Implementation of Chemical Management plan, Challenges and lessons learnt - Sri Lanka

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Democratic Socialist Republic of Sri Lanka

Location : Southern Asia, island in the Indian Ocean, south of India

Land area : 65,610 Km^2

Country has divided into 9 provinces and 25 Districts

Climate : Tropical monsoon
Average temperature in country 27^0 - 30^0C.

Terrain : mostly low, flat to rolling plain; mountains in south-central interior

Natural resources : gems, limestone, graphite, mineral sands, phosphates, clay, Tropical rain forests with highest biodiversity, Natural water bodies etc

Population : 20 million.

- **Generally, In Sri Lanka Chemicals are managed under the following categories**
  - Agricultural chemicals (pesticide and fertilizer)
  - Chemicals used for public health, industrial and consumer users
  - Chemicals used in industrial process
  - Petrochemicals including refined petroleum products
  - Chemicals in consumer products such as cleaning products paints and solvents
  - Explosives
  - Radio active substances

- Specific aspects of the chemical lifecycle from importation, production storage through transport distribution /marketing used handling and disposal are handled by various government ministries and agencies with respect to different groups of chemicals .

Legal Instruments

Legislations

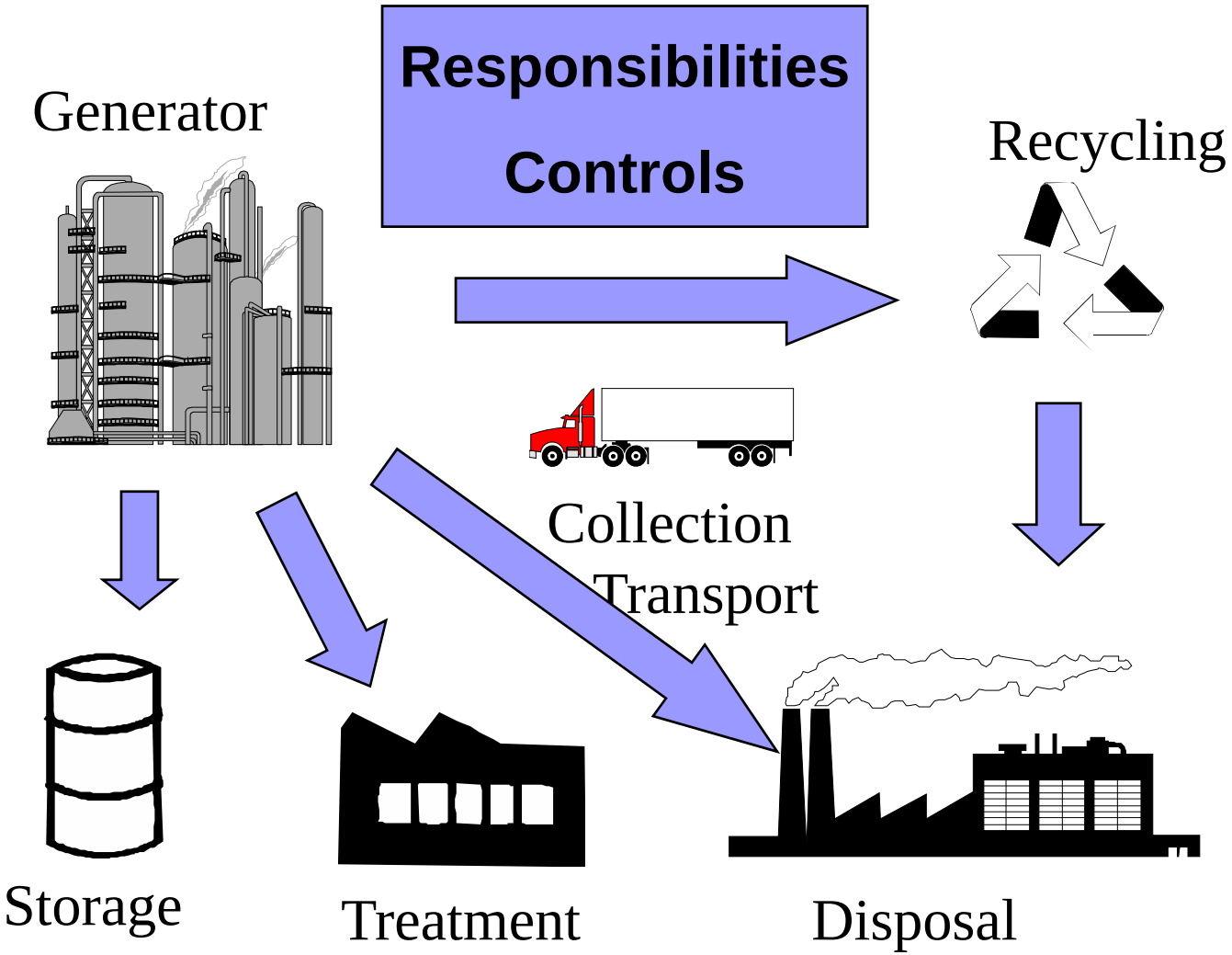
- There are number of Acts and regulations in place with respect to the management of chemicals.

- Sri Lanka Ports Authority Act, Control of Pesticides Act, Customs Ordinance, Import and Export Control Act, Fertilizer Act, Atomic Energy Authority Act etc, Explosives Act, Poisonous, Opium and Dangerous drugs Act, Veterinary Drug Control Act, Cosmetic Devices and Drugs Act, Motor traffic Act, National Environmental Act etc.

