 9 summarizes some key characteristics of the PRTR systems in Colombia and Ecuador.

Table 9
Summary of key characteristics of the PRTR systems in Colombia and Ecuador

Feature	Colombia	Ecuador
Year of implementation	2024 (start of implementation)	2020
Public access	Yes: free of charge and no prior registration required (from November 2025)	No: the reported information is not public
Media covered	Air, Water, Soil	Air, Water
Emission sources	Point sources only	Only point sources
Transfers and waste	Yes	Yes
Other data (inputs, performance)	Yes: Production volume data; input usage data; pollution prevention data.	Yes: use of chemicals; resource consumption; spill/emergency reports
Pollutants	130	Subject to the guidelines of Ministerial Agreement 097-A
Sectors covered	OECD list and/or Kiev Protocol	Establishments with environmental authorisation in SUIA but on a voluntary basis
Languages	Spanish	Spanish

Participatory processes	Yes, through the Technical Working Group (CCN) and the National Advisory Committee (GTT)	No formal participatory processes are reported in the design of the system

Source: Prepared by the authors.

3) PRTR systems in the start-up phase

This chapter examines the situation in countries that are in the early stages of designing or implementing a PRTR system. The analysis covers nine countries in the region—Antigua and Barbuda, Argentina, Belize, Brazil, Costa Rica, Honduras, Jamaica, Peru and Uruguay—and each sub-chapter documents the key aspects of their current situation, the progress made, the challenges faced and the opportunities identified to advance the implementation of a PRTR system. The depth of the analysis varies according to the information available for each case.

i. Progress, challenges and opportunities in Antigua and Barbuda

Antigua and Barbuda has taken the **first steps towards** designing an PRTR and has institutional and regulatory conditions that can facilitate its progressive development. Key provisions such as the *Environmental Protection and Management Act* (2019) and the *Freedom of Information Act* (2004) provide a legal basis for advancing environmental transparency. It is envisaged that the future PRTR will be mandatory and that information on pollutants will be made available to the public. However, Section 24 of *the Environmental Protection and Management Act* (EPMA) stipulate that access to this information from the Environment Registry will be subject to the payment of a fee, which could hinder public access to the information, particularly for vulnerable groups. The system's envisaged scope is initially focused on point source emissions to air, water and soil, without considering diffuse emissions or having yet defined the inclusion of waste transfers. The progress, challenges and opportunities are analyzed in greater detail below:

a. Legal foundations and international commitments

Antigua and Barbuda has a regulatory framework that lays a solid foundation for the development and implementation of a PRTR. The Environmental Protection and Management Act (EPMA) of 2019 establishes functions covering the monitoring of pollution sources, the collection and management of environmental data, and public access to this information – powers that could provide the framework for the creation and operation of a PRTR. The Freedom of Information Act (2004) complements this framework by recognizing the right of individuals to request public information, an essential element for transparency, accountability and public participation. At the international level, Antigua and Barbuda is a State Party to the Escazú Agreement, which reinforces obligations regarding access to environmental information, public participation in decision-making processes, and access to environmental justice. This international legal framework provides a solid foundation for moving towards the creation of a PRTR aligned with the principles of maximum disclosure, accessibility, progressive availability of information, and institutional strengthening.

With regard to mandatory reporting, it is expected that this will eventually evolve into a mandatory system for companies and industries, which is a fundamental step towards ensuring that emissions and transfers of pollutants are systematically monitored.

b. Interest and commitment of key stakeholders

Interest in implementing a PRTR scheme has been expressed by various sectors, including the government, industry and civil society organizations. This convergence of stakeholders represents a significant opportunity to strengthen multisectoral dialogue and build a shared vision regarding the design of the system. However, there are still no formal agreements or institutional mechanisms between the government and the industrial sector to facilitate data provision by industry or to establish voluntary reporting schemes, which represent a gap that needs to be addressed.

c. Technical capacities, infrastructure and available resources

Antigua and Barbuda possesses technical capabilities within institutions responsible for the collection, storage and analysis of environmental data, as well as staff specialized in emissions inventories and information management. Furthermore, the country has technological platforms, server infrastructure and environmental monitoring systems, which could be integrated as key components of the future e system. However, these capabilities are only partially developed and their consolidation requires further efforts, as well as specialized training and the provision of adequate technical equipment to enable the establishment of a functional and interoperable system.

d. Culture of transparency and access to information

The country has policies that promote public access to environmental information, which is an enabling factor for the PRTR. However, the EPMA stipulates that access to the Environmental Registry shall be subject to the payment of a fee. According to Article 24 of *the Environmental Protection and Management Act* (EPMA), "The Environmental Registry shall be open to public inspection upon payment of a fee, at the Department's offices during normal office hours", which could constitute a barrier to the effective exercise of the right of access to information.

e. International support and regional cooperation

To date, no active international initiatives directly related to the design or implementation of the PRTR in Antigua and Barbuda have been reported. However, the country could benefit from the technical cooperation and experience-sharing mechanisms available under the Escazú Agreement, as well as from other regional initiatives aimed at strengthening environmental information systems.

f. Challenges

The development and implementation of an PRTR in Antigua and Barbuda faces a number of structural and operational challenges that must be addressed comprehensively:

- **Insufficient funding:** Available resources are limited to cover technological costs, training and system operation.
- **Technological limitations:** Investment is required in monitoring systems, interoperable digital platforms and standardized databases.
- **Insufficient technical capacity:** Although trained staff are available, skills in the validation, analysis and management of environmental data need to be strengthened.

- **Regulatory gaps:** The EPMA requires complementary regulations defining reporting obligations, verification mechanisms and operational procedures. **Lack of characterization of** the **regulated sector:** No comprehensive assessment has been carried out of emitting facilities, priority substances or critical sectors, which constitutes a technical barrier to defining the scope and requirements of the system.

Taken together, the main gaps identified center on the technological infrastructure for data collection and monitoring, available human resources and the need for capacity building. Even if the necessary funds were available, these challenges could slow down implementation. It is therefore essential to proceed with a strategy of progressive development, accompanied by technical cooperation and a clear roadmap that combines regulatory, institutional and financial efforts.

g. Enabling factors and opportunities

Antigua and Barbuda possesses a number of important enabling factors: an environmental and freedom of information legal framework which, although requiring regulatory adjustments, provides a solid regulatory foundation; technical capabilities within key institutions; operational technological platforms that can be integrated into the system; experience in managing environmental data that can be leveraged and integrated; and a political environment with an interest in promoting access to environmental information.

The commitment expressed by various government, industry and civil society stakeholders presents an opportunity for dialogue, multi-sectoral cooperation, and the co-creation and participatory governance of the system.

Furthermore, accession to the Escazú Agreement and its openness to international cooperation offer a concrete pathway to mobilize technical and financial support, promote methodological harmonization, and move towards a progressive, accessible and useful PRTR for environmental management and informed decision-making.

ii. Progress, challenges and opportunities in Argentina

Argentina has embarked on the path towards implementing a PRTR, with significant progress at the regulatory and institutional levels. The country is currently in **a pilot phase**, through a project in the Matanza-Riachuelo basin in the province of Buenos Aires, and a national guide has been drawn up to guide the future implementation of the system. Although there is not yet a set date for the launch of the PRTR at national level, these advances represent a solid foundation for its future consolidation.

The country has a robust legal framework on environmental matters and access to environmental information, including the recognition of the right to a healthy environment in Article 41 of the National Constitution. At the international level, Argentina is a party to the Escazú Agreement and has ratified key conventions such as the Basel, Stockholm, Rotterdam and Minamata Conventions, reinforcing its commitment to transparent and responsible environmental management. Furthermore, Argentina is a member of the Open Government Partnership (OGP).

For its part, the Law on Free Access to Public Environmental Information (No. 25,831) guarantees citizens' right to access relevant environmental information, assigning the national environmental authority the responsibility of centralizing and ensuring such access.

As for the intended scope, the PRTR is projected to cover point source emissions to air, water and soil, as well as waste transfers for treatment or final disposal; diffuse sources are not currently being considered.

It is worth noting that, in the Roadmap for the implementation of the Escazú Agreement in Argentina (ECLAC and Government of Argentina, 2023) , Action A.6 of *the National Plan for the Implementation of the Escazú Agreement* explicitly incorporates the mandate to "Implement a PRTR", the objective of which is *"to encourage proactivity among national government agencies in the collection and dissemination of information on emissions and transfers of pollutants*". This inclusion not only reinforces the strategic importance of the PRTR within the national environmental agenda but also positions it as a key instrument for advancing the effective fulfilment of the right of access to environmental information.

The main progress and opportunities are analyzed below:

a. Legal foundations and international commitments

The National Constitution (Article 41) recognizes the right to a healthy, balanced environment suitable for human development, whilst at the same time imposing a duty on the state to enact regulations for its protection. The General Environment Act (No. 25,675) establishes principles of sustainability and prevention, and access to environmental information, through the preparation of annual reports on the state of the environment. For its part, the Law on Free Access to Public Environmental Information (No. 25,831) sets out specific obligations regarding the dissemination and availability of environmental information by the national authorities. At the international level, accession to the Escazú Agreement—through Law No. 27,566—reinforces these commitments by requiring effective mechanisms for access to environmental information, public participation and justice in environmental matters. Added to this are international conventions such as the Basel Convention, ratified by Law No. 23,922, the Stockholm Convention, ratified by Law No. 26,011, the Rotterdam Convention, ratified by Law No. 25,278, and the Minamata Convention, ratified by Law No. 27,356, which entail specific obligations regarding the management and reporting of hazardous chemicals (ECLAC and Government of Argentina, 2023) .

b. Interest and commitment of key stakeholders

The development of a national methodological guide and the implementation of the pilot project in the Matanza-Riachuelo Basin reflect the institutional commitment to the development of a PRTR.

In 2023, a specific technical collaboration agreement was signed between the then Ministry of Environment and Sustainable Development and the Matanza-Riachuelo Basin Authority (ACUMAR), with the aim of compiling an inventory of emissions and releases of chemicals into the air, water and soil, as well as the transfer of waste for treatment or final disposal. This agreement, which is currently in force and automatically renewable, constitutes a concrete sign of the institutional commitment to advancing the PRTR. It also provides for the annual updating of the output generated and the continuation of joint work beyond the duration of the pilot project.

However, formal reporting mechanisms with the industrial sector and voluntary data-sharing agreements have not yet been established, which limits the effective involvement of the productive sector. Furthermore,

it is necessary to strengthen multi-sectoral coordination mechanisms to ensure that the future PRTR meets the needs of different users: the private and academic sectors, civil society, and sub-national governments.

c. Technical capacities, infrastructure and available resources

The Ministry of Environment and Sustainable Development possesses technical capacity in environmental monitoring and data management, including the preparation of GHG and persistent organic pollutant inventories. Furthermore, the Environmental Information Centre (CIAM) and the Integrated Environmental Information System (SInIA) constitute established platforms for the dissemination of environmental data.

As part of the pilot project, work is underway to develop a digital platform designed to facilitate access to statistical products from the general public. Furthermore, the Ministry's Systems and Technologies Coordination Unit has staff trained in software development, enabling progress towards proprietary technological solutions tailored to the national context.

In the Matanza–Riachuelo basin, the Matanza-Riachuelo Basin Authority (ACUMAR) utilizes the REAMAR System, which collects environmental data from industrial establishments and provides key inputs for the territorialized design of a PRTR. The pilot project developed in conjunction with ACUMAR, under the UNDP ARG 20/G27 Project funded by the GEF, enables the testing of methodologies, the assessment of capabilities and the definition of standards, and constitutes a valuable technical foundation for its gradual expansion to other jurisdictions.

However, the development of a robust national system will require significantly strengthening the available technological infrastructure, incorporating interoperability between databases, improving information collection and traceability systems, and developing digital platforms accessible to the public, thereby ensuring transparency, data traceability and the informed participation of citizens.

d. Culture of transparency and access to information

The Argentine regulatory framework broadly recognizes the right of access to environmental information. The Constitution, the General Environment Act, Act No. 25,831 and Act No. 27,275—which established the 'regime for access to public information' held by the National Public Administration—set out obligations regarding active and passive disclosure, rules on exceptions, response times and penalties for non-compliance.

The CIAM and SInIA are well-established instruments for the dissemination of environmental information. However, information regarding emissions and the transfer of pollutants is not yet systematic or mandatory and depends largely on the willingness of emitting sources and the availability of technical capacity to collect and process data. The implementation of an EPRTR could be a key tool for democratizing access to critical information and strengthening public participation in environmental management.

e. International support and regional cooperation

The UNDP Project ARG 20/G27, funded by the GEF, is a central enabling factor that has facilitated the development *of* the *Guide for the implementation of a Pollutant Release and Transfer Register in Argentina* (UNDP, 2024) , built technical capacity, and advanced the pilot project in the Matanza-Riachuelo basin.

This project also includes the development of a digital platform for public consultation on the PRTR.

At the regional level, there are opportunities for coordination with other countries that are making progress in the design of PRTRs, as well as for participation in technical networks, the development of regional methodologies and capacity building in emissions estimation.

f. Challenges

The main challenges in moving towards a PRTR include:

- **Regulatory weaknesses: Although** the country has a generally favorable legal framework, there is no specific regulation governing the obligation to report data, estimation methodologies, and quality standards.
- **Technical and operational capacities:** Technical and operational capacities vary across provinces, particularly in terms of technical resources, qualified personnel, and equipment. Furthermore, to date, no systematic assessment has been carried out of the full range of emission sources, priority sectors, or key chemicals at the national level, which limits the system's strategic design capacity. Furthermore, operational and technological weaknesses persist: whilst capacities exist within bodies such as the Ministry of the Environment, the development of a national EPR system requires a more robust infrastructure, including interoperable databases, data collection systems, information traceability and freely accessible public platforms.
- **Insufficient technological infrastructure:** Particularly regarding database interoperability, information traceability and accessible public platforms. Although the Ministry of the Environment has specialized units such as the Environmental Information Centre (CIAM) and technological development capabilities within the Systems and Technologies Coordination Unit, human and technical capacities need to be strengthened across the country.
- **Limited and intermittent funding:** To date, progress has depended largely on international cooperation projects, such as the UNDP ARG 20/G27 Project, which does not guarantee long-term sustainability.
- **Limited involvement of the industrial sector and other key stakeholders:** given the lack of formal obligations and the need for greater awareness of the system's benefits.

g. Enabling factors and opportunities

Despite the challenges, Argentina possesses several favorable conditions for moving towards an effective PRTR. Key enabling factors include:

- **A robust legal framework**, reinforced by national regulations and the Escazú Agreement.
- **Institutional technical capacities** within key bodies such as the Ministry of Environment and Sustainable Development, ACUMAR and CIAM, which can be progressively strengthened and scaled up with adequate resources and training.
- **An ongoing international cooperation project**, which is generating capacities, technical outputs and infrastructure**.**

- **The prioritization of the PRTR** (ECLAC and Government of Argentina, 2023) , National Plan for the Implementation of the Escazú Agreement (Action A.6), which provides additional political backing and a clear framework for action to advance the development of the system.
- **Opportunities for regional and international cooperation**: with benefits in terms of the exchange of good practices, the development of common methodologies and capacity building.

Together, these elements enable the development of a phased strategy, with realistic targets, multi-sectoral participation and sustained political and financial support.

iii. Progress, challenges and opportunities in Brazil

Brazil has made progress on the preliminary design of a PRTR, although the system has not yet been implemented. The actions taken to date relate to the initial stages of planning, feasibility studies and regulatory analyses, some of which are based on previous consultancy work and on a regulatory proposal that remains under discussion.

One of the most significant developments is the drafting of a revised proposal for a resolution by the National Environment Council (CONAMA), supported by a Regulatory Impact Analysis (RIA). This regulatory process has not yet been formally approved.

Among the motivations driving this initiative are compliance with international commitments, the strengthening of evidence-based environmental management, the objectives of the National Environmental Policy (Law 6.938/1981) and the growing public demand for access to environmental information recognized in Law 10.650/2003. The RIA identified the lack of sufficient data to support more effective environmental management and oversight as a critical gap.

Although the legislation is still at the drafting stage, the regulatory proposal suggests a gradual implementation of the PRTR, projected to take place over a period of more than five years following its approval. The design envisages a mandatory reporting system, coordinated with existing mechanisms, particularly the reporting of potentially polluting activities (CTF/APP) by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA).

a. Legal foundations and international commitments

The design of the PRTR is based on two key instruments: the National Environmental Policy Act (Law 6,938 of 1981), which defines the general principles of environmental management in Brazil, and the Law on Access to Environmental Information (Law 10,650/2003), which guarantees citizens' right of access to environmental information. Although Brazil is not a member of the OECD, the country has progressively adopted several of its standards, including the Recommendation on the Integrity of Public Information (2024), as well as guidelines on open government, regulatory policy and open data. This alignment strengthens the institutional foundation for the future PRTR and reinforces the national commitment to transparency and evidence-based environmental management.

The draft regulation under discussion forms part of a revised CONAMA resolution, aimed at establishing the legal basis for the implementation of the system.

b. Interest and commitment of key stakeholders

The initiative is being driven by the Ministry of the Environment (MMA) in response to a series of the country's strategic needs, such as improving the availability of and access to reliable environmental data, strengthening evidence-based management, and fulfilling national and international commitments regarding pollution control.

The process has been preceded by feasibility studies and is currently in the phase of developing the legal and regulatory framework. The proposal envisages a shared governance model, assigning IBAMA essential technical functions related to the operation of the system, data collection and validation.

The creation of the PRTR responds to the objective of having standardized, centralised and publicly accessible information that will strengthen transparency, improve public participation and guide more effective environmental policies.

c. Technical capacities, infrastructure and available resources

Brazil has a significant institutional and technical foundation to support the development of the PRTR. Of particular note are the CTF/APP system and the Report on Potentially Polluting and Resource-Using Activities (RAPP), both operated by IBAMA, which already collect relevant environmental information and have established digital platforms.

The proposal envisages a one-stop-shop approach, integrating the PRTR electronic form into the RAPP system. This would optimize processes, reduce duplication and facilitate compliance by facilities or emitters. However, it will be necessary to strengthen the technological infrastructure to ensure interoperability between federal and state systems, as well as to expand institutional capacities, particularly in data validation, analysis and dissemination.

d. Culture of transparency and access to information

Brazil has a robust regulatory framework regarding access to information, particularly through Law No. 12,527 of 2011 (Access to Information Act). The country has signed the Escazú Agreement, although it has not yet ratified it.

Digital platforms such as IBAMA's Public Consultation portal and the National Environmental Information System (SINIMA) facilitate access to environmental data.

The PRTR proposal envisages the creation of a public portal administered by the MMA, with search tools by substance, facility, sector, location and year. This portal would include visualization and download tools, as well as a public API.

e. International support and regional cooperation

Currently, Brazil has no specific international initiatives linked to the PRTR. However, it has expressed interest in strengthening its participation in regional and global initiatives related to chemicals management and environmental transparency.

Opportunities have been identified for the exchange of experiences with countries such as Mexico and Chile, the joint development of methodologies and regional platforms, and the harmonization of lists of

substances and reporting criteria. Furthermore, the country recognizes the value of international support in areas such as funding, technical assistance, training and system evaluation.

f. Challenges

Brazil faces a number of significant challenges in advancing the effective implementation of the PRTR. Among the main challenges are:

- **Budgetary constraints and a shortage of specialized human resources, which** are necessary for technological development, training and the efficient operation of the PRTR.
- **Sectoral resistance,** particularly due to concerns about costs, confidentiality and potential sanctions.
- **The need to strengthen data validation and quality** through standardized methodologies and robust control mechanisms.
- **Challenges regarding inter-institutional coordination** between federal and state levels
- **Technological limitations** in ensuring interoperability between systems.
- **Gaps in awareness and access to information** may hinder public participation.

g. Enabling factors and opportunities.

The preliminary design of the PRTR incorporates a phased implementation strategy that represents a key opportunity. Starting with priority sectors (chemical, metallurgical, pulp and paper, oil and gas, and mining), and with an initial set of around 100 prioritized substances, allows for learning and the strengthening of institutional and technical capacities. The possibility of periodically reviewing this list of substances provides flexibility to adapt to new environmental and technological priorities, promoting the evolution of the system and its relevance to the various stakeholders.

The integration of the PRTR with existing environmental information systems in the country—such as MONITORAR, SNIRH, SINIR and SISLIMA—creates a favourable environment for interoperability and efficiency, facilitating the consolidation of environmental data and promoting a comprehensive view of pollution and its sources. The development of unique identifiers for facilities and substances, as well as integrated portals, are enabling tools that can optimize the management, analysis and access to information.

Technical capacity-building is envisaged through training programmes for public agencies, businesses – including SMEs – and civil society, as well as the development of sector-specific technical materials and the creation of support mechanisms, such as helpdesks and regional centers of excellence.

These enabling factors, together with institutional commitment and the availability of basic technological infrastructure, form a conducive platform for advancing the consolidation of the PRTR in Brazil, with the potential to become a regional benchmark for transparency and environmental management.

iv. Progress, challenges and opportunities in Costa Rica

Costa Rica is currently in **the process** of designing its Pollutant Release and Transfer Register (PRTR), which is scheduled to be launched in 2026. The system will aim to collect, manage and report information on emissions and transfers of pollutants from point sources, specifically into the air, water and soil; it will not, for the time being, cover diffuse sources or waste transfers. Its regulatory basis is the *Regulation on the Pollutant Release and Transfer Register* (Executive Decree No. 43272-S-MINAE, published in 2022), which sets out the system's administrative, technical and operational guidelines. This initiative forms part of national efforts to strengthen environmental policy, increase transparency in pollutant management and promote more sustainable production processes. At the international level, Costa Rica has ratified key conventions such as the Basel, Stockholm, Rotterdam and Minamata Conventions, reinforcing its commitment to responsible environmental management.

a. Legal foundations and international commitments

Costa Rica has a robust environmental legal framework, led by the Organic Law on the Environment (Law No. 7554 of 1998), complemented by specific policies and regulations, including the Law on Integrated Waste Management. Executive Decree No. 43058-S of 2022 formally establishes the PRTR as a publicly accessible information system designed to collect, systematize and disseminate data on emissions, waste and the transfer of pollutants.

Article 4 of the regulations designates the Ministry of Health as the competent authority and governing body of the National Technical Coordination Committee. This committee is responsible for the direct implementation of the laws, regulations and legal instruments underpinning the reports to be submitted by natural or legal persons, whether public or private, from which the information to feed the PRTR will be obtained. The participating institutions include the Ministry of Agriculture and Livestock (MAG), the Ministry of Public Works and Transport (MOPT), the Ministry of Health (MS) itself, and the Ministry of Environment and Energy (MINAE), in accordance with their respective sectoral responsibilities.

This national regulatory framework is complemented by the international commitments undertaken by Costa Rica in the environmental field, including the Basel, Stockholm, Rotterdam and Minamata Conventions, as well as its active participation in regional and global cooperation initiatives such as the Climate and Clean Air Coalition (CCAC), the Central American Commission on Environment and Development (CCAD) and the Open Government Partnership (OGP), reflecting its commitment to regional and multilateral cooperation on environmental issues. Furthermore, upon acceding to the Organization for Economic Co-operation and Development (OECD) (Law No. 9981 of 2021), Costa Rica accepted the Council's Recommendation on the establishment and application of EPRs[10] , thereby strengthening the foundation of this process.

b. Interest and commitment of key stakeholders

Interest in advancing the implementation of an PRTR has been driven primarily by the public sector, within the framework of the OECD accession process and the explicit acceptance of the organization's recommendations on environmental transparency and pollutant registers.

[10] OECD/LEGAL/0440

c. Technical capabilities, infrastructure and available resources

Costa Rica has technical capabilities and platforms that can be utilized for the development of the PRTR. These include the National Environmental Information System (SINIA) and the SIGREP Platform for hazardous waste management, as well as the national emissions inventories. These tools provide a useful basis for integrating and systematizing priority environmental information.

The country also has relevant technological infrastructure—servers, databases and monitoring systems—which can provide technical support. However, it will be necessary to strengthen the pool of specialized staff and make progress on the integration and interoperability of existing systems to ensure the robust operation of the future PRTR.

d. Culture of transparency and access to information

Costa Rica has institutionalized the right of access to environmental information. Article 30 of the Constitution guarantees free access to information of public interest. This principle was reinforced with the enactment of Law No. 10554 of 2024, the Framework Law on Access to Public Information, which establishes fundamental principles such as transparency, accountability and maximum disclosure, alongside procedures for requesting information and review mechanisms.

Although Costa Rica has platforms such as SINIA for the dissemination of environmental data, public access to specific information on emissions and the transfer of pollutants is not yet fully guaranteed. In this context, the implementation of a PRTR represents a key opportunity to expand access to critical environmental information, strengthen transparency and promote public participation in decision-making.

e. International support and regional cooperation

Costa Rica receives technical and financial support on environmental matters from various international organizations, including the Global Environment Facility (GEF) and German Cooperation. The country is currently participating in United Nations projects aimed at pollution prevention. However, it does not yet have specific support for the design and implementation of a PRTR, which represents an opportunity to channel future technical collaborations in this strategic area.

f. Challenges

The process of designing and implementing the PRTR in Costa Rica faces a series of challenges that require coordinated and sustained attention. The main challenges are identified below:

- **Funding for the expansion of the system:** Whilst initial funding has been secured to develop the platform and a module for reporting emissions from boilers and furnaces, additional resources are required to incorporate other emission sources and sectors.
- **Technical and institutional capacities:** It is necessary to strengthen the PRTR's technical capacities, recruit specialist staff and consolidate technological infrastructure to ensure the system's development, implementation and long-term sustainability.
- **Difficulties in data collection and compliance**: Limitations have been identified in the timely and complete submission of reports by emission sources, linked to training gaps, technical deficiencies in reporting systems, operational or resource constraints, and the lack of clear incentives to meet

established deadlines. It is essential to address these various causes to ensure the systematic collection of quality data, improving the traceability and usefulness of the information obtained.

- **Development of integrated systems and continuous training**: The consolidation of the PRTR requires interoperable and flexible platforms, as well as ongoing capacity-building programmes aimed at public institutions and reporting entities.

g. Enabling factors and opportunities

Costa Rica possesses favorable institutional, regulatory and cultural conditions to advance the progressive implementation of a PRTR. Its accession to the OECD and acceptance of the OECD Council Recommendation on the Establishment and Operation of Pollutant Release and Transfer Registers (PRTRs) reinforces its commitment to advancing the implementation of a national PRTR system aligned with international standards.

Currently, the design and implementation of the PRTR is progressing with an initial module aimed at capturing emissions data from boilers and furnaces, an initial step in the construction of a broader system that will progressively integrate other emission sources and environmental matrices.

This progress is part of a well-established culture of access to public information and builds on existing platforms such as the National Environmental Information System and the SIGREP Platform, which provide the technical foundations for data systematization. These systems constitute a valuable basis for integrating and systematizing the environmental information required by a PRTR.

