

Chemicals are essential for modern life, but they also pose high health and environmental risks, when not properly managed. There is a general lack of knowledge about risks with chemicals, how to use them and dispose of them safely. Once the awareness is there, it is possible to reduce the risks. Safe management of chemicals and hazardous waste is a prerequisite for sustainable development. This brief aims to provide guidance on how to address chemicals and hazardous wastes in the management of Sida-supported programmes.

Low and middle income countries are experiencing rapid increase in chemical production and use. Chemicals are often used without adequate information about hazards to human health and the environment. The poor are particularly vulnerable, since they often are the most exposed and their working conditions may be very unhealthy.

Chemicals in products are an increasing problem. Electronics, solar power systems, building material, textiles and other products can be the source of chemical pollution during their production, use and disposal.

Non-existent or sub-standard waste management and small scale "recycling" at home or in the street can result in pollution of air, water and soil. Inappropriate recycling of waste may expose waste workers and their families to hazardous chemicals. Improving management of chemicals and hazardous waste is a means to combat poverty and to achieve the sustainable development goals.

Examples of hazardous chemicals

- Pesticides, fertilizers and other chemicals for agriculture, forestry, aquaculture and gardens
- Heavy metals, persistent organic pollutants and oil from industries such as tanneries, textile industries, paper mills and extractive industries
- Mercury from artisanal gold mining and health clinics
- Flame retardants, other additives in plastics and textiles
- Metals such as cadmium and lead from solar panels
- Mercury, lead and acid from batteries
- Refrigerants from refrigerators/freezers, A/C

Examples of effects on health and the environment

Effects on health may be both acute and chronic:

- Lead and mercury may cause neurological damage
- Asbestos may cause lung cancer
- Organic solvents may cause neurological impairment

There are also environmental effects, for example:

- PCBs still remaining in old electric insulation cause reproductive system damages in mammals and birds
- PFOS used as water repellent in textiles may cause chronic kidney disease
- Methylmercury accumulates in fish and adversely affects e.g. reproduction in fish-eating animals

There is a wide range of effects on human health from chemicals, sometimes already at very low levels of exposures. The reproductive system is the most vulnerable. Chemicals may affect e.g. sperms, fetus and the quality of life for the child the rest of its life. Chemicals are transferred from mothers to babies during pregnancy and via breast milk. Pregnant women and their babies are especially susceptible to the hazards. Children are often more vulnerable to chemicals than adults.

Pesticide poisoning is a major public health problem in low and middle income countries. Beverage bottles are often reused for storing chemicals and it has caused many cases of intoxication and death.

Hazardous waste and burning of waste pose serious health risks for the waste handlers and their families. Very hazardous substances are formed during uncontrolled burning of waste. Another example is small scale recycling of car batteries causing lead poisoning, in severe cases leading to death.

Examples of Sida support

- The Swedish Chemicals Agency, which implements chemical management programmes at global, regional and bilateral levels and Sida international training program (ITP) on chemicals management. www.kemi.se
- To IPEN, an international NGO with 700 participating organizations in 120 countries, primarily environmental and public health groups. www.ipen.org
- To UNEP, www.unep.org/chemicalsandwaste

INSTITUTIONAL ISSUES

Legislation regarding chemicals and hazardous waste is often fragmented among different ministries, such as the ministries of agriculture, environment, health, industry, labour, and trade. Resources and capacity for enforcement of legislation are usually inadequate.

It is the responsibility of the manufacturer or importer to know the hazards from chemicals they market. They should provide information about the risks they may cause and the precautions that need to be taken to avoid those risks.

Infrastructure for collecting and treating hazardous waste is often lacking. Enforcement of legislation is often weak at municipal level. Corruption occurs, for example by buying permits. Civil society can play an important role in promoting enforcement and implementation of regulations.

Chemical safety is closely linked to human rights including the right to physical and mental health and rights concerning information, participation, and effective remedy.

In summary, a low capacity to manage chemicals and waste soundly can be a significant obstacle to sustainable development and poverty reduction.

Sustainable Development Goal targets particularly valid for chemicals and waste

- 3.9 "By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination."
- 6.3 "By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials,..."
- 12.4 "By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle,and significantly reduce their release to air, water and soil...."
- 12.5 "By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse."

SIDA'S APPROACH

A project/programme may at first not look like it relates to chemicals or waste, but a closer look might reveal it does.

1. A proper assessment must be ensured:
 - a) The Sida programme officer screens whether the partner needs to make an Environmental Impact Assessment (EIA) or a simplified environmental assessment, depending on the type of activities (See Guidelines for Screening in Sida's Green Tool Box).
 - b) It is the responsibility of the partner to undertake the environmental assessment. It should cover the use of chemicals and waste management, regardless of

sector. The partner should identify any risks or vulnerabilities from chemicals and waste, and how they should be managed.

- c) Assessments should always take into account how women and men respectively are affected, and if they will get adequate information, training and protective equipment for their work. Risks for children being exposed should also be assessed and managed.
 - d) The Sida programme officer will appraise the partner's assessment, and their capacity to address the identified risks. Sida may provide external support to the partner if needed to assess and mitigate risks.
2. The laws in the country, and the international conventions the country has committed itself to, should be adhered to, but Sida can require that more stringent measures be applied if the regulations are not sufficient to protect health and environment.
 3. Chemicals withdrawn (banned) from the EU market and substances covered by the Stockholm Convention shall not be used and/or promoted in activities supported by Sida.
 4. Procurements should require assessments of
 - a) chemicals involved in tenders and how to reduce risks.
 - b) hazardous chemicals in products, in particular if the project will result in many products entering the market, for example solar products. Consider if there are products with less hazardous chemicals available, and whether they are easy to repair and recyclable.

International Conventions and Policies

- Stockholm Convention on Persistent Organic Pollutants
- Rotterdam Conventions on Prior Informed Consent
- Basel Convention on Hazardous Wastes
- Minamata Convention on Mercury
- AU Bamako Convention on Hazardous Waste
- The Strategic Approach to International Chemicals Management (SAICM) www.saicm.org
- The Globally Harmonized System on Classification and Labelling of Chemicals (GHS)

Other references

- Sida Green Tool Box www.sida.se/greentoolbox, including Guidelines for Screening; Guidelines for Environmental Assessment; and Pesticides in Agriculture.
- The UNEP LIRA Guidance on legislation and institutional set-up for sound management of chemicals, www.unep.org/chemicalsandwaste