

In addition, if specific hazardous waste streams are not managed well, the government should organise stakeholder meetings and discuss action plans and future regulations for such streams.

**Example 2 Risk Reduction in Lead Acid Battery Recycling in the Philippines**

The International Lead Management Centre conducted a pilot programme with UNCTAD, UNDP, the Philippine Department of Trade and Industry and local industries to reduce the risks in lead recycling in the Philippines. The programme involved an environment assessment of a large recycling facility in September 1997. The Centre provided technical support in upgrading the facility to reduce environmental emissions, and the recycling company reformed its used lead acid battery collection system, which led to an informal recycler receiving a hazardous waste transport license as collecting agent for authorised recyclers.

**Reference documents and existing guidelines**

If your country lacks regulations governing hazardous waste, the first step is to issue hazardous waste legislation. Please refer to this Basel Convention information: *Model National Legislation on the Management of Hazardous Wastes and Other Wastes as well as on the Control of Transboundary Movements of Hazardous Wastes and Other Wastes and their Disposal*. <http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/modlegis.pdf>

Guidance document for improving national reporting, including data collection: Committee for administering the Mechanism for promoting implementation and compliance of the Basel Convention [2009] *Guidance Document on Improving National Reporting by Parties to the Basel Convention*. <http://www.basel.int/Portals/4/Basel%20Convention/docs/natreporting/GuidFinal-22102009-e.pdf>

Technical Guidelines on hazardous waste such as "used oil", "waste lead-acid batteries", "biomedical and healthcare wastes", "wastes consisting of, containing or contaminated with POPs", "elemental mercury and waste containing or contaminated with mercury", "co-processing of hazardous waste in cement kilns", were developed by the Basel Convention. These guidelines are posted on the following website: <http://www.basel.int/Implementation/TechnicalMatters/Developmentof-TechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx>

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**i For Further Information**

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# Hazardous Waste Management

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## 01 Outline of indicator

The basic qualitative indicator Hazardous Waste refers to the existence of regulations controlling hazardous waste. The presence of regulations themselves should also promote environmentally sound management of hazardous waste. Amounts and rates of generation of hazardous waste are the main quantitative indicators. To assess a country's hazardous waste treatment and disposal capacity, imports and exports of hazardous waste should be taken into account. Many Asian countries have ratified the Basel Convention and compile the required data for submission to the convention secretariat every year. Such data covers information on hazardous waste regulations, existing facilities, generation and import and export.

As regards disposal, it is preferable to dispose of non-recyclable hazardous waste at the location of its generation. However, in the absence of appropriate domestic treatment or disposal facilities, it should be exported to an environmentally sound facility through the 'prior notice and consent' procedure. Environmentally sound management is also a prerequisite for export of recyclable hazardous waste\*1. In accordance with the economies of scale of recycling technologies and pollution prevention, and due to fragmentation of the production processes involved, resource efficiency may be improved by providing regional recycling centres.

\*1 "Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention" (1994) stated that the Self-sufficiency Principle, the Proximity Principle and the Least Transboundary Movement Principle should be considered in relationship and balance. In addition, it states "it should also be recognised that considerations for disposal may be different from those for recovery, which, if soundly managed, can provide environmental and economic benefits and should be encouraged".

## 02 Type of indicator

Existence of regulations to control hazardous waste: Qualitative Indicator, Response Indicator  
Amount and rate of generation of hazardous waste: Quantitative Indicator, Pressure Indicator

## 03 Policy goals to be monitored by this indicator

If hazardous waste is dumped or recycled without environmentally sound technology, serious environmental problems and health hazards may result. Policy goals on hazardous waste are to minimise environmental and health risks due to hazardous substances contained in hazardous waste and to utilise hazardous waste as resources via environmentally sound technologies.

The first step to manage hazardous waste within a country is to formulate regulations governing hazardous waste generation, storage, transport, treatment and disposal facilities. If such regulations do not exist, a model national legislation provide by the Basel Convention can be used. Reporting requirements given in such regulations will form the basis of the data used in hazardous waste management.

Using the collected data on hazardous waste generation and disposal, the associated environmental risks can be minimised and correctly managed. Ideally, generation of hazardous waste should be minimised, but this can present quite a challenge in a rapidly growing economy. An alternate indicator of management efficiency used in place of absolute amount of hazardous waste generation is GDP per unit of the amount.

Usually, readily available data on hazardous waste generation refers to the amount of hazardous waste treated and disposed with government-approved technology. However, any reduction in the amount of reported hazardous waste generation could point to an increase in informal recycling or illegal dumping (see the section on Challenges and concerns).

## 04 Definition

In most Asian countries that have ratified the Basel Convention, national legislation follows the convention's definition, i.e., it is defined as hazardous waste if it is within the category of wastes listed in Annex I of the Convention and exhibits one of the hazardous characteristics contained in Annex III such as explosive, flammable, toxic or corrosive. Annex VIII also lists up typical hazardous wastes.

The Basel Convention allows parties to formulate individual definitions but requires such parties to report their definitions to the secretariat, which then disseminates such to the other parties.

## 05 Supporting indicators

Other related statistics are as follows:

- (1) Hazardous waste generation by industry
- (2) Amount of hazardous waste by treatment and disposal type, such as recycling, energy recovery and landfill

As explained in the following section, hazardous waste generation by industry, as well as by type, such as waste oil and lead acid batteries, is useful in interpreting trends in hazardous waste generation.

## 06 Challenges and concerns

- Reduction in hazardous waste generation can be targeted by national policy, but observed reductions in hazardous waste may indicate a rise in illegal dumping, thus caution should be observed in interpreting the indicator. Reasons for the type of waste being reduced should be first identified, and if such explanations lack credibility, indications of illegal dumping should be investigated.
- Any reduction in exported hazardous waste through 'prior notice and consent' also warrants caution as such could have resulted from either an increase in appropriate treatment by domestic facility or improper treatment via unauthorised recycler, or smuggling.
- Some countries lack legislation for hazardous waste, but control it by regulation on industrial waste, while leaving hazardous household waste to local governments. Under such legal systems, where the types and generation of hazardous waste lack appropriate classification, the risks allied with hazardous waste can be minimised by enforcing regulations on generator's responsibility of industrial waste, pollution control to recycling and disposal facilities and local government waste management.

## 07 Appropriate data management by stakeholders

Generators of hazardous waste are usually required to issue manifests or consignment notes when transferring hazardous waste to carriers for delivery to authorized treatment or disposal facilities. It is also common practice for waste generators, treatment and disposal facilities to report to the government on amounts of hazardous waste generated, treated and disposed of, respectively, the reporting structure of which forms the basis of substantiation for the indicator.

Importers and exporters of hazardous waste are required to obtain prior consent from competent authorities before shipment, and the amounts involved constitute another source of data.

## 08 Best practices

Regulations on hazardous waste need to be disseminated to industry and other related stakeholders by the government, and enforcement thereof is a key route to fostering environmentally sound management.

### Example 1

#### Course for Certified Environmental Professional in Scheduled Waste Management, organised by Environment Institute of Malaysia

The Environment Institute of Malaysia, under the Department of Environment in the Ministry of Natural Resource and Environment, provides a course entitled Environmental Professional in Scheduled Waste Management ('Scheduled waste' means hazardous waste in Malaysia). This five-day course is for managers and supervisors involved in managing toxic and hazardous waste at industrial waste facilities, and covers "scheduled waste legislation and policy", "scheduled waste facilities and licensing procedure", "storage, packaging and labelling of scheduled waste", "options for disposal and treatment technology", "identification, classification and properties of scheduled waste", as well as other topics.