Furthermore, Costa Rica has received international technical and financial support and participates in international coalitions and commissions in the environmental field, which has enabled it to access methodological tools, share experiences and strengthen institutional capacities.

Technical exchange with other countries that already have operational PRTR systems represents an opportunity to adapt good practices and consolidate technological solutions suited to the national context.

Taken together, these elements create a conducive environment for moving towards a robust, transparent PRTR aligned with the country's environmental priorities.

v. Progress, challenges and opportunities in Uruguay

Uruguay has shown a growing interest in developing a PRTR, recognizing its usefulness as a tool for environmental management and access to public information. Although the country does not yet have a system in place, significant progress has been made at institutional and technical levels, laying the foundations for its future development. In particular, **work has begun on the conceptual design of the PRTR**, including the preliminary identification of priority substances and chemicals based on their release, transfer or environmental and health impact. The system is projected to become operational by the end of 2026. To this end, the conceptual design still needs to be finalized, followed by progress on the development and implementation of the corresponding information system.

Furthermore, Uruguay has a robust regulatory framework in the environmental field and is a party to relevant international commitments, including the Escazú Agreement and the main multilateral conventions on chemicals and waste.

The main progress, challenges and opportunities identified are set out below:

a. Legal foundations and international commitments

The country has a well-established environmental legal framework, centred on General Law No. 17,283 of 2000 on Environmental Protection (LGPA), which incorporates principles such as prevention, precaution, liability and the proper management of environmental information. Uruguay has ratified key international agreements on chemicals, such as the Basel, Stockholm, Rotterdam and Minamata Conventions, as well as the Escazú Agreement. The latter, approved by Law No. 19,773 of 2019, reinforces obligations regarding access to environmental information, public participation and access to justice. Furthermore, Uruguay participates in the Open Government Partnership (OGP).

Although these instruments provide a general legal framework, Uruguay has not yet developed specific regulations governing the design and implementation of a PRTR. Various environmental management instruments currently exist—environmental permits, waste management plans, environmental impact assessments—but there is no unified, mandatory and public system for reporting emissions and transfers.

b. Interest and commitment of key stakeholders

The government has expressed an interest in moving towards the implementation of an PRTR, an interest reflected in its inclusion as a priority action in the national roadmap for the implementation of the Escazú Agreement (ECLAC and Government of the Eastern Republic of Uruguay, 2024) . There are also preliminary contributions from academic circles. However, no formal coordination mechanisms have yet been established with the industrial sector for the exchange of information, nor are there any voluntary emissions reporting schemes. Making progress on this coordination will be a key step towards strengthening the information base of the future system.

c. Technical capabilities, infrastructure and available resources

Uruguay has a technological and institutional foundation that can facilitate the implementation of a PRTR. There are applications, inventories and environmental monitoring platforms, as well as installed capacity for data processing, IT systems and servers. Also noteworthy are public bodies with experience in the collection, storage and analysis of environmental data, and technical staff trained in IT systems.

A key element is the **National Environmental Observatory**, established by **Law No. 19,147 of 2013**, whose function is to collect, systematize and disseminate environmental information from various public institutions. This platform constitutes an important foundation for progress towards integrated environmental information systems. Uruguay also has an Environmental Information System, established under Law No. 17,283 on Environmental Protection.

However, the implementation of a national PRTR will require strengthening interoperability between existing platforms, establishing standardized protocols for the collection, validation and publication of data, and allocating specific human and financial resources for its operation, maintenance and updating.

d. Culture of transparency and access to information

Uruguay has made progress in institutionalizing public access to environmental information. The LGPA and the Act establishing the National Environmental Observatory set out obligations to generate and disseminate information on the state of the environment, including aspects related to emissions and waste.

The Roadmap for the implementation of the Escazú Agreement (ECLAC and Government of the Eastern Republic of Uruguay, 2024) , which incorporates measures aimed at improving public access to environmental data, thereby creating favorable conditions for the future incorporation of information produced by an PRTR.

e. International support and regional cooperation

Uruguay actively participates in multilateral environmental agreements, particularly those relating to chemicals, which has enabled it to receive technical support on specific issues. However, there are currently no ongoing international programmes or initiatives specifically aimed at the design or implementation of a national chemical inventory system, although work is being carried out within the framework of a GEF project to update inventories for the implementation of the Stockholm Convention. This opens up opportunities for future collaboration on technical assistance, funding, exchange of experiences and methodological development.

f. Challenges

Among the main challenges facing Uruguay in implementing a PRTR are:

- **Lack of funding** to develop the system and operate it on a sustainable basis.
- Uneven and sometimes insufficient **technical and operational capacities**, particularly in terms of specialized human resources
- **Resistance or concern among some key stakeholders** regarding the administrative burden or the publication of information.
- **Absence of a specific regulatory framework for the PRTR**, which limits the mandatory nature, standardization and quality of reporting.
- **The broad scope of the PRTR**, which requires a strategic definition of its realistic initial scope to allow for progressive, phased implementation.

g. Enabling factors and opportunities

Uruguay has a number of factors that favor the progressive development of an PRTR. The prior development of various environmental management tools and information systems provides a solid foundation for the design of an PRTR. Much of the relevant information is already housed on existing platforms, although it was not originally designed for this purpose. This situation offers an opportunity to coordinate and optimize the use of already available data, minimizing costs and implementation times. Furthermore, the recognition of the PRTR as a priority action within the roadmap for the implementation of the Escazú Agreement provides political and institutional support to advance this process. The existence of technical capabilities within public institutions, together with the possibility of accessing specialized international cooperation, allows for a phased development approach, based on lessons learnt, interoperability strategies and the gradual building of capacity. These conditions provide a favorable basis for moving towards a national PRTR system that contributes to strengthening transparency, environmental management and public access to relevant information.

vi. Progress, challenges and opportunities in the remaining countries in the initiation phase

The analysis of the countries included in this sub-chapter is based on publicly available information, given the diversity of sources and reporting methods available in the region. Consequently, the level of detail is significantly lower than in the previous cases, and the findings should be interpreted as indicative of the state of progress, without claiming to be exhaustive.

a. Progress, challenges and opportunities in Belize

According to publicly available information, Belize has an explicit legal mandate for the establishment of a PRTR system and has participated in regional initiatives aimed at its design, although the system has not yet been implemented. The main progress and opportunities identified are set out below:

Legal basis and international commitments

The Environmental Protection Act (Chapter 328, No. 22 of 1992, amended in 2020) is the primary legislative instrument underpinning the mandate of an PRTR scheme in Belize. Section 4(i) stipulates that the Department of the Environment shall maintain a register of all wastes, discharges, emissions, deposits or other sources of emission or substances that pose a danger or potential danger to the environment. This provision provides a legal basis directly linked to the rationale of a PRTR, as it provides for a centralized inventory of emission sources under the responsibility of the competent environmental authority. Furthermore, Belize is a party to the Basel, Stockholm and Rotterdam Conventions, which reinforces its obligations regarding the management and reporting of hazardous chemicals.

Interest and commitment of key stakeholders

As part of the collaboration between the Central American Commission on Environment and Development (CCAD) and the Spanish Ministry of the Environment, with technical support from UNITAR, Belize participated in a regional project to design a PRTR, which included the holding of technical meetings in the country in September 2011. This process formed part of a broader regional agenda: the Central American Council of Environment Ministers decided in June 2010 that the implementation of a regional PRTR for Central America and the Dominican Republic was a priority on the regional environmental agenda, entrusting the CCAD with supporting the countries in its design and implementation. However, no formal coordination mechanisms with the industrial sector or active voluntary emissions reporting programmes have been identified to date.

Technical capacities, infrastructure and available resources

The Department of the Environment (DOE) has legal powers to register sources of pollution and has experience in environmental licensing and in coordinating activities related to waste disposal. However, the institutional capacity to develop a PRTR has been limited by the lack of a unit specializing in chemicals management. In this context, a project supported by UNEP has made progress in establishing a Chemicals Management Unit within the DOE, with the aim of strengthening national capacity for the management of chemicals and waste and the implementation of the Basel, Rotterdam and Stockholm Conventions, which may provide a relevant institutional foundation for the future PRTR.

Culture of transparency and access to information

The Environmental Protection Act establishes, among the functions of the Department of the Environment, the obligation to provide information and education to the public on environmental protection, and to supply decision-makers with the information necessary to achieve long-term sustainable development. This mandate for active dissemination is consistent with the principles guiding a PRTR as a tool for accessing environmental information. However, no specific digital platforms for public access to data on pollutant emissions and transfers have been identified.

International support and regional cooperation

The process of designing the PRTR in Belize has been linked to Central American regional cooperation initiatives, in particular the project coordinated by the CCAD with support from UNITAR and funding from the Spanish Ministry of the Environment. At the global level, collaboration with UNEP on chemicals management has enabled progress in the institutional strengthening of the DOE. These experiences provide a foundation upon which to channel future collaborations specifically aimed at the design and implementation of the PRTR.

Challenges

The main challenges to progress towards the implementation of the PRTR include:

- The absence of specific regulations governing the design, operation and mandatory nature of the system beyond the general mandate contained in Article 4(i) of the Environmental Protection Act.
- Limitations in technical, institutional and financial capacity that have prevented the legal mandate from being translated into an operational system.
- The lack of characterization of the range of emission sources, priority substances and critical sectors at the national level.
- The need to strengthen mechanisms for inter-institutional coordination and the involvement of the industrial sector.

Enabling factors and opportunities

Belize has an explicit legal mandate granting the Department of the Environment the responsibility to maintain an emissions register, which provides a legal basis upon which to proceed without the need for new enabling legislation. The experience gained within the framework of the CCAD regional project and the progress made in strengthening the DOE institutionally through UNEP support constitute concrete starting points. Active participation in multilateral chemical conventions opens up channels for technical and financial cooperation that could be mobilized to move progressively towards a functional system.

b. Progress, challenges and opportunities in Peru

According to publicly available information, Peru has made progress in the design and institutionalization of its PRTR. Supreme Decree No. 018-2021-MINAM, published on 24 July 2021, formally establishes the system as an environmental information management mechanism linked to the National Environmental Information and Management System (SINIA). Its adoption is the result of more than ten years of joint work between the Ministry of the Environment (MINAM) and representatives from the public, private and

academic sectors, as well as non-governmental organizations. The main progress, challenges and opportunities identified are set out below:

Legal foundations and international commitments

The General Environment Act (No. 28611) and the Framework Act on the National Environmental Management System (No. 28245) establish the right of access to environmental information and the duty of public bodies to provide information, thereby providing the legal basis for the system. At the international level, the Stockholm Convention, the Minamata Convention, the Free Trade Agreement with the United States and the process of accession to the OECD have been the main drivers for its creation. The Environmental Performance Review of Peru prepared by the OECD in 2016 explicitly included among its recommendations the implementation of the PRTR as a tool for transparency and environmental information.

Interest and commitment of key stakeholders

MINAM is the authority responsible for administering the system and publishing the data in open formats on the National Open Data Portal. The Supreme Decree provides for the periodic preparation of a consolidated report on emissions and transfers for public dissemination and establishes that information from the PRTR may also contribute to greenhouse gas measurements under the Framework Law on Climate Change, thereby broadening its institutional relevance.

Technical capabilities, infrastructure and available resources

The integration of the PRTR into SINIA is a key enabling factor, as it allows for the use of an already established technological and institutional platform. The system provides for a dedicated digital platform for the annual reporting of reporting entities, which must report, at a minimum, on their emissions to air, water and soil; their waste transfers; and the mitigation measures implemented. The scope of application covers activities subject to the list of the National Environmental Impact Assessment System (SEIA), with the substances listed in Annex No. 2 of the Supreme Decree.

Culture of transparency and access to information

The system is of an informative nature and does not confer rights. The Supreme Decree establishes the obligation of MINAM to incorporate public information from the PRTR into the SINIA and to promote environmental education and communication initiatives to facilitate its use by citizens as a tool for informed participation.

International support and regional cooperation

The PRTR design process has been closely linked to the international agenda, in particular to the OECD's recommendations and the commitments arising from the Stockholm and Minamata Conventions. There are also opportunities for coordination with other countries in the region that are making progress in designing PRTRs, within the framework of the Escazú Agreement and other regional technical cooperation initiatives.

Challenges
The main challenges to achieving full operationality of the PRTR include:

- The pending operational guidelines, the publication of which via a Ministerial Resolution triggers the start of the voluntary reporting period, and whose status has not been verifiable from publicly available sources.
- The need for technological development to build and integrate the PRTR's specific digital platform with SINIA.
- The requirements for cross-sectoral coordination, given that the system involves multiple productive and extractive sectors.
- The need for training for both reporting entities and the public to ensure the effective use of the system.

Enabling factors and opportunities
Supreme Decree No. 018-2021-MINAM provides a solid regulatory foundation, underpinned by a lengthy technical and participatory process. Integration with SINIA reduces start-up costs, and the system's phased design—with a three-year voluntary phase prior to full mandatory implementation—offers reasonable scope for capacity building and fostering trust among reporting stakeholders. The framework of international commitments, in particular with the OECD and the Escazú Agreement, maintains sustained incentives to advance implementation and opens up concrete channels for technical and financial cooperation. However, it has not been possible to verify, from publicly available sources, the current state of implementation or the degree of operationality achieved since the approval of the Supreme Decree.

c. Progress and opportunities in Honduras

According to publicly available information, Honduras has made progress in implementing its PRTR, going beyond the regulatory framework to include the development of an operational digital platform. The system was formally established by Ministerial Agreement No. 1070-2014, published in the Official Gazette on 15 April 2015, and its design origins date back to regional Central American initiatives from the previous decade. The main progress, challenges and opportunities identified from publicly available sources are presented below.

Legal foundations and international commitments
Ministerial Agreement No. 1070-2014 is based on the Constitution of the Republic, which establishes the State's obligation to protect health and preserve a suitable environment, and on the General Environment Act (Decree No. 104-93), which stipulates the State's responsibility to adopt the necessary measures to prevent or remedy environmental pollution (Article 7). The Regulation defines the PRTR as an environmental management tool that supports decision-making and policy formulation in the field of environmental prevention and control, facilitating public access to information on potentially harmful pollutants. Its guiding principles are prevention, governance and transparency, shared responsibility, public participation and gradualism.
At the international level, the Regulation expressly reflects the State's commitment to the Basel, Stockholm and Rotterdam Conventions. Furthermore, according to publicly available information, the PRTR of the Republic of Honduras is designed to coordinate actions and report to the regional PRTR of Central America

and the Dominican Republic, developed as part of the commitments arising from the Central America–United States–Dominican Republic Free Trade Agreement (CAFTA-DR).

Interest and commitment of key stakeholders

According to publicly available information, the system is administered by the Secretariat of Natural Resources and the Environment (SERNA) through the Centre for the Study and Control of Pollutants (CESCCO), with the support of the CCAD and the Spanish Ministry of the Environment, within the framework of the project 'Design of the Key Characteristics of a PRTR and implementation of a first pilot test of the PRTR in Honduras'. At the institutional level, participants include the Directorate of Environmental Assessment and Control (DECA), the National Environmental Information System (SINIA) and the Management Planning and Evaluation Unit (UPEG), as well as representatives from industry, civil society, non-governmental organizations, academia and the general public.

Technical capacities, infrastructure and available resources

According to publicly available information, Honduras has an operational digital platform for the PRTR. In March 2025, CESCCO made a new online version of the system available, accessible via the MiAmbiente+ institutional portal. However, it has not been possible to verify from publicly available sources the number of establishments actively reporting or the system's current coverage.

Culture of transparency and access to information

The principles of good governance and transparency, and of public participation, are expressly enshrined in the Regulations, stipulating that the State must guarantee access to information on pollutant emissions and transfers and provide opportunities for participation and consultation. The existence of a public online platform constitutes, according to available public information, a concrete step towards the realization of these principles. However, it has not been possible to confirm from public sources the scope or the updating of the data available on the platform.

International support and regional cooperation

The design and implementation of Honduras's PRTR has received sustained international technical and financial support. The CCAD and the Spanish Ministry of the Environment funded the pilot design and implementation project, with technical assistance from UNITAR.

Challenges

Based on publicly available information, the following challenges have been identified in consolidating Honduras's PRTR:

- It has not been possible to verify the effective scope of the system—including the number of reporting establishments, the substances covered, and the frequency of data updates—using publicly available sources.
- The financial and institutional sustainability of the system beyond the cooperation projects that have supported it to date.
- Strengthening of intersectoral coordination mechanisms to ensure systematic coverage of the sectors and activities subject to reporting.

- The need for ongoing training for both reporting entities and the public to maximize the use of the system as a tool for informed participation.

Enabling factors and opportunities

Honduras presents a combination of enabling factors that is noteworthy in the regional context: it has specific approved regulations, a responsible technical institution (CESCCO) and an operational digital platform accessible to the public. These elements form a solid foundation for moving towards the consolidation and expansion of the system, in particular through the broadening of sectoral coverage, the strengthening of data quality and verification, and the deepening of citizen participation mechanisms.

d. Progress and opportunities in Jamaica

Initial conditions and opportunities in Jamaica

According to publicly available information, Jamaica has a pollutant release and transfer register formally launched in 2017, linked to the environmental licensing and permitting framework administered by the National Environment and Planning Agency (NEPA). It has not been possible to verify the current operational status of the system or its level of coverage from publicly available sources. The main elements identified are presented below:

Regulatory framework

Jamaica's PRTR is underpinned by the country's existing regulatory framework for environmental permits and licenses, administered by NEPA. The Wastewater and Sludge Regulations of 2013 include specific provisions relating to a Pollutant Release and Transfer Register, linked to the licensing system for the discharge of industrial effluents and wastewater, which requires regulated facilities to report pollutants. The Air Quality Regulations of 2006, for their part, establish the licensing system for air emission sources and the associated monitoring and reporting requirements. The pollutant registry system draws precisely on the information generated by compliance with these licensing and permitting instruments.

Interest and commitment of key stakeholders

According to public information available on the NEPA website, the PRTR was launched in June 2017 with the aim of providing free, accessible and reliable information to the public, based on the principle of the community's right to know. The data used to populate the database comes from compliance reports relating to permits and licenses issued for wastewater, air emissions and the management and storage of hazardous materials. The system was also promoted within the framework of the Green Business Jamaica (GBJ) Certification Programme, also launched in 2017, which voluntarily promotes the implementation of Environmental Management Systems and the reporting of pollutant emissions and transfers within the private sector. The institution responsible for administering the system is NEPA, through its specialist units for pollution monitoring and assessment, pollution prevention and air quality management.

Technical capabilities, infrastructure and available resources

NEPA has a specialized institutional structure that provides a technical basis for the operation of the system. The existence of an operational framework for environmental licenses and permits, which generates annual compliance reports from regulated facilities, constitutes the primary source of data for the PRTR, thereby reducing start-up costs by utilizing information already required under current regulations. It has not been

possible to verify from publicly available sources the stage of development of the system's digital platform, the number of facilities actively reporting, or the frequency of data updates.

Culture of transparency and access to information

The conceptual design of Jamaica's PRTR explicitly incorporates the principle of the public's right to know as the basis for its focus on public access. The information is intended to be freely available, which is consistent with the principles of maximum disclosure. It has not been possible to verify from publicly available sources whether an operational digital platform for public consultation exists, nor the actual extent of public access to the system's data.

Challenges

Among the main challenges identified from the available public information are:

- The gap between the system's launch in 2017 and its current operational status, which has not been possible to verify from publicly available sources.
- The system's reliance on compliance reports regarding permits and licenses, which limits its coverage to facilities holding environmental licenses, without necessarily covering the entire universe of emission sources.
- The verifiable absence of a publicly accessible digital platform that allows for the systematic and up-to-date consultation of data.
- The need to expand coverage beyond water and air matrices towards an integrated system that includes emissions to soil and transfers of hazardous waste.

Enabling factors and opportunities

Jamaica has concrete enabling factors to advance the consolidation of its PRTR. The existence of a formally launched system, linked to an operational environmental licensing and permitting framework and grounded in the principle of the right to know, provides an institutional and conceptual foundation upon which to build progressively. The NEPA, with its experience in environmental licensing, air and water quality monitoring, and the promotion of environmental management systems, is an institution with the necessary expertise to administer and expand the system. International cooperation on chemicals management and the country's framework of multilateral environmental commitments represent concrete channels for mobilizing technical and financial assistance aimed at operationalizing and strengthening the PRTR.

4) PRTRs with an established regulatory framework but pending implementation

a. Initial conditions and opportunities in Saint Kitts and Nevis

St Kitts and Nevis took a significant regulatory step forward with the adoption of the National Conservation and Environmental Management Act (NCEMA, Act No. 26 of 2025), which contains a specific provision directly linked to the logic of a PRTR. The system has not yet been implemented, but the new legislation creates a more robust legal framework for moving in that direction. The main elements identified are set out below:

i. Regulatory framework

The NCEMA was passed by the National Assembly on 31 October 2025 and assented to by the Governor-General on 7 November 2025, replacing the National Conservation and Environmental Protection Act of 1987, which had remained unchanged for 38 years. Formal entry into force is pending the date to be set by the Minister by Order published in the Official Gazette.

Section 87 provides that the Department of the Environment shall establish, within the National Environmental Information System (NEIS), a register of pollutant sources containing data identifying the source, quality and conditions or concentrations relevant to the identification of a pollutant. This register shall be open to public inspection during normal business hours, subject to payment of the prescribed search fee, if any.

The register forms part of the NEIS, the creation and maintenance of which are the responsibility of the Director of the Department of the Environment in accordance with section 19 of the NCEMA. This system annually integrates environmental reports, monitoring data, permits and certificates, approved policies and plans, as well as the information records established under the Act.

The NCEMA is supplemented by the Freedom of Information Act (2024), which recognizes the right of individuals to request public information, thereby reinforcing the transparency framework necessary for the operation of an EPR scheme.

ii. International commitments

A key feature of the NCEMA is that its Second Schedule gives the force of law in Saint Kitts and Nevis to fourteen international conventions, including the Escazú Agreement, the Stockholm Convention on Persistent Organic Pollutants, the Rotterdam Convention, the Basel Convention, the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity. The explicit incorporation of the Escazú Agreement into domestic law reinforces the country's obligations regarding access to environmental information, public participation and access to justice, and provides an additional foundation for moving towards an EIAF aligned with the principles of maximum disclosure and progressive accessibility of information. Furthermore, the country is a member of the Open Government Partnership (OGP).

iii. Available technical capacities and infrastructure

Although technological and funding constraints have been identified, Saint Kitts and Nevis possesses initial capabilities that could serve as a basis for a future PRTR. The Department of Environment has servers that could be used to host system data, and there are institutions such as the Bureau of Standards and the Department of Statistics with experience in managing environmental and statistical information. The effective implementation of the register provided for in section 87 of the NCEMA will require progress in the development of a publicly accessible digital platform, the definition of data collection and validation protocols, and the allocation of specific human and financial resources.

iv. Government interest and political will

The adoption of the NCEMA reflects a concrete political decision. However, according to publicly available information, there are as yet no formal agreements with the industrial sector nor established voluntary

monitoring programmes, which represents a gap that needs to be addressed to ensure the information base required by the future system.

v. Challenges

Among the main challenges identified are a lack of funding, insufficient technological infrastructure, a shortage of reliable data, inconsistent reporting methods and limited capacity for verifying information, as well as challenges in institutional coordination. Added to this is the pending formal entry into force of the NCEMA and the development of the necessary regulations to operationalize the register provided for in its Section 87. These issues must be addressed through capacity-building programmes, technological upgrades and international cooperation.

vi. Enabling factors and opportunities

Saint Kitts and Nevis has concrete enabling factors: a specific regulatory framework in Section 87 of the NCEMA, the explicit political backing expressed in the approval of the new legislation, the incorporation with the force of law of the Escazú Agreement and other key environmental conventions, available institutional technical capacities, and active participation in international mechanisms. The consolidation of inter-institutional collaboration and access to international funding and technical assistance, particularly within the framework of the Escazú Agreement, could facilitate the implementation of a progressive, accessible PRTR system adapted to the national context, building on the existing legal mandate as a starting point.

b. Initial conditions and opportunities in the Bahamas

According to publicly available information, the Bahamas has a legal provision enabling the establishment of an Environmental Register with components directly linked to the logic of a PRTR. The law containing this provision is in force, and the institution responsible for its implementation is operational. However, it has not been possible to confirm from available public sources the effective operation of the pollution source register or the degree of progress towards a systematic reporting system for pollutant emissions and transfers. The main elements identified are presented below:

i. Regulatory framework

The Environmental Planning and Protection Act of 2019 (No. 40 of 2019) was enacted on 19 December 2019 and came into force on 20 January 2020. Section 38 establishes an Environmental Register to be maintained by the Director of the Department of Environmental Planning and Protection (DEPP), the contents of which include, amongst other elements, information relating to sources of pollution. In particular, the provision stipulates that the register shall contain data identifying the quantity, conditions or concentrations relevant to the identification of each pollutant in relation to water, air and noise pollution. This mandate constitutes the regulatory basis most directly linked to the logic of a PRTR in the Bahamian legal system, as it provides for an institutional inventory of emission sources with publicly accessible information.

The Act also sets out relevant supplementary functions: section 39 (information gathering) provides for the collection of environmental information through voluntary surveys and questionnaires; Section 29 (record keeping and monitoring requirements) sets out record-keeping and monitoring requirements for those who release pollutants or handle hazardous substances; and Section 42 (public information, education and

training) requires the Director to develop public information and training programmes to promote understanding of the provisions of the Act. The Act replaced the Bahamas Environment, Science and Technology Commission and established the DEPP as the country's new central environmental authority.

