




GCO Pillar I: Trends and Indicators

Rachel Massey
Massachusetts Toxics Use Reduction Institute,
University of Massachusetts Lowell
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Trends & Indicators Report: Outline

1. Introduction
2. Trends in production, trade, use and disposal of chemicals
3. Trends in health & environmental effects of chemicals
4. Summary & Conclusions



2. Trends in production, trade, use and disposal of chemicals

2.1 Number of Chemicals on the Market

2.2 Trends in the Chemical Industry

2.3 Toxic Metals

2.4 Pesticides

2.5 Nanomaterials

2.6 Illegal use, transport, & disposal of chemicals

2.7 Products containing toxic chemicals

2.8 Electronic waste

Areas for possible expansion of the study

- Trends for sub-categories of chemicals of particular interest
 - POPs
 - IARC 1 & 2a carcinogens
- Case studies (e.g. PFCs)
- Expanded discussion of
 - Illegal trade & use of chemicals
 - Products containing chemicals of high concern
- Expanded research, *as needed*, on
 - Amount of information available on health & environmental effects of chemicals
 - Number of chemicals on the market
 - Trends in adoption of green chemistry approaches



Data Sources/Data Quality

- Aggregate sales data
- Metals
- Pesticides
- Nanomaterials
- Illegal chemical trade
- Proprietary sources as a supplement to publicly available sources



3. Trends in health & environmental effects of chemicals

3.1 Lack of information on health and environmental effects of chemicals

3.2 Environmental effects

3.3 Data on health effects and exposures

3.4 Making use of existing toxicological and ecotoxicological data.



3.2 Environment

Atmosphere

Water resources (including fisheries)

Soil resources

Biodiversity

[Agriculture]

3.3 Human Health

Acute poisoning

- Deaths
- Non-fatal poisonings

Birth defects

- e.g. oral cleft, heart & CNS defects linked to solvent exposures

Neurodevelopmental disorders

- Studies of lead, mercury, PCBs, manganese, brominated flame retardants, toluene, various pesticides, etc.
- Disorders include IQ deficits, psychomotor retardation, mental retardation, gait & movement disorders, etc.

Reproductive/developmental disorders

- Examples include effects on sperm count & motility; DBCP/sterility; etc.

Cancer

- IARC data from 60 countries
- Links between individual chemicals & specific cancer sites can form basis for more detailed study
- Occupational cancers a high priority for continued research



3.3 Human Health (cont'd)

Studies of health effects by chemical category

Lead

Mercury

Studies of occupational exposures

Occupational cancers

Chemicals and epidemiologic transition

3.4 Making use of existing toxicological and ecotoxicological data