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Global trends of Pollutant Release and Transfer
Registers in the context of Public Participation

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Project TIGER

**“Policy decision-making and public participation on energy, chemicals
and water management: an international comparative study”
(Global Initiative Program)**

Osaka University

Global trends of Pollutant Release and Transfer Registers in the context of Public Participation

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A Pollutant Release and Transfer Register (PRTR) is a key tool for governments to provide the public with data regarding the amount of hazardous chemicals and pollutants released to air, water and soil and transferred off-site for treatment or disposal (Aizawa and Oi, 2014). Principle 10 of the Rio Declaration, articulated at the 1992 United Nation Conference on Environment and Development (UNCED) known as the Earth Summit, the Organisation for Economic Cooperation and Development (OECD) Council Recommendation (1996), and the Aarhus Convention (1998) all emphasize the importance of providing public access to environmental information. A PRTR can provide data to stakeholders including the public and enable governments to make better decisions on with participations of various stakeholders.

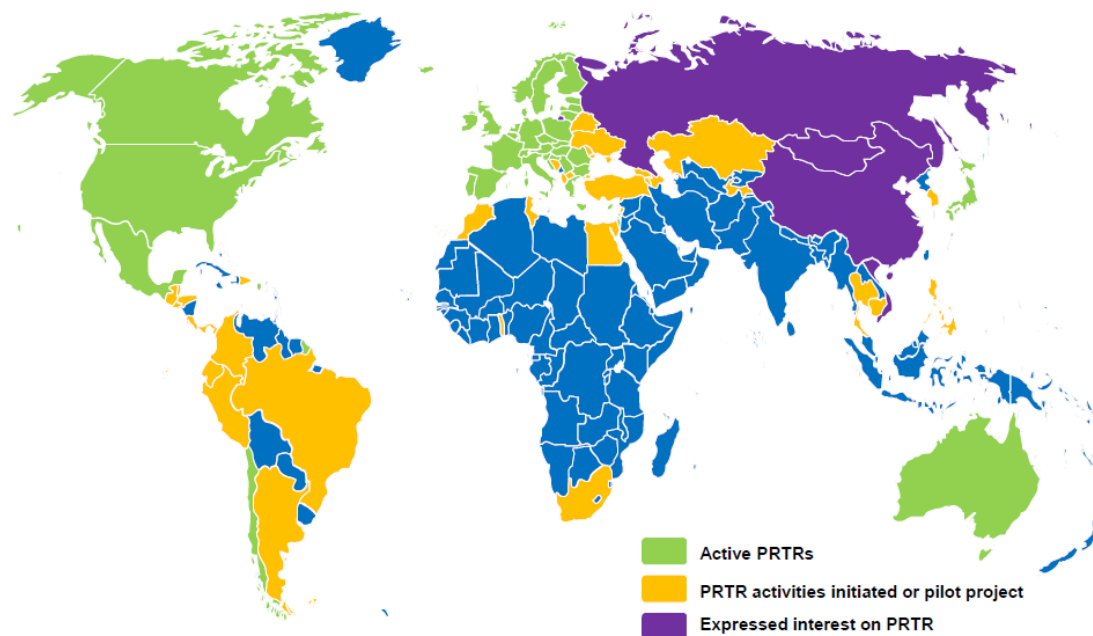
The countries having PRTRs are increasing. Some regions and organisations have been developing more regionally or internationally coordinated PRTRs. Both the United Nations Economic Commission for Europe (UNECE) and OECD have recently refocused on sustainable development as their members or states establishing PRTRs. A key to make PRTR data more useful is linking data providers of PRTRs and users.

1 Countries with PRTRs

Now, more than 30 countries have PRTRs. Most of those countries are European or North American countries, or developed countries in the other regions (Figure 1). However, some countries in the other regions such as South Asia, Central America and Latin America also have initiatives related to PRTRs. The United Nations Institute for Training and Research (UNITAR) has initiated capacity building projects for implementing PRTRs in Belarus, Cambodia, Ecuador, Kazakhstan, Moldova, and Peru with UNEP (UNITAR, 2015a). Japan International Cooperation Agency (JICA) has supported to develop a PRTR in Thailand (JICA, 2015).