Progress towards an operational PRTR will require the development of specific regulations, publicly accessible digital platforms and formal reporting mechanisms for emitting sources, elements that go beyond the general mandate contained in section 38.

ii. International commitments

The Bahamas is a party to a number of international agreements promoting transparent environmental management, including the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity, the Montreal Protocol and the Basel Convention. The Act expressly states among its objectives the facilitation of compliance with obligations arising from international agreements and conventions ratified or acceded to by the Bahamas. As for the Escazú Agreement, the Bahamas ratified it by accession on 5 June 2025 — World Environment Day —, becoming the 18th State Party to the treaty, and will also host COP4 in Nassau in April 2026. This accession reinforces the country's obligations regarding access to environmental information, public participation and access to justice, and provides a further basis for moving towards an environmental information system consistent with the principles of maximum disclosure and progressive accessibility enshrined in the Agreement.

iii. Technical capacities, infrastructure and available resources

The DEPP, established by the EPPA of 2019, constitutes the central institutional platform for the country's environmental management, with responsibilities including the development and implementation of environmental policies and programmes, the management of multilateral environmental agreements, and the review of environmental impact assessments. Section 45 of the Act empowers the Director to carry out continuous or periodic environmental monitoring. These institutional capacities form a basis upon which a system for recording emissions and transfers of pollutants could be progressively built. It has not been possible to verify from publicly available sources the state of technological development of the Environmental Register provided for in section 38, nor whether it operates as a publicly accessible digital platform.

iv. Culture of transparency and access to information

The EPPA enshrines among its objectives the establishment of an effective mechanism for public participation in decision-making and the formulation of environmental policies, as well as the promotion of a better understanding of the environment among the public. Section 42 requires the Director to develop public information and training programmes to promote understanding of the provisions of the Act. The ratification of the Escazú Agreement in June 2025 reinforces these commitments by establishing binding obligations regarding access to environmental information, public participation and access to justice, and provides a framework for moving towards a system for disseminating information on pollutants consistent with the principle of maximum disclosure. The effective operation of the Environmental Register provided for in Section 38 of the EPPA as a tool for transparency will depend on the development of supplementary

regulations and investment in technological infrastructure that enables public consultation of data on sources of pollution.

v. Challenges

Based on publicly available information, the main challenges to moving towards the effective implementation of a PRTR in the Bahamas include:

- The gap between the general legal mandate contained in section 38 of the EPPA and the development of an operational system for reporting emissions and transfers of pollutants, the status of which has not been verifiable from public sources.
- The need to develop specific regulations defining concrete reporting obligations, estimation methodologies, substances and sectors covered, and data quality standards.
- The technological infrastructure requirements for hosting, processing and publicly disseminating the registry data.
- The technical and financial capacity constraints inherent to a developing island nation.

vi. Enabling factors and opportunities

The Bahamas possesses specific enabling factors: a modern, in-force environmental law establishing the mandate of the Environmental Registry; a responsible, operational institution (the DEPP) with broad powers in environmental management; and a set of international commitments that create sustained incentives to advance the generation and dissemination of information on pollutants. The ratification of the Escazú Agreement in June 2025 and the country's status as host of COP4 in Nassau represent a concrete political and institutional stimulus to advance the development of instruments for access to environmental information consistent with the treaty's principles, in particular those of maximum disclosure, accessibility and progressive availability of information. Access to international technical and financial cooperation within the framework of the Escazú Agreement and multilateral environmental conventions represents a concrete opportunity to progressively develop the necessary capacities to operationalize the Environmental Register as a tool for management and transparency.

c. Cuba's starting point and opportunities

According to publicly available information, Cuba has taken a significant regulatory step with the adoption of the Law on the Natural Resources and Environment System (Law No. 150 of 2023), which incorporates for the first time into the Cuban legal system a mechanism equivalent to a PRTR. The law is in force, although it has not been possible to verify from available public sources the status of implementation of the specific provisions relating to the register of pollutant emissions and transfers. The main elements identified are set out below:

i. Regulatory framework

The Law on the Natural Resources and Environment System (Law No. 150) came into force on 11 March 2024, having previously been published in the Official Gazette No. 87 Ordinary of 13 September 2023. Articles 75 and 76 establish the Pollutant Emissions and Transfers Control System as a digital database with information accessible to the public, which records information on emissions and transfers into the environment of potentially harmful chemicals or pollutants, identifying the nature, quantity and location of these emissions or transfers. The objectives of the system are: to have a reliable and up-to-date information base on the emission and transfer of pollutants into the air, water and soil; to simplify and systematize the collection of information and reporting requirements across different sectors; to identify the sources, sectors and geographical areas with the highest concentration of emissions; to provide information for the identification and assessment of risks to health and the environment; to identify and assess trends in emissions with the aim of promoting prevention and control efforts; and to provide information to the general public on emissions and transfers of pollutants in a manner that contributes to the exercise of the right to enjoy a healthy and balanced environment.

The law establishes the Environmental Information System under the Ministry of Science, Technology and the Environment (CITMA), which must publish a report on the state of the environment every four years and a compendium of key statistics annually, and shall establish the mechanisms and procedures for public access to the system's information.

ii. International commitments

Cuba is a party to a number of relevant multilateral environmental agreements, including the Basel, Stockholm and Rotterdam Conventions on the management of hazardous chemicals and waste, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change. The law establishes as one of its fundamental principles the contribution to the fulfilment of the international commitments, agreements, treaties and instruments to which Cuba is a party in the field of natural resources and the environment. It should be noted that Cuba is not a party to the Escazú Agreement. However, Law No. 150 itself incorporates specific provisions on access to environmental information and public participation that reflect an approach compatible with those principles.

iii. Technical capacities, infrastructure and available resources

CITMA is the governing body for environmental policy in Cuba and has an institutional network that includes the Environment Agency (AMA) and environmental research centers in each province, providing a regional basis for the eventual implementation of the Pollutant Release and Transfer Register. Among the new features of Law No. 150 are the strengthening of CITMA's role as the governing body and the refinement of environmental policy and management instruments. It has not been possible to verify from publicly available sources the degree of operational achieved in relation to the emissions and transfers registration component provided for in Articles 75 and 76, nor the existence of a publicly accessible digital platform for the system's data.

iv. Culture of transparency and access to information

The law establishes the principle of access to information as the basis for environmental protection, recognizing transparency and access to environmental information for all natural and legal persons as a guarantee of public awareness of the State's environmental actions and decisions. Central government bodies are obliged to ensure transparency and the exercise of the right of access to public information on environmental management. Environmental information is considered to be in the public domain, with the exceptions set out in the law relating to national defense and security interests, ongoing legal proceedings,

intellectual property rights or the confidentiality of commercial data. It has not been possible to verify from available public sources the stage of development of the public access mechanisms and procedures that CITMA is mandated to establish.

v. Challenges

Among the main challenges identified from the available public information are:

- The gap between the legal mandate contained in Articles 75 and 76 of Law No. 150 and the effective operation of the emissions and transfers registration system, the status of which has not been possible to verify from available public sources.

- The need to develop specific regulations defining the sectors and substances subject to reporting, estimation methodologies and information quality standards.

- The reconciliation of environmental provisions with the country's economic development practices, in a context of budgetary constraints and limited access to technology.

- Non-participation in the Escazú Agreement limits access to regional technical cooperation mechanisms directly linked to the strengthening of environmental information systems.

- The need to continue the process of institutional capacity-building at the territorial and sectoral levels, recognized by CITMA itself as one of the outstanding challenges in the implementation of the law.

vi. Enabling factors and opportunities

Cuba has relevant enabling factors to advance the implementation of the Pollutant Release and Transfer Register (PRTR) system. Law No. 150 is a modern and current piece of legislation that incorporates a legal framework equivalent to a PRTR with detailed and explicit objectives, providing a solid legal mandate. Notable new features include the strengthening of CITMA's role as the governing body, the refinement of environmental policy and management instruments, and the definition, for the first time, of the concept of environmental damage with the establishment of civil and criminal liability for causing it. The existence of a nationwide institutional network, with environmental research centers in each province, provides a potential basis for the collection and validation of data at the national level. International commitments arising from multilateral conventions on chemicals offer channels for technical cooperation to advance the methodological development of the system. The phased approach envisaged for the implementation of the law, with the progressive development of complementary regulatory, represents an opportunity to build the system in stages, adapted to available capacities and national environmental priorities.

d. Initial conditions and opportunities in Trinidad and Tobago

According to publicly available information, Trinidad and Tobago has an environmental institutional and regulatory framework with legal provisions enabling the establishment of pollutant source registers and mandating the maintenance of inventories of atmospheric pollutants and noise. It has not been possible to verify from publicly available sources the existence of a comprehensive pollutant release and transfer register system covering all environmental media. The main elements identified are set out below:

i. Regulatory framework

The Environmental Management Act (Chapter 35:05, Act No. 3 of 2000), in force since 8 March 2000, constitutes the country's main environmental management instrument. Two of its provisions are most directly linked to the logic of a PRTR. Section 26 empowers the Minister, subject to a negative resolution by Parliament, to make regulations concerning: the procedures for the registration of sources from which pollutants may be released into the environment and the characterization of such sources; and the quantity, state or concentration of pollutants or substances that may be released into the environment in general or by specific sources or categories of sources. Section 49, for its part, provides that the Environmental Management Authority (EMA) shall investigate the environment, facilities and vehicles to determine the extent of air and noise pollution and significant sources of pollutants, and shall maintain a register of air and noise pollutants containing data identifying the relevant quantities, conditions or concentrations.

It should be noted that Articles 26 and 49 authorize and mandate the registration of pollution sources, but the explicit scope of Section 49 is limited to air and noise pollution, without comprehensively covering waste transfers or soil and water pollution within a unified framework equivalent to a PRTR. Extending this scope through regulations based on Section 26 constitutes the legal route envisaged for moving towards a more comprehensive system. In terms of subsidiary legislation, the Air Pollution Rules (2015), the Water Pollution Rules (2001) and the Noise Pollution Control Rules (2001) are currently in force. Draft regulations on waste and hazardous waste management have been prepared but have not yet been enacted into law.

ii. International commitments

Trinidad and Tobago is a party to a number of multilateral environmental agreements relevant to chemicals management and environmental transparency, including the Basel, Stockholm and Rotterdam Conventions. With regard to the Escazú Agreement, Trinidad and Tobago deposited its instrument of ratification on 27 January 2026, becoming the 19th State Party to the treaty. This accession reinforces the country's obligations regarding access to environmental information, public participation and access to justice, and provides an additional framework for moving towards an environmental information system consistent with the principles of maximum disclosure and accessibility enshrined in the Agreement.

iii. Technical capacities, infrastructure and available resources

The EMA, established by law, is the institution responsible for the development and implementation of policies, standards and programmes for the management and use of the environment. Under the 2015 Air Pollution Rules, the EMA implemented a Source Emitter Registration process that enables the creation of a national inventory of the types, quantities and locations of sources releasing atmospheric pollutants, with the aim of supporting strategic air quality management. This process, linked to the air pollution permitting system, constitutes the closest operational approximation to a sectoral PRTR in the country. It has not been possible to verify from available public sources whether this capability has been expanded into an integrated public access system that comprehensively covers emissions and transfers of pollutants in a manner comparable to international standards.

iv. Culture of transparency and access to information

The Environmental Management Act establishes a coordinated approach to environmental management that includes mechanisms for public awareness and the development of subsidiary legislation on pollution and hazardous substances. The Act expressly provides for the right to public participation in environmental impact assessment procedures and in the formulation of environmental policy. The ratification of the Escazú Agreement in January 2026 introduces additional binding obligations regarding access to environmental information that may strengthen existing mechanisms. It has not been possible to verify from publicly available sources the existence of a digital public access platform allowing for the consultation of aggregated data on pollutant emissions and transfers at the national level.

v. Challenges

Among the main challenges identified from the available public information are:

- The gap between the legal provisions set out in sections 26 and 49 of the Act and the development of an integrated national system for the registration of pollutant emissions and transfers, the status of which has not been possible to verify from publicly available sources.
- The limited scope of the mandate under Section 49, restricted to air and noise pollution, which would require the development of specific regulations under Section 26 to cover other environmental media and waste transfers.
- The pending status of the regulations on waste and hazardous waste management, which have been drafted but not yet approved, thereby limiting the regulatory coverage of the system.
- The need to develop a publicly accessible digital platform that integrates data from the various environmental matrices and allows for searches by substance, sector and geographical area.
- The need for coordination between the EMA and other sectoral authorities to ensure comprehensive coverage of all emission sources.

vi. Enabling factors and opportunities

Trinidad and Tobago possesses relevant enabling factors to move towards a National Pollutant Release and Transfer Register (PRTR). The Environmental Management Act provides a solid and flexible legal basis that expressly enables the development of regulations for the registration of polluting sources. The EMA, with over two decades of operation, has consolidated institutional capacities and accumulated experience in the administration of environmental permits and the compilation of inventories of emission sources. The country's track record in chemical management and compliance with international agreements places it in a favorable position to move towards a formal PRTR. The recent ratification of the Escazú Agreement introduces additional binding incentives and opens channels for regional technical cooperation that can be mobilized to design and implement an integrated system of public access to information on pollutant emissions and transfers.

5) Countries without PRTRs: initial conditions and opportunities

In Latin America and the Caribbean, several countries have not yet formally begun the design or implementation of a PRTR. However, even in these early stages, it is possible to identify enabling conditions, strategic opportunities and relevant starting points that could facilitate future development processes.

Based on the information provided via the questionnaire included in Annex 1, the main findings for the responding countries—Barbados, Guyana and Panama—are presented below.

a. Initial conditions and opportunities in Barbados

Although Barbados has not yet begun the design or implementation of an PRTR, the country possesses certain institutional and technological elements that could serve as a basis for its future development. Key challenges identified include regulatory, technical and financial constraints, as well as low private sector participation and limited experience in handling large volumes of environmental data. However, there are enabling factors such as the country's active participation in international environmental agreements, the government's recent interest in strengthening pollution control, the existence of basic technological platforms and a growing public demand for greater access to environmental information.

i. Functional regulatory framework with specific components for the PRTR

The country has an environmental legal framework that is still insufficient to support the implementation of a PRTR. There is no specific legislation enabling or mandating the creation of a national emissions and transfers register system. However, the **Marine Pollution Control Act (CAP 392A)** offers a relevant starting point, as it provides for the assessment of the state of the environment and empowers the drafting of regulations in this area. To move towards a PRTR, it would be necessary to pass additional legislation granting clear powers to national authorities to establish and operate emissions and pollutant registers.

ii. International commitments, an emerging culture of transparency and environmental cooperation

Barbados is a party to several key international agreements on pollution and sustainability, such as the Cartagena, Basel, Stockholm and Rotterdam Conventions and the International Maritime Organization (IMO). These commitments could facilitate technical and financial support for the development of a PRTR. However, at the national level, there are still no clear policies or effective mechanisms to promote transparency and public access to environmental data, which highlights a culture of transparency and environmental governance that is still in its infancy. This situation represents a significant challenge for the future implementation of an open and participatory system such as the PRTR.

iii. Available institutional and technological capacities

Barbados has limited institutional capacities. Whilst there are entities with experience in the collection, storage and analysis of environmental data, these capacities are insufficient to manage information on a large scale. Experience in managing environmental information systems and emissions inventories is very limited. However, there have been some technological advances: the Department of Environmental Protection has an information management system that stores data on water quality, air pollution and noise

– although it does not include industrial discharges. Furthermore, the Coastal Management Unit has developed the **National Coastal Risk Information and Planning Platform (NCRIPP)**, which could be integrated as an input into a future PRTR.

iv. Government interest and political will

Although there is no specific policy establishing an PRTR, the government has expressed an interest in moving towards an Environmental Pollution Control Act, which could incorporate requirements relating to emissions registration. This interest stems both from the need to strengthen environmental management and to comply with obligations arising from multilateral environmental agreements. However, this interest has not extended significantly to the industrial sector or civil society, and there are as yet no cooperation initiatives between the government and industry to share data or monitor pollutants.

v. Challenges

Among the main challenges are:

- **A lack of funding** to assess and manage the environment in a sustainable manner.
- **Technological limitations**, particularly regarding knowledge and use of modern monitoring and information management technologies.
- **Concerns within the private sector** regarding the costs of sampling, analysis and reporting, and their potential impact on profitability.
- Absence of a specific legal framework, as the current legal framework neither requires nor facilitates the collection or reporting of information by industry.
- **A limited understanding of the concept of PRTR** among relevant institutions and stakeholders, which hinders its promotion and uptake.
- **Weak inter-institutional coordination**, due to the lack of clear policies and awareness campaigns on the importance of pollution control and environmental transparency.

vi. Enabling factors

Despite the challenges, there are opportunities that could facilitate progress towards a PRTR in Barbados. Among these, the growing public interest in access to environmental information stands out, which could serve as a catalyst for the development of more open and participatory policies. Furthermore, the government's intention to enact new legislation on pollution control offers a window of opportunity to explicitly incorporate the elements necessary to establish a robust and functional PRTR.

b. Initial conditions and opportunities in Guyana

Although Guyana has not yet begun the formal development of a PRTR system, there are institutional, regulatory and technical elements that could facilitate its implementation in the future.

i. A functional regulatory framework with specific components for the PRTR

Guyana's environmental legal framework provides a basis for moving towards a PRTR system. There are specific regulations on air quality, water quality and hazardous waste management, which establish registers and lists of pollutants. Furthermore, national legislation assigns the Environmental Protection Agency (EPA) the responsibility for establishing and operating environmental information systems, including databases on emissions and environmental quality.

Through its environmental permitting process, the PRTR has identified priority substances and pollutants, depending on the activity carried out, requiring operators to submit periodic reports – quarterly, half-yearly or annually – on the quantity and quality of their emissions or effluents, in order to verify compliance with national and international standards. This practice not only constitutes an exercise in environmental oversight but also provides valuable and replicable technical inputs for a future PRTR system.

Although there is not yet an explicit mandate for an integrated PRTR system, these provisions provide a solid starting point for its progressive development.

ii. International commitments, an emerging culture of transparency and environmental cooperation

Guyana has demonstrated a growing commitment to environmental governance through its accession to various multilateral environmental agreements that promote transparency, the responsible management of chemicals and regional cooperation. These include the Escazú Agreement, which reinforces the principles of access to information, public participation and environmental justice; the Cartagena Convention, focused on the prevention and control of marine pollution in the Caribbean; and the Basel, Stockholm and Rotterdam Conventions, which regulate the management and trade of hazardous waste and chemicals.

These commitments not only establish common regulatory frameworks but also facilitate access to technical and financial support.

Guyana has received assistance through programmes run by the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), aimed at institutional strengthening, chemicals management and the development of environmental inventories.

At the national level, these advances are complemented by the Open Data Act of 2024, which promotes the use and availability of public data. Furthermore, the existence of online platforms that disseminate real-time information on air and water quality reinforces the trend towards greater environmental transparency and lays a favorable foundation for a future PRTR system.

iii. Available institutional and technological capacities

The EPA has established a robust technological infrastructure comprising servers, databases and cloud platforms for storing and analyzing environmental information. Guyana also has real-time environmental monitoring systems—such as water and air quality dashboards and monitoring platforms for offshore facilities—which could be integrated into an PRTR system. Furthermore, the EPA has technical staff trained in the management of information systems and data analysis, although it recognizes the need to strengthen specific capacities related to emissions inventories.

iv. Reporting initiatives and inter-institutional cooperation

The EPA requires developers holding environmental permits to submit regular emissions reports, thereby ensuring a constant flow of relevant information. The Agency also collaborates with other government institutions with similar mandates, which could facilitate system interoperability and access to relevant data sources. However, there are as yet no formal agreements with the private sector nor voluntary monitoring mechanisms in place within industries.

v. Challenges

The main challenge identified is the lack of personnel specialized in emissions inventories, a key capability for the development of a PRTR. This limitation extends to the shortage of human resources dedicated to the design, operation and sustainability of the system, as well as insufficient technical expertise in the collection, management and analysis of environmental data.

Despite having technological infrastructure and general experience in data management, structural challenges persist. Among these, the lack of structured and consistent data collection systems across sectors stands out, hindering the creation of a reliable and comprehensive database. The available environmental information, generated by various government bodies and non-governmental organizations, remains fragmented and stored in an ad hoc manner, without standardized mechanisms for integration or centralized access.

Furthermore, the lack of laboratories operating to international standards represents a significant barrier to ensuring data quality. Existing laboratories often lack the capacity to analyses a wide range of environmental parameters and media.

Finally, the absence of an explicit legal mandate for an PRTR limits its institutionalization, hindering its regulatory and operational development. Finally, the need to mobilize specific and sustained financial resources could slow down any eventual implementation.

vi. Enabling factors

Guyana possesses enabling conditions to move towards the implementation of an PRTR. These include a regulatory framework incorporating sectoral environmental registers, the existence of an environmental authority with experience in data collection and processing, modern monitoring systems, and an institutional commitment to strengthening access to environmental information.

Added to this are the multilateral commitments undertaken—including the Escazú Agreement and the Basel, Stockholm and Rotterdam Conventions—which promote principles of transparency, responsible environmental management and international technical cooperation. Thanks to these partnerships, the country has accessed technical and financial assistance from UNEP, UNDP and the Global Environment Facility (GEF), strengthening institutional and regulatory capacities.

The existence of public platforms providing real-time environmental information, complemented by the Open Data Act of 2024, constitutes another key enabling factor.

With a progressive roadmap, specialized technical support and effective mechanisms for inter-institutional and international coordination, Guyana could lay the foundations for a functional, transparent PRTR that is

in line with its environmental and socio-economic context, making full use of both its internal resources and opportunities for external cooperation.

c. Panama's starting point and opportunities

Although Panama has not formally begun developing an PRTRs, there has been progress in its regulatory framework, technical and institutional capacities, and international commitments that could facilitate its future implementation. The Ministry of the Environment has stated its intention to address this issue during 2025, with a view to having the system operational within one year of its launch, provided that the necessary external funding and capacity-building are in place.

i. Consolidated regulatory framework geared towards transparency

Panama has an environmental legal framework that provides an adequate basis for incorporating a PRTR system. Among the most relevant instruments are the Consolidated Text of Law 41 of 1998 (General Environment Law), Law 8 of 2015, and Law 6 of 2002 on transparency and access to public information. Furthermore, Law 125 of 2020 incorporates the Escazú Agreement into the national legal system, reinforcing obligations regarding public access to environmental information and public participation. Taken together, these regulatory elements provide a legal basis for moving towards an EPR system grounded in the principles of transparency and accountability.

ii. International commitments as a lever for progress

Panama is a State Party to the Escazú Agreement, which establishes obligations regarding access to environmental information, public participation and environmental justice. In fulfilment of these commitments, the national roadmap for the implementation of the Agreement includes, as a priority action, the creation of a Pollutant Release and Transfer Register (PRTR) under the responsibility of the Ministry of the Environment (ECLAC and Government of Panama, 2025). Furthermore, Panama is a member of the Open Government Partnership (OGP), whose guidelines include the promotion of open data and the improvement of public information systems. These instruments provide the framework for the design and future implementation of the PRTR in the country.

iii. Technical and institutional capacities and available resources

Although the sampling universe has not yet been assessed and no priority pollutants or sectors have been identified, Panama has the technical capabilities and resources that can serve as a basis for the design of the PRTR. There are environmental monitoring platforms and systems, as well as technological infrastructure (databases and servers), which could be integrated into the new system. Furthermore, the country has organizations with experience in collecting, analyzing and reporting environmental information, which constitutes significant institutional capital.

In the industrial sector, the National Centre for Cleaner Production stands out, which could serve as a bridge to strengthen public-private partnerships aimed at improving environmental data management. However, to date, there are no reports of voluntary monitoring initiatives or formal agreements between the government and industry regarding the PRTR.

iv. Challenges

Among the main challenges for the implementation of the PRTR in Panama are a lack of funding, gaps in technical and operational capacities, and potential resistance from some key stakeholders. The absence of up-to-date data on emissions and pollutants—particularly in matrices such as soil and subsoil—as well as the lack of adequate records kept by companies, are also identified as barriers.

v. Enabling factors

Despite the challenges, Panama has several enabling factors that could accelerate the development of an PRTR system: a robust legal framework geared towards transparency, available technological resources, existing institutional capacities, and active international commitments. The political will expressed by the Ministry of the Environment and the existence of institutional reference points such as the National Centre for Cleaner Production reinforce these starting conditions. The coordination of these elements through a progressive approach, accompanied by international cooperation, could enable Panama to move towards the implementation of a PRTR system adapted to its national context.

For the remaining countries in the region, no official information was received – nor was it possible to identify any background information through a review of public sources – and they are therefore classified as 'no information' in Map 1. This categorization reflects the absence of verifiable data and does not rule out the existence of unreported domestic initiatives.

G. GOOD PRACTICES IN THE INITIATION, OPERATION AND CONTINUOUS IMPROVEMENT OF PRTRs

PRTSs are fundamental tools for promoting access to environmental information, facilitating public participation and supporting informed decision-making on environmental matters. This chapter identifies good practices in the initiation, operation and continuous improvement phases of PRTRs, with a focus on their applicability to countries in Latin America and the Caribbean.

Good practices in the context of a PRTR refer to a set of actions, methodologies and procedures that have proven to be effective, efficient and replicable in the implementation, operation and continuous improvement of these systems. These practices are based on principles of transparency, public participation, continuous improvement and alignment with standards such as those established by the OECD, UNECE, IOMC, UNITAR and other recognized bodies.

In this regard, it is important to note that this chapter does not aim to be a detailed guide for the implementation or management of a PRTR, as international organizations such as the OECD, UNITAR and the IOMC have already developed and widely disseminated such guidelines. Annex D provides a summary of the most relevant organizations and guidelines. Instead, it focuses on highlighting certain critical aspects for each phase of the PRTR and describing the associated good practices.

1) Good Practices in the PRTR Initial Phase

The initiation phase of a PRTR system is a critical moment that lays the foundations for the system's success. At this stage, the system's strategic objectives are defined, the legal and technical frameworks underpinning it are established, and the institutional, human and financial resources necessary for its implementation are mobilized. Furthermore, it is the moment when consensus is built among the various stakeholders involved, including governments, industry, academia and civil society.

Organizing support from legislative bodies, industry and the public

Early engagement between legislative bodies, industry and the public, along with intergovernmental coordination, are essential components of the initial phase of a PRTR. Securing political and social support from the outset lends legitimacy to the system, ensures its regulatory viability and facilitates its evolution over time. The active participation of key stakeholders helps to define realistic objectives, strengthen the regulatory framework and promote ownership of the system by those who will be required to report data or use the information generated.

Below are two examples of good practice illustrating how strategic legislative actions and mechanisms for multi-sectoral participation can make a decisive contribution to the establishment of a PRTR: (i) the early and flexible legislative support seen in the creation of the Toxic Release Inventory (TRI) in the US, and the formation of a Stakeholder Working Group, as was done in the case of Canada's National Pollutant Release and Transfer Register (PRTR). These practices offer valuable lessons for designing effective, inclusive and sustainable systems.

Good Practice 1: Early legislative support in the development of the TRI (United States)[11]

i. Context

The US Toxic Release Inventory (TRI) was established following the Bhopal chemical disaster (1984), which highlighted the lack of public information on hazardous substances. In response, the Emergency Planning and Community Right-to-Know Act (EPCRA) was passed in 1986, introducing mandatory reporting obligations and transparency mechanisms regarding hazardous chemicals for the first time.

ii. Actions taken

EPCRA defined a clear regulatory framework for the creation of the TRI, granting the Environmental Protection Agency (US EPA) the authority to administer the system, require periodic reports and update the list of substances subject to reporting. Section 313(d) established criteria for adding or removing substances, which allowed the scope of the inventory to be progressively expanded. The legislative framework was flexible enough to adapt to emerging needs and ensured the obligation for businesses to report emissions and transfers.

[11] US EPA (2024). History of the Toxics Release Inventory (TRI) Programme. US EPA (2001). EPCRA Section 313: Guidance for Reporting Toxic Chemicals.

iii. Results

The TRI was implemented with robust legal backing, which enabled an effective roll-out, ensured data availability and strengthened accountability. The initial list of over 300 substances has expanded to more than 600; the system has been regularly updated and enjoys stable institutional support.

iv. Key elements and lessons learnt

- **Early legislative backing:** ensured mandatory compliance, continuity and clarity regarding institutional responsibilities.
- **Regulatory flexibility:** the ability to update lists and criteria ensured the system remained relevant.
- **Transparency as a structural principle:** the legal duty to report ensured public access without relying on voluntary measures.

v. Relevance for Latin America and the Caribbean

The case demonstrates that a clear and adaptable legislative framework facilitates the progressive implementation of PRTR schemes, creates certainty for stakeholders and enables a response to new environmental challenges.

