Implementing a PRTR Reporting Trial

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UNITAR Guidance Series for Implementing a National Pollutant Release and Transfer Register (PRTR) Design Project

Complementary to the OECD Guidance Manual for Governments and based on the lessons learned through pilot initiatives in Mexico, the Czech Republic and Egypt, UNITAR has developed the following documents in a guidance series intended to assist countries in undertaking a national PRTR design project:

- Implementing a National PRTR Design Project: A Guidance Document
- Supplement 1: Preparing a National PRTR Infrastructure Assessment
- Supplement 2: Designing the Key Features of a National PRTR System
- Supplement 3: Implementing a PRTR Pilot Reporting Trial
- Supplement 4: Structuring a National PRTR Proposal

Additional documents, including technical support and general reference materials on various aspects of PRTR design and implementation, are also available from UNITAR.

This document has been prepared in the context of UNITAR's Training and Capacity Building Programme to Facilitate the Design and Implementation of Pollutant Release and Transfer Registers (PRTRs), which is financially supported by the U.S. Environmental Protection Agency.

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1. **INTRODUCTION TO THE DOCUMENT**

This guide is the third of four supplements to the main guidance document in the UNITAR Guidance Series for Implementing a National PRTR Design Project (see box on inside front cover). The guidance series builds on the substantive and technical information contained in the OECD’s *Pollutant Release and Transfer Registers (PRTRs): A Tool for Environmental Policy and Sustainable Development: Guidance Manual for Governments* by providing countries with a suggested step-wise approach for undertaking the design of a national PRTR system. Each of the supplementary documents in the series provides in-depth guidance on a specific stage of UNITAR’s suggested approach for implementing a national PRTR design project. The guidance is not meant to be prescriptive and should be adapted by countries in a flexible manner according to their specific needs and circumstances.

The 6 suggested stages of a national PRTR design project are the following:

1. Identifying the Goals of the National PRTR System
2. Assessing the Existing Infrastructure Relevant to a National PRTR
3. Designing the Key Features of a National PRTR System

4. **Conducting a PRTR Pilot Reporting Trial**

5. Finalizing the National PRTR Proposal
6. Organizing a National PRTR Implementation Workshop

This document provides specific guidance on implementing Stage 4 of the suggested PRTR design process. It addresses issues and challenges associated with conducting a PRTR pilot reporting trial to test the preliminary design of the national PRTR system in order to obtain practical feedback for finalizing the national PRTR proposal.
2. **WHY CONDUCT A PRTR PILOT REPORTING TRIAL?**

The purpose of conducting a PRTR pilot reporting trial is to test the PRTR system on a limited scale in order to gain practical experience directly applicable to the design of the national PRTR system. In most cases a pilot reporting trial is undertaken to test and refine the preliminary design of the national PRTR system after the initial specifications have been developed by the National Coordinating Team (NCT). In other cases a PRTR pilot reporting trial might be used to "test the waters" by assessing the general feasibility of the PRTR concept before embarking on a national PRTR design project.\(^1\)

The results of the pilot reporting trial can be used by the NCT to improve the design of the PRTR system and can help predict the level of human and financial resources that will be required to operate the system on a national scale. In addition, the data collected during the reporting trial provides an opportunity to test the intended applications and uses for the PRTR data.

The design elements to be tested through a PRTR pilot reporting trial include the following:

- The list of chemical substances subject to reporting;
- The reporting formats and data collection procedures;
- The guidance material to assist industries in reporting PRTR data, (e.g., reporting instructions and data estimation manuals); and
- The PRTR software and hardware infrastructure.

A PRTR pilot reporting trial may also provide practical insights into important operational and resource management issues related to the PRTR system. These include:

- The level of assistance required by industrial facilities to ensure successful reporting;
- The level of cooperation that can be expected from industry during national implementation;
- The type of outreach strategy that government authorities should use to inform industry of reporting requirements and procedures;
- The coordination mechanisms among the various government agencies and levels of government that are involved in the operation of a PRTR reporting cycle; and
- The potential operative costs for both government and industry in running a national PRTR system.