UNITAR's projects are funded by the Global Environment Facility. It should be noted that Paragraph 5 of Article 10 on PRTRs in the Stockholm Convention on

Persistent Organic Pollutants¹ makes it possible to provide a country fund under the Convention by linking with the financial mechanism under the Stockholm Convention.



The designations employed and the presentation of the material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Colors used are illustrative.

Figure 1. PRTR Map (UNECE, 2014a)

Table 1 shows a history of international or regional PRTRs. The number of countries with PRTRs has been increasing from a few countries in 1996 when the OECD made the council recommendation on implementing PRTRs to its members. The number has increased to more than 30. After the recommendation, international or regional initiatives such as North American PRTRs, European PRTRs and the Kiev Protocol on PRTRs has been launched.

¹ ARTICLE 10 Public information, awareness and education.

5. Each Party shall give sympathetic consideration to developing mechanisms, such as pollutant release and transfer registers, for the collection and dissemination of information on estimates of the annual quantities of the chemicals listed in Annex A, B or C that are released or disposed of.

1996	OECD Council Recommendation on Implementing PRTRs
	The United States and Canada had an operational PRTR that conformed to the guiding principles of the Recommendation.
1997	Commission for Environmental Cooperation started to publish North American PRTR Data (Taking Stock).
1999	8 OECD countries had an operational PRTR
2003	14 OECD countries had an operational PRTR.
	16 OECD countries had an operational PRTR.
2006	Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register;
2009	Protocol on Pollutant Release and Transfer Registers under the Aarhus Convention, Kiev, 21 May 2003, entering into force in 2009.
	39 countries had an operational PRTR.

Table 1. History of international or regional PRTRs (modified from Suzuki(2013))

2 Trends of international or regional PRTRs

2.1 Protocol on PRTR

The Kiev Protocol on PRTRs under the Aarhus Convention was agreed in 2003 and entered into force in 2009. Although the UNECE developed this Protocol, it opens to all UN member countries including non-Parties to the Convention. The PRTR Protocol is a legal framework on PRTRs. In October 2014, 33 Parties ratified the Protocol. It covers 65 activities and 86 substances or substance categories.

One of the unique points is that the Protocol is addressed under the Aarhus Convention, the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. The convention grants the public rights and imposes on Parties and public authorities obligations regarding access to information and public participation and access to justice. So the PRTRs can be addressed in the context of the Convention.

At the second session of the Meeting of the Parties to the Protocol in July 2014, it was agreed that focal areas and goals for 2015-2020 such as inclusion of the other aspects such as energy and water consumption and use of PRTRs as a tool for assessing the development of a green economy (Table 2). Considering that these areas are somehow beyond simply providing data on emissions and transfers, the activities under the Protocol would focus on how data can really achieve sustainable development.

Focal area I: Implementation of the Protocol by each Party	
Focal area II: Lifting barriers to ratification and expansion beyond the ECE region	
Focal area III: Development of the Protocol	
	Identifying areas for possible future improvements in annexes I and II to the Protocol (ie. reporting sectors and chemicals)
	Inclusion of specific requirements for releases of pollutants from diffuse sources where and when necessary
	Considering the inclusion of other aspects, such as information on energy and water consumption, on-site transfers of waste or storage
	Use of the Protocol on PRTRs as a tool for assessing the development of a green economy in the context of sustainable development

Table 2. Strategic plan for 2015–2020 for the Protocol on PRTRs (UNECE, 2014b)

Capacity building activities have been implemented under the Protocol by UNECE, UNEP, UNITAR and the Regional Environmental Center for Central and Eastern Europe (UNECE, 2014c; UNECE, 2015). This means that the Protocol also promotes establishing PRTRs.

2.2 OECD

Following to the Agenda 21 of the United Nations Conference on Environment and Development in 1992, the OECD made the recommendation on PRTRs to its member countries in 1996 (OECD, 2003). It outlines what a PRTR is and what are the elements of a PRTR (Table 3). OECD members have developed PRTRs to cover the recommendation, and most of its 34 member countries have PRTRs.