Good Practice 2: Multisectoral Advisory Committee for the design of the NPRI (Canada)[12]

i. Context

In 1991, Canada launched a consultation process to develop its National Pollutant Release Inventory (NPRI). To ensure a representative and consensus-based system, the Ministry of the Environment brought together public and private stakeholders to establish a participatory design mechanism.

i. Actions taken

The Multi-Sector Advisory Committee (MSAC) was established, comprising representatives from industry, environmental organizations, trade unions, provincial governments and federal agencies. Between 1991 and 1992, the Committee held plenary sessions, technical meetings and public consultations. This process resulted in a final report that defined the NPRI's objectives, principles, reporting requirements, exemptions and operational recommendations.

ii. Results

The NPRI was established in 1993 following the Committee's recommendations. Since then, the MSAC has continued to function as an advisory body, evaluating changes to methodologies, reporting criteria and public access mechanisms. Its collaborative structure has helped to strengthen transparency, public acceptance and data quality.

[12] Government of Canada (2021). Stakeholder Working Group Terms of Reference: NPRI. Government of Canada (2015). Canada's National Pollutant Release Inventory (NPRI).

iii. Key elements and lessons learnt

- **Clear mandate and objectives:** the terms of reference defined advisory functions and ensured clarity in decision-making.
- **Balanced representation:** the participation of different sectors promoted legitimacy and a diversity of perspectives.
- **Open and documented processes: these** ensured transparency and allowed for the incorporation of informed feedback.
- **Logistical and financial support:** this facilitated the equitable participation of organizations with fewer resources.

iv. Relevance for Latin America and the Caribbean

This model demonstrates the value of creating formal multi-sectoral spaces with public participation for the design and continuous refinement of PRTRs, particularly in contexts where social acceptance and data quality are determining factors.

Assessment of the National Infrastructure for a PRTR

The design and implementation of a PRTR requires a comprehensive assessment of the legal, institutional, administrative and technical infrastructure available at the national level. This analysis, generally referred *to as the National Infrastructure Assessment for a PRTR*, is a fundamental step in the initiation phase, as it enables the identification of existing capacities, gaps that need to be addressed, and opportunities to integrate already developed resources and systems.

This assessment not only documents the current status of applicable laws and regulations, but also considers programmes for the generation, reporting and dissemination of information on pollutant emissions and transfers. Furthermore, it analyses the capacity of the competent authorities to implement the system and evaluates the degree of coordination between government bodies, academia, the private sector and civil society organizations.

The data collection process also facilitates the identification of structural issues that must be addressed through dialogue with key stakeholders, thereby helping to build legitimacy, political support and institutional sustainability in the implementation of the PRTR. Furthermore, this process enables the establishment of collaborative relationships with various sectors, including research centers, international agencies and bilateral organizations, thereby strengthening technical capacities and expanding access to specialized resources.

The guide ‘ describes five key components of the National Infrastructure Assessment for a PRTR:

a. **Contextual information:** Economic, industrial and territorial characterization of the country, including patterns of chemical use and sectors and regions with significant potential for emissions or transfers of pollutants.
b. **Legal and regulatory infrastructure:** Inventory and analysis of laws, standards and regulations relating to pollutant releases and transfers.

c. **Institutional and administrative infrastructure**: Establishes the responsibilities of environmental authorities, cross-sectoral bodies and existing mechanisms for coordination, enforcement, monitoring and reporting.
d. **Non-governmental programmes and initiatives**: Initiatives driven by industry, research centers or organizations that can provide data, methodologies or independent monitoring.
e. Available international and bilateral cooperation: Identifies activities and projects related to pollution prevention, cleaner production and waste management that could support the development of the PRTR.

The National Infrastructure Assessment for a PRTR is a strategic tool to guide regulatory decisions, priorities sectors and substances, identify operational needs and build a phased implementation process. Its value lies in enabling the PRTR to be developed efficiently, avoiding duplication, leveraging existing platforms and strengthening collaboration between public and private actors.

Below, we present the experience of Moldova, where a feasibility study was carried out for the design and implementation of a PRTR in collaboration with international organizations.

Good Practice 3: Feasibility study as a basis for the design of the PRTR (Moldova)[13]

i. Context

In 2013, Moldova initiated a structured process to assess the feasibility of developing a Pollutant Release and Transfer Register (PRTR) as part of the project *"Establishment of the Aarhus Centre in Chisinau and Public Information Centre in Bender"*, funded by the OSCE Mission. The country sought to strengthen environmental transparency, align itself with the Aarhus Convention and move towards a national system that would enable the reporting, management and dissemination of information on pollutants. The feasibility study included a legal, institutional, operational and financial assessment, with the participation of national and international experts.

ii. Actions taken

Between 2013 and 2015, data was collected, regulatory frameworks were reviewed and consultations were held with key stakeholders. Subsequently, between June 2015 and January 2016, the study was updated under the regional project *"Support for the Establishment and Advancement of PRTR in the Western Balkan Countries and Moldova"*, implemented by REC and EcoContact with support from the German Federal Ministry for the Environment (BMUV) and supervision by UBA.

[13] (EcoContact & REC, Nagy, & Iordanov, 2016) Developing a Pollutant Release and Transfer Register (PRTR) in Moldova - Feasibility Study (Environmental Pollution Prevention Office, National Strategy for Public Access to Environmental Information and PRTR - "Global Project on the Implementation of PRTRs as a tool for POPs reporting, dissemination and awareness raising for Belarus, Cambodia, 2018) National Strategy for Public Access to Environmental Information and PRTR - "Global Project on the Implementation of PRTRs as a tool for POPs reporting, dissemination and awareness raising for Belarus, Cambodia, Ecuador, Kazakhstan, Moldova and Peru" (Environmental Pollution Prevention Office, 2017) National PRTR Proposal – "Global Project on the Implementation of PRTRs as a tool for POPs reporting, dissemination and awareness raising for Belarus, Cambodia, Ecuador, Kazakhstan, Moldova and Peru" (Ministry of Environment, National report on the implementation of the Protocol on the Pollutant Release and Transfer Register for the period (2017–2020), 2021) National report on the implementation of the Protocol on the Pollutant Release and Transfer Register for the period (2017–2020). (Ministry of Environment, 2025) National report on the implementation of the Protocol on the Pollutant Release and Transfer Register for the period (2021–2024). Validated by Angela Panciuc, Senior Consultant, Department of Pollution Prevention Policies, Ministry of the Environment

Between 2015 and 2019, Moldova participated in the GEF-funded global project *"Implementation of PRTRs as a tool for POPs reporting, dissemination and awareness-raising"* (Belarus, Cambodia, Ecuador, Kazakhstan, Moldova and Peru), which consolidated the vision of the PRTR as a tool for complying with the Stockholm Convention and promoting public access to environmental information.

iii. Results

The feasibility study produced a comprehensive roadmap for establishing the PRTR, with recommendations on legal reforms, institutional structure, technical requirements and financial sustainability. This enabled progress towards concrete measures:

- 2018 — Creation of the Environment Agency, the authority responsible for the PRTR.
- 2018 — Approval of Government Decision No. 373 of 2018, which formally established the PRTR and its national regulations.
- 2023 — Implementation of the AIS "PRTR" automated system, with mandatory digital reporting and the elimination of paper forms.

The Moldovan case demonstrates how feasibility studies can accelerate decision-making and facilitate the institutionalization of the PRTR.

iv. Key elements and lessons learnt

- Initial assessment as the basis for a roadmap.
- Legal review and identification of reforms needed to enable the PRTR.
- Definition of a centralized operational authority and inter-ministerial coordination.
- Design of the electronic reporting system with an integrated database.
- Technical training as a structural component for operators, authorities and civil society.
- Importance of blended finance: national funds + international cooperation.

v. Applicability to Latin America and the Caribbean

Moldova's experience is particularly relevant for countries in the early stages, as it demonstrates that a well-designed feasibility study enables realistic planning, reduces implementation costs, identifies critical gaps and leverages synergies with multilateral environmental agreements. Its approach is replicable and adaptable in contexts where specific regulations or developed operational capacities do not yet exist.

Objectives, Design, Pilots and National Proposal for the PRTR System

The creation of a PRTR requires a comprehensive approach spanning from the identification of objectives to the final proposal for its implementation. This chapter presents good practices for the design and structuring of a national PRTR system, integrating the components of **design, piloting** and **national proposal** based on the guidelines of UNITAR, IOMC and the OECD. Although UNITAR presents these stages in separate publications—one for the **design of the system's key features** (UNITAR, 2020b) , another for the development of a pilot (UNITAR, 2020c) and another for the **structuring of the final**

proposal (UNITAR, 2020d) — in this document, these are addressed jointly due to their direct relationship and their critical importance to the success of the system.

i. Identification of the PRTR System's Objectives

The definition of objectives constitutes the starting point of the process. These must be established through collaborative processes involving governments, industry, academia and civil society. Objectives can be classified as national and international and must be clearly defined before proceeding with the technical design of the system.

- **National Objectives**: These aim to strengthen pollutant management, improve the quality of information available for decision-making, promote evidence-based regulations and contribute to environmental sustainability.
- **International Objectives**: These promote alignment with international standards, facilitating the comparability and harmonization of data, and enable the addressing of cross-border issues, including greenhouse gases and persistent pollutants.

ii. Design of the PRTR System

The PRTR design must define all the technical and procedural elements that will structure the system's operation. The main components developed by IOMC, UNITAR and the OECD include:

iii. Scope of the System

This defines the chemicals, industrial sectors, reporting thresholds, exemptions, data elements and types of emission sources that must be considered in the register.

- **List of Chemicals**: The OECD recommends (OECD, 2014) that all chemicals on the Short List (OECD, 2022) be included, and that the inclusion of additional chemicals, such as those on the Long List or other chemicals of interest depending on the national context, be considered. It is recommended to use the *Chemical Abstracts Service* (CAS) number when defining individual chemicals; to provide a descriptive name for groups of chemicals; and to provide transparent documentation for groups of chemicals.
- **Sectors to be covered**: The OECD recommends (OECD, 2014) that all sectors on the Short List (OECD, 2013) be included, and that the progressive inclusion of additional sectors, such as those on the Long List or other sectors of interest, be considered. The OECD also recommends developing the list of sectors using the *International Standard Industrial Classification* (ISIC) or a comparable regional/national classification system and having a clear list of industrial activities covered.
- **Reporting Thresholds**: The OECD suggests (OECD, 2014) using the reporting thresholds of the Kiev Protocol as an initial reference – including thresholds for the manufacture, processing, use and release quantities of chemicals – to promote international comparability.
- **Reporting Exemptions**: These specify the activities or sources that are excluded from the criteria used and provide technical justification for such exclusions.
- **Data elements to be collected**: Identification of the facility or source of pollutants, chemical identification, sectoral classification, and the description and quantification of emissions or transfers of listed substances, amongst others.

- **Point vs. Non-point Sources of Emission**: Establishes whether the system will cover only fixed sources of emission (point sources) or also diffuse sources (e.g. agricultural runoff and transport).

iv. Legal aspects for implementation

These cover the definition of reporting obligations, the enabling legal framework, compliance procedures, coordination with other environmental reporting systems, and the protection of sensitive information.

- **Mandatory or Voluntary Reporting**
- **Enabling legal framework and complementary regulations.**
- **Monitoring, compliance and enforcement mechanisms.**
- **Coordination with other environmental reporting systems:**
- **Management of data confidentiality without compromising transparency.**

v. Data collection and management procedures

Defines the administrative, technical and operational architecture of the system.

- **Government roles**: Defines the specific responsibilities of each public institution linked to the PRTR. This includes determining the types of reports that facilities must submit (e.g. reports on closures, operational changes, variations in thresholds), as well as establishing who will allocate and manage the resources necessary for the development and operation of the PRTR system. It also specifies the roles of the different levels of government – local, regional and central authorities – in the validation, review and authorisation of data prior to publication.
- **PRTR Reporting System**: This establishes the mechanism by which facilities will report their emissions and pollutant transfers. This includes defining data capture methods – for example, direct file uploads, online forms or web applications – as well as automatic and manual validation processes,
  integration with other information systems and user authentication requirements, amongst others. It also covers the organization, storage and management of information through a structured database with security measures, version control, editing permissions and the capability for external publication. It must also define whether data and metadata generation will be automatic or manual and whether the infrastructure will operate on on-premises servers or in the cloud. Finally, the design must provide communication channels with reporters and the web services necessary for analysis, interoperability and information security.
- **Training instructions and materials for reporting**: Identifies training requirements so that establishments can estimate emissions and submit reports to the PRTR. This includes the preparation of guides, manuals, training sessions and support materials, whether distributed in advance or incorporated directly into the reporting platform.
- **Data estimation techniques**: Determines the methods and techniques to be used to estimate emissions and transfers where direct measurements are not available.

vi. Data analysis, visualization and dissemination:

This refers to how results are presented and communicated to the public and regulated entities.

- **Types of analysis** establishes the types of analysis to be carried out on the collected data (e.g. aggregation by sector, territory and/or environmental media, identification of trends, etc.).
- **Data presentation**: defines the methods for presenting data in a clear and accessible manner (e.g. downloadable databases, search engines, interactive maps and interpretative products such as annual reports or fact sheets).
- **Data access and dissemination**: defines strategies for informing stakeholders about the availability of data. This includes multi-channel dissemination strategies to ensure equal access to information.

Pilot Implementation and National Proposal for a PRTR System

In line with good practices suggested by UNITAR and other international organisations, it is advisable to implement a **pilot prior to national roll-out** ((UNITAR, 2020c) , (OECD, 2015) and (IOMC, n.d.)) based on the initial system design. The pilot will enable the actual functioning of the system to be verified, interoperability to be assessed, technical barriers to be documented and the user experience to be validated. During this phase, potential adjustments will be identified and operational and technical issues resolved, allowing the system to be refined prior to its full deployment.

The results obtained during the pilot phase must be integrated into the National PRTR Proposal ((UNITAR, 2020d) , (OECD, 2015) and (IOMC, n.d.)), – a document that consolidates the final design and enables the transition to the full implementation phase. This phased approach, based on the pilot experience, improves the system's effectiveness and minimizes risks during its full implementation.

The National PRTR Proposal must contain:

- **Legal Basis**: Current legislation, necessary adjustments and regulatory framework.
- **Technical Design:** all technical characteristics of the PRTR system, including: the list of substances, thresholds and **methodologies**, the reporting format, the reporting schedule, all aspects of data estimation and management; the design of the PRTR database and infrastructure; and all other specifications and details of the PRTR design.
- **Institutional and Administrative Responsibilities**: These precisely define the roles of each entity and the operation of the system. Furthermore, they include the identification of the agency responsible for hosting and maintaining the national database, the entities in charge of collecting and verifying the information, as well as those agencies responsible for the storage, processing, publication and dissemination of the data. This section also sets out the distribution of functions between the central and sub-national levels, where applicable.
- **National Implementation of the PRTR System**: This comprises the operational planning necessary to bring the system into operation at a national level. This planning includes the design of the timetable for the first PRTR reporting cycle, the definition of specific responsibilities and tasks for each agency involved, the development of procedures for the receipt, review and publication of information, as well as the inter-institutional coordination mechanisms required for its implementation.

- **Other relevant aspects:** The proposal must incorporate essential elements to ensure the sustainability and continuous improvement of the system, such as training programmes for operators, authorities and reporters; mechanisms for engagement with the private sector and civil society; identification of national and international funding sources; and periodic evaluation processes that enable the PRTR to be updated as regulations, technical knowledge and environmental management needs evolve.

Below are two good practices associated with the implementation of PRTR pilot schemes prior to their adoption at the national level. The pilot schemes carried out in Japan and Colombia have been fundamental in evaluating and optimizing their respective reporting systems, enabling the identification of technical and administrative challenges, as well as strengthening the participation of stakeholders. Furthermore, the model for the development and implementation of a common PRTR software system in the Western Balkans is presented.

In Japan, the pilot scheme was launched in 1997 in three selected districts, with the aim of testing the feasibility of the entire PRTR process; identifying technical issues relating to the collection and reporting of emissions and transfers; and raising awareness of the PRTR system amongst businesses, authorities and the public. The pilot scheme enabled procedures to be refined and operational functionality to be improved prior to nationwide implementation.

In Colombia, it was carried out in 2019 as part of a structured process to design and implement the PRTR. The exercise was carried out in different jurisdictions and focused on validating the preliminary design of the system, evaluating the performance of the IT platform (RUA), testing companies' ability to generate and report the required information, and strengthening the capacities of environmental and industrial authorities. This experience allowed for adjustments to the technical and operational model prior to its nationwide implementation.

In the Western Balkans**,** a model was developed based on the creation of **common PRTR software,** jointly promoted by several countries with converging regulatory objectives. The initiative involved the design, programming and installation of a shared platform for the management and reporting of emissions and transfers, as well as training for authorities and operators. The use of a unified system made it possible to standardize registration formats and procedures, establish common technical criteria and advance interoperability with regional regulatory frameworks linked to European standards. The experience also required agreements to be defined regarding the administration, updating and maintenance of the software, given that these elements determine its operational continuity and the possibility of future expansion.

Good practice 4: Pilot project for the implementation of the PRTR (Japan, 1997)[14]

i. Context

In 1997, Japan developed a pilot project to assess the technical, administrative and operational feasibility of a Pollutant Release and Transfer Register (PRTR). The project was implemented in three representative districts—Kawasaki City, Shonan District and Mikawa District—with the aim of testing the system's full functionality, building capacity and generating evidence for its future national implementation. The experience marked a milestone in the Asia-Pacific region, enabling the validation of procedures for data calculation, reporting and publication prior to their official adoption.

ii. Actions taken

The pilot was designed with three main objectives in mind:

- to verify the feasibility of the full PRTR system;
- to test calculation tools and electronic reporting mechanisms;
- raise awareness among businesses, authorities and the public regarding transparency in chemical matters.

Its implementation focused on substances of high concern (carcinogens and toxic substances), included point and non-point sources of emissions, and relied on voluntary reporting by companies. Key tools were developed—such as a national emissions calculation manual—and the usability of the digital system, the administrative burden and the technical capacity of the reporters were assessed.

iii. Results

The pilot provided critical information for refining the design of the Japanese PRTR. It identified gaps in technical capabilities, challenges in managing commercial confidentiality and operational limitations for reporting. The feedback enabled the simplification of administrative procedures and the improvement of estimation methodologies, laying the foundations for a robust, flexible and progressive national implementation.

iv. Key elements and lessons learnt

- Technical training is essential for the system to operate properly.
- Simplified procedures increase efficiency and private sector adherence.
- Transparency must be balanced with the protection of sensitive information.
- Calculation methods require continuous review and flexibility to be updated.
- The design of the system must be accompanied by incentives and policies providing sustained support.

[14] (Environment Agency of Japan, 1998) Report on the Evaluation of the PRTR Pilot Project in Japan Interview (1 April 2025) with Koki Takaki, Wakana Matsunami (Ministry of the Environment), Masashi Horie (NITE), and Makato Takahashi (Advisor, Ministry of the Environment).

v. Applicability to Latin America and the Caribbean

The pilot approach is fully replicable in Latin America and the Caribbean, where levels of development, industrial sectors and institutional capacities are diverse. The controlled trial allows the design to be adapted to each national context, reducing risks and strengthening the transition towards a consolidated PRTR system.

Good practice 5: Structured process for establishing the PRTR (Colombia)[15]

i. Context

In 2016, Colombia began the process of establishing and implementing its PRTR in response to an OECD recommendation, which urged the country to strengthen the Colombian Environmental Information System (SIAC) and to establish a PRTR in line with international good practices, ensuring the availability of information on emissions and transfers to the public. To achieve this objective, a structured process was designed comprising five main stages: (i) development of a conceptual model; (ii) design and implementation of a digital platform (hardware and software) for the administration and operation of the PRTR; (iii) preparation of a user guide to facilitate reporting; (iv) conducting a pilot test to fine-tune the digital platform, reporting guidelines and management tools; and (v) issuance of the relevant regulatory instrument for its implementation.

Since 2016, two key collaborative bodies have been established. On the one hand, the Technical Working Group (TWG), comprising the Ministry of Environment and Sustainable Development and other technical government institutions, is responsible for the methodological and technical aspects of the system. On the other hand, the National Advisory Committee (NAC), comprising government bodies, representatives from the productive sector and academia, is tasked with providing feedback, legitimizing the process and ensuring a participatory approach.

ii. Conceptual model

From 2016 onwards, the GTT began developing the Conceptual Model for the implementation of the PRTR in Colombia and the Guide for completion and reporting. This model established that the PRTR forms part of the Environmental Information System (SIA), which in turn forms part of the SIAC. The PRTR was conceived as an 'information output' that will use the RUA platform as a digital tool, fed by a single data entry channel, in order to meet the requirements for the establishment of the PRTR and ensure the availability of information to the public.

This model has been continuously refined by the CCN, and technical developments regarding the PRTR have been regularly shared with the various stakeholders involved in the process. The final version of the model, published in 2024, sets out the goals, objectives and scope of the PRTR in Colombia and defines, amongst other aspects: the list of hazardous waste and substances subject to reporting; the thresholds, means and methods for determining reporting; the sectors required to report; the inputs and outputs of the system;

[15] Ministry of the Environment (2021) PRTR pilot test; Ministry of the Environment and Lizarazo (2024) Conceptual model; interview with Diego Escobar and Patsy Nadin Lizarazo Martínez (27/02/2025).

the mechanisms to ensure the quality of information; the identification of activities and responsible parties for the implementation of the PRTR; and the strategies for harmonization with other national and international systems.

iii. Pilot

In 2019–2020, Colombia carried out a pilot test in several jurisdictions to assess the viability of the PRTR. This pilot was designed to evaluate the preliminary structure of the system, verify the functionality of the RUA IT tool, measure the reporting capacity of establishments, and train both environmental authorities and the productive sector. To this end, work was carried out with nine selected environmental authorities, including the National Environmental Licensing Authority (ANLA), the District Environment Secretariat (SDA) and the Valle del Cauca Regional Autonomous Corporation (CVC).

The pilot project involved the reporting of 135 hazardous chemicals and wastes, in accordance with national and international regulations. Sixty establishments from various sectors participated, voluntarily reporting information on emissions to water, air and soil, as well as transfers of wastewater and hazardous waste. To facilitate the process, a specific completion guide was drawn up and an electronic reporting system was implemented within the RUA tool, enabling the capture, validation and transmission of information to be tested under real-world conditions.

iv. Results

The structured process of designing and implementing the PRTR in Colombia yielded concrete and verifiable results. Firstly, it helped to build an atmosphere of trust with the relevant stakeholders—authorities, the private sector and academia—facilitating the continuity of the process over time. Secondly, it led to the issuance of specific PRTR regulations via Resolution 0839 of 2023, which formalizes the system and establishes its reporting obligations.

Thirdly, it enabled the definition of a strategy for the gradual implementation of the PRTR, with clear milestones:

- **2024**: registration of the manufacturing sector in the system (more than 2,800 establishments).
- **2025**: reporting of emissions and transfers from the manufacturing sector, with the first cycle ending in April; registration of additional sectors (more than 14,000 establishments by November) and publication, in the same month, of emissions data from the manufacturing sector to the public.
- **2026**: reporting of emissions from all sectors in April and public access to consolidated information in November.

This timetable reflects a phased implementation that incorporates lessons from the pilot and spreads technical and institutional efforts across several reporting cycles.

v. Key elements and lessons learnt

The Colombian experience highlights several key elements:

- **A structured and sustained process**: The early definition of stages (conceptual model, platform, guidance, pilot and standard) and their continuity over almost a decade proved fundamental to the progress of the PRTR.
- **Building trust**: The transparency of the process, the constant sharing of progress and the active participation of the CCN strengthened the system's legitimacy.
- **Teamwork**: Despite having a small core team (two people), the support of the GTT and coordination with multiple institutions enabled significant efforts to be mobilized.
- **Flexibility and adaptability**: The pilot enabled the identification of necessary adjustments to the RUA platform, reporting guidelines and administrative procedures before scaling the system up to the national level.
- **Harmonization with other systems**: The integration of the PRTR with existing systems and platforms (SIAC, SIA, SIUR and RUA) maximizes efficiency, avoids duplication and facilitates the use of previously available information.

vi. Applicability to Latin America and the Caribbean

The model implemented in Colombia offers a valuable reference for other countries in Latin America and the Caribbean seeking to develop or strengthen their own PRTRs. Elements such as the early and structured involvement of relevant stakeholders, the use of a pilot to validate the preliminary design, integration with existing environmental information systems, and gradual implementation by sector can be adapted to different institutional contexts and national capacities.

Finally, another interesting example for the start-up phase of an PRTR is the development of a common PRTR software solution in the Western Balkans.

Good Practice 6: Development and Implementation of a Common PRTR Software Solution in the Western Balkans[16] .

i. Context

Since 2021, the project "Improvement of PRTRs in the Western Balkans and the Republic of Moldova" has been underway, funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, within the framework of the Environmental Protection Assistance Programme for Central and Eastern Europe, the Caucasus and Central Asia, as well as in neighbouring countries of the European Union, under the supervision of the German Environment Agency (UBA). The project is implemented by Participation Ltd., in collaboration with four key non-governmental organizations: Resource Environmental Center (REC) Albania, REC Bosnia and Herzegovina, REC Montenegro and EcoContact Moldova.

The main objective of the project is to develop and strengthen the PRTR systems in Albania, Bosnia and Herzegovina, Montenegro, Kosovo and the Republic of Moldova, with the aim of improving the transparency of environmental data and promoting informed decision-making for greater sustainability. This objective includes the design, development and installation of a common software solution for PRTRs in three of the participating countries (Bosnia and Herzegovina, Kosovo and Montenegro), enabling greater consistency in environmental reporting and promoting compliance with international standards. The common software solution is not used in the other two countries (Albania and Moldova), where previous PRTR systems were already in place.

ii. Actions taken

The project simultaneously addressed institutional strengthening and technological development, as well as the training of stakeholders.

Firstly, a **unified and modular software solution** was designed and implemented for Bosnia and Herzegovina, Kosovo and Montenegro, capable of collecting, managing and reporting environmental data in a harmonized manner. The design was aligned with the UNECE Protocol on PRTRs and with the European Union's integrated E-PRTR and LCP reporting requirements, enabling the countries to move towards systems compatible with EU regulations.

Secondly, **capacity-building and training activities** were carried out, targeting authorities, operators and civil society organizations, to ensure the proper use of the software and promote a shared understanding of the objectives and functioning of PRTRs.

