# TRI and Beyond

The Toxics Release Inventory (TRI) is a powerful resource that provides the public with information about how TRI chemicals are managed by facilities in the United States. However, there are many other programs at EPA that collect information about chemicals and the environment. The next figure is an overview of some of the laws that EPA implements, and the industrial activities or processes EPA regulates under these laws.

While many programs at EPA focus on one area, TRI covers waste management activities including the release of chemicals to air, water, and land, and waste transfers. As a result, TRI data are especially valuable, as they can be used with many other datasets to provide a more complete picture of national trends in chemical use, chemical management, environmental release and other waste management practices, and environmental performance.
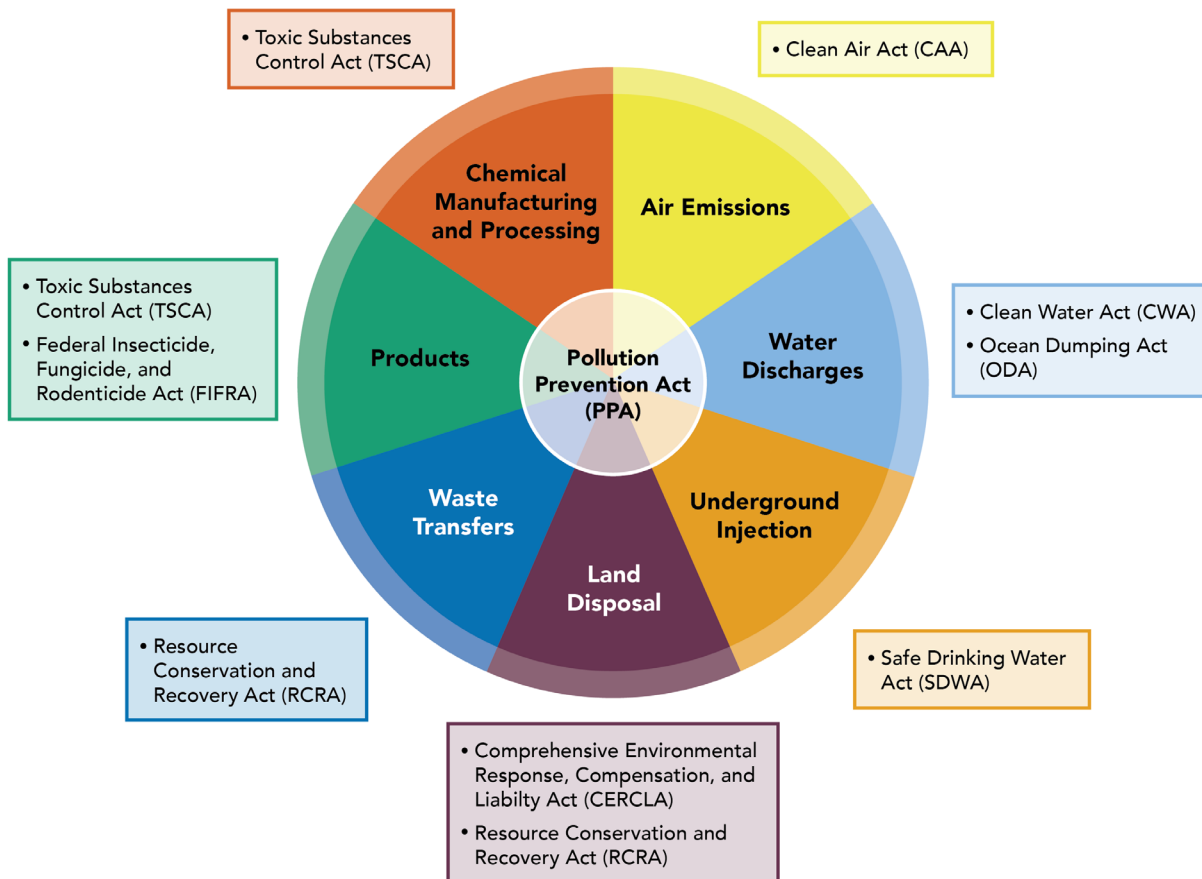
Note: The Emergency Planning and Community Right-to-Know Act (EPCRA) establishes requirements for emergency planning, preparedness, and reporting on hazardous and toxic chemicals involving air releases, water releases, land disposal, waste transfers, and the quantities of chemicals on site, the type and location of storage of those chemicals, and their use.