1	A listing of chemicals, groups of chemicals, and, if appropriate, other relevant categories all of which are pollutants when released or transferred;
2	Integrated multi-media reporting of releases and transfers (air, water and land);
3	Reporting of data by source where the reporting sources are defined;
4	Reporting on a periodic basis, preferably annually; and
5	Making data available to the public.

Table 3. Core Elements of PRTRs in the OECD Recommendation (OECD, 2003)

About 20 years have passed since the Council recommendation. During the years, there can be largely three paradigms on PRTRs at OECD (Suzuki, 2013). The first one among OECD member countries had been establishing PRTRs to comply with the Council recommendation (Figure 2). Only two countries had operational PRTRs conforming to the Council recommendation in 1996. Then, the second one had been improving quality of data and developed better release estimation techniques. The third one which is relatively new has been harmonization of PRTRs, use/application of

PRTR data and PRTR data for sustainability.

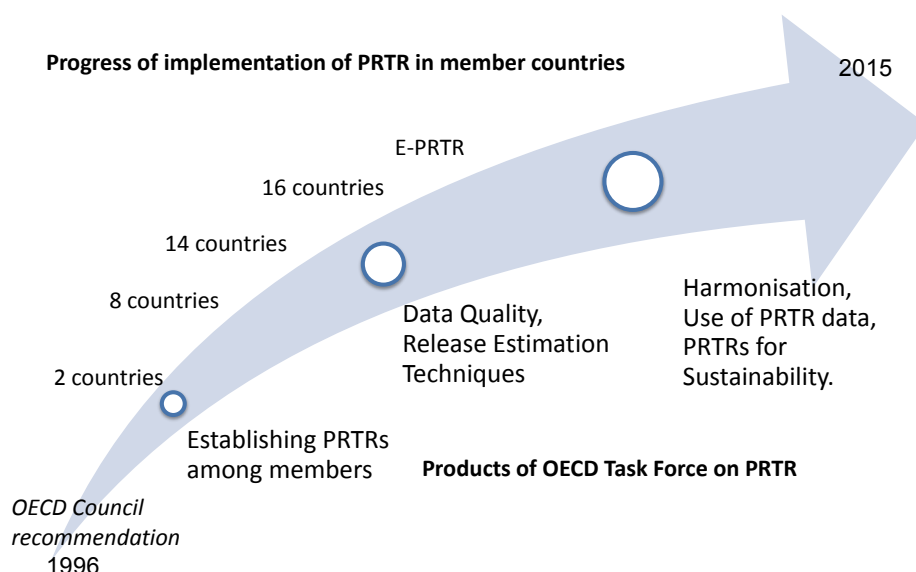


Figure 2. Paradigms of OECD Activities on PRTRs (modified from Suzuki(2013))

OECD has developed three databases in order to encourage governments, the public and other stakeholders to share PRTR data and technical information.

The Centre for PRTR Data presents PRTR Data from OECD countries on a national or regional level. The database does not include PRTR data of individual sites of facilities. Users can create a report of PRTR data according to years, countries, regions, industry sectors, chemicals, types of release sources, and types of releases and transfers.

PRTR.net provides a global portal to PRTR information and activities from countries and organisations around the world. It has been developed and is maintained by UNECE, OECD and the United Nations Environment Programme / GRID-Arendal.

The Resource Centre for Release Estimation Techniques provides information on available release estimation techniques, overarching documents and general information among OECD countries for estimating releases from various sources. The main users of this Centre may be PRTR data providers.

2.3 Europe

The Europe Union (EU) has a harmonised PRTR - the European

Pollutant Release and Transfer Register (E-PRTR). E-PRTR covers the 27 EU Member States as well as Iceland, Liechtenstein, Norway, Serbia and Switzerland (European Environment Agency, 2015). 95 pollutants including greenhouse gases, 65 activities are covered under the E-PRTR. E-PRTR also can implement the PRTR Protocol. That is, implementing E-PRTR conforms to the requirements of the PRTR Protocol. The first data were provided in 2009.