The experiences of several countries that have undertaken PRTR reporting trials indicate that an exercise of this nature can be a very important part of a national PRTR design project. A carefully implemented and evaluated trial could lead to the following outcomes:

- Initial training of government personnel to ensure adequate capabilities for successful management and operation of the PRTR system;
- Finalization of the required PRTR data collection and management infrastructure and procedures (software, database, reporting formats and instructions, etc.);

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\(^1\) This guide is geared primarily to assist those countries that are implementing a PRTR pilot reporting trial after the preliminary specifications for the key features of the PRTR system have been developed, i.e., as Stage 4 of the suggested PRTR design process. Countries intending to conduct a PRTR pilot reporting trial separate from or prior to embarking on a national PRTR design effort may find it necessary to adapt some of the guidance found in this document to fit their specific situation.
Analysis of a concrete sample of PRTR data to test the policy applications planned for the national PRTR system; and
Initiation of a cooperative relationship with the industry sector geared towards transparency and more responsible environmental management.
3. **Initiating a PRTR Pilot Reporting Trial**

The National Coordinating Team is the entity responsible for initiating, planning and overseeing the implementation of the PRTR pilot reporting trial. Several planning and strategic considerations should be taken into account by the NCT before starting this exercise. These considerations concern the selection of the region where the pilot reporting trial will be undertaken and the timing of the exercise in relation to the overall national PRTR design project.

**Selecting the pilot reporting trial region or national sample**

In most cases, countries will decide to conduct their pilot reporting trials on a geographic basis, such as within a specific region or locality. However, another option is to utilize a national sample of industries from throughout the country. The decision between these two approaches will depend on the objectives of the pilot reporting trial and the objectives that have been identified for the national PRTR system, as well as other factors such as the size of the country and the geographic distribution of industrial facilities and other emissions sources.

In selecting an appropriate region in which to run a regionally-based PRTR pilot reporting trial, there are several elements to consider including the types and diversity of industries in the region, the degree to which specific chemicals of interest are used in the region, and the capacities of local or regional authorities to take on the necessary data collection and other operational roles involved in carrying out a successful reporting trial.

Ideally, the selected region would offer the following characteristics:

- Contains a representative industrial sample of manageable size;
- Existence of good relationships between local/regional authorities and the central government;
- Existence of good relationships and cooperation between the local/regional authorities and local industries;
- Environmental policies at the regional level that are in line with the objectives of the PRTR system; and
- Adequate regional capacities and budgetary resources to operate the pilot reporting trial activities.

**Securing policy commitment**

An important precondition for a successful PRTR pilot reporting trial is the support of high level national authorities, as well as the commitment of the local authorities and industries in the region where the reporting trial will be held. The undertaking of a PRTR reporting trial has the potential to be a politically sensitive issue. A number of industries will be asked to estimate and report their emissions for the first time. Operation of the PRTR reporting trial also requires that central and regional authorities work together in new ways and perform functions for which they may have no prior experience.

In order to meet these challenges and to ensure a successful pilot reporting trial, the National Coordinating Team should take the necessary steps to secure adequate policy support and commitment from relevant decision makers prior to embarking on the exercise. By
communicating the goals of the reporting trial to the various parties involved, informing them in advance of planned activities, and anticipating their likely concerns, the NCT can help prevent opposition and criticism by groups that initially may be opposed to the national PRTR initiative.

A useful strategy for building policy commitment is to conduct individual meetings or small seminars with the leaders of the various government agencies and other groups involved in the pilot reporting trial. This outreach should emphasize the specific opportunities that the PRTR could offer to each stakeholder group and the potential linkages to various environmental management initiatives.

Establishing a cooperative relationship with participating industries is another important prerequisite for a successful pilot reporting trial. A clear communication strategy is crucial in this regard. The representatives of industry and industrial associations who are members of the National Coordinating Team should be actively involved in laying the necessary groundwork for a collaborative relationship between government and industry in carrying out the pilot reporting trial.