Throughout EPA, offices use TRI data to support their mission to protect human health and the environment. These uses include technical analysis for regulation, informing program priorities, providing information to stakeholders, and many other applications.

This section of the National Analysis highlights how TRI data contribute to Toxic Substances Control Act (TSCA) data and risk evaluations, and how TRI has served as a model for other pollutant release and transfer inventories around the world.
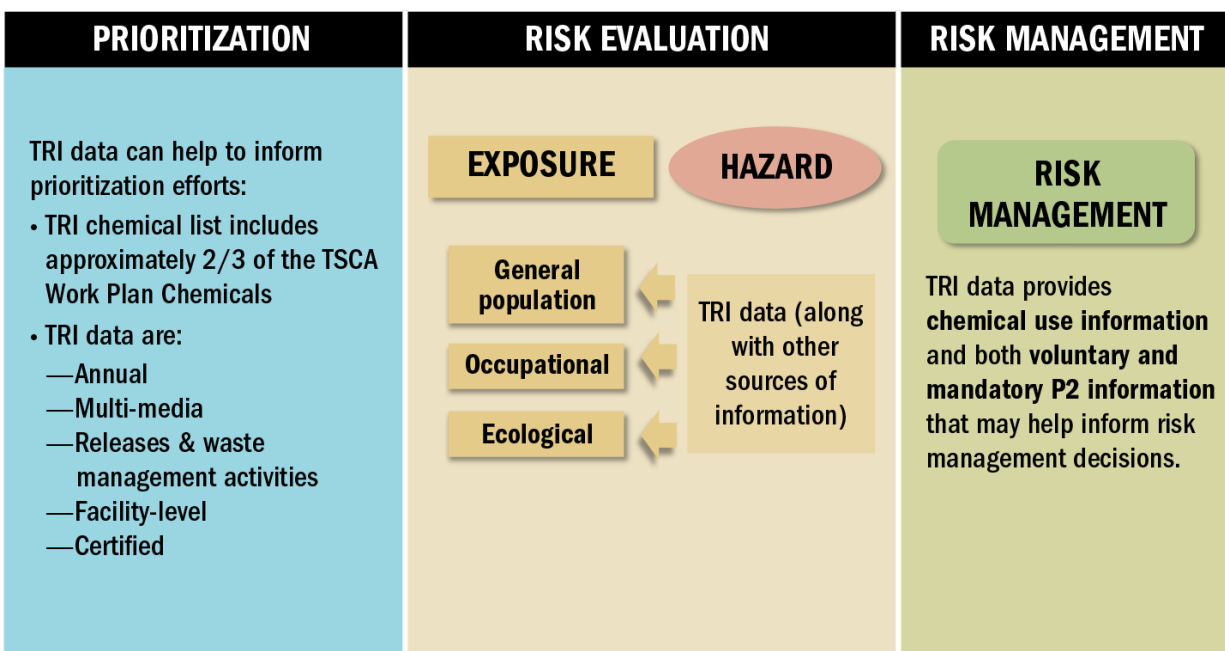
As with any dataset, there are several factors to consider when reading about or using the TRI data. Key factors associated with data presented are summarized in the Introduction. For more information see Factors to Consider When Using Toxics Release Inventory Data.

TSCA and TRI

The Toxic Substances Control Act (TSCA), as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, is the nation's primary chemicals management law. Under TSCA, existing chemicals in commerce and new chemicals intended for use in commerce are reviewed for safety through a risk-based process with increased public transparency. EPA has identified chemicals for further assessment under TSCA, referred to as work plan chemicals, to help focus and direct EPA's activities.