2.4 North America

Commission for Environmental Cooperation (CEC) compiles PRTR data from Canada's National Pollutant Release Inventory (NPRI), Mexico's Registro de Emisiones y Transferencia de Contaminantes (RETC) and the United States' Toxics Release Inventory (TRI). CEC makes them available online and as a report. The database named Taking Stock Online provides the data including the data of cross-country transfer (CEC, 2015). Recent data are also provided as a layer of Google Earth and enable users to identify sources by looking at google earth.

The latest Taking Stock report details pollutant releases and transfers reported by approximately 35,000 industrial facilities across North America from 2005 to 2010, with an in-depth view of releases from the specific sources – the pulp and paper industry.

CEC has been promoting tri-lateral collaboration toward more coordinated PRTRs in the region. For example, it published Action Plan to Enhance the Comparability of PRTRs in North America (CEC, 2014).

2.5 Central America

Belize, Costa Rica, Guatemala and Honduras have obligatory PRTRs. It was pointed that the list of chemicals and sectors of the regional PRTR and other elements that were the basis to homologate PRTR data among Central America and the Dominican Republic (Suazo Hernandez, 2013).

3 Global trends in the context of public participation

This paper aims to point out current three global trends in light of PRTRs and public participation. Firstly, still many countries do not have PRTRs as shown in Figure 1. Some initiatives to develop PRTRs are launched. Some of the activities are linked with the Stockholm Convention or the PRTR Protocol. Secondly, some countries

or organisations promote regional or international coordination. Lastly, there is some movement to reconsider how a PRTR can contribute to sustainable development. Then, the author points out importance to make systematic linkage between PRTR data providers and users.

There are many trends or technical issues on PRTRs such as expanding target sources, release estimation from non-point sources, avoiding double counting of transfer and tracking transfer, improving quality of data, providing risk related information with emission data, improving data submission, following up alternative emissions as a result of shifting chemical uses, etc. However, this paper focuses on global trends especially from the perspective of public participation.

3.1 More coordinated or harmonised PRTRs

A PRTR is a policy tool which has multiple purposes: checking national emissions, facilitating facility's voluntary actions, providing data to the public. Considering environmental and socioeconomic background of each country in addition to this nature of a PRTR, each PRTR can be unique. However, for users of PRTRs, it is not convenient that each country has its unique PRTR. Coordinated or harmonized PRTRs are helpful for users to access to, understand and compare the data.

It may be difficult to establish fully compatible PRTRs among countries due to their unique socioeconomic or environmental circumstances or their purposes of PRTRs. However, countries having PRTRs are increasing. There are several initiatives described in section 2 to make efforts to promote more international or regional coordination.

There are some additional initiatives to coordinate PRTRs more internationally or regionally. OECD has proposed the lists of common chemicals and sectors among five PRTRs – the E-PRTR, the Australian National Pollutant Inventory, the Canadian National Pollutant Release Inventory, the Japanese PRTRs and the US Toxic Release Inventory (OECD, 2012 and 2013a). The lists also cover the PRTR Protocol. Furthermore, OECD has proposed common elements among the PRTRs as a guidance document to be considered for a country when revising a PRTR or developing a new PRTR (OECD, 2014).

In 2013, UNECE and OECD in cooperation with UNITAR organised a joint meeting named the PRTR Global Round Table, inviting their member and non-member countries to cover the world. In 2014, UNECE and the UN

Economic Commission for Latin America and the Caribbean (UNECLAC) organised a joint workshop on PRTRs in Latin America in cooperation with OECD (UNECLAC, 2014). Such joint efforts among international organisations across different regions may enable to make more harmonisation or coordination on PRTRs beyond countries and regions.

3.2 Sustainable development

Recently, both UNECE and OECD have put more focus on PRTRs in the context of sustainable development. As mentioned, the strategic plan for 2015–2020 for the Protocol on PRTRs addresses sustainable development (UNECE, 2014b). OECD has initiated a project on the role of PRTR data in global sustainable development for 2013-2016 (Suzuki, 2013).

