

Instruments and Approaches for the Sound Management of Chemicals



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Sound Management of Chemicals

The Sound Management of Chemicals, first articulated in Agenda 21 of the UN Conference on Environment and Development, places significant responsibilities on governments and industries

To carry out these responsibilities there exist today a broad range of legal, professional and program instruments and approaches

These tools may be regulatory, economic, technical or voluntary

Chemicals and Economic Development

Chemicals are critical to economic development

However, instruments and approaches for chemical management should be appropriate to the specifics of a nation's economic development, because...

- chemical uses vary by type of development**
- governments vary in terms of chemical management capacity**
- global markets push polluters to countries with weaker policies**

A Framework for Considering Chemicals and Economic Development

<i>Type of Economic Development</i>	<i>Chemicals</i>	<i>Concerns</i>
A. Small Scale Agriculture	pesticides, disinfection chemicals	lack of data, weak chemical training, little government capacity
B. Large Scale Agriculture	pesticides, fertilizers, fuels, disinfection chemicals,	lack of data, limited government capacity, waste imports
C. Decentralized Industrial	metals, inorganics, basic bulk chemicals	lack of data, limited government capacity, weak waste management, waste imports
D. Advanced Industrial	metals, bulk chemicals, specialty chemicals, production chemicals, PBTs, CMRs, nanochemicals	confidential data, heavy occupational exposures, large waste exports
C. Consumer/Service	metals, PBTs, CMRs, nanochemicals	lack of data, limited government authority, large waste exports

Seven Types of Instruments for Soundly Managing Chemicals

1970 and thereafter

- 1. Instruments for Controlling Chemical Pollution**
- 2. Instruments for Remediating Contaminated Sites and Managing Wasted Chemicals**

1990 and thereafter

- 3. Instruments for Preventing Chemical Pollution**
- 4. Instruments for Chemical Information Management**
- 5. Instruments for Managing Chemicals in Products**

2000 and thereafter

- 6. Instruments for Promoting Safer Alternatives**
- 7. Instruments for Generating Safer Chemicals**

1. Instruments for Controlling Chemical Pollution

Regulatory

- **Chemical Use and Import Regulations**
 - Chemical Control and Occupational Exposure Laws
- **Chemical Release Restrictions**
 - Environmental Media Protection Laws
- **Chemical Bans and Phase Outs**
 - National Chemical Bans, “Montreal Protocol”, Stockholm Treaty

Economic

- **Chemical Waste Fees**
 - European Waste Management Fees
- **Environmental Liability Requirements**
 - EU Environmental Liability Directive



2. Instruments for Remediating Contaminated Sites and Managing Wasted Chemicals

Technical

- **Emergency Response and Spill Management Programs**
OECD Guiding Principles, National Programs
- **Site Clean Up Programs**
US “Superfund”
- **Post Clean up Management**
US “Brownfields” Program

- **Legacy Chemical Storage Management**
SAICM National Implementation Plans



3. Instruments for Preventing Chemical Pollution

Technical

- **Pollution Prevention Planning**
Toxics Use Reduction and P2 Facility Planning
- **Chemical Accident Prevention**
EU “Seveso II Directive”, UN APELL
- **Cleaner Production Assessments**
UN NCPCs

Economic

- **Chemical Use Fees and Taxes**
- **Chemical Leasing**
Chemical Product Services
Austria’s SAFECHEM



4. Instruments for Managing Chemicals in Products

Regulatory, Voluntary and Technical

- **Product Design**
 - Dutch Eco-Design
- **Product Labeling**
 - **Product Declarations**
 - Swedish Product Declarations
 - **Eco-Labeling**
 - Blue Angel, Nordic Swan, Canadian Ecologo
 - **Product Standards and Certification**
 - ISO, ANSI
- **Product Management**
 - **Preferred Product Procurement Policies (EPP)**
 - **Product Stewardship and Take Back (EPR)**



5. Instruments for Managing Chemical Information

Regulatory and Technical

- **Pollutant Release and Transfer Registries**
US TRI, Canadian NPRI, Aarhus “Kiev Protocol”
- **Product Ingredient Registries**
Scandinavian Product Registries
- **Chemical Hazard Characterization and Labeling**
GHS (Globally Harmonized System of Classification and Labeling)
EU REACH
- **Chemical Manufacturing and Use Inventories**
EU REACH