[16] Participatio Ltd. (2023), Subregional activities achievements, Tenth meeting of the Working Group of the Parties to the Protocol on PRTR. Participatio (2024), Input for the preparation of a thematic report on strengthening access to information on the environmental and health hazards posed by hazardous substances through establishing, enhancing and integrating Pollution Information Portals. Participatio (2024), Statement – Fourth Global PRTR Roundtable. EcoContact & REC; Nagy & Iordanov (2016), Developing a Pollutant Release and Transfer Register (PRTR) in Moldova – Feasibility Study. Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (2024), Project information: Enhancement of Pollutant Release and Transfer Registers in the Western Balkan countries and the Republic of Moldova. Interviews with representatives of Participatio Ltd., the German Federal Ministry for the Environment and the Serbian company GIS Solutions, as well as email correspondence with representatives of the Federal Ministry of Environment and Tourism of Bosnia and Herzegovina.

Thirdly, the project included **improvements to the existing PRTR system in the Republic of Moldova** by enabling online reporting, which represented a key step towards modernizing data collection and management.

During its implementation, specific challenges linked to the context of the participating countries were identified, including:

- A lack of human resources, due to a shortage of technical staff and limited experience in information technology within the government agencies responsible for the PRTRs.
- Financial constraints, given that the management of PRTRs relies heavily on project-based funding, with no regular budgetary allocations for their long-term operation.
- Compliance difficulties on the part of operators, arising from reporting thresholds based on total operational capacity rather than actual emissions, which complicates traceability and control.

Furthermore, the common software solution faced additional challenges, such as:

- Software ownership issues, particularly when development is outsourced to external companies, which complicates the updating, maintenance and future evolution of the tool.
- Limited integration with other environmental databases, which keeps data fragmented and hinders its combined use for decision-making, although this integration was not an initial objective of the project due to resource constraints.

iii. Results

The project has made significant progress in strengthening PRTR systems in the Western Balkans and the Republic of Moldova, in line with the objectives defined at the outset.

Firstly, a **unified software solution** was developed, which is currently in the final phase of testing and installation in Montenegro, Bosnia and Herzegovina, and Kosovo. This modular system enables environmental data to be collected, analyzed and reported in a consistent manner, increasing efficiency and contributing to compliance with international standards, including the UNECE Protocol on PRTRs and the European Union's integrated E-PRTR and LCP reporting. These countries have begun to collect data via the new online platform, with plans to progressively extend data collection to all operators subject to PRTR obligations.

Secondly, **capacity building** took place: public authorities, operators and civil society organizations participated in training sessions on the use of the software, which led to greater awareness, improved access to environmental information and more effective data management.

Thirdly, the project helped **to improve Moldova's PRTR system** by enabling online reporting and modernizing its data collection processes, with direct benefits for the system's efficiency and transparency.

Fourthly, a **regional impact** was consolidated by strengthening cooperation between participating countries and creating a sustainable framework for ETRC management that is projected to last for years to come. The

project is still ongoing and is scheduled for completion on 30 November 2025, which will allow for further refinement of the software solution and associated institutional arrangements.

iv. Key elements and lessons learnt

With regard to the common software solution, the following lessons stand out:

- **Shared resources and cost efficiency**: The development of a unified software platform for three countries reduced the individual financial burden on each government. The modular design allows functionality to be scaled in line with the requirements of the UNECE Protocol on PRTR and EU regulations, whilst keeping costs at manageable levels.
- **Clear agreements with software providers**: It is essential to define from the outset the terms relating to intellectual property, use, updates and maintenance of the software, in order to ensure its sustainability and avoid problematic dependencies on external developers.

In general terms, the project has highlighted other key factors:

- **Gradual implementation**: The phased introduction of the solution, starting with voluntary participation by operators, allowed the system to be tested and adjustments to be made before full legal obligations came into force.
- **High-level commitment**: Political backing and the provision of annual budgetary allocations for the operation of the PRTR (including human, technical and IT resources) are essential conditions for the system's sustainability.
- **Transparency and stakeholder participation**: The inclusion of authorities, operators and civil society organizations in the design and implementation fostered acceptance of the system and ensured its relevance to the needs of all stakeholders.
- **Capacity building for sustainability**: Ongoing training for PRTR authority staff and operators, as well as raising awareness among civil society, are essential to ensure the system functions properly in the long term.
- **Regional cooperation**: Cross-border collaboration between the project countries and with experts from the European Union and other regions helped to resolve technical and operational challenges and accelerate progress.

A further key factor has been these countries **shared political commitment** to adopting European Union legislation and implementing the Kiev Protocol. This common legislative framework has been a key factor in joint progress and has improved the comparability of PRTR data across countries.

v. Featured case: Bosnia and Herzegovina

Bosnia and Herzegovina is a prime example of the progress achieved within the project. In this country, the initiative was led by The Resource Environmental Centre (REC)[17] . The installation of the common software enabled the launch of the PRTR in the Federation of Bosnia and Herzegovina (from December

[17] https://rec.org.ba/en/home/

2024) and in the Republika Srpska, whilst the launch in the Brčko District was delayed due to an ongoing institutional transition.

Three harmonized PRTR databases were established—one for each entity—along with a consolidated state database, creating the technical foundation necessary for the future ratification of the PRTR Protocol. The implementation of the system identified opportunities for improvement, such as the need to adjust key functionalities (e.g. automatic notifications and report export), streamline technical support mechanisms, and strengthen specialist staff within the responsible institutions.

In December 2024, a second phase of the project was launched, aimed at further improving the PRTR system, addressing these challenges and ensuring its long-term sustainability and accessibility. This new phase also seeks to comply with the requirements of the new EU Regulation on the Industrial Emissions Portal (IEP)18 and to consolidate integrated PRTR reporting. The experience of Bosnia and Herzegovina demonstrates how a phased approach, combined with technical support and clear political commitment, facilitates the implementation of an PRTR even in complex federal contexts.

vi. Applicability to Latin America and the Caribbean

The approach applied in the Western Balkans offers relevant lessons for countries in Latin America and the Caribbean. In particular:

- The existence of **shared regional objectives** and convergence towards international environmental standards can foster the development of common or harmonized solutions, reducing costs and facilitating cooperation.
- **Capacity building** through regional cooperation and the exchange of experiences can help overcome technical and administrative gaps in the design and operation of PRTRs.
- A **modular, shared software solution** can generate significant savings in development and maintenance, promote cross-border data exchange and improve environmental monitoring.
- **Regional cooperation** can contribute to stronger environmental governance and greater transparency in reporting and access to environmental information.
- In terms of **financing and sustainability**, a regional collaboration model can open up opportunities for joint financing schemes, reducing the individual financial burden on countries and promoting the continuity of the systems.

2) Good Practices in the PRTR Operational Phase

The operational phase is the stage at which the decisions adopted during the PRTR's initiation phase are implemented, ensuring the continuity, effectiveness and transparency of the system. This phase encompasses processes critical to the comprehensive functioning of the PRTR, such as a) staffing and

[18] Regulation (EU) 2024/1781 establishing the Industrial Emissions Portal (IEP) was adopted on 12 April 2024 and replaces the previous E-PRTR Regulation. The new framework expands public access to information on emissions and resource use, harmonises reporting methods and strengthens consistency with the Industrial Emissions Directive. Available at: European Commission, "Industrial Emissions Portal Regulation (IEPR)"

governance, b) data collection and storage, c) quality assurance, d) dissemination of and access to information, and e) data use. Each of these aspects is described in greater detail below.

- **Staff and governance**

The management of the PRTR requires a clear definition of operational responsibilities and coordination mechanisms between the various competent authorities. Depending on the national design, the agency responsible for collecting, reviewing, compiling, consolidating and publishing the information may vary. In this regard, international experiences reflected in **IOMC (n.d.)** show different models [OBJ][OBJ] :

- **Australia**: Facilities report to the National Pollutant Inventory (NPI) via their state or territory's environmental authority. These bodies review the information and then forward it to the Federal Government, which centralizes and publishes the data.
- **Canada**: Facilities report directly to the federal government, via Environment Canada. This central authority reviews, consolidates and publishes data from the National Pollutant Release Inventory (NPRI).
- **European Union:** Facilities report to the competent authority in each country, which reviews and submits the data to the European Pollutant Release and Transfer Register (E-PRTR) administered by the European Environment Agency (EEA), which compiles and disseminates the E-PRTR data.
- **Japan:** Facilities report their data to the relevant prefectural government. The prefecture then reviews and sends this information to the national government.

Once consolidated at both levels – prefectural and national – the PRTR data may be published.

- **United States** Facilities submit Toxic Release Inventory (TRI) information to the US Environmental Protection Agency (US EPA), the relevant state government and, where applicable, the tribal government. The US EPA, as well as state and tribal agencies, publish the TRI data.

In addition to defining institutional responsibilities, it is essential to have trained staff to operate the PRTR. To this end, it is recommended that:

- Identify the necessary skills (e.g. database management, data analysis, emissions estimation, chemical safety).
- Assess internal capabilities and, where necessary, implement specialized training. Data collection, compilation and storage

The correct collection, compilation and storage of data is essential for the functioning of a PRTR, as it ensures the integrity, accessibility and transparency of the information. The key recommendations on this process, based on the standards of the OECD, UNITAR and other international actors, are set out below.

- **Data Collection**

(OECD, 2015)There are various mechanisms for **collecting data from specific sources**, including paper forms, digital media (CD-ROMs, USBs) or web platforms. Wherever possible, the use of electronic systems is recommended, as they allow for:

- **Reduced costs and administrative time.**
- **Improved data quality**, with automatic validation checks and minimization of typing errors.

- **Facilitate the publication and timely access to information**.

When collecting sensitive information (e.g. trade secrets), electronic platforms must implement cybersecurity measures, particularly on web-based platforms.

For data transmission to the PRTR, two main approaches can be used:

- **Open source:** For example, the adaptation of pre-existing software from other PRTR systems (open source or licensed).
- **Customized:** Development of software specific to the needs of the country and the PRTR system.

➢ Estimation of Emissions from Non-Point Sources

The responsible agencies should calculate **diffuse emissions** using available tools and data sources, such as emission factors and geographic information systems (GIS). Non-point sources that may be included in a PRTR include:

- **Area sources:** Groups of small facilities that do not exceed reporting thresholds.
- **Mobile sources:** Cars, aircraft, among others.
- **Biogenic sources:** Microbial activity, vegetation, etc.
- **Geogenic sources:** Volcanoes, natural processes.

➢ Data processing and flow

It is essential to have a clear and efficient data flow model that covers the following steps:

- **Receipt and preliminary verification** of data from point and non-point sources.
- **Quality control and validation** of information to ensure its accuracy and reliability.
- **Process automation**, which improves efficiency and accuracy in data collection and processing.

➢ Infrastructure and Database

Having an adequate infrastructure is essential for the effective storage and management of PRTR data. This involves:

- **Integrating** point and non-point sources and metadata.
- **Designing databases** that facilitate accessibility and public access to information, as well as efficient management by the competent authorities.
- Procedures for **updating backups, version control** and continuous updating.
- Implementing **security measures** to protect sensitive information.

Harmonization To facilitate data exchange and integration, it is recommended to adopt international standards and common principles in data management. This includes:

- **The use of international identifiers** and common parameters (e.g. the CAS number).
- Consistent **conceptual and logical models** for data management.
- **International standards** for data management and transfer between different systems.

Applying these good practices improves the efficiency and reliability of the PRTR system, facilitating access to information for all stakeholders.

A notable example in the field of PRTR software development is that of Chile, where a one-stop shop was implemented that integrates the PRTR with other sector-specific platforms, as well as a register linked to the green tax. This integration not only optimizes data collection and reporting but also facilitates more efficient, transparent and accessible management of information on emissions and environmental impacts. In doing so, the system contributes both to national sustainability and to the fulfilment of international climate targets.

Good Practice 7: Optimizing Environmental Reporting and Governance: the case of Chile.

a. One-Stop Shop (OSS)

The Single Window is a centralized system for environmental reporting. It was established in 2013 under Article 17 of Supreme Decree No. 1 of 2013, which mandates that information be reported exclusively through the SP PRTR system. It began operating in 2014 and was updated in 2020 with a new platform accessible via a unique password, offering greater data processing and analysis capacity.

The core functions of the VU include:

- Assigning a unique ID to each establishment subject to environmental regulation, standardizing the identification of emissions to air, water and soil/waste;
- Coordinating information between different government agencies in an efficient manner;
- Serving as a single point of entry for emissions and pollutant declarations;
- Providing regulatory information, regulatory updates and support material.

Currently, the Single Window integrates systems such as SINADER, SISAT, RUEA, RFP, REP and others, enabling interoperability, reducing duplication and ensuring a coordinated flow of environmental information.

b. Green Tax

The Green Tax is a levy applied to fixed sources of pollutant emissions. For its operational implementation, the Superintendency of the Environment uses the Atmospheric Monitoring System (SISAT), through which establishments report their emissions quarterly. This data is used to determine which facilities are subject to the tax and to calculate the amount due. The information generated is integrated into the PRTR.

The process involves three main institutions:

- The Ministry of the Environment, drawing on information from the PRTR, identifies emission sources, defines the tentative pool of liable parties and sets thresholds. The Superintendency of the Environment applies measurement, reporting and verification (MRV) to obtain validated data that enables the payment to be determined;
- The Internal Revenue Service calculates the tax based on the reported data.

This has enabled a tax system based on verifiable environmental data, with greater traceability and enforcement capacity.

c. Results

The One-Stop Shop has generated concrete benefits:

- Harmonization of sectoral bases and standardization of information;
- Elimination of duplicate registrations and reduction of the administrative burden;
- Georeferencing of emissions and transfers;
- Integration of multiple reports into a single point;
- Voluntary exchange of information between public services; and
- Faster and less costly processes for regulators and businesses.

The integration of the Green Tax into the PRTR has enabled:

- A unified system for reporting and tax calculation;
- Greater tax administration efficiency and a reduction in data duplication;
- Better coordination between environmental and tax authorities; and
- Faster and more organized access to information for decision-making.

d. Key elements and lessons learnt

- Inter-agency coordination has been fundamental to the functioning of the system.
- The **National Coordination Group** enabled stable and coordinated governance between ministries.
- International support—particularly from UNITAR and Canada—provided key technical assistance.
- Gradual implementation allowed for stability, improvement and subsequent analytical processing.
- The growing volume of data requires **automated processing** capacity.
- The PRTR can be scaled up to new policies, such as REP or water emissions control.

e. Applicability in Latin America and the Caribbean

Chile's experience is replicable in other countries in the region.

- The One-Stop Shop reduces the administrative burden, improves transparency and facilitates inter-institutional coordination.
- The integration of the PRTR with tax instruments demonstrates its potential as a public policy tool, enabling data-driven enforcement and informed decision-making.

- **Data quality assurance**

Data quality is a vital component of an PRTRS. A system based on accurate data reduces uncertainty in analyses, strengthens the reliability of results, allows for more precise measurement of progress in national environmental policies, and facilitates harmonization with other ETRSs at the international level.

According to the OECD's ' , it is essential that NERTS have mechanisms in place to verify and validate the reported information. To this end, systematic review and validation procedures must be implemented to identify and correct inaccurate or incomplete data prior to publication.

The key components of quality assurance include:

- **Review of reported data** to detect outliers, significant year-on-year changes and records with internal inconsistencies.
- **Feedback to those responsible for reporting** to confirm or correct questionable information,
- **Standardized procedures for error correction** that allow those responsible for reporting to review and update reported data.
- **Verification built into the reporting software** to alert users to potential quality issues before data is submitted.
- **Automation of data validation** using algorithms that identify inconsistencies and generate alerts or automatic reports.

Each of these components is described in greater detail below:

1) **Review of Submitted Data**

The review procedure involves analyzing the reported data to identify anomalous patterns, inconsistencies, as well as outliers and significant changes in reported emissions from one year to the next. Good practices include:

- Comparison with historical records to detect inconsistencies.
- **Using reasonable estimation methodologies** when direct measurements are not available.
- **Checking for internal consistency** to avoid contradictions within the reported data.
- **Consult with the relevant managers** to confirm any unusual information or correct any errors found.

2) **Feedback to the relevant managers**

When data issues are detected, it is essential to notify the responsible parties for review and clarification. Communication can take place via telephone, email, formal letter or site visits, enabling the validation of outliers, the justification of variations or the correction of incorrectly entered data.

3) **Error correction procedures**

To ensure an orderly and traceable correction process, clear procedures must be established, defining:

- Who is responsible for submitting the correction or update.

- The mechanisms or channels through which the correction will be made (forms, software, official document)
- How versions and modifications in the PRTR database will be controlled.

4) Verification integrated into the reporting software.

The use of technological tools facilitates the detection and correction of errors before the final submission of data to the PRTR. Some recommended tools include:

- Automatic validations to ensure the integrity of the data entered, avoiding empty fields or inconsistencies.
- Internal consistency checks. Alerts regarding excessive variations.
- Automatic comparison with historical records to detect anomalies.

5) Software development for automatic validation

- Computer systems can enhance the efficiency of quality control through tools that: Detect large variations in emissions reports.
- Compare data with sectoral benchmarks to identify unusual deviations.
- Generate automatic reports highlighting critical points for review.

6) Final Considerations

It is essential to strike a balance between quality verification and the speed of data publication. The extent to which data will be reviewed prior to disclosure must be determined, and responsibilities must be defined between those responsible for reporting and the PRTR authority.

➢ Presentation, dissemination and access to data

The presentation and dissemination of PRTR data is a key tool for environmental management, as it enables governments, industry, academia and civil society to access, understand and use the information for decision-making. The value of the PRTR lies not only in the generation of data, but also in its appropriate presentation, visualization and dissemination. Below are good practices based on the standards contained in the following documents: , (OECD, 2005) , (OECD, 2023) , (IOMC, n.d.)

1) Dissemination of PRTR Data

Dissemination involves making information available to the public. Decisions regarding dissemination relate to **the** *scope* and the *means* by which the information will be distributed. **'Scope'** defines the level of public access to PRTR data, whilst the **'means'** of publication refer to the format used to deliver it (e.g. on paper, digital platforms, public databases).

Recommended good practices:

- Publish information via multiple access platforms, including websites, printed reports, web databases and interactive visualizations.
- Ensure formats are accessible and understandable to different audiences.
- Promote interoperability with other environmental information systems.
- Update data regularly to ensure it remains current and useful.

It is important to note that, although governments typically lead the dissemination of PRTR data, over time other stakeholders play an increasingly significant role. NGOs and local authorities can play a key role in bringing information to local communities and collaborating on data validation. Industry can use the data to report progress in reducing pollutants. Similarly, the academic community can analyse and contextualize the data, making it easier to understand. Finally, the media play a key role in disseminating this data to the general public, facilitating access to relevant information on pollution and environmental management, and promoting accountability among businesses and governments.

2) Presentation of PRTR Data

Presentation refers to the way in which information is delivered to audiences. It involves determining whether the reported data will be published in full or in aggregate form, with or without context, and using which tools.

Good practices in data presentation include:

- The use of clear and explanatory visualizations, such as charts, maps and interactive tables.
- Providing context through historical, comparative or environmental impact data
- Explanation of data collection methodologies and their potential limitations.
- Including examples, glossaries and case studies that help non-specialist users interpret PRTR data.

Adopting these good practices in the presentation and dissemination of PRTR data helps to improve transparency, encourage public participation and strengthen evidence-based decision-making on environmental matters.

3) Analysis and Presentation Tools

The use of technological tools is essential for transforming raw data into interpretable information. Some of the most commonly used tools include:

- **Geographic Information Systems (GIS)**: These enable the geospatial visualization of data and its integration with other environmental, demographic and socio-economic variables, amongst others.
- **Toxicity weighting**: Adjusts reports according to their potential impact on health and the environment (hazardousness).
- **Data classification and prioritization**: Enables data to be organized according to criteria such as industrial sectors, substances, emission volumes, and geographical locations.
- **Risk assessment**: Tools to identify and prioritize chemicals according to their hazard level and exposure.
- **Interpretative reports and downloadable databases**: Facilitate access for both experts and the general public.

- **Application Programming Interface** (API) **and data export**: These facilitate interoperability with other environmental information systems.

- **Strategies for the presentation and dissemination of PRTR data**

According to the OECD's ' , an effective strategy should consider:

a. **Definition of objectives**: Identify the purpose(s) to be achieved through the publication of the information. **Identification of** the **target audience**: Consider the different potential users, such as industry, civil society, government agencies and academia.
b. **Determination of information needs**: Adapt the language, format and technical level required to the specific needs of each audience.
c. **Selection of data to be published**: Decide whether to publish complete, aggregated or thematic data, as well as supplementary information and metadata (geographical coordinates, historical data, trends, etc.).
d. **Choice of dissemination channels**: Use print publications, electronic media such as websites, CD-ROMs (in areas with poor connectivity) or searchable databases, and interactive maps.
e. **Design of query tools**: Implement dashboards, interactive maps, data query tools, interpretative reports, press releases, fact sheets and APIs to integrate data from other PRTRs.

Well-planned dissemination turns the PRTR into a dynamic tool for timely, understandable and meaningful access to environmental information.

Below, we describe two good practices that illustrate how to improve the presentation and dissemination of PRTR data. The first is an OECD compilation of good global practices in visualization and public access. This resource brings together examples from various countries that have developed accessible platforms, interactive maps, automated reports and intuitive formats for different audiences. The second example is the annual public information and participation day in Spain, a key event where PRTR data is presented and active public participation in environmental decision-making is encouraged. This practice strengthens interaction between citizens and the authorities, promoting greater engagement with environmental policies.

Good Practice 8: OECD Compilation of Global Good Practices in the Visualization and Public Access to PRTR Data[19]

The presentation of PRTR data is an essential component in ensuring its accessibility and understanding by various stakeholders. To this end, the OECD has compiled examples of international good practices that illustrate different tools and presentation formats used to improve access to, interpretation and use of the available information. These examples cover a range of approaches, from basic visualizations to advanced

[19] OECD, Uses of PRTR Data and Tools for their Presentation, Series on Pollutant Release and Transfer Registers No. 27, 2023.

analysis systems, and help to understand how different methodologies can facilitate decision-making and public engagement.

The compilation brings together more than 26 examples divided into five categories:

- 10 examples of **Basic data presentation**
- 3 examples of **Classification and ranking of facilities**
- 6 examples of **the use of GIS and interactive maps**
- 2 examples of **toxicity weighting tools**
- 5 examples of **data visualization for the public**

i. Results

The experiences gathered demonstrate that a clear and comprehensible presentation of PRTR information enhances its public utility and its ability to drive informed decisions. Maps, graphs and other visualizations facilitate the interpretation of complex data, whilst the prioritization of facilities allows for the targeting of control and monitoring actions. Toxicity weighting, in turn, makes it possible to distinguish not only the volume of emissions but also their potential impact on health and the environment, guiding management priorities.

ii. Key elements and lessons learnt

Basic data presentation:
It facilitates access to and general understanding of the PRTR's content through interactive platforms and simple visualizations, enhancing transparency and public use of the information.

Classification and prioritization of facilities:
Enables the identification of priority emission sources through rankings or filters based on volume or hazard level, facilitating regulatory intervention and environmental enforcement.

Use of Geographic Information Systems (GIS) and maps:
Spatially represents emissions, showing risk zones or concentrations of pollutants. Its visual nature allows for quick understanding even for non-specialist users.

Toxicity weighting tools:
These adjust reported emissions according to their hazard level and potential effects, highlighting critical releases with greater environmental and health significance.

Data visualization for the public:
Designed for non-technical audiences, they use infographics, simple charts and visual narratives that enable the public to understand and use the information without requiring specialist training.

iii. Applicability in Latin America and the Caribbean

The practices identified can be replicated in different contexts and progressively incorporated into PRTR platforms. Their adoption is particularly valuable for countries that need to improve public understanding of data or strengthen the analytical use of information. Visualization tools, toxicity weighting and interactive mapping can support strategies for regulation, transparency and public participation, facilitating informed decision-making in environmental policy.

iv. Annual Information and Public Participation Conference[20]

The Annual Conference on Information and Public Participation regarding the PRTR in Spain, organized by PRTR-Spain, provides an annual forum for dissemination and dialogue on pollutant releases and transfers. Through technical presentations, round-table discussions and forums for debate, it promotes exchange between public administrations, industry, academia, civil society organizations and the public. Since its inception, this event has established itself as a stable mechanism for strengthening access to information, ensuring transparency in environmental management and gathering input for the continuous improvement of the system.

v. Results

The conference has enabled:

– **To increase transparency** by improving public visibility and understanding of data on pollutant emissions.
– **Strengthen public participation** by creating opportunities for different stakeholders to express their views, ask questions and make comments.
– **Promote knowledge exchange** by sharing experiences and good practices between regions and countries.
– **Consolidate collaborative networks**, fostering synergies between government, industry and civil society to advance environmental sustainability.

vi. Key elements and lessons learnt

The main lessons learned from this experience are:

– **Expand the reach of the PRTR**, reinforcing communication strategies to increase its visibility and practical utility.
– **Create opportunities for feedback**, systematically incorporating public consultations and comments into the improvement of the system.
– **Present information in a comprehensible manner**, using accessible formats and reducing technical barriers to data interpretation.
– **Promote the active use of information**, encouraging the use of PRTR data in environmental decision-

[20] Official documentation from Public Information and Participation Days (2013–present) available at: https://RETC-es.es/documentos/otros Interview (26 February 2025) with Dr Íñigo de Vicente-Mingarro, consultant and manager of the PRTR.

making, research, planning and public oversight.
– **Maintain international coordination**, leveraging links with global agendas and standards to strengthen national management.

vii. Applicability in Latin America and the Caribbean

This type of workshop is replicable in Latin America and the Caribbean, and can help improve the national dissemination of PRTRs, generate feedback channels, promote their use as a public policy tool and strengthen regional cooperation through the exchange of experiences.

- **Uses of PRTR data**

The strategic use of PRTR data is essential to transform the environmental information contained therein into an active tool for decision-making, risk management and public participation. Although these systems are designed as 'access to information' tools, their application is much broader: they enable the guidance of policy-making, the assessment of environmental performance, the support of research, and the strengthening of environmental justice.

This sub-chapter explores good practices for using this data, as well as examples from other countries, drawing on OECD (2023) and the PRTR Data and Tools Interactive Database, which brings together implementation experiences from a variety of contexts.

Good Practices in the Use of PRTR Data

a. **Public policy-making**: PRTR data are essential for identifying priority sectors or substances, helping governments to design and develop regulatory instruments. Transparency in the collection, analysis and dissemination of information are key conditions for underpinning policies that are supported by reliable and up-to-date data.
b. **Environmental performance assessment**: PRTRs provide key data for assessing trends in environmental performance over time. A good practice is the development of indicators that allow for the comparison of trends in pollutant emissions and the effectiveness of implemented policies, thereby promoting accountability.
c. **Risk assessment**: Quantifying released and transferred substances enables the analysis of risks associated with chemical exposure. Good practices include integrating PRTR data with toxicological information, spatial and demographic analyses to identify areas of higher risk.
d. **Education and Research**: PRTR data are a valuable resource for environmental education and research. To encourage their use in these contexts, it is essential that the data are accessible, easy to interpret and regularly updated. The creation of visualization tools and collaboration with academic institutions are examples of good practices that facilitate the dissemination and analysis of information.
e. **Environmental justice**: Cross-referencing PRTR data with social variables helps identify areas where vulnerable communities are most exposed to disproportionate impacts. A good practice is the integration of PRTR data with demographic, socio-economic and environmental information, enabling a more comprehensive analysis of impacts. Furthermore, promoting active public participation in monitoring strengthens environmental transparency.

f. **Strengthening partnerships and public trust**: PRTR data is also used to build partnerships between governments, businesses and the public. Active and transparent disclosure improves trust and can accelerate measures to prevent and reduce emissions.