Considering the origin of a PRTR in the UNCED in 1992, a PRTR could contribute to sustainable development. As described in section 2.2 OECD, the first challenge for a country is to develop a PRTR. After establishing it, the country can afford to come back to the question “how or whether the PRTR really contributes to sustainable development.”

In 2011, OECD performed a survey on application of PRTR data among member countries (OECD, 2013b). The survey focused on:

- Documenting the range of uses by government programs,
- Enabling access and documenting uses of PRTR data by external users, and
- Inventorying ways to present PRTR data with other information to increase the value of PRTR data.

The results identified a gap to present PRTR data in sustainable development or pollution prevention:

- None of the survey respondents claim that their respective organisations have developed guidance or documentation that describes how PRTR data or information can be used as a means to measure progress (or lack thereof) in preventing pollution or achieving sustainability.
- Few survey respondents reported that they have developed or use descriptors of sustainability or pollution prevention as a way to present or interpret their PRTR data.

This result shows that there are a few PRTR applications or no guidance document explicitly linking PRTR implementation and sustainable

development. This gap triggered the project on a role of PRTR data in global sustainable development for 2013-2016 at OECD.

It is important to have a clear concept or guidance on how to use PRTR data in sustainable development. Considering that sustainable development covers various aspects including environmental, economic and social perspectives, PRTRs have probably contributed to sustainable development. However, the problem is that there is no clear comprehensive guidance or understanding on how a PRTR can contribute to sustainable development.

3.3 More public participation

The online survey for the PRTR Global Round Table in 2013 showed that the respondents recognized that the data use by the public is highly important (UNECE, 2013). About 60% of total 49 respondents of this survey were government officials covering the world. The other respondents were NGOs, academics, local governments and others. 67.4% out of 49 respondents answered that the data use by the public is important (Figure 3). 40.5% respondents answered that involvement of the public is highly important when being asked problematic or challenging areas² (Figure 4).

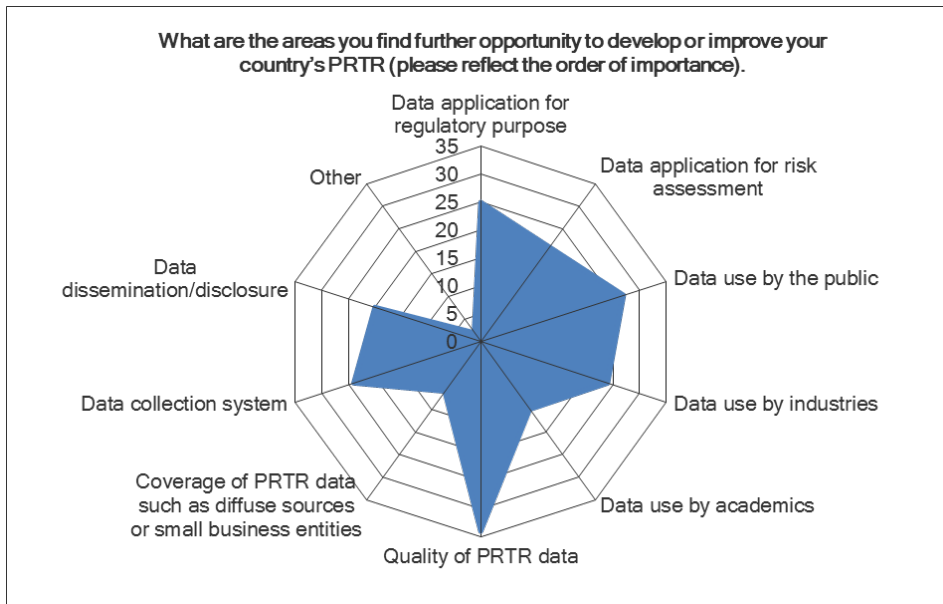


Figure 3. Areas to improve PRTRs (data from UNECE, 2013)

² Multiple choice: 12% when converting the ratio to be total 100% by summing up all responses.

