

# Module 8: Risk management

- Objective: acquaintance with different preventive ways to manage chemicals risks. Different tools to reduce the risks from chemicals will be described.
  - Legal instruments, including international conventions and agreements
  - Restrictions
  - Handling of exemptions
  - Overview of strategies and tools, e.g. dialogues with industry and economic incentives
  - Approval of Pesticides and risk mitigations – sustainable use of pesticides

# Elements in Risk Management

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Risk  
management

Exposure  
assessment and  
Risk assessment

Hazard Communication

Hazard Classification

# Risk management

- Why?
- When?
- By whom?
- Strategies?
  
- Steps/Actions?



# Clean up after pollution

- Estimate by Swedish EPA:
  - 80 000 contaminated sites need cleaning up
  - preservation of wood with As, Cr, Cu
  - slag from mining
  - Metal works
- Estimated PCB cost for environmental measures 1971-2018
  - In Sweden – EUR 320-550 million
  - In EU25 – EUR 1,5 billion

# Why risk management?

- “Risk management is a decision making process that involves political, social, economic and technical factors as well as a relevant risk assessment” (WHO)
- Aiming for a sustainable development
  - that meets the needs of the present, without compromising the ability of future generations to meet their own needs
  - where the protection of the environment and social and economic development are fundamental

# When?

- Hazard information → substitution?
  - safe handling
- Substances of very high concern
- High risk (hazard x exposure)
- Chemicals regulated internationally

# Who can manage risks?

- Industry
  - producers and importers of chemicals
  - producers of articles using chemicals in their production
- Other professional users
- Consumers
- Recyclers
- Waste handling facilities
  
- Authorities?



# Strategies in risk management

- Risks could be managed at various points in the lifecycle and by various means
- Which option is most cost efficient?
  - The higher the hazard/risk
  - The more widespread the exposure

# Strategies – Examples

Risk	Strategy
Uninformed users hurt by chemical substances	Instructions for safe use via classification, labelling, SDS
Increasing amounts of waste from widely used products	Extended producer responsibility for waste collection and product development (WEEE, ELV)
Increasing risks with waste from widely used products	Restricted use of hazardous substances (RoHS for electronics)
Specific uses of very hazardous substances have benefits that outweigh the risks	Pre-marketing control and conditional authorisation of certain uses by authorities

# Steps in risk management

1. Problem description
2. Stakeholder ID
3. Solutions / Instruments
4. Stakeholder involvement
5. Cost/Benefit
6. Evaluation

# 1. Describe the problem

- Hazards
- Exposure and Use
- Vulnerable groups? (Children, pregnant women, illiteracy etc.)

## 2. Identify stakeholders

- Supply chain – links
- General public
- Waste sector
- Others?

# 3. Identify instruments for risk management

- Information
  - through the supply chain
  - from authorities
  - dialogues between authorities and industry
- Bans and restrictions
  - total bans
  - bans for specific uses
  - bans with exemptions
  - authorizations
- Economic instruments



## 4. Involve stakeholders

- Collect views on the problem, on solutions and consequences from all identified stakeholders
- Strengths and weaknesses of a proposal is shown
- Decisions can be informed, justified, transparent and acceptable

## 5. Compare views – risks vs benefits

Alternative actions	Consequences for stakeholders and society	Health and environment
Do nothing – baseline	The problem and its consequences	The problem and its consequences
Action alternative 1	Pros and cons with this action	Efficiency of this action
Action alternative 2	Pros and cons with this action	Efficiency of this action



## 6. Evaluate alternative solutions

- Effectiveness
  - Can risks be reduced within a reasonable time?
- Proportionality
  - Are costs proportionate to benefits?
- Practicality
  - Can measure be implemented, enforced, monitored?
- Consistency
  - Legal certainty and predictability?

## 6. Evaluate alternative solutions

- Effectiveness
  - Can it be implemented?
- Proportionality
  - Are the benefits worth the costs?
- Practicality
  - Can it be implemented, monitored?
- Consistency
  - Legal certainty and predictability?

How are risk management decisions made in your countries?