**Timing of the pilot reporting trial**

The timing of the PRTR pilot reporting trial in relation to the overall national PRTR design process is another important consideration. As mentioned before, a reporting trial could be undertaken to test the feasibility and usefulness of the PRTR concept under local conditions prior to embarking on a formal PRTR design project. In such a case, the reporting trial would be the first PRTR related activity undertaken at the country level, and its results would be used in the context of subsequent efforts to design a national PRTR system. If the purpose of the PRTR pilot reporting trial is to test the National Coordinating Team’s preliminary design for the PRTR system, then the trial should be conducted towards the end of the PRTR design project. Regardless of when the pilot reporting trial is conducted, it is very important that both the technical capabilities and political climate are favourable for its successful operation.
4. **IDENTIFYING ROLES AND RESPONSIBILITIES**

The PRTR pilot reporting trial involves several distinct groups. These include the central and local governmental authorities and agencies that are directly involved in operating the reporting trial, the participating industries, and other parties that have an interest in the final outcome or that are involved in communication and liaison activities (e.g., non-governmental organizations (NGOs) and industry associations). With the involvement of these diverse groups, a clear assignment of responsibilities and effective coordination is essential.

It is suggested that the National Coordinating Team appoint a pilot reporting trial manager and working group to carry out the detailed organization and daily management of the PRTR reporting trial. The NCT may decide that organizing a regional coordinating group may also be necessary to facilitate coordination between central and local authorities in the area of study. The following are brief descriptions of the suggested roles and responsibilities of each of these actors.

**The National Coordinating Team**

The National Coordinating Team is the entity responsible for overseeing all activities in the development of the national PRTR system, including the pilot reporting trial. The NCT should maintain close linkages with all governmental and non-governmental parties involved in the reporting trial.

Upon completion of the pilot reporting trial, the NCT should undertake a comprehensive evaluation of the exercise to gather all pertinent recommendations and feedback in order to continue its work on the national PRTR design. Successful incorporation of the lessons learned during the pilot trial exercise will depend on the active participation of the NCT throughout its implementation.

**The Pilot Reporting Trial Manager and Working Group**

The appointed pilot reporting trial manager should be someone with sufficient authority to keep the various actors operating according to schedule and to resolve issues that may cut across several different government agencies. The project coordinator or some other appropriate person from within the agency that is serving as the National Coordinator for the overall PRTR design project may be a logical candidate.

Tasks that the pilot trial manager will need to coordinate might include:

- Ensuring that all preparatory technical work is completed including specification of the chemicals list, software, hardware, reporting formats, reporting instructions, etc.;
- Establishing a clear communication strategy with industry;
- Organizing an informational workshop for participating industries;
- Organizing training for government personnel;
- Supervising all aspects of data collection and management;
- Supervising the analysis and reporting of the collected data; and
- Evaluating the pilot reporting trial and providing feedback to the NCT.

A special working group should be designated to assist the pilot reporting trial manager in completing these tasks.
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The Regional Coordinating Group

The National Coordinating Team and pilot reporting trial manager may decide that a regional coordinating group is needed in order to ensure successful operation of the pilot reporting trial. This group could be comprised of representatives from local government, industry and NGOs in the region of study. Factors such as the organizational relationship between the central, regional and/or local levels of government and the physical distance between the reporting trial region and the central government may influence the decision of whether a regional coordinating group is needed.

Following are some possible tasks to be undertaken at the regional level:

- Approaching local industries and ensuring their cooperation;
- Selecting local government personnel for pilot reporting trial operation;
- Maintaining coordination with the central authorities;
- Distributing reporting forms, instructions and guidance materials;
- Providing assistance to reporting facilities on data estimation and report preparation;
- Collecting the completed reporting forms;
- Checking data quality, correcting errors, and relaying data to central authorities; and
- Providing feedback to the NCT.
5. **DEVELOPING A WORK PLAN**

Among the first tasks to be undertaken by the pilot reporting trial manager and working group, through consultation with the NCT, is to develop a work plan, laying out in detail the time frame for each of the tasks and activities to be completed within the context of the PRTR pilot reporting trial. Figure 1 provides a sample work plan which countries may wish to adapt to fit their individual needs. A comprehensive work plan with realistic time frames can be instrumental in keeping the process moving forward and for ensuring that involved parties complete the tasks for which they are responsible in a timely manner.