Below are four good practices associated with the use of PRTR data.

a. Platforms with cases (OECD and US EPA). Both institutions have developed interactive databases to facilitate access to and analysis of this data. These platforms allow users to explore the uses of PRTR data in various contexts and sectors, promoting a broader and more effective use of available environmental information.
b. Reduction of atmospheric emissions in Israel. The second example details the use of PRTR data in Israel to effectively reduce atmospheric emissions at the municipal level. Through the analysis of this data, local authorities have been able to identify areas of high pollution and design specific policies to mitigate emissions, improving urban air quality and public health in the affected areas.
c. Assessment of industrial environmental performance in Israel. The third example concerns the use of PRTR data in Israel to assess companies' environmental risk and performance. Through this analysis, a more accurate evaluation of the impacts of industrial activities has been achieved, enabling authorities, investors and companies to make informed decisions to improve sustainability and reduce the environmental risks associated with industrial operations.
d. Prevention of industrial pollution in Israel. The fourth example details the use of PRTR data to analyze and promote pollution prevention in the automotive manufacturing sector in North America (USA, Canada, Mexico). This practice highlights how information collected through PRTRs is being used to assess data quality and completeness, understand current pollution prevention practices, and identify drivers and barriers.

Good practice 9: Database of PRTR data uses[21]

Various organizations, such as the OECD and the US EPA, have identified and documented good practices in the use of TRI data to support policy-making, environmental performance assessment, risk identification and the promotion of environmental justice. Below are some specific examples of the use of data from the US Toxic Release Inventory (TRI):

- **Example 1: Policy Development**

TRI data, combined with information from the US EPA, is used to compile the **National Emissions Inventory (NEI)** every three years. This information enables the development and review of air quality regulations, the carrying out of modelling, and the support of risk assessments. The NEI provides essential input for understanding the impacts of air pollution on public health and forms a solid basis for formulating more effective policies aimed at mitigating these risks, particularly in vulnerable communities.

[21] The practices and examples described are based on: US EPA, Catalog of Applied TRI Data Uses; OECD, Interactive Database of Uses of PRTR Data and Tools; OECD (2023), Uses of PRTR Data and Tools for their Presentation, Series on PRTR No. 27; American Chemistry Council, Protecting the Environment; Dutzik, Tony et al. (2022), Wasting our Waterways; Zhang, Charlie; Sears, Clara; Zierold, Kristina (2022), Exploring Racial and Economic Disparities in Exposure to Airborne Lead from Industrial Facilities in Kentucky, USA.

- **Example 2: Environmental Performance Assessment**

The **American Chemistry Council (ACC)** reports regularly on changes in Hazardous Air Pollutant (HAP) emissions from its member companies. Using TRI data from 2010 to 2021, the ACC reported a 26% reduction in HAP emissions, presented in graphs that make it easy to track environmental performance. This practice allows for the assessment of progress in reducing emissions and the monitoring of compliance with environmental targets over time.

- **Example 3: Risk Assessment**

Environment America Research & Policy Center, U.S. PIRG Education Fund and Frontier Group used data from the 2020 TRI, together with the **Risk Screening Environmental Indicators (RSEI)**, to analyze emissions of toxic substances into water bodies. The study identified significant sources of pollution and their potential impacts on health and the environment, making recommendations aimed at strengthening the implementation of *the Clean Water Act* and improving the protection of water resources in the US.

- **Example 4: Environmental Justice**

The study *"Exploring Racial and Economic Disparities in Exposure to Airborne Lead from Industrial Facilities in Kentucky, USA"* analyzed differential exposure to lead in communities with diverse racial and economic characteristics. Using TRI data and geospatial tools, it concluded that low-income communities and ethnic minorities were more exposed to lead emissions from industrial facilities. This case highlights significant environmental disparities and underscores the need for public policies that reduce these inequalities and protect the most affected communities.

i. Results

The comprehensive and strategic use of PRTR data, particularly when combined with other sources of information, enhances its effectiveness and generates concrete impacts across multiple sectors. Its application helps to improve public policy formulation, optimize risk assessment, strengthen scientific research and promote better industrial practices. Furthermore, collaboration between different stakeholders enables a more accurate understanding of environmental issues, improving decision-making and increasing transparency and public accountability.

ii. Key elements and lessons learnt

The PRTR system truly comes into its own when the data collected is used effectively. Without practical applications or integration with other sources of information, the PRTR's ability to influence public policy or support sustainability is limited. To maximize its usefulness, the following elements are key:

Multiple uses and cross-sectoral collaboration:
PRTR data can support policy, research, risk assessment, business practices and transparency. Its value increases when governments, the private sector, academia and civil society collaborate on its analysis and dissemination.

Data integration and complementary analysis:
Combining PRTR data with geospatial, socio-economic or health information enables a more comprehensive analysis of environmental impacts. Modelling, risk assessments and demographic analyses are essential for better decision-making.

Generation of added value:
The integration of diverse sources enables the tackling of complex issues, such as multi-media pollution or the cumulative effects of hazardous substances, thereby strengthening response and prevention capabilities.

iii. Applicability in Latin America and the Caribbean

Good practices in the use of PRTR data can be adopted in Latin American and Caribbean countries, strengthening environmental management and decision-making in the region. Integration with socio-economic or health databases enables inequalities to be addressed and interventions to be targeted. Collaboration between governments, the private sector, academia and civil society is key to maximizing the potential of PRTRs and consolidating their role as a tool for transparency and access to information.

Good Practice 10: Use of PRTR data for the reduction of atmospheric emissions at the municipal level[22]

The strategic use of PRTR data in Israel has proven to be a powerful tool for driving government and public action to reduce atmospheric emissions at the municipal level. The cases of Haifa Bay, Ashdod and illegal waste burning demonstrate how spatial analysis of emissions can translate into effective environmental policies.

- **Example 1: Haifa Bay, a comprehensive approach**

In 2013, the Ministry of Environmental Protection published a ranking of non-methane volatile organic compound (NMVOC) emissions by municipality, placing Haifa in first place. In 2015, PRTR data supported the Ministry of Health in the urban planning process by highlighting an increase in certain types of cancer linked to air pollution, which triggered significant public mobilization.

In response to this situation, the Government approved the National Plan in 2015 (Government Decision 529), which included measures such as a 50% reduction in industrial NMVOC emissions by 2018, the creation of Israel's first Low Emission Zone, which restricts the entry of diesel vehicles, and the installation of vapor recovery systems at all petrol stations. Furthermore, air quality monitoring was doubled and the number of inspection staff increased by 60%, with a total investment of €66 million.

[22] Ministry of Environmental Protection (2023), What do the factories in our environment emit into the air, sea and soil? The Jerusalem Post (2015), Haifa has the highest cancer risk in the country, says the Ministry of Health; The Jerusalem Post (2022), Is air pollution in Haifa Bay linked to cancer? An Israeli study suggests so; Ministry of Environmental Protection (2015), Cross-cutting applications of PRTR. Global Round Table on PRTRs; Haaretz (2021), Main Cause of Cancerous Emissions in Israel: Illegal Burning of Waste; Interview conducted on 04/03/2025 with Mr. Uri Shilhav, PRTR Coordinator, Israeli Ministry of Environmental Protection.

Between 2015 and 2020, the results were remarkable: industrial NMVOC emissions were reduced by 48%, and the cumulative reduction in air pollutants ranged from 57% to 95%. In 2020, NMVOC emissions in Haifa Bay were reduced by 72%, and by 2022, carcinogenic substances had fallen by 23%.

- **Example 2: Ashdod Industrial Areas, replicating the success**

Ashdod, the seventh-highest municipality for NMVOC emissions in 2014, is now at the center of a new National Plan to reduce atmospheric emissions, following Haifa's successful model.

- **Example 3: Illegal Waste Burning, Tackling a Critical Source of Pollution**

The PRTR data and the analysis carried out on it were fundamental in highlighting the problem of illegal waste burning in Israel, a phenomenon that in 2020 accounted for two-thirds of the country's carcinogenic emissions, mainly due to the burning of domestic and agricultural waste, including plastics.

Although the detailed analysis involved a degree of uncertainty due to necessary assumptions, it enabled the problem to gain significant public and media attention. This heightened awareness is currently driving active intervention by government authorities to address the situation.

i. Results

The processing of PRTR data has been key to highlighting air pollution problems associated with various geographical areas (municipalities) and practices such as the illegal burning of waste. This analysis has helped to raise awareness, spark public debate and prompt government action. Action plans such as the one implemented in Haifa have demonstrated concrete results in reducing atmospheric emissions.

ii. Key elements and lessons learnt

- **Storytelling with data:** Transforming data into accessible narratives helps to engage the public and other stakeholders (e.g. emissions rankings).
- **Inter-institutional collaboration:** Involving other ministries, such as health, allows data to be contextualized and linked to health risks.
- **Expanding impact through participation:** Involving government and civil society stakeholders broadens the reach of the analysis.
- **Transparency and communication:** Publishing processed information in an understandable format helps catalyze policy decisions.

iii. Applicability in Latin America and the Caribbean

The use of PRTR data for spatial emissions analysis is highly transferable to countries in Latin America and the Caribbean. Coordination between institutions, the integration of health and environmental data, and transparency are essential factors for driving effective public policies.

Good Practice 11: Environmental Risk and Corporate Performance Rating[23]

Israel's Ministry of Environmental Protection (MoEP) created the **Environmental Impact Index**, a tool designed to provide information to both the public and investors on the environmental performance and risks of the country's leading companies. This index facilitates clear comparisons between companies, enabling investors to make informed decisions. Through this tool, investors can assess the level of financial risk associated with companies' environmental actions and activities, promoting accountability and transparency in the sector.

The Index assesses more than 40 publicly listed or government-owned companies with industrial subsidiaries, covering approximately 100 factories and nearly 800 service stations. Developed by the MoEP, it is based on PRTR data and takes into account annual pollutant emissions, waste transferred or released into the atmosphere, and the risk classification of hazardous materials. It also incorporates factors such as the quantity and type of materials used, proximity to population centers, the site's water sensitivity, and companies' compliance with regulations.

Determination of the rating

A company's environmental rating is determined based on the following components:

a. Level of risk and direct impact on the environment:
This includes three elements:

- **Annual emissions of pollutants or transferred waste:** The data comes from the MoEP's PRTR.
- **Hazardous materials:** Risk is classified according to the use or storage of hazardous materials, their quantity and the types of materials managed at the facility.
- **Location:** This considers proximity to inhabited areas, the site's water sensitivity and the destination of effluents.

b. Compliance
Assesses the degree of compliance with environmental laws and regulations, including business licenses, discharge permits, permits for toxic substances, amongst others.

c. Environmental management and reporting
Takes into account companies' positive actions, such as the implementation of environmental management systems, transparency in their operations, and voluntary reporting to the Ministry of the Environment and Public Works' (MoEP) national greenhouse gas registry.

[23] Government of Israel, Environmental Impact Index: Rating Environmental Risk and Performance of Companies; Interview conducted on 04/03/2025 with Mr Uri Shilhav, PRTR Coordinator, Israeli Ministry of Environmental Protection.

d. Results

The Environmental Impact Index has proven effective in promoting transparency and environmental accountability. Whilst it was initially expected to be used predominantly by investors, **NGOs and the media** have been the most active users, driving improvements in corporate environmental performance.

e. Key elements and lessons learnt

Some key lessons drawn from this practice are:

- **Clear presentation:** Converting complex PRTR information into understandable indices or rankings, accompanied by supplementary data.
- **Data simplification:** Simplification makes it easier for NGOs, the media, companies and the public to better understand environmental risks and impacts.
- **Transparency and compliance:** The clear dissemination of data and companies' regulatory behavior strengthens public trust and supports informed decision-making.
- **Driving action:** The accessibility of information encourages more effective action by the state, companies and civil society.

f. Applicability in Latin America and the Caribbean

The Environmental Impact Index is transferable to countries in Latin America and the Caribbean, although it requires additional supplementary information—such as the level of regulatory compliance or the distance of facilities from inhabited areas or bodies of water—to adequately calculate environmental risk and adapt it to local circumstances.

Good Practice 12: Use of PRTR Data for Pollution Prevention in the North American Automotive Sector[24]

The North American Pollutant Release and Transfer Register (NAPRTR) initiative is in itself a good practice, as it promotes transparency and access to data on industrial pollutants from the region's three PRTR programmes: Canada's National Pollutant Release Inventory (NPRI), Mexico's Pollutant Release and Transfer Register (PRTR) and the United States' Toxic Release Inventory (TRI). By integrating this data through the **Taking Stock Online (TSO)** platform, the initiative enhances understanding of industrial activities across North America and supports evidence-based decisions for pollution prevention.

A specific good practice within this initiative is the **Pollution Prevention (P2) Challenge**, which aims to promote good practices in pollution prevention within the automotive manufacturing sector and its supply chain. This sector, which is highly integrated across the region, plays a central role in the economies of

[24] CEC (2024), P2 Challenge, Phase 1. Analysis of P2 Data for the North American Automotive Manufacturing Sector and Supply Chain; CEC (2024), Pollution Prevention (P2) Challenge; Interview on 7 March 2025 with Orlando Cabrera, Danielle Vallée and Erika Hercules of the Commission for Environmental Cooperation.

Canada, Mexico and the United States, and accounts **for** approximately **40% of all facilities reporting to North American PRTRs**.

The P2 Challenge was established under the **Commission for Environmental Cooperation's (CEC) 2021–2025 Strategic Plan** and is being implemented in two phases:

- **Phase 1 (Completed):** Review of P2 data reported by facilities to assess the quality and completeness of the information, understand current P2 practices, and identify factors that drive or hinder pollution prevention. National reporting requirements were also evaluated to identify strengths, weaknesses, and areas for improvement.
- **Phase 2 (Scheduled for 2025):** Engage industry representatives to review the results of Phase 1 and explore opportunities to improve both the reported information and its practical application by industry and governments.

a. Results

Although the initiative is still under development, the work carried out so far allows for important conclusions to be drawn:

- **Identified good practice:** The use of EPR data in pollution prevention initiatives within the automotive sector is still being explored, but the findings show that this data can be a key tool for promoting transparency and supporting evidence-based decisions in the automotive supply chain.
- **P2 practices, barriers and drivers:** Phase 1 provided valuable information on existing P2 practices and helped identify common barriers and drivers within the sector. It also revealed differences between countries in reporting requirements that could be harmonized to improve the comparability and usefulness of the data.
- **Industry engagement:** The initiative has successfully engaged industry representatives and experts, laying a solid foundation for promoting better P2 practices across North America and strengthening collaboration between industry and governments.

b. Key elements and lessons learnt

Among the lessons learned from the initiative's progress, the following stand out:

- **Designing reporting requirements aligned with the intended use:** It is essential that reporting requirements are designed with the end use of the information in mind. Clear and practical frameworks help to generate comparable, reliable and useful data for pollution prevention and other environmental purposes.
- **Identification of barriers and drivers using PRTR data:** Analysis of PRTR data enables the identification of challenges to implementing P2 solutions and guides the design of policies, incentives, technical assistance or other instruments that facilitate their adoption.

- **Data comparability:** Ensuring comparability across countries is key to supporting decision-making and implementing regional pollution prevention initiatives. Standardising reporting requirements facilitates information exchange and international cooperation.

c. Applicability in Latin America and the Caribbean

The lessons from this initiative offer valuable opportunities for countries in Latin America and the Caribbean, particularly those currently designing or updating their EPR systems. The aim is not merely to collect data to meet regulatory obligations, but **to convert that information into actionable insights** that drive environmental policy, foster industrial innovation and improve sectoral environmental management. Aligning reporting requirements with the intended use of the data helps to improve the quality of information, enhance regulatory compliance and promote more sustainable practices in key sectors.

➢ Good Practices in Promoting, Monitoring and Analyzing the Use of PRTR Data

To properly monitor the use of PRTR data and generate statistics on its applications, it is essential to have monitoring systems that enable the evaluation of the effectiveness of the policies and practices implemented. This includes collecting information on who accesses the data, how it is used and for what purposes, as well as producing regular reports that identify trends, achievements and areas requiring improvement in pollutant management at local, regional and global levels.

Below are two good practices associated, on the one hand, with promoting the use of PRTR data and, on the other, with monitoring its actual uses.

The first example details how the US EPA promotes the use of PRTR data through specific guidelines and tools, designed specifically for different types of users. These tools facilitate access to and understanding of the information, provide guidance on how to use it efficiently, and support environmental decision-making. In this way, the practical use of the data is encouraged and its value as an input for improving environmental policies and practices is enhanced.

The second example describes how the US EPA itself carries out continuous monitoring of the use of PRTR data. This monitoring makes it possible to identify who is using the information, for what purpose and through which methods, which helps to assess the effectiveness of dissemination strategies and the actual impact of the data on public policy. This process also helps to ensure that the data is used appropriately, maximizing its contribution to environmental sustainability and the strengthening of regulatory compliance.

Good Practice 13: Promoting the Use of TRI Data[25]

The US EPA actively promotes the use of TRI data to improve environmental management, foster transparency and facilitate informed decision-making. Through its *TRI Data in Action* initiative, it has developed resources and tools to enable various stakeholders to use TRI data effectively. An example is

[25] US EPA, TRI Data in Action; TRI for Tribes; Guide to Using TRI Data to Reduce Pollution in Your Community.

described below; the website also features initiatives and tools aimed at different stakeholders, such as civil society, indigenous peoples, scientists and the media, amongst others.

- **Example: TRI for Tribes**

Industrial and federal facilities located on indigenous lands that meet TRI reporting requirements must submit annual data not only to the US EPA, but also to the relevant tribal government body. This dual obligation ensures that tribes have access to the information needed to identify sources of toxic chemical releases within their territories, monitor changes in these releases over time, and prioritize efforts to reduce local pollution. The information received enables tribes to make informed decisions and develop strategies to protect the health and well-being of their communities.

To support tribes in this process, the US EPA provides various tools, such as the **TRI Toxics Tracker**. This interactive tool provides access to detailed data on chemical releases from TRI facilities located on or near indigenous lands. Tribes can intuitively view summary-level data on these releases and their potential impacts. If no specific selections are made, the tool displays national-level data for all tribes, providing a broader overview.

In addition, tribes can access supplementary resources via the **TRI Toolbox**, which offers online tools and educational materials to help interpret the data and make more effective use of the available information. To receive specific support, tribes can also contact the TRI programme by email or get in touch with the TRI Programme Regional Coordinators or the US EPA Tribal Programme Managers, who provide personalized assistance regarding facilities near their communities.

i. Results

US EPA initiatives, such as *TRI Data in Action*, have significantly boosted the use of TRI data by various stakeholders, including advocacy organizations, researchers, the media, industry, governments and Indigenous communities. Through interactive tools, specialized guides and practical examples, these initiatives have facilitated access to, interpretation of and application of information on chemical releases. This has enabled the monitoring of pollution, the implementation of preventive measures and the strengthening of participation in environmental management. Furthermore, by providing data in accessible formats and promoting its integration into decision-making, *TRI Data in Action* has contributed to the reduction of pollution and the strengthening of transparency in environmental management.

ii. Key elements and lessons learnt

The true value of the PRTR in the region will depend on its effective use and not merely on data collection. Given that the information is technical and complex, it is crucial to develop resources that facilitate its interpretation and application according to the needs of each user, whether communities, industries, researchers or governments.

To prevent the complexity of the data from discouraging its use, intuitive tools, clear guidelines and interactive platforms are required to enable comprehensible visualization. Likewise, it is key to design tailored support strategies, including training, personalized assistance and practical examples that

demonstrate the value of the PRTR in environmental management and decision-making. An effective dissemination strategy must also ensure that key stakeholders are aware of and have access to these tools, promoting their continuous and effective use.

iii. Applicability in Latin America and the Caribbean

This good practice is applicable to countries in Latin America and the Caribbean and is aligned with the principles of the Escazú Agreement, which promotes access to environmental information and public participation in decision-making. To maximize its effectiveness, it is necessary not only to have tools that facilitate access to and use of PRTR data, but also to identify potential users—including vulnerable groups—and understand their specific interests and needs.

Designing tools tailored to each type of user, together with a clear dissemination strategy, will ensure that stakeholders are aware of, understand and use this information. This will strengthen their participation in environmental management and contribute to reducing pollution and informing decisions in the region.

Good Practice 14: Monitoring the Use of PRTR Data[26]

i. Operational phase

The US EPA, through its *Data Uses Catalogue* initiative, systematically monitors the use of TRI data with the aim of improving environmental management, promoting transparency and facilitating informed decision-making. This platform compiles examples of how different stakeholders—such as communities, industries, researchers and governments—use TRI data to tackle pollution and promote sustainability. It also invites users to share their own examples for inclusion in the catalogue, enabling the identification of emerging trends, good practices and areas for improvement in the accessibility and applicability of the data.

Through the *Data Uses Catalogue*, the US EPA documents the use of TRI data, offering a detailed overview of practical applications across various sectors. This not only helps to visualize the impact of the data on decision-making, but also provides a valuable resource for learning from others' experiences and improving the effectiveness of available tools.

ii. Results

Shared Learning: By sharing stories of data use, users can help others learn from their experiences, promoting the exchange of knowledge and good practices.

Inspiration for New Applications: Practical examples offer ideas for exploring new ways to apply PRTR data in different contexts and environmental challenges.

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[26] US EPA, Catalogue of Applied TRI Data Uses; US EPA, TRI in Action: Media, Government, Business, Community and Academic Uses of TRI Data.

Tool and Training Improvement: Collecting usage stories enables the US EPA to refine and improve training materials, web platforms and other resources, ensuring they better meet user needs and that the tools are more effective.

iii. Key elements and lessons learnt

The key elements are:

Collection of Real-World Cases and Collaboration: The collection of concrete examples of PRTR data use in projects across different sectors fosters collaboration and the exchange of experiences, enabling learning from existing initiatives.

Identification of Good Practices and Continuous Feedback: The examples help identify trends and good practices in data usage, contributing to the continuous improvement of tools and resources. Active user participation is essential for adapting the data to changing needs.

Accessibility and Applicability of Data: Monitoring data usage allows for the evaluation of its effectiveness and ensures that it remains useful and accessible to a diverse range of users. Facilitating access and understanding through guides and interactive tools is essential for its effective use.

Value of Examples and Real-World Application: Specific case studies demonstrate the real value of the data, inspiring other users to apply them in their own projects and highlighting their impact on environmental management.

iv. Applicability in Latin America and the Caribbean

This practice is applicable to the region. The use of mechanisms such as the *Data Uses Catalogue* to monitor and share local uses, together with the adaptation of tools and the training of key stakeholders, will foster collaboration, transparency and the effective use of data to reduce pollution and improve environmental management.

➢ Good Practices in the PRTR's Continuous Improvement Phase

Continuous improvement is essential to ensure that the PRTR remains relevant and effective in a context of technological, regulatory and environmental changes. Keeping the system up to date and aligned with the needs of its users helps to strengthen its public utility, improve the conditions for the effective exercise of access rights, and enhance its contribution to environmental management and informed, participatory decision-making.

1. Regular performance evaluation

Regular performance evaluation is a fundamental component in ensuring that the PRTR maintains its relevance and effectiveness in a dynamic environment. This process involves systematic **review** of the

PRTR's objectives, processes and results, with the aim of identifying strengths, gaps and opportunities for improvement. A well-structured evaluation enables the PRTR to be adapted to new requirements, improves its operational efficiency and ensures that it continues to guarantee access to information, guide decision-making and strengthen transparency and public participation in environmental matters. For this evaluation to be effective, it is essential **to continuously involve stakeholders –** including data providers, industry sectors, users and the general public. Regular interaction with these stakeholders ensures that the PRTR remains relevant, user-friendly and adapted to different needs. It also strengthens confidence in the system and fosters sustained commitment from key stakeholders to its implementation.

Another key element is the adoption of **formal and transparent update processes** that allow changes to be proposed, evaluated and implemented in an agile and structured manner.

Below is Canada's strategy for consultation and *engagement* with various stakeholders to ensure the continuous improvement of its PRTR. This strategy focuses on the participation and involvement of diverse stakeholders – including governments, businesses, non-governmental organizations and the general public . The aim is to ensure that the PRTR evolves in line with users' needs and expectations. Canada's experience demonstrates how collaboration and knowledge sharing can strengthen the continuous improvement of the system and broaden its impact.

Good Practice 15: Consultation and engagement strategy for continuous improvement[27]

Canada's National Pollutant Release Inventory (NPRI) is a prime example of how to manage and improve a PRTR. Its long-term success is based on a comprehensive stakeholder engagement strategy, which includes participation, a structured process for updating reporting requirements, collaboration with other programmes and international partners, and continuous and transparent communication. These practices ensure that the NPRI remains relevant, accessible and aligned with regulatory needs and user expectations.

i. Results

This ongoing consultation and engagement strategy has led to:

- Improved data relevance and accessibility through the integration of feedback from NPRI users.
- Better alignment with regulatory and user needs through stakeholder feedback on reporting requirements.
- Improved data quality through collaboration with other government programmes and international organizations.
- Greater transparency and trust through the provision of regular updates on changes to the NPRI programme, thereby strengthening public confidence and participation in environmental management.

[27] Consultation and engagement: National Pollutant Release Inventory Process for proposing and considering changes to the National Pollutant Release Inventory Email correspondence with Pascal Roberge, Director of the National Pollutant Release Inventory and the Substances Information, Science and Technology Division, Environment and Climate Change Canada.

ii. Key elements and lessons learnt

The NPRI consultation process is designed to identify challenges and necessary modifications. Any individual, government body or organization may submit proposals to modify the NPRI programme. These proposals may involve the addition or removal of substances or the adjustment of reporting thresholds. Whilst some modifications stem from government initiatives, many are proposed by stakeholders. The NPRI evaluates all proposals and determines which should proceed to consultation.