The three stages of EPA's process for evaluating the safety of existing chemicals are prioritization, risk evaluation, and risk management. During both the prioritization and risk evaluation stages of the process, TRI serves as a source of information as illustrated in the figure below. TRI data may also be used in the risk management stage of the process.

TRI Data Use in TSCA Chemical Evaluations

PRIORITIZATION	RISK EVALUATION	RISK MANAGEMENT
TRI data can help to inform prioritization efforts: • TRI chemical list includes approximately 2/3 of the TSCA Work Plan Chemicals • TRI data are: —Annual —Multi-media —Releases & waste management activities —Facility-level —Certified	EXPOSURE HAZARD General population Occupational Ecological TRI data (along with other sources of information)	RISK MANAGEMENT TRI data provides **chemical use information** and both **voluntary and mandatory P2 information** that may help inform risk management decisions.

Prioritization. Approximately two-thirds of the chemicals identified in the 2014 update of the TSCA Work Plan are also included on the TRI list of chemicals. TRI can inform prioritization of chemicals for risk evaluation because TRI data are submitted annually and contain information on the location of the facility and its release quantities of TRI chemicals to air, water and land, and transferred to off-site locations. Note that designation as a TRI chemical by itself does not determine high or low priority for a chemical.

Risk evaluation. A TSCA risk evaluation of a chemical is a comprehensive evaluation of the risk the chemical poses to human health and the environment over the chemical's life cycle. EPA evaluates the conditions of use for the chemical, which may include manufacturing and import, processing, use, distribution in commerce, and disposal. During risk evaluation, EPA is required to assess exposure to the chemical in the workplace, to the general population and to ecological receptors. This includes assessment of exposure to susceptible subpopulations that may be sensitive to the potential hazards posed by the chemical under review. The TRI data are used to estimate these exposures that may impact the general population and ecological resources.

Risk Management. If EPA determines that a chemical presents unreasonable risk of adverse effects to human health or the environment, EPA will evaluate options for lessening that risk. EPA is required to implement, via regulation, restrictions on the manufacture, processing, distribution in commerce, use and/or disposal of the chemical to eliminate the unreasonable risk. EPA is given a range of risk management options under TSCA, including labeling with warnings and instructions for use, recordkeeping or notice requirements, actions to reduce human exposure or environmental release, or a ban of the chemical or of certain uses of the chemical. EPA often uses TRI data, such as on chemical use and pollution prevention, to inform these risk management decisions.

High-priority Substances for TSCA Risk Evaluation

In 2017, EPA published the scope of the risk evaluations to be conducted for the initial ten chemicals undergoing risk evaluation under the amended TSCA. In December 2019, EPA announced the next 20 chemicals to undergo risk evaluation. Finalizing this list of high-priority chemicals for risk evaluation represents the final step in the TSCA prioritization process and marks another major TSCA milestone for EPA in its efforts to ensure the safety of existing chemicals in the marketplace. Of these 20 chemical substances, 13 are currently individually listed TRI chemicals. TRI is well suited to help inform the risk evaluation process because TRI includes annual data on the location of reporting facilities and their releases of TRI chemicals to air, water, land, and quantities transferred off site.