**Figure 1**

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Implementing a PRTR Pilot Reporting Trial
6. **Defining the Scope of the PRTR Pilot Reporting Trial**

In defining the scope of the pilot trial, the NCT must make decisions regarding the size of the industry sample and study region, the amount of information to be collected from participating facilities, and whether the trial will be conducted with a complete or reduced version of the intended national PRTR system. In making decisions regarding the scope of the pilot reporting trial, considerations regarding the amount of human and other resources that will be required should be taken into account.

There are several factors affecting the amount of effort and resources involved in a pilot reporting trial in addition to the geographic size of the study area, the number of reporting industries and the depth to which the various technical aspects of the system will be tested. These other factors include the following:

- Whether the participation of the reporting industries will be voluntary or mandatory, and the approach to be used by government in ensuring participation, e.g., outreach or enforcement activities, etc.;
- The level of training that the participating industries will need in order to report PRTR data effectively; and
- The types of analyses to be performed and the intended uses of the collected data.

**Selecting the reporting facilities**

A manageable sample size will maximize the probability of a successful PRTR pilot reporting trial. Trying to cover too many industries or too large an area can compromise the success of the exercise. In deciding on the sample size, it should be recognized that the participating industries will be reporting PRTR data for the first time, and thus may require a lot of support and guidance. A manageable sample size will ensure that sufficient follow-up can be carried out with all of the facilities that participate.

The chosen sample size should be sufficiently representative to provide practical experience with the potential challenges to be encountered when implementing the system on a national scale. To be representative, the sample size needs to include companies of different sizes as well as from different industrial sectors. Pilot trial projects in Sweden and Mexico have used samples of 40 to 150 industrial facilities.

Parameters that might be considered in choosing a representative sample of industrial facilities for the pilot reporting trial include: production of one or more of the listed chemicals, facility size, industrial activities or production processes used, types of wastes generated and other information that might be captured in existing reporting and permitting schemes. Industrial statistics of the pilot trial region, current environmental reporting data and import-export activity can be examined to aid in the selection of facilities. The willingness of the facilities to participate in the pilot trial may also be a consideration, particularly if reporting will be voluntary.

**Selecting the chemicals list**

The chemicals list that has been developed by the NCT in preparation for the national PRTR, or a subset of it, can be used for the pilot reporting trial. If a national PRTR chemicals list has not yet been developed, existing lists of regulated pollutants in the region of study could be used. The list of chemicals should be chosen to track substances of interest in the study...
region and to provide enough data to conduct relevant analyses in order to test the policy applications planned for the PRTR system.

**Defining the data elements to be collected**

The selection of the data elements to be collected during the PRTR pilot reporting trial also should be made according to the types of analyses and applications intended for the collected data. A trade-off exists between making reporting as simple as possible, and collecting information of sufficient depth and breadth to support more sophisticated uses and applications.

A set of core data elements should always be present in a PRTR report, including the identification of the source or facility (including its geographic location), the identity of the chemical substance(s) (e.g., Chemical Abstracts Service (CAS) number) and the estimated emissions to the various environmental media. However, a number of additional data elements could also be collected during the pilot reporting trial depending on the objectives and depth of analysis that authorities would like to perform. These data elements could include information on recycling, levels of chemical use, emissions reduction methods, energy and water use, the amount of chemicals that end up in the final product, details on waste disposal methods, etc.
7. **REQUIRED INFRASTRUCTURE FOR THE PRTR PILOT REPORTING TRIAL**

The PRTR pilot reporting trial should test all technical, administrative and operational aspects of the PRTR system. For this purpose it is recommended that the PRTR elements to be tested in the field trial closely resemble the version intended for use at the national level. This will ensure that the pilot trial experiences will be of direct relevance to the national PRTR design.

The necessary infrastructure for conducting the pilot reporting trial includes the forms for reporting the PRTR data, the reporting instructions and guidance material to help industries estimate emissions, and the installation of the software and hardware equipment used to host and analyze the collected PRTR data. The particular features of these technical elements should be decided by the National Coordinating Team and will vary from country to country depending on the particular objectives and intended applications of the national PRTR system.