The success of this strategy is based on the following key elements:

- **Diverse and inclusive stakeholder engagement:** ensuring broad participation from industry, government and civil society fosters balanced discussions and fair, well- d decision-making. Regular meetings, both virtual and in-person, help to maintain engagement.
- **Clear governance and a structured consultation process:** establishing clear terms of reference and using a formal, transparent approach to updating NPRI requirements (including multi-sectoral working groups and public consultations) ensures credibility and effectiveness.
- **Financial support for participation:** providing funding to environmental stakeholders enables non-profit organizations and under-represented groups to participate without limited resources being a barrier.
- **Collaboration with other programmes and international partners:** strengthening intergovernmental and international cooperation facilitates knowledge sharing and aligns the NPRI with global standards.
- **Ongoing and transparent communication:** keeping stakeholders informed through website updates, guidance documents and regular meetings fosters trust, ensures accessibility and enhances long-term engagement.

iii. Applicability

This practice is highly adaptable for Latin America and the Caribbean. Countries can implement similar stakeholder engagement processes, ensuring that their PRTRs evolve to meet local and global needs. Collaboration between governments and international organizations can further improve the quality of environmental data in the region.

➢ Continuous improvement of the system

Continuous improvement of the PRTR system involves implementing adaptive processes that allow the system to be adjusted and optimized as user needs, environmental priorities and technological advances evolve. This approach includes the regular evaluation of the system's functionality, the incorporation of new technological tools and alignment with regulatory and public policy changes. A PRTR that is constantly reviewed and updated can better respond to societal demands for information, strengthen the capacity of individuals and communities to participate in environmental decision-making, and consolidate transparency and accountability as essential pillars of public governance.

Below are three examples of good practice relating to the strengthening and continuous improvement of PRTR systems in various contexts. The first example illustrates how the evaluation and modification of the

European PRTR (E-PRTR) under the Regulatory Fitness and Performance Programme (REFIT) has helped to improve its effectiveness and suitability, promoting a more robust, coherent and adaptable system. The second example highlights Japan's experience in strengthening its capacity to respond to chemical incidents during natural disasters by integrating PRTR information into emergency management. Finally, the third example describes the development of an automated system in Serbia to ensure data quality and efficient report generation, thereby optimizing environmental management and transparency.

Good Practice 16: Evaluation of the European PRTR under the REFIT Programme[28]

The review of the E-PRTR (European Pollutant Release and Transfer Register) regulation was carried out with the aim of ensuring that the register continues to fulfil its role of promoting environmental transparency and public access to information on pollutant releases and transfers. The original regulation, implemented over a decade ago, needed to be evaluated to identify potential areas for improvement, adapt to technological and regulatory advances, and align its objectives with new European environmental policies, such as the European Green Deal. In this context, the regulation was assessed in terms of its effectiveness, efficiency, relevance, coherence and added value for the EU. The evaluation analyzed both the benefits provided by the E-PRTR and the potential for simplification and the reduction of costs and regulatory burdens.

The process of reviewing the E-PRTR legislation involved a participatory and evidence-based approach. Public consultations were held and stakeholders were engaged, including national authorities, regulated industries, NGOs and the general public. In addition, detailed technical analyses and impact assessments were carried out to evaluate how the proposed amendments might affect the collection, reporting and accessibility of environmental data. To this end, the 'fit for purpose' approach was applied through the European Commission's Regulatory Fitness and Performance (REFIT) programme, which routinely reviews selected policy instruments to ensure their effectiveness and efficiency.

i. Results

The assessment revealed the need to improve the accuracy and consistency of reported data, simplify reporting processes for industry, and strengthen the authorities' capacity to monitor compliance. One of the key lessons learnt was the importance of regulatory flexibility to adapt quickly to changes in good practice and environmental monitoring technology.

Following this comprehensive evaluation, the Commission proposed revising the E-PRTR regulation. The new Industrial Emissions Portal Regulation (IEPR) replaced the E-PRTR and was adopted on 12 April 2024 and entered into force on 22 May 2024. Subsequently, the Commission began work on the implementing rules, including, amongst other things, a standardized format for reporting on resource use and for new

[28] European Commission (2017), REFIT evaluation of Regulation (EC) No 166/2006 concerning the establishment of a European Pollutant Release and Transfer Register (E-PRTR), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017SC0710; Industrial Emissions Portal Regulation (IEPR), available at: https://environment.ec.europa.eu/topics/industrial-emissions-and-safety/industrial-emissions-portal-regulation-iepr_en.

sectors. The first data reported under the new law, describing emissions and resource use in 2027, will be published in 2028.

The new Regulation introduces the following changes:

- Expanding access to environmental information on the Industrial Emissions Portal by publishing data on energy, water and raw material consumption, and providing contextual information on operators' activities.
- Aligning the sectoral scope and granularity of reporting with the Industrial and Livestock Rearing Emissions Directive (IED 2.0) to better support its implementation.
- Allow the list of reported pollutants to be adjusted in response to scientific advances and updates to EU environmental legislation.
- Improve data quality by harmonizing the quantification methods operators must use when reporting.
- Simplify reporting for the aquaculture and livestock sectors.

ii. Key elements and lessons learnt

The evaluation of the E-PRTR under the REFIT programme yielded valuable lessons learned:

- **Regular review of regulations:** It is essential to regularly assess regulatory frameworks and technological tools to ensure their relevance and effectiveness in a dynamic and changing environment.
- **Inclusive and collaborative approach:** Involving all stakeholders, including authorities, industry and local communities, promotes a transparent process that enables improvements to be identified and policies to be adapted to new environmental and regulatory realities.
- **Optimization without compromising policy objectives:** Regular evaluations provide opportunities to simplify and optimize regulations, keeping policy objectives aligned with technological and scientific advances.
- **Greater positive impact:** The active participation of various stakeholders helps ensure that regulations better respond to the real needs of the environment, generating more significant environmental outcomes.

iii. Applicability in Latin America and the Caribbean

Although the European process was extensive and highly technical, its principles are a source of inspiration for countries in Latin America and the Caribbean. Each country, in accordance with its capabilities and priorities, can adapt these approaches to establish periodic reviews of its regulatory frameworks and reporting tools. Promoting regular, inclusive and evidence-based assessments—with the participation of sectoral authorities, businesses, civil society and academia—helps to strengthen transparency, improve data quality and ensure that chemical accident response plans continue to meet the needs of their users. Such processes increase the coherence of environmental policies and promote progressive, adapted and sustained implementation over time.

Good practice 17: Strengthening the response to chemical incidents in the event of disasters[29]

In 2019, Japan's Central Environment Council reviewed the Pollutant Release and Transfer Register (PRTR) and issued recommendations for its improvement. One of these was to enhance the capacity to respond to chemical incidents during natural disasters, by optimizing the use of PRTR data by local authorities and promoting greater disclosure of information by industrial operators. The aim was to facilitate the exchange of information between authorities and companies, as well as to use PRTR data to assess the impact of a disaster on industrial facilities.

As a result, **D.Chem-Core (Chemical Risk Assessment and Management Resource Core for Disaster and Emergency)** was developed, a tool created by the National Institute for Environmental Studies (NIES) in Japan with funding from the Environmental Technology Research and Development Fund of the Agency for Environmental Restoration and Conservation. D.Chem-Core is designed to provide immediate and relevant information when chemical emissions occur during disasters or accidents, enabling authorities to assess risks and make timely decisions.

i. Results

Since its development (2019–2023), NIES and the Ministry of the Environment have promoted the use of the system by local governments in multiple chemical emergency scenarios, including:

Spills caused by landslides
When a landslide affects industrial facilities, there is a risk of spillage and dispersion of hazardous substances. D.Chem-Core enables the identification of the substances involved, the assessment of their chemical properties and the modelling of their atmospheric dispersion using meteorological data. This supports decisions such as preventive evacuations or public alerts.

Identification of sources of unusual odors
If a community reports chemical odors, the authorities can use the tool to filter substances by physicochemical properties, review historical emissions from the PRTR and identify nearby facilities that may be responsible, facilitating investigations and corrective measures.

Responses to reports of suspicious gases
In cases where unusual gases are detected, the system helps to identify associated toxic substances, locate facilities that handle them and coordinate emergency responses. If an immediate risk is confirmed, health warnings can be issued and emergency protocols activated.

[29] Ministry of the Environment (2024), "Perspective on Disaster Accident Response Japan", 4th Global Roundtable on PRTRs; National Institute for Environmental Studies (2023), "D.Chem-Core – Chemical Risk Assessment and Management Resource Core for Disaster and Emergency"; Interview (1 April 2025) with Koki Takaki, Wakana Matsunami, Masashi Horie and Makato Takahashi.

ii. Key elements and lessons learnt

The development of D.Chem-Core demonstrates how PRTR data can be used to improve chemical emergency management. Key factors driving its success include:

- **Addressing real-world challenges:** The system tackles the urgent need to manage chemical incidents exacerbated by natural disasters and the effects of climate change.
- **Inter-institutional collaboration:** Coordination between local authorities, environmental agencies and businesses facilitates more coherent and efficient responses.
- **Adaptability of the PRTR:** The data can be applied to multiple scenarios — floods, tsunamis, landslides, earthquakes — enabling risk assessments based on up-to-date information.
- **Ease of use:** Designed for both expert and non-expert users, facilitating its adoption in critical situations.
- **Emergency-oriented advanced search:** The tool allows queries tailored to the timing of the disaster and the type of risk involved.
- **Integration of multiple sources:** It combines PRTR data with risk maps, geospatial information and meteorological data, enhancing the accuracy of risk assessment.

iii. Applicability in Latin America and the Caribbean

Countries in Latin America and the Caribbean frequently face natural disasters—earthquakes, hurricanes, floods, landslides and tsunamis—whose intensity is increasing due to climate change. In this context, using PRTR data to anticipate, manage and mitigate chemical risks is particularly relevant. Adapting tools such as D.Chem-Core would help strengthen emergency response capacity, protect public health and improve preventive planning.

To make progress in the region, the following adaptations could be considered:

- **Development of a regional platform** integrating GHS data, risk maps and geospatial analysis tools.
- **Training local authorities and emergency personnel** in the use of PRTR data for chemical incident management.
- **Integration with early warning systems**, improving anticipation and coordination during emergencies.
- **Harmonization with local regulatory frameworks**, promoting the adoption and sustainability of the system.

The implementation of tools based on PRTR data can significantly strengthen chemical risk management in the region, reducing environmental and health impacts during natural disasters.

Good Practice 18: Development of an Automated System for Data Quality and Report Generation[30]

i. Continuous Improvement Phase

Serbia has made steady progress in strengthening its PRTR system (National Register of Pollution Sources), with a priority focus on improving the quality of reported data, monitoring information and optimizing reporting processes at national and international levels.

ii. Data quality

One of the recurring challenges was the persistence of errors in the material balances reported by companies, even after training and the provision of calculation guidelines by the Serbian Environmental Protection Agency (SEPA). To overcome these difficulties, a new system was implemented that significantly reduces the margin of error: companies no longer need to perform manual calculations, but simply enter basic data—such as the number of animals in the livestock sector or the type of waste and exposed areas in the case of mining. The system automatically performs the calculations using standardized methodologies, ensuring consistency and greater accuracy in estimating emissions from area sources.

iii. Tracking and traceability of information

The system also incorporates a robust tracking mechanism (Data Tracking & Data Changes), which automatically monitors compliance with reporting obligations, identifying companies that fail to submit their information within the deadlines. Furthermore, a feature has been implemented that records all changes made to the data, including the date, the person responsible and the previous value, ensuring transparency, quality control and traceability. It should be noted that failure to submit reports may result in penalties before the criminal court.

iv. Automatic report generation

As part of its modernization, the system now generates automatic analytical reports, facilitating data communication both nationally and internationally, including reports for Eurostat and the OECD. Furthermore, it collects additional information on the consumption of raw materials, fuels and production volumes, and incorporates innovations such as the recording of noise emissions and of products that generate special waste streams at the end of their useful life.

v. Results

Thanks to these improvements, Serbia has achieved greater accuracy and reliability in the data reported and has significantly reduced errors in emission inventories. The system currently produces more than 145 automatic analytical reports, including those required by international bodies such as Eurostat. It has also expanded the range of available information—raw materials, fuels, production, noise and special waste—

[30] Environmental Protection Agency (2024), "Overview of Serbian PRTR System", 4th Global Roundtable on PRTRs; Interview (21/02/2025) with Nebojša Redžić, Head of the National PRTR Registry Department, Serbian Environmental Protection Agency.

and strengthened monitoring of compliance with reporting requirements, enabling the detection of non-compliance that may lead to legal sanctions.

vi. Key elements and lessons learnt

- **Optimization of data entry:** Reducing manual calculations improves the quality and consistency of the information.
- **Automation of calculations:** Reduces the administrative burden and minimizes errors in financial statements.
- **Traceability and monitoring:** Documenting changes and monitoring compliance enhances transparency and oversight.
- **Automatic report generation:** Facilitates strategic analysis and improves environmental management at national and international levels.

vii. Applicability in Latin America and the Caribbean

The Serbian model offers highly replicable solutions in Latin American and Caribbean countries. The automation of calculations, improved data quality and the implementation of traceability systems can significantly strengthen environmental reporting processes in the region. Adapting these tools would optimize data collection, increase transparency and improve the industrial sector's compliance with reporting obligations.

➢ Sharing results and good practices

Broad collaboration with other government programmes and international organizations is another key pillar. This cooperation not only improves data quality but also facilitates the adoption of global good practices and alignment with international standards.

H. ENABLING AND LIMITING FACTORS FOR THE INITIATION, OPERATION AND CONTINUOUS IMPROVEMENT OF ETRCs

The capacity of Latin America and the Caribbean to implement, operate and continuously strengthen PRTRs depends on a wide range of enabling and limiting factors. These factors are not restricted to technical aspects, but also encompass institutional, operational, political, social and financial dimensions, which directly influence the viability, effectiveness and sustainability of these systems.

This chapter analyses these factors through the **TOPP (Technical, Operational, Political and Prospective) capabilities** framework proposed by the Economic Commission for Latin America and the Caribbean (ECLAC, 2024) . According to this framework, the major transformations required in the region will only be possible if these four key capabilities are addressed simultaneously, both in the public sector and within productive and social systems.

In addition, two cross-cutting dimensions are considered essential for the success of PRTRs: on the one hand, **financing and international cooperation**, which facilitate implementation and technical-institutional strengthening; and on the other, **social acceptance and public participation**, which are indispensable for legitimizing the initiative, fostering a sense of ownership and enabling citizen oversight.

The relevance of each of these factors varies according to the stage of the PRTR's life cycle—initiation, operation and continuous improvement—which requires a dynamic analysis to identify specific needs and opportunities at each stage.

Understanding these factors is essential for designing effective strategies that ensure the sustainability of PRTRs and their alignment with international commitments, including the implementation of the Escazú Agreement.

1. TOPP Capacities (Technical, Operational, Policy and Prospective)

i. Technical Capacities

Technical capacities refer to specialized knowledge, the availability of reliable information, and the technological tools necessary to design, operate and improve PRTRs. They form the basis for ensuring the quality, consistency and usefulness of environmental data.

As applied to PRTRs, these capacities include:

- Availability of reliable, high-quality data on pollutant emissions and transfers.
- Development of validated estimation and reporting methodologies.
- Training in qualified technical staff in public and private institutions.
- Availability of digital technologies for the collection, management and dissemination of information.

Common limitations include a lack of emissions inventories, fragmentation of data sources, a lack of standardization of methodologies, and high turnover of technical staff.

ii. Operational Capacities

These refer to the infrastructure, management processes and institutional organization required to implement the PRTR. In this area, the following are essential:

- Functional, interoperable and accessible digital platforms.
- Clear reporting protocols for emitters and operators.
- Mechanisms for verification, quality control and data updating.
- Effective coordination between ministries, environmental agencies and local stakeholders.

Common limitations: low interoperability between databases, obsolete platforms and weak cross-sectoral coordination.

iii. Policy Capacities

These encompass the political will, legitimacy, governance and regulatory frameworks that underpin the implementation of public environmental policies.

For PRTRs, this implies:

- A clear and up-to-date legal framework establishing mandatory reporting.
- Sustained political support from the highest levels of government.
- Participatory governance, with clearly defined roles and responsibilities.
- Institutional stability that allows the system to be maintained and developed over time.

Limitations include: a lack of political will, institutional instability, a lack of coordination between levels of government, and weak regulatory support.

iv. Forward-looking capabilities

Forward-looking capabilities are those that enable us to anticipate changes, adapt to new contexts and steer the system towards the future.

When applied to PRTRs, these manifest as:

- Long-term planning for the expansion and improvement of the system.
- Regular assessments of the PRTR's performance and strategic adjustments.
- Integration of new technologies (artificial intelligence, remote sensing, blockchain).
- Coordination with policies on the circular economy, decarbonization and just transition.

Common limitations include the absence of long-term strategies, a lack of systematic evaluation, and a disconnect from emerging sustainability agendas.

A. Complementary Enabling/Limiting Factors

1. Financial support and international cooperation

Funding and technical cooperation are essential for the development and implementation of a PRTR, particularly in countries with limited resources.

Enabling factors include:

- Support from international organizations that can provide technical assistance and resources for the development of digital platforms, monitoring programmes and institutional strengthening.
- International networks, which facilitate the exchange of experiences and good practices.

Limiting factors include excessive reliance on external funding, a lack of long-term financial sustainability, and poor coordination between cooperation agencies.

2. Social acceptance and public participation

The backing of civil society and public access to information are essential for the consolidation of ETIAs as tools for transparency and environmental oversight.

Enabling factors include:

- Participation of NGOs, academia and civil society, as users and monitors
- Awareness campaigns on the importance of the PRTR for the protection of health and the environment. Mechanisms for public participation and public consultations to provide feedback on the system.

Limiting factors include the low public visibility of the PRTR, restricted access or unfriendly interfaces, and a weak culture of environmental transparency in some contexts.

B. Phased analysis of the PRTR life cycle

❖ Initiation phase

At this stage, the conceptual, regulatory and technical framework of the PRTR is defined.

- **Technical capabilities**: preliminary emissions inventories, baseline methodologies and initial technical staff are required. Common limitations include a lack of data or standardized technical protocols.
- **Operational capacities**: it is essential to have basic digital infrastructure and initial mechanisms for institutional coordination. A lack of interoperability or poor design can result in fragile systems from the outset.
- **Political capabilities**: regulatory and political backing is key. Critical factors include the involvement of key stakeholders and the definition of clear institutional mandates.
- **Forward-looking capabilities**: a long-term vision can help avoid future constraints.
- **Financial support**: external funding is often decisive at this stage.
- **Public participation**: the inclusion of civil society from the design stage reinforces the system's legitimacy and usefulness, although this is still limited at this stage.

❖ Operational phase

This corresponds to the day-to-day operation of the PRTR: collection, validation, publication and use of data.

- **Technical capabilities**: it is necessary to keep methodologies up to date, have trained staff and ensure data quality.
- **Operational capacities**: reporting flows, the stability of the digital system and verification processes are central.
- **Political capabilities**: continuous monitoring by environmental authorities and inter-institutional coordination underpin the system's legitimacy. Disruption or political changes may affect it.

- **Forward-looking capabilities**: these enable processes to be adjusted and new coverage or technological improvements to be planned. Their absence leads to stagnation.
- **Funding**: must cover operational costs and updates. The withdrawal of initial funding may render the system inoperative if sustainability is not ensured.
- **Public participation**: this enhances the use of the PRTR as a tool for social control. Its weakness limits the system's real impact.

❖ Continuos improvement phase

This involves reviewing, expanding or updating the PRTR in light of new contexts, technologies or demands.

- **Technical capabilities**: these must allow for the integration of new pollutants, methodologies or sectors. This requires organizational learning and continuous updating.
- **Operational capabilities**: scalable, adaptable and interoperable platforms are needed. Rigid systems hinder innovation.
- **Political capabilities**: the will to transform or expand the system, even in the face of resistance, is essential.
- **Forward-looking capabilities**: these are central to identifying new opportunities, aligning with other agendas (e.g. decarbonization, circular economy) and anticipating emerging risks.
- **Funding and cooperation**: this enables innovation and expansion processes to be sustained. New partnerships may be necessary.
- **Public participation**: feedback from advanced users and social actors can provide key inputs for improving the system, fostering its democratization.

I. CONCLUSIONS AND RECOMMENDATIONS

The regional analysis of the state of implementation of PRTRs in Latin America and the Caribbean reveals a mixed picture and, in many cases, one that is still in its infancy. To date, only four countries have a partially or fully implemented PRTR, nine have initiated the process, four have established regulatory frameworks, and three others have not yet begun. The rest have not provided official information, but a review of public sources suggests little or no progress.

Nevertheless, there are encouraging signs. Eleven countries – the Bahamas, Belize, Bolivia, Dominica, Grenada, Guyana, Nicaragua, Panama, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, and Trinidad and Tobago – which have not yet implemented a national environmental reporting and accounting system (NERAS) have ratified the Escazú Agreement, which explicitly sets out the obligation to make steady progress towards these systems. Furthermore, eight countries have already included the implementation of a PRTR as a priority action in their national roadmap for the Escazú Agreement, opening up positive prospects for progress on these systems in the short and medium term.

Furthermore, several countries that do not yet have an operational PRTR have developed specific regulatory frameworks that lay the groundwork for their future implementation. This is the case for the Bahamas, Cuba, Saint Kitts and Nevis, and Trinidad and Tobago, which have incorporated explicit regulatory

provisions on pollutant release and transfer registers. Meanwhile, as part of its accession to the Organization for Economic Co-operation and Development (OECD)[31] , Costa Rica has adopted the OECD's recommendation regarding the establishment of a PRTR as a key environmental management tool.

Furthermore, numerous countries in the region have made progress in regulating access to information, including environmental information, either through transparency laws or as part of sectoral or environmental regulations. These regulatory advances represent a strategic opportunity to promote the progressive adoption of PRTRs, linking international commitments, such as the Escazú Agreement, with the strengthening of institutional and technical capacities.

A comparative analysis of experiences reveals that the viability and sustainability of PRTRs depend on a diverse set of factors. These include: political will and appropriate regulatory frameworks (political dimension); the existence of robust technical and institutional capacities for data collection, analysis and dissemination (technical dimension); effective operational coordination between public, private and civil society institutions (operational dimension); and the incorporation of mechanisms for evaluation, learning and long-term planning (prospective dimension).

This comprehensive approach to **TOPP** (Technical, Operational, Political and Prospective) capacities allows for a more precise identification of the structural conditions that enable or limit the implementation of PRTRs in the region.

Key enabling factors identified

- International commitments related to accession to the OECD or the Escazú Agreement.
- Availability of international cooperation for technological design and development and capacity building.
- Clear regulatory frameworks and the existence of pre-existing reporting systems.
- Effective inter-institutional coordination and coordination mechanisms.

Most common limiting factors

- Lack of sustained funding for platforms, dissemination and capacity building.
- Insufficient technical capacity in public and private entities.
- High turnover of key staff in responsible agencies.
- Poor quality, coverage and standardization of environmental data.
- Limited awareness of the PRTR among the public and social actors.
- Limited coordination between public institutions and a lack of effective mechanisms for collaboration with private and social actors.

These findings reaffirm that the successful implementation of PRTRs does not depend solely on technical aspects. It also requires a solid framework of operational, policy and forward-looking capabilities, as well

[31] Law No. 9981 (2020) Approval of the agreement on the terms of accession of the Republic of Costa Rica to the OECD Convention. Annex 1: Council Recommendation on the establishment and operation of Pollutant Release and Transfer Registers (PRTRs) [OECD/LEGAL/0440].

as adequate funding and active public participation. The maturity and sustainability of a PRTR system are directly linked to the country's ability to simultaneously coordinate and strengthen these dimensions throughout the system's entire life cycle: from its initial design to its continuous improvement.

In this context, moving towards more robust, useful and reliable PRTRs involves:

- Overcoming structural and governance weaknesses.
- Ensuring resources and capabilities are sustained over time.
- Fostering dialogue and cooperation between public, private and civil society actors.
- Ensuring that the systems are aligned with the objectives of transparency, prevention and environmental justice.

Only through a comprehensive, progressive and rights-based approach will it be possible to consolidate PRTRs as effective tools for environmental management, accountability and evidence-based decision-making in Latin America and the Caribbean.

Regional opportunities

PRTRs also represent a strategic opportunity to promote technical and institutional integration among countries in the region. Key opportunities include:

- The exchange of good practices, methodologies and technological tools.
- The harmonization of technical standards and criteria to facilitate regional comparability.
- The development of shared or interoperable platforms, inspired by experiences such as the North American PRTR.
- The creation or consolidation of regional networks for technical cooperation and training.

The most successful experiences demonstrate that PRTRs are not merely technical environmental information systems, but genuine instruments of environmental governance. Their implementation requires strategic vision, progressive planning and a participatory approach that incorporates, amongst other elements, one-stop shops, integrated reporting platforms, cross-sectoral technical committees and forums for dialogue with the public.

These elements reinforce their potential to contribute to greater transparency, accountability and environmental sustainability in Latin America and the Caribbean.

Recommendations based on international good practices

To advance the implementation and improvement of PRTRs in Latin America and the Caribbean, it is recommended to incorporate key lessons learned from successful international experiences, adapting them to national contexts. Among the recommendations are:

1. **Promoting early and flexible legislative support**, involving **the legislature** and regulatory authorities from the initial stages, to ensure a robust regulatory framework that provides legitimacy, political backing and long-term legal viability for the PRTR. The case of the US Toxic Release

Inventory demonstrates that having a legal basis from the earliest stages facilitates its progressive institutionalization.

2. **Establishing multi-sectoral advisory committees and participatory working groups** to ensure the system is designed on the basis of broad consensus and the effective representation of key stakeholders such as the private sector, academia, civil society and different levels of government. The Canadian INRP model demonstrates how this approach contributes to the system's social legitimacy, technical relevance and sustainability.
3. **Conduct a comprehensive assessment of national infrastructure prior to implementing the PRTR**, taking into account legal frameworks, institutional capacities, existing systems and relevant stakeholders. This facilitates the identification of gaps and opportunities, as demonstrated in Moldova through feasibility studies supported by international cooperation.
4. **Define clear and shared objectives for the PRTR**, at both national and regional levels, based on broad consultation processes. These objectives should guide the design of the system towards better environmental management and greater alignment with international standards.
5. **Design PRTRs with a comprehensive scope and harmonized criteria**, establishing rigorous technical parameters for the selection of substances, sectors, thresholds and types of emissions, in line with recommendations from the OECD and other specialized bodies.
6. **Promote the continuous improvement of the system** through formal mechanisms for review, updating and training, enabling it to adapt to regulatory, technological and contextual changes, thereby ensuring its relevance and effectiveness over time.

Implementing these recommendations will help to strengthen the PRTRs as transparent, participatory and technically robust systems, contributing to more effective environmental management, greater accountability and evidence-based decision-making in Latin America and the Caribbean.

International funding: a driving force for the implementation of PRTRs

Financial sustainability is a critical condition for the development and continuity of PRTRs schemes. In particular, international cooperation can play a fundamental role in the initial implementation phase, facilitating access to resources that enable the establishment of the infrastructure, processes and training necessary to launch these systems.

It is recommended that specific funding from the Global Environment Facility (GEF) for PRTRs be explored, following the model of support provided under international conventions such as the Stockholm and Minamata Conventions. Furthermore, it is possible to utilize existing funds earmarked for related issues, such as climate change or chemicals management, to incorporate the development of PRTRs as part of those investments.