TRI Around the World

In 1986, the TRI Program was established as the first national Pollutant Release and Transfer Register (PRTR) in the world. Since then, environmental agencies around the world have been increasingly implementing their own right-to-know PRTR programs with the TRI serving as a model. Currently, at least 50 countries have fully established PRTRs or have implemented pilot programs, as shown in the map below. More are expected to be developed over the coming years, particularly in Asian, South American, and African countries.
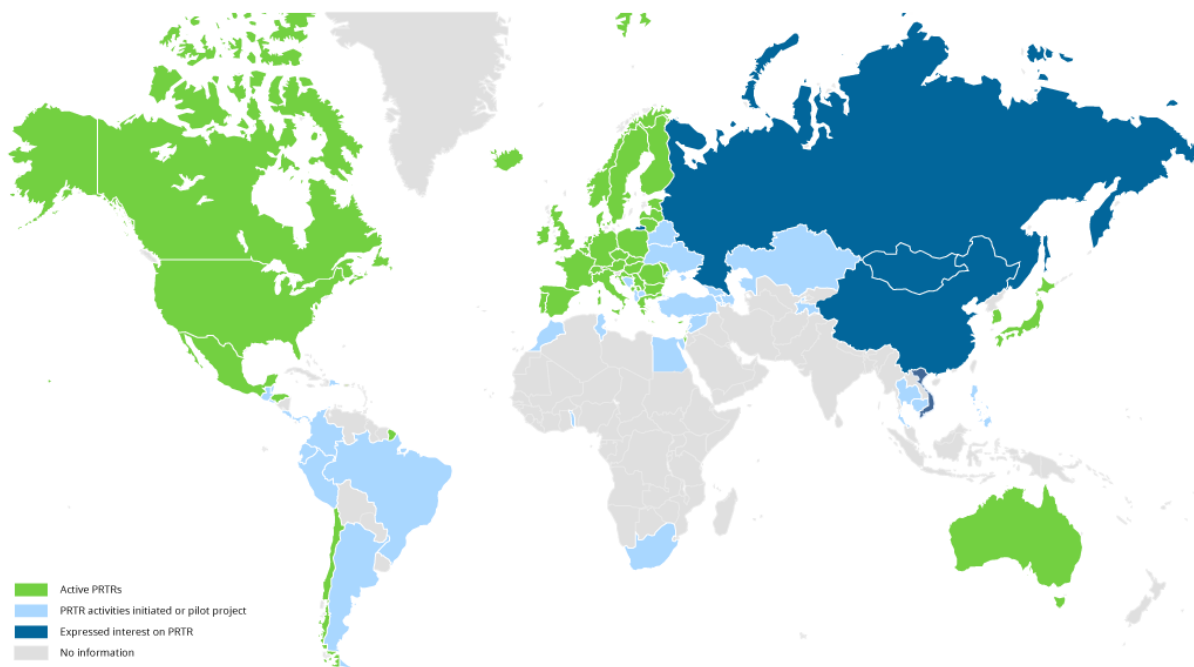
Source: United Nations Economic Commission for Europe

As global PRTR implementation continues to grow, the TRI Program will continue to work with international organizations to:

- Assist in the development of PRTR programs in other countries,
- Encourage other countries to develop initiatives aimed at making existing PRTR data more comparable to allow better analysis of the data on a global scale, and
- Make PRTR data more useful for assessing progress towards sustainability.

As an example, the TRI Program is currently working with the Organization for Economic Co-operation and Development (OECD) EXIT on a project to use global PRTR data to assess progress toward the Sustainable Development Goals established in the United Nation's 2030 Agenda for Sustainable Development EXIT, as described in the Project Spotlight below. For

information on international PRTR activities, projects and partners, see TRI's International webpage.

International Project Spotlight: Using PRTR Data to Assess Progress toward the U.N. Sustainable Development Goals

Background. The TRI Program is collaborating in a project to use global PRTR data to assess progress toward the United Nations' (U.N.) Sustainable Development Goals (SDGs). These goals are designed to "shift the world on to a sustainable and resilient path" by setting targets that encompass the economic, environmental, and social dimensions of sustainability. As stakeholders act toward achieving the SDGs, the U.N. will measure progress toward the Goals using existing data where possible. One such existing data source for some of the SDGs may be found in countries' PRTR data.

Initial Project Focus. The U.N. SDG Target 12.4 EXIT was identified as the target most directly relevant to PRTR data and is the focus of this initial phase of the project. This target focuses on reducing chemical releases to the environment.

> **SDG Target 12.4**
>
> By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Project Status. Global analyses of PRTR data are currently underway based on aggregated data for multiple chemicals from multiple countries in order to recommend possible metrics to track progress in reducing chemical releases to the environment. A sample figure below shows the trend for air and water releases of one pollutant from manufacturing facilities as reported to 6 of the 7 PRTRs in the project.