**Preparation of reporting formats and instructions**

Ideally, the reporting format and instructions to be used during the reporting trial should be those which have been developed by the NCT for the national PRTR system. In this way, the pilot reporting trial can be used to assess their suitability and “user-friendliness”. The reporting instructions provided to industry should be as self-standing and simple as possible so that facilities will be able to estimate their data and complete the reporting forms with a minimum of assistance. All terms such as units of measurement, releases, discharges, and emissions should be carefully defined according to local usage.

**Installation of the required software**

The software infrastructure required to run a generic PRTR system consists of three modules: a data entry module, a database manager module, and a data dissemination module. Ideally the pilot reporting trial will be used as an opportunity to fully test all three components of the software intended for use with the national PRTR system. However, for a pilot trial of limited size, only a database manager module is likely to be necessary. Any commercially available database manager software package can be readily adapted to perform this function by simply configuring each record of the database to contain data fields identical to those of the reporting format.

If the country wishes to use integrated PRTR software comprising all three modules but has not yet developed its own version, the software developed by countries with existing PRTR programmes could be adapted for use. The adaptation of internationally available PRTR software to meet the specific needs of the country can be performed without major difficulty.

**Installation of required hardware infrastructure**

The hardware infrastructure required for the pilot reporting trial consists of a desktop personal computer to host the PRTR database with the PRTR database manager software installed. Any generic desktop PC computer should be sufficient to handle the database management tasks of a typical PRTR pilot reporting trial.
8. **HUMAN RESOURCES AND TRAINING**

**Responsibilities of government staff**

Government personnel will need to be identified and sufficiently trained to handle all the operational aspects of the PRTR system during the pilot reporting trial. These tasks and responsibilities cover all aspects of a PRTR reporting cycle including data estimation, error checking and correction, data collection, management and analysis procedures. In addition to these operational aspects, it is important that the field government staff who will be interacting with the industries be prepared to handle industry questions and provide adequate assistance. A number of assistance services and data verification mechanisms might also be required to ensure that participating industries correctly estimate and report their PRTR data.

**Organizing a training workshop for government personnel**

Holding a training workshop is one way to prepare government staff for their roles during implementation of the pilot reporting trial. Such a workshop should introduce data estimation and reporting techniques to help government personnel address industry questions and concerns. The workshop should also ensure that the government personnel who will be directly involved in implementing the pilot trial have all the necessary skills and knowledge to handle the operational aspects of the PRTR system, including data collection, management and analysis. The scope and content of the training workshop will depend on the number of government staff, levels of government, and number of agencies involved in the pilot reporting trial. These parameters in turn depend on the scale of the reporting trial and the specific roles of the various agencies as defined by the NCT.
9. **Ensuring Successful Participation of Industry**

*Managing the relationship with reporting industries*

Establishing a cooperative relationship with industry during the pilot reporting trial can be critical to the success of the larger national PRTR effort. Governmental authorities should avoid a command and control approach and concentrate instead in working alongside industry with the common goal of collecting reliable PRTR data to meet the environmental management objectives of both the public and the private sector. The concerns expressed by industry regarding the development of the PRTR system or during planning for the pilot reporting trial should be taken into account and efforts should be made to make reporting as simple as possible to avoid the perception of PRTR reporting as another burdensome requirement. Creating a good working relationship with industry during the pilot phase can set a good precedent for obtaining private sector support for the larger national PRTR initiative.

During the implementation of the pilot reporting trial, all details pertaining to the pilot trial should be clearly communicated to the facilities that will be taking part, including the purpose of the exercise and clear instructions on estimating and reporting the data.

*Organizing a workshop for industry*

An informational and training workshop for participating industries could be useful to ensure a good understanding of the goals of the PRTR pilot trial and what it entails for participating facilities. The workshop can be used to officially present the pilot trial and to distribute reporting forms, instructions and guidance material. Specific guidance and methodologies for estimating chemical emissions should be provided during this workshop. With good coverage and clear guidance, the workshop may succeed in addressing the majority of industry questions prior to the actual reporting of data. Holding an effective workshop for industries can help minimize the assistance services required later on.