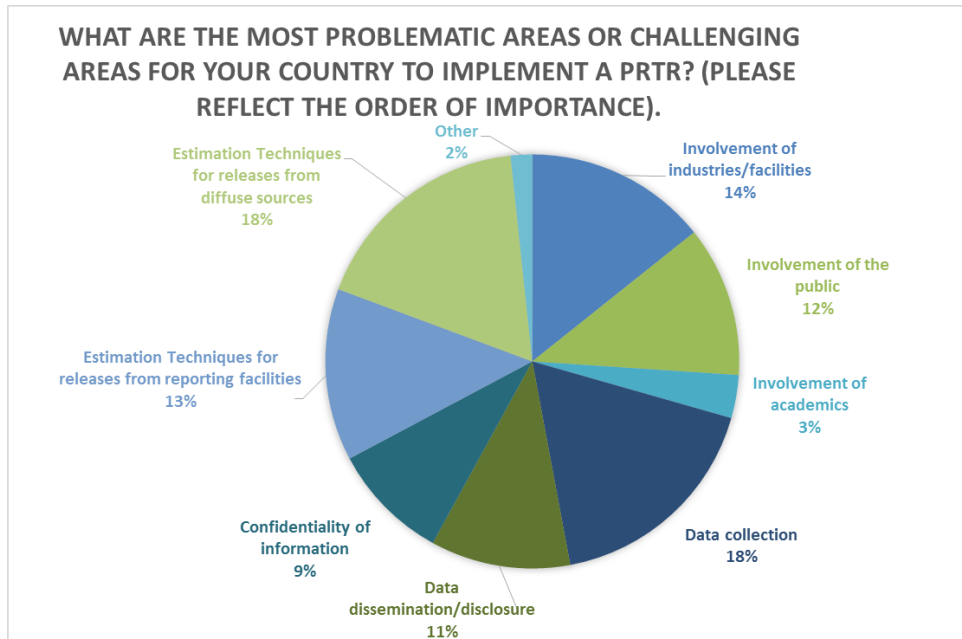


Figure 4. Problematic or challenging areas (data from UNECE, 2013)

A PRTR is a key tool for governments to provide the public with data and has huge potential for application of its data covering many facilities and environmental media. But there are many limitations on applying the data such as data quality and coverage of emission sources. Government officials working for PRTRs are likely to pay much attention to their limitations. They normally work for overcoming such limitations. Considering the limitations, the officials may become too conservative to try new challenges to apply the data. However, the PRTR officials are those who can provide the knowledge on how to utilize the data well.

From the survey in 2011 among OECD countries, few have a standing mechanism for exchanging ideas with and gathering feedback from the range of users (OECD, 2013b). Linking the providers and the users of the PRTR data to consider how to use PRTR data is a key to produce useful information.

For example, Swedish Environmental Protection Agency published a report on consumption-based indicators in Swedish environmental policy (Swedish EPA, 2013). This report used Swedish PRTR data and made a challenge to produce the indicators and developed by not only the data provider but also academics and NGOs.

4 Conclusion

The number of countries having PRTRs has been increasing from a few countries in 1996 to more than 30 in 2015.

During the period, several international and regional PRTRs have been developed. Intergovernmental Organisations such as UNECE, UNECLAC, UNITAR and OECD have made efforts to develop more internationally coordinated PRTRs. PRTRs can be designed for different purposes and different national background. It is important to promote more international harmonization or coordination as possible by taking into consideration of national circumstances,

UNECE and OECD have recently refocused on PRTRs and sustainable development. It is beneficial to have a clear and comprehensive concept on how PRTRs can contribute to sustainable development. Because a country put priority to establish a PRTR first, the country can come back to the issue on the PRTR and sustainable development after establishing the PRTR.

A PRTR has huge potential for its application. However, there seem few mechanisms for data providers to gather feedback from users. Knowing PRTRs limitation well, PRTR data providers may become conservative for application. A key to make PRTR data more useful is linking data providers of PRTRs and users.

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