Releases of trichloroethylene to air and water from manufacturing facilities by PRTR (kg)
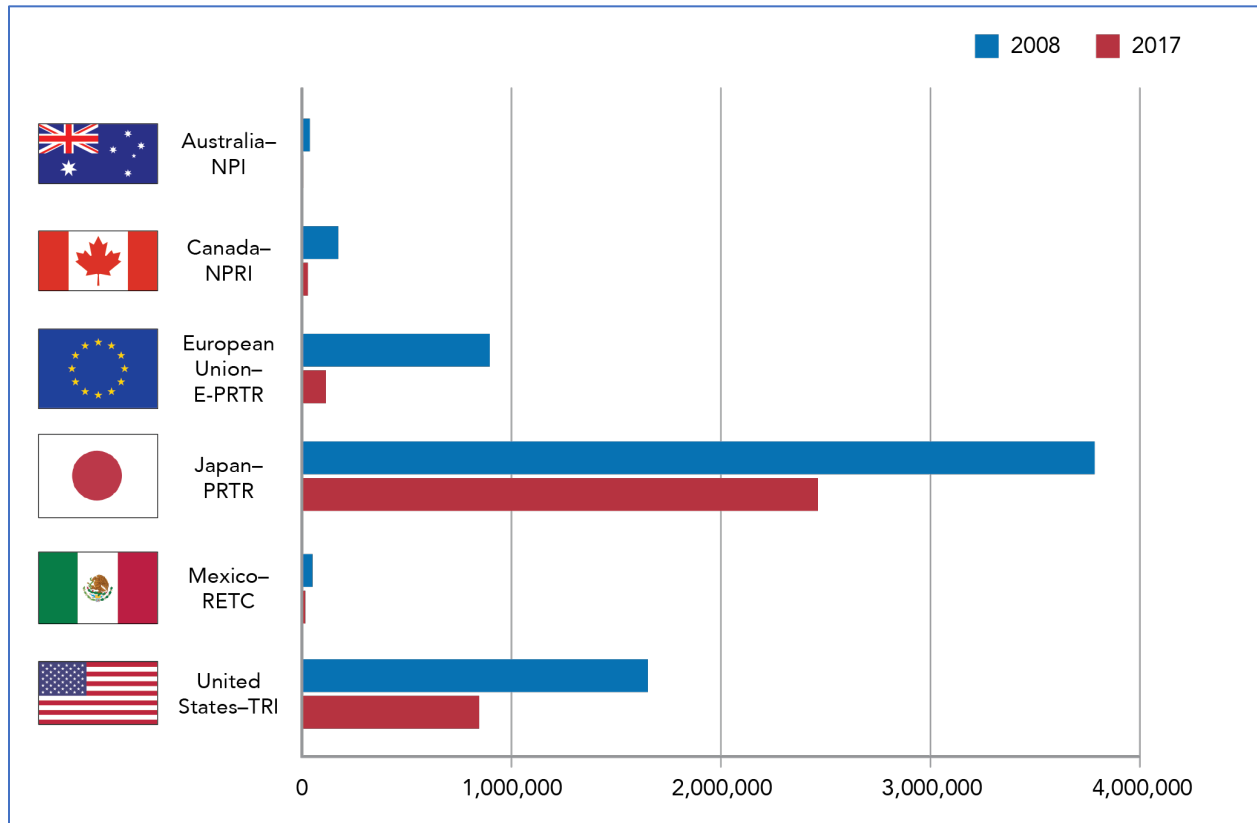
PRTRs included in the analyses: Australia – National Pollutant Inventory (NPI), Canada – National Pollutant Release Inventory (NPRI), Chile – Registro de Emisiones y Transferencia de Contaminantes (RETC, not shown here), European Union – European Pollutant Release and Transfer Register (E-PRTR), Japan Pollutant Release and Transfer Register (PRTR), Mexico – Registro de Emisiones y Transferencia de Contaminantes (RETC), United States – Toxics Release Inventory (TRI).

Next steps. As the project progresses and the methods and metrics are reviewed and refined, the findings may be included in the next update of the U.N. Sustainable Development Goals Report EXIT.

Read more about the TRI Around the World.