However, it is essential that, once the initial phase has been completed, countries secure long-term sustainable funding, thereby ensuring the operational viability, updating and continuous improvement of the systems.

International support for the design and operation of PRTRs: key methodological guidelines and tools

The regional overview described throughout this chapter reveals that countries are at different stages of the process of designing and implementing their PRTRs, facing common challenges regarding financing, technical capacity, technological infrastructure and specific regulations. In the face of these shared challenges, the international framework offers concrete support mechanisms that countries can strategically mobilize.

In this regard, Articles 10 and 11 of the Escazú Agreement—on capacity building and cooperation, respectively—are particularly relevant for countries moving towards the implementation of a PRTR. Article 10 stipulates that each Party, in accordance with its capabilities, undertakes to build and strengthen its national capacities to implement the Agreement, which expressly includes the development of publicly accessible environmental information systems such as PRTRs, as a direct expression of the right of access to information enshrined in Articles 5 and 6. Article 11, for its part, stipulates that the Parties shall cooperate to strengthen their national capacities through mechanisms such as technical assistance, the exchange of experts and experiences, the development of educational and training materials, and the establishment of multi-sectoral platforms. These mechanisms are precisely what countries need to make progress in the stages that these chapters have identified as challenges: conceptual design, the development of digital platforms, the training of specialized personnel, the definition of estimation methodologies, and the construction of specific regulatory frameworks.

Added to this are the numerous technical guidelines and methodological tools developed by international organizations such as the OECD, UNEP and UNITAR, which can guide and facilitate the various stages of this process. Together, these resources—regulatory, technical and cooperation-related—form an ecosystem of international support that countries in the region can leverage to progressively move towards pollutant release and transfer register systems that are accessible, reliable and useful for environmental management and informed decision-making.

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ANNEX

A. Questionnaire

On the Status and Challenges of Pollutant Release and Transfer Register (PRTR) Systems in Latin America and the Caribbean

Introduction

The purpose of this questionnaire is to gather detailed information on Pollutant Release and Transfer Register (PRTR) systems in Latin American and Caribbean countries. The information obtained will enable an assessment of systems already in place and will help identify enabling factors and obstacles for those countries that are in the process of implementation or do not yet have a system, with a view to exploring challenges and opportunities for their effective implementation.

The questionnaire is divided into three sections:

- **Section A**: For countries that already have a PRTR in place.
- **Section B**: For countries that do NOT have a PRTR or are in the process of designing or implementing one.
- **Section C**: General questions applicable to all countries, regardless of whether or not they have a PRTR, focusing on cross-cutting and regional aspects.

Instructions for completing the questionnaire:

1. One response per country: Ideally, there should be only one response to the questionnaire per country. The person responsible for completing the questionnaire should, where possible, gather responses from the relevant responsible authorities.
2. If your country already has an PRTR in place, please complete Section A (direct link HERE, pages 3 to 13).
3. If your country does not yet have an PRTR, or is in the process of implementing one, please complete Section B (direct link HERE, pages 14 to 17).
4. All countries must complete Section C (direct access HERE, page 18).
5. Please answer all questions in detail. If a question does not apply to your situation, please indicate this in the space provided.
6. Once completed, please send the questionnaire toangela.oblasser@un.org .

If you have any questions or queries, please do not hesitate to contact Angela Oblasser via the email address mentioned above.

Respondent Identification Details
(Please complete this section before proceeding to the specific questions in the questionnaire.)

1. **Full name:**
   Answer: _____

2. **Position or role within the institution:**
   Answer: _____
3. **Name of institution:**
   Answer: _____
4. **Country:**
   Answer: _____
5. **Contact email address:**
   Answer: _____
6. **Telephone number (optional):**
   Answer: _____
7. **Date the questionnaire was completed:**
   Answer: _____

Section A: For countries with a PRTR

1. General Information on the PRTR

Description: This section seeks to gather basic information about the Pollutant Release and Transfer Register (PRTR) in your country, including its name, access URL and the responsible authority.

- What is the name of the PRTR or other system that provides PRTR functions?
  Answer: _____
- What is the PRTR's URL?
  Answer: _____
- Who is the Responsible Authority (RA) for the implementation and management of the ETRC in your country?
  Answer:
  - ☐ Ministry of the Environment
  - ☐ Other (please specify): _____
- Is there an organisational structure or an operational committee to facilitate coordination between the various stakeholders (including public institutions, the private sector, organised civil society and academia), such as a national coordination group?
  Answer:
  - ☐ Yes (specify objective and members): _____
  - ☐ No

---

2. Legal and Regulatory Framework

Description: This seeks to ascertain the legal basis for the PRTR. Responses should indicate whether there is legislation supporting it and how non-compliance is penalised.

- Is the PRTR backed by specific legislation?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

- Are there penalties for failure by Obligated Reporters (ORs) to report information[32] to the PRTR? If so, what types of non-compliance are subject to penalties?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

- What penalties are considered applicable? (Select all that apply)
  Answer:
  - ☐ Financial penalties
  - ☐ Operational restrictions
  - ☐ Exclusion from public tenders
  - ☐ Other penalties (specify): _____
  - ☐ Not applicable

- Are there any court rulings relating to PRTR records, whether directed at Reporting Obligations (OR) for failure to comply with their obligations or at the Responsible Authorities for failing to comply with the provisions of the applicable regulations? If so, please provide relevant information[33] .
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

---

3. Nature and Frequency of Reporting

Description: This seeks to determine whether the information is provided voluntarily or on a mandatory basis, as well as the frequency with which updates are required.

- Is the report mandatory or voluntary?
  Answer:
  - ☐ Voluntary
  - ☐ Mandatory
  - ☐ Mixed (please specify): _____

[32] For example: Failure to submit information within the established deadline; Submission of incomplete or fragmented information; Omission of critical information required by regulations; Reporting information that does not comply with the required formats or standards; Submission of outdated data or data outside the assessed period; etc.

[33] Year and jurisdiction of the ruling; Type of ruling; Parties involved; Description of the infringement or non-compliance; Sanctions imposed; Any other relevant information.

- What time period does the information reported in the PRTR records cover?
  Answer:
  - ☐ **Calendar year (January to December)**
  - ☐ Tax year (specify dates)**:** _____
  - ☐ Other (specify): _____
- What is the time lag between the data being submitted by Reporting Obligations (ROs) and its publication in the PRTR?
  Answer:
  - ☐ Less than 1 month
  - ☐ 1 to 3 months
  - ☐ 4 to 6 months
  - ☐ More than 6 months
  - ☐ Other (please specify): _____

---

4. PRTR coverage

Description: Seeks information on the industrial sectors, emission sources and pollutants included in the PRTR, the types of receptors involved and any other additional information considered in the system.

Industrial Sectors

- Which industrial sectors are required to report to the PRTR? (Select all that apply).
  Answer:
  - ☐ Mining
  - ☐ Energy
  - ☐ Agriculture
  - ☐ Manufacturing
  - ☐ Chemicals
  - ☐ Transport and logistics
  - ☐ Construction and infrastructure
  - ☐ Fisheries and aquaculture
  - ☐ Tourism
  - ☐ Forestry
  - ☐ Other (please specify): _____

- Are all sectors covered by the OECD's "Short Report Sector List"[34] or the Kiev Protocol on Pollutant Release and Transfer Registers (Annex 1)?
  Answer:
  - ☐ Yes
  - ☐ No (please specify those not covered): _____

- How are the sectors required to report identified?
  Answer:
  - ☐ ISIC classification of economic activities (specify revision number): _____
  - ☐ Other, please specify: _____

- Are there defined reporting thresholds[35] for sectors, substances or chemicals?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

Sources of Emissions and Transfers

- What types of pollutant emission sources are included in the report? (Please note that the nomenclature may vary by country)
  Answer:
  - ☐ Stationary sources
  - ☐ Non-fixed sources[36] (specify): _____

- Which emissions, transfers or other data are considered in the report? (Select all that apply).
  Answer:
  - ☐ Emissions to Water (specify[37]): _____
  - ☐ Emissions to Air
  - ☐ Emissions to Soil/Subsoil
  - ☐ Waste (specify[38]): _____
  - ☐ Waste treatment **(**reuse, recycling, energy recovery, composting, other)
  - ☐ Transfers
  - ☐ Production volume information (specify): _____

[34] OECD (2013), Proposals for a Harmonised List or Reporting Sectors, OECD Series on Prevention and Control of Pollutant Releases, OECD Publishing, Paris. https://doi.org/10.1787/6e8f2c98-en

[35] Examples of thresholds for sectors: a) Production capacity b) Number of employees. Examples of thresholds for chemicals: a) Release/use: Report substances exceeding established limits. b) Concentration: Apply if minimum levels are exceeded. c) Media: Specific limits for air, water and soil. d) Combined releases: Apply if the cumulative threshold is exceeded.

[36] Non-point sources: a. Area sources (such as small facilities or distributed activities, e.g. wood burning or pesticide use). b. Mobile sources (such as cars or aircraft). c. Biogenic sources (microbial activity). d. Geogenic sources (such as volcanoes).

[37] For example: surface water, groundwater or marine water.

[38] For example: hazardous waste, non-hazardous waste.

- ☐ Information on input use (water, energy, etc.) (specify): _____
- ☐ Pollution prevention information
- ☐ Carbon capture and storage (CCS)
- ☐ Other (specify): _____

- Is there a unique coding system for sources?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

Substances and Chemicals

- Which substances or chemicals are included in the PRTR?
  Answer: _____
- Are all chemicals on the OECD's "Short List of Chemicals"[39] or the Kiev Protocol on Pollutant Release and Transfer Registers (Annex 2) covered?
  Answer:
  - ☐ Yes
  - ☐ No (Please specify the chemicals that are not included): _____
- How are these substances or chemicals identified?
  Answer:
  - ☐ Chemical Abstracts Service (CAS) number
  - ☐ Chemical name
  - ☐ Other (specify): _____

---

5. Data Collection, Compilation, Storage and Management
Description: Aims to understand the methodologies and procedures used for the collection, compilation, processing, storage and quality of data in the PRTR.

Methods of data collection, storage and compilation

- What methods does the system use to collect data from Reporting Entities? (Select all that apply).
  Answer:
  - ☐ Paper forms
  - ☐ Electronic media (e.g., CD-ROMs)
  - ☐ Web-based reporting
  - ☐ Other (please specify): _____

[39] OECD (2022), Harmonised List of Pollutants for Global Pollutant Release and Transfer Registers (PRTRs), OECD Series on Prevention and Control of Pollutant Releases, OECD Publishing, Paris. https://doi.org/10.1787/39657758-en

- Are there any overlaps in information requirements with other reporting systems in the country? How are these managed?
  Answer
  - ☐ Yes, there is duplication, but the systems are integrated (specify how): _____
  - ☐ Yes, there is duplication, but there is a single, centralised system, such as a one-stop shop.
  - ☐ Yes, there is duplication, and those required to report must do so in all systems.
  - ☐ No, there is no duplication.
  - ☐ I do not have enough information to answer.

- What methods does the system use to determine emissions from non-fixed sources?
  Answer
  - ☐ Model-based estimates (specify): _____
  - ☐ Direct measurement (specify): _____ _____
  - ☐ Other (specify): _____

- a. Where is the collected data stored?
  Answer
  - ☐ On local servers
  - ☐ In the cloud
  - ☐ Other (please specify): _____ _____

- How is the long-term integrity, accessibility and availability of the stored data ensured? (Select all that apply).
  Answer
  - ☐ Regular backups
  - ☐ Data encryption
  - ☐ Access control and authentication
  - ☐ Continuous system monitoring
  - ☐ Redundant storage (e.g. across multiple servers or locations)
  - ☐ Regular data restoration tests
  - ☐ Logging of all changes with timestamps and historical data
  - ☐ Other (please specify):_____

Data Compilation Procedures

- What procedures does the PRTR Responsible Authority (RA) use to compile the collected data? (Select all that apply).
  Answer
  - ☐ Automated compilation software
  - ☐ Manual compilation by staff

- ☐ Other (specify): _____

Quality Control and Data Validation

- Who is responsible for the quality of data and information in the PRTR?
  Answer:
  - ☐ Reporting Obliged Party (OR)
  - ☐ PRTR Responsible Authority (AR)
  - ☐ Both (specify): _____
- What quality controls are applied to the data during collection, compilation and storage? (Select all that apply).
  Answer
  - ☐ Manual data review by staff
  - ☐ Comparison with previous data to detect inconsistencies
  - ☐ Data validation using software (specify): _____
  - ☐ Other (specify): _____
- If you select any of the above options, please provide details:_____
  _____
- Are Obligated Reporters (OR) permitted to review or correct incorrectly reported data?
  Answer
  - ☐ Yes (specify): _____
  - ☐ Only under certain conditions (please specify): _____
    _____
  - ☐ No
- To what extent does the PRTR Responsible Authority (RA) review the data before it is released to the public?
  Answer
  - ☐ Full and detailed review
  - ☐ Partial review of the data, focusing on the most relevant cases
  - ☐ No review is carried out prior to public release
  - ☐ Other (please specify): _____
    _____
- Are there any exceptions or restrictions on the reporting or publication of data, due to confidentiality considerations or other factors?
  Answer
  - ☐ Yes (specify): _____
  - ☐ No

6. Dissemination, Accessibility and Transparency

Description: Aims to assess the accessibility and transparency of the information.

- Is there a strategy for disseminating the data and its uses?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

- Where is the PRTR data available? (Select all that apply).
  Answer:
  - ☐ Dedicated PRTR website
  - ☐ Web page within the PRTR Responsible Authority (RA) website
  - ☐ Public libraries (specify): _____
  - ☐ Available on request (specify): _____
  - ☐ Websites providing international PRTR data (specify): _____
  - ☐ Other (specify): _____

- Is the information available in all the country's official languages?
  Answer:
  - ☐ Yes
  - ☐ No (specify): _____

- Is the information available in English?
  Answer:
  - ☐ Yes
  - ☐ No

- In what format is the information available to the public? (Select all that apply).
  Answer:
  - ☐ Raw data files/databases
  - ☐ Summary and interpretative reports
  - ☐ Analytical tools[40] (specify): _____
  - ☐ Press releases
  - ☐ Factsheets designed for specific audiences or for a particular end use (specify): _____
  - ☐ Exports and APIs (Application Programming Interfaces) designed to integrate with data from other PRTRs (specify): _____

- What is the level of disaggregation of the PRTR's public data? (Select all that apply).
  Answer:
  - ☐ Individual facilities
  - ☐ Individual pollutants

[40] For example: searchable databases, predefined query tools, maps, graphs, diagrams, rankings, toxicity weighting, customised query tools, etc.

- ☐ Aggregated records[41] (specify): _____
- ☐ Other (specify): _____

- What additional information is provided alongside the PRTR data? (Select all that apply).
  Answer:
  - ☐ Guidance documents on how ETRC data should (or should not) be interpreted (please specify): _____
  - ☐ Regulatory, hazard (e.g. toxicity) and exposure information (specify): _
  - ☐ Information on the estimation technique used to calculate release and transfer quantities[42] (specify): _____
  - ☐ Contact details (e.g. telephone number, email address, online enquiry form) (specify): _____
  - ☐ Other (specify): _____

- What other specific measures are in place to ensure that the system is user-friendly for the various stakeholders?_____
  _____

- What mechanisms are in place to collect feedback from users of ETRC data? (Select all that apply).
  Answer:
  - ☐ Online forms (specify): _____
  - ☐ Direct contact via email or telephone
  - ☐ Regular surveys on the usefulness of the published data (specify): _____

---

7. Training and Technological Adaptability

Description: Aims to identify the training available for Reporting Obligations (ROs) and information users, as well as the system's capacity to adapt to emerging technologies.

- Are there training programmes and materials aimed at Reporting Obligations (ROs)?
  Answer
  - ☐ Yes (specify): _____
  - ☐ No

- Are there training programmes and materials aimed at information users?
  Answer
  - ☐ Yes (please specify): _____
  - ☐ No

- What other systems exist and are interoperable with the PRTR? (Select all that apply).
  Answer:

[41] For example: by industry, pollutant, etc.

[42] For example: Direct monitoring; Mass balance; Chemical-specific emission factors; Calculations or engineering judgement, etc.

- ☐ Environmental Information System
- ☐ Other emissions registers (specify): _____
- ☐ Other (specify): _____
- ☐ Are they interoperable with the PRTR (specify how and for what purpose): _____

---

8. PRTR Funding and Cost

Description: This aims to understand the sources of funding that support the PRTR, as well as to assess their impact on companies required to report.

- What funding sources support the PRTR and how is its long-term sustainability ensured?
  Answer: _____
- Does the cost of implementing and operating the PRTR represent a significant financial burden for the sectors required to report?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

---

9. Perception, Use and Impact of the PRTR

Description: This section seeks to understand both civil society's perception of PRTR information and its impact on environmental policy-making, sectoral performance assessment, the promotion of clean technologies, and the improvement of transparency in public participation and environmental justice. The questions are designed to understand how PRTR data is used and valued, both by civil society and by the sectors responsible for environmental policy.

Perception, Use and Impact of the PRTR on Civil Society

- Has the public used PRTR information? For what specific purposes? (Select all that apply and provide details for each selected case)
  Answer:
  - ☐ Advocacy
  - ☐ Research
  - ☐ Public policy evaluation
  - ☐ Environmental activism
  - ☐ Business decision-making
  - ☐ Public participation in environmental protection
  - ☐ Dialogue with public policy makers
  - ☐ Other (please specify): _____

- **Evidence for the selected options:** _____

- Is the information considered reliable by users?
  Answer:
  - ☐ Yes (specify evidence): _____
  - ☐ No

Impact of the PRTR on Environmental Policies, Performance and Technologies

- In what specific areas does PRTR data have an influence? (Select all that apply and provide evidence for each selected case):
  Answer:
  - ☐ Development and evaluation of environmental policies
  - ☐ Assessment of environmental performance across different sectors
  - ☐ Analysis of potential risks posed by pollutants to human health and the environment, and communication of findings to the public
  - ☐ Promotion of clean technologies and processes to prevent pollution at source
  - ☐ Ensuring compliance with environmental regulations and demonstrating corporate responsibility on the part of companies
  - ☐ Other (please specify): _____
  - **Evidence for the selected options:** _____

---

10. Measures for long-term success
Description: Aims to identify actions taken to promote the long-term success of a PRTR.

- What measures have been implemented to ensure compliance with the PRTR requirements? (Select all that apply).
  Answers:
  - ☐ Promotion of compliance (assistance and/or incentives to facilitate reporting)
  - ☐ Monitoring of compliance (inspections, audits, follow-up meetings)
  - ☐ Enforcement of sanctions (corrective actions and sanctions to deter non-compliance)
  - ☐ Other (specify): _____

- What actions are taken to promote the dissemination and use of ETRC data among stakeholders? (Select all that apply).
  Answers:
  - ☐ Promotion of the PRTR (raising public awareness of data availability)
  - ☐ User training (training on the use and interpretation of PRTR data)
  - ☐ Building relationships with the user community (establishing lasting relationships)

- ☐ Consultation and collaboration with other government bodies to align PRTR data with their needs
- ☐ Collaboration with other PRTRs (working together with international organisations, countries and NGOs) (Specify): _____
- ☐ Other (Specify): _____

- What measures are taken to ensure the continuous improvement of the PRTR system? (Select all that apply).
  Answers:
  - ☐ Monitoring and improving the performance of the PRTR system (regular evaluation and adjustments)
  - ☐ Expansion of the PRTR's scope (to include more sources, regions or types of emissions)
  - ☐ Improvement of PRTR data quality (ensuring complete, verifiable and high-quality data)
  - ☐ Other (specify): _____

---

11. Enablers, Good Practices and Challenges
Description: Identify PRTR enablers and good practices to serve as a model for other countries, as well as identify current challenges to improve and strengthen the system.

- What enabling factors were in place to establish the system in the country?
  Answer: _____
- What good practices associated with the PRTR exist in the country?
  Answer: _____
- What challenges or opportunities for improvement is the PRTR currently facing?
  Answer: _____

End of Section A

Section B: For countries without a PRTR

1. Current progress in the design or implementation of a PRTR
Description: This section aims to identify whether the process of implementing a PRTR has already begun in the country and to ascertain its current status.

- Has the design or implementation of an ETRC begun in the country?
  Answer:
  1. ☐ Yes
  2. ☐ No

  If the answer is yes, please specify the current phase:

1. ☐ Design
2. ☐ Pilot test
3. ☐ Roll-out
4. ☐ Implementation
5. ☐ Other (please specify): _____

- When is the final system expected to go live, and what remains to be done to achieve this?
  Answer: _____
- Has the sample universe been assessed with regard to facilities, emissions, transfers of significant pollutants and relevant substances/chemicals?
  Answer:
  1. ☐ Yes
  2. ☐ No

  If the answer is yes, please specify whether the following have been identified (select all that apply):
  1. ☐ Economic sectors with high levels of emissions, transfers of pollutants or use of significant substances/chemicals.
  2. ☐ Geographical or political regions with high pollution levels or impacts associated with specific substances/chemicals.
  3. ☐ Priority substances/chemicals in terms of release, transfer or environmental and health impact.
  4. ☐ Other relevant aspects (specify): _____

---

2. Regulatory Framework and National and International Standards

Description: Aims to assess whether there are legal frameworks and international commitments that could support the implementation of a PRTR system, ensuring that the collection and reporting of environmental data are legally underpinned and aligned with international standards.

- Does the current environmental legal framework provide an adequate basis for incorporating an EPR system?
  Answer:
  1. ☐ Yes (specify): _____
  2. ☐ No What amendments or new legislation would be required? _____

- Is there any legislation that assigns responsibility to a national authority for establishing and operating environmental information systems, including databases on the state of the environment, emissions and transfers of pollutants?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

- Is the country a member of international organisations (e.g. the OECD) or has it signed up to international standards (e.g. the Escazú Agreement) that promote the implementation of emissions registries or environmental transparency, public access to information and data comparability?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

---

3. Commitment, Collaboration and Interest of Key Stakeholders
Description: Assess the level of interest, cooperation and existing initiatives among the government, industry and civil society regarding the implementation of the PRTR.

- Have the government, industry and/or communities shown an interest in implementing a PRTR scheme?
  Answer:
  - ☐ Yes
  - ☐ No

  If the answer is yes, which stakeholders have shown interest? (tick all that apply)
  - ☐ Government (specify): _____
  - ☐ Industry (specify): _____
  - ☐ Civil society/local organisations (specify): _____

- Are there any initiatives or agreements between the government and industry to facilitate the implementation of a PRTR scheme, such as sharing environmental data or cooperating on data collection?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No
- Are there any in-industry programmes[43] to monitor, control or report pollutant emissions?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

---

4. Potential Technological Infrastructure and Information Systems for the PRTR
Description: Aims to identify existing technological resources that may facilitate the implementation of the PRTR.

- Are the following technological resources or systems available that could facilitate the implementation of the PRTR? (Select all that apply):
  Answer:

[43] For example: cleaner production programmes, etc.

- ☐ Applications or platforms that collect and store pollution-related data, such as emissions inventories or environmental monitoring.
- ☐ Technological infrastructure (servers, databases).
- ☐ Environmental monitoring systems (air, water, soil) that can be integrated into the PRTR.
- ☐ Other (please specify): _____

If you selected any of the above, please provide details: _____

---

5. Technical Capabilities and Human Resources for the Implementation of the PRTR

Description: This section analyses the availability of human resources and technical capabilities to manage and operate the PRTR, ensuring that data is handled appropriately and that staff are adequately trained.

- Are the following resources or capabilities available in the country to facilitate the implementation of the PRTR? (Select all that apply):
  Answer:
  - ☐ Organisations with experience in the collection, storage, analysis and reporting of environmental data.
  - ☐ Technical staff with experience in handling large volumes of data or in the use of IT systems.
  - ☐ Experts in emissions inventories who can assist with the implementation of the PRTR.
    If you selected any of the above, please provide details: _____

---

6. Culture of Transparency and Access to Information

Description: Aims to identify policies that promote transparency and public access to pollution data, which are essential for building trust in the PRTR system.

- Are there policies that promote transparency and the opening up of environmental data to the public, civil society organisations and communities?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

- Are there mechanisms in place to ensure free and public access to data relating to pollutants?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

---

7. International Support and Regional Cooperation

Description: This section explores international relationships that could facilitate the implementation of the PRTR, such as access to technical and financial resources from international organisations.

- Does the country participate in international or regional agreements on pollution and sustainability, facilitating technical and financial support?
  Answer:
  - ☐ Yes (specify): _____
  - ☐ No

- Are there currently any international organisations or cooperation initiatives implementing programmes at national level related to a PRTR[44] ?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

---

8. Obstacles to the implementation of an PRTR

Description: This aims to identify the main barriers that could hinder or delay the implementation of a PRTR in the country, enabling specific solutions to be prioritised.

- What obstacles does the country face in the effective implementation of a PRTR? (Select all that apply and provide details for each):
  Answer:
  - ☐ Lack of funding (specify): _____
  - ☐ Technological limitations (specify): _____
  - ☐ Technical and operational capabilities (specify): _____
  - ☐ Resistance from key stakeholders (specify): _____
  - ☐ Shortcomings in the regulatory framework (specify): _____
  - ☐ Other (please specify): _____

- If the necessary funding were available for the design and implementation of an emissions register, what factors might hinder or prevent its implementation? Please provide details.
  Answer:
  - _____

End of Section B

[44] Organisations such as UNDP, UNIDO, UNEP, WHO, bilateral cooperation agencies, regional or international development banks, etc.

Section C: Cross-cutting Gaps, Barriers and Enabling Factors

(This section applies to both countries with an EPR in place and those without. Please answer all questions that you consider relevant to your context.)

1. Other Gaps

Description: This section aims to identify additional gaps that have not been mentioned previously, but which represent significant obstacles to the design, implementation or improvement of the PRTR in your country.

- Are there any other specific gaps that you consider relevant to the development or strengthening of the PRTR in your country?
  Answer:
  - ☐ Yes (please specify): _____
  - ☐ No

---

2. Other Obstacles

Description: This aims to identify any potential barriers not previously considered that hinder the implementation or operation of the system.

- What other obstacles does your country face in implementing or improving the PRTR? Please provide details.
  Answer:

  _____

---

3. Other Enabling Factors

Description: Aims to identify additional enabling factors that could contribute to the success of an ETRC in your country.

- Are there any other enabling factors or specific opportunities that could facilitate the development or strengthening of the PRTR? Please provide details.
  Answer:

  _____

---

4. Unaddressed Issues

Description: This allows participants to add relevant information that has not been addressed in the previous questions.

- Are there any other important aspects related to the PRTR that you consider necessary to mention and that have not been covered in this questionnaire? Please provide details.
  Answer:

  _____

End of Section C

Submission Instructions:

Once you have completed the questionnaire, please send it to the following email address:**angela.oblasser@un.org** .

We greatly appreciate your time and cooperation. If you have any questions or require assistance, please do not hesitate to contact **Angela Oblasser**.