Voluntary

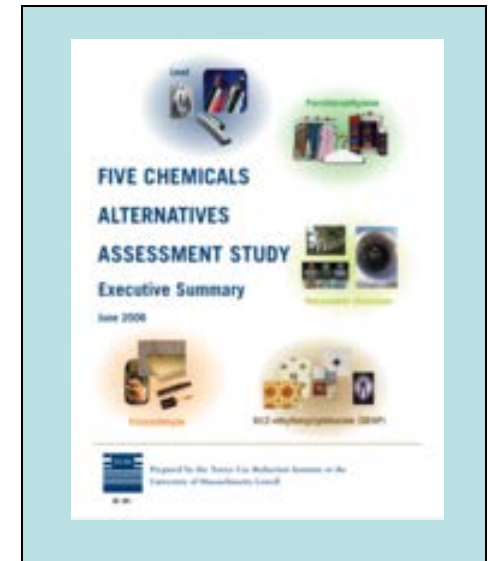
- **Chemical Disclosure in the Supply Chain**
CleanGredients, WERCS



6. Instruments for Promoting Safer Chemical Alternatives

Technical

- **Chemical Screening**
SIDS, OECD HPV
- **Chemical Characterization and Priority Setting**
Dutch “Quick Scan”, German “Column Model”, Green Screen
- **Alternatives Assessment**
TURI 5 Chemicals, LCSP Framework
- **Life Cycle Assessment**
ISO 14040, GaBi, SimaPro



7. Instruments for Generating Safer Chemicals

Technical

- **Green Chemistry**

Green Chemical Synthesis and Processing

“Twelve Principles of Green Chemistry”

US Presidential Awards, EU Green Chemistry Awards

- **Green Engineering**

“Twelve Principles of Green Engineering”

Economic

- **Research Investments**

EU SusChem Platform, US Green Chemistry Bill



Instruments and Approaches Appropriate for Types of Economic Development--I

<i>Type of Development</i>	<i>Instruments and Approaches</i>
A. Small Scale Agriculture	<ol style="list-style-type: none"> 1. Restrict imports 2. Emergency Response, site clean-up, legacy chemical management 3. CP Planning, Chemical Leasing 4. Product labeling
B. Large Scale Agriculture	<ol style="list-style-type: none"> 1. Restrict Imports, regulate releases 2. Emergency response, site clean up 3. CP Planning, chemical leasing 4. Product labeling 5. Chemical registries,
C. Decentralized Industrial	<ol style="list-style-type: none"> 1. Restrict Imports, regulate releases 2. Emergency response, site clean up 3. CP Planning, chemical leasing 4. Product labeling 5. Chemical registries,

Instruments and Approaches Appropriate for Types of Economic Development--II

<i>Types of Economic Development</i>	<i>Instruments and Approaches</i>
D. Advanced Industrial	<ol style="list-style-type: none"> 1. Regulate releases, waste fees, liability requirements 2. Emergency response, site clean up 3. P2 & CP Planning, chemical fees, chemical leasing 4. Product design & labeling, EPP, EPR 5. Chemical registries, PRTRs, supply chain communication 6. Chemical screening, alternatives assessment, LCA 7. Green chemistry and research investments
E. Consumer/Service	<ol style="list-style-type: none"> 1. Regulate releases, waste fees, liability requirements 3. P2 & CP Planning, chemical fees, chemical leasing 4. Product design, labeling & standards, EPP, EPR 5. Chemical registries, supply chain communication 6. Chemical screening, alternatives assessment, LCA 7. Green chemistry and research investments

Limits of Current Instruments and Approaches

- **Many countries have yet to adopt full sets of appropriate instruments and approaches**
- **Capacity to implement Instruments and approaches is unevenly developed across countries**
- **Instruments and approaches are not internationally coordinated and harmonized**
- **Appropriate instruments and approaches are not integrated into national economic development planning and international development funding**
- **Developing countries are not taking advantage of the most recent instruments and approaches**

Comprehensive Chemicals Policy

We need to develop Comprehensive Chemicals Policies that systemically integrate chemical safety and sustainable development.

Such policies need to:

- focus on all chemicals,**
- promote sufficient chemical characterization,**
- provide public information,**
- support safer chemical research and innovation and**
- encourage the substitution of chemicals of high concern with safer and more sustainable alternatives.**

The global capacity for the Sound Management of Chemicals exists....however, to be effective...

- instruments need to be implemented appropriate for each type of economic development**
- government and business capacity needs to be strengthened in developing countries and countries in transition**
- the currently diffuse array of instruments and approaches needs to be coordinated, harmonized and integrated globally**
- new and more comprehensive chemicals policies need to be developed that link chemical safety, environmental protection and sustainable development.**

Thank You