The workshop could include a hands-on exercise during which industry representatives would estimate emissions and complete a sample PRTR reporting form. This exercise could be useful for bringing forth and addressing questions on the specifics of estimating and reporting PRTR data correctly. Facilities of the same industrial sector could be asked to form groups and complete the reporting form together. Questions or problems faced by participants during this exercise could then be raised and addressed by government officials during the workshop.

*Assistance and support services for reporting industries*

Providing assistance and support to industry during the course of the pilot reporting trial is likely to be necessary to address industry questions regarding data estimation and report preparation and to ensure correct reporting of PRTR data. The type of assistance services to be provided should be decided by the National Coordinating Team based on anticipated needs.

Some possible assistance and support services to consider include: establishing a telephone hotline to answer questions on the reporting procedure; having government staff in the field to provide direct assistance to reporting facilities; and/or appointing technical staff from a regional office to address industry concerns via fax or through direct consultation.
10. **Evaluating the Results of the PRTR Pilot Reporting Trial**

**Evaluation of the pilot trial experience**

All feedback and recommendations arising from the pilot reporting trial should be channelled to the National Coordinating Team as the overseeing entity in charge of completing the national PRTR proposal. The national authorities and industries involved in the different phases of the reporting trial could be called upon to provide concrete recommendations for the NCT based on their experiences in operating the reporting trial. In addition to evaluating the results at the conclusion of the pilot trial, the NCT should be an active observer of the pilot trial process from the start and should not wait to gather feedback only when the formal evaluation is being conducted.

The NCT should undertake this comprehensive evaluation in a manner that it considers most appropriate depending on the number of agencies involved and the particular way in which the pilot trial has been conducted. One possibility is to request that the authorities in charge of operating the pilot trial prepare written reports and recommendations. Another is to conduct interviews and collect feedback directly from the various agents involved in the pilot trial, including government personnel as well as the individuals at the facilities who were in charge of reporting. A questionnaire or survey of participating industries might be considered as a means for collecting feedback and recommendations from industry. A combination of a few options is probably ideal for a comprehensive evaluation.

**Demonstration of planned policy applications**

The second component of the analysis/evaluation stage is to assess the data collected during the pilot reporting trial in order to see how well it serves the specific policy applications planned for the national PRTR system. The pilot trial can help identify which of the planned applications are realistic and which are beyond current national capacities. Based on these preliminary analyses, the NCT may be able to revise the design to better meet the key national objectives of the PRTR system.

The NCT may wish to consider appointing working groups to take the collected data sample and run prototype demonstrations of the uses and applications that have been planned for the national PRTR system. These concrete exercises with actual data will enable the NCT to develop a realistic and cost efficient PRTR concept tailored to national needs and conditions.

Some of the types of analyses that might be considered include:

- Estimation of total regional pollution burden by chemical substance;
- Developing a baseline from which to measure future trends and responses to policy actions;
- Aggregating total pollutant discharges to a particular watershed or air shed;
- Measuring the unit costs of undertaking PRTR reporting (costs incurred by industries and overhead costs incurred by government per industrial facility);
- Developing a regional map of pollutant sources combining PRTR data with geographic information system (GIS) information which could then be used to undertake further dispersion modelling or estimation of risks for particular receptors; and
Any other type of analysis that might be of interest for regional environmental management.

While these preliminary analyses may give a good indication of whether or not the planned applications for the PRTR data are feasible, the NCT should bear in mind that the data collected during this first round of reporting might not be reliable. Thus, the NCT should exercise caution in using the data for anything other than demonstration purposes.

**Incorporating the lessons learned into the national PRTR design project**

The feedback obtained through the pilot reporting trial experience will aid the NCT in refining the design of the PRTR system and completing the national PRTR proposal. The practical experiences and lessons learned through the pilot trial will enable the NCT to anticipate potential problems and adjust the PRTR design and implementation strategy accordingly, prior to implementation on a national scale. The results of the pilot reporting trial may also provide a concrete basis for demonstrating to decision makers and concerned parties the potential benefits and uses of a national PRTR system.