International Conventions

- **Basel Convention** - *Ratified on 28. 8.1992*
- **Stockholm Convention** - *Ratified on 22.12.2005*
- **Rotterdam Convention** - *Ratified on 19.01. 2006*

Elements of legislation



Basel Convention on the transboundary movement of Hazardous Waste

Implementation mechanism

- In order to control the inflow of Hazardous waste in to the country. Import requests are considered by 2committees
- Technical Expert Committee [TEC] to discuss and make decisions on Technical and Legal Issues
- National Coordinating Committee [NCC] to take final decisions
- As per the decision taken by the Cabinet of Ministers Waste prescribed under List “A” of BC are banned and Waste prescribed under List “B” are considered case by case basis.

Internal regulations practiced (Basel Convention)

- Importation of hazardous waste in the Basel Convention lists A and B are regulated by the Regulation No.1813/14 of 05.06.2013 under Imports and Exports (control) Act No.01 of 1969

- Importing the waste in the list “B” of the BC is granted approvals case by case on the basis through TEC & NCC

- New industries depend on the post consumer waste materials listed in the list “B” of the BC is not allowed

Rotterdam Convention

Implementation

Rotterdam Convention implemented through two National Designated National Authorities

- Pesticides – Registrar Of pesticides (under the Ministry of Agriculture as the Focal Point)
- Industrial Chemicals – Central Environmental Authority (under the Ministry of Environment and Mahaweli Development as the Focal point)

Management of industrial Chemicals

Technical Advisory Committee for the Management of Industrial Chemicals [TACMIC] in Sri Lanka Established to ensure effective and efficient implementation of the obligations of the RC.

Composition the TACMIC

1. Ministry of Environment
2. Ministry of Industrial Development
3. Central Environmental Authority
4. Sri Lanka Customs Department
5. Department of Import and Export
6. Department of Government Analyst
7. Industrial Technology Institute
8. Universities
9. Ministry of Health
10. Ministry of Labour
11. BOI

Management of Pesticides

- Pesticides Technical Advisory Committee established under the provisions of the control of Control of Pesticides Act No 33 of 1980 to manage the pesticides

- PIC Procedure implements during the international trade of chemicals

- Certain types of Chemicals had been banned under Pesticide Act (Carbaryl, Chlorophyriphos, Carbofuran and Propanil and the weedicide Glyphosate etc.)

Stockholm Convention

Stakeholders institutions engaged in POPs Management in Sri Lanka

- Ministry of Environment and Natural Resources
- Office of the Registrar of Pesticides
- Customs Department
- Central Environmental Authority
- Imports and Exports Control Department
- Board of Investment (BOI)

Current Chemical Management practices

- Controlling of chemicals under relevant acts and regulations
  Ex: Polychlorinated bi phenyls and Crocidolite were banned under Import and Export Control Act, Certain pesticides were banned under Control of Pesticide Act etc. Importation of certain types of chemicals under " no objection " issued by relevant stakeholder institutions)

- National Chemical profiles were compiled in 1996 , 2003 and currently the updated chemical profile is being complied under the funds mobilized from SAICM project.

- Pollution Control under the Environmental Protection License (EPL) and the Scheduled (Hazardous) Waste Management license

- Issuance of Site clearances for chemical storages.

- Promotion of the exportation of certain Hazardous Waste.

- Temporary storage at the site of generation until proper options are available.

- Promote recycling.

- Encourage Cleaner Production Interventions through EPL procedure to reduce the quantity of wastes.

National challenges.....

- Inadequacy of legal provisions - Even though the CEA has been identified as DNA under international conventions no provisions to manage Chemicals under the National Environmental Act.

- Institutional Gap -There are number of stakeholder Ministries and institutions for chemical management no coalition between them.
- Purview of the institutions work on chemical managements are not clearly defined.

- Inadequacy of technical expertise and trained personnel to engage in chemical management.

- Insufficient infra structure and technical resources.

- Insufficient disposal facilities for chemicals
- No proper system to address chemical accidents and emergencies

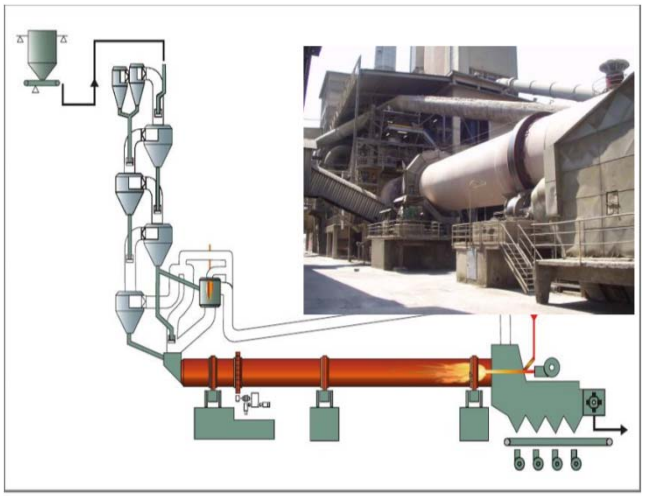
Introduction to Co Processing

Co-processing

Using the cement manufacturing process to recycle, reuse, or treat waste while simultaneously manufacturing cement in a single combined operation.

Features

- ✓ Flame temperatures 1800 - 2000^0 C
- ✓ Residence time 4-6 sec.
- ✓ Total destruction of material under controlled conditions.
- ✓ No organic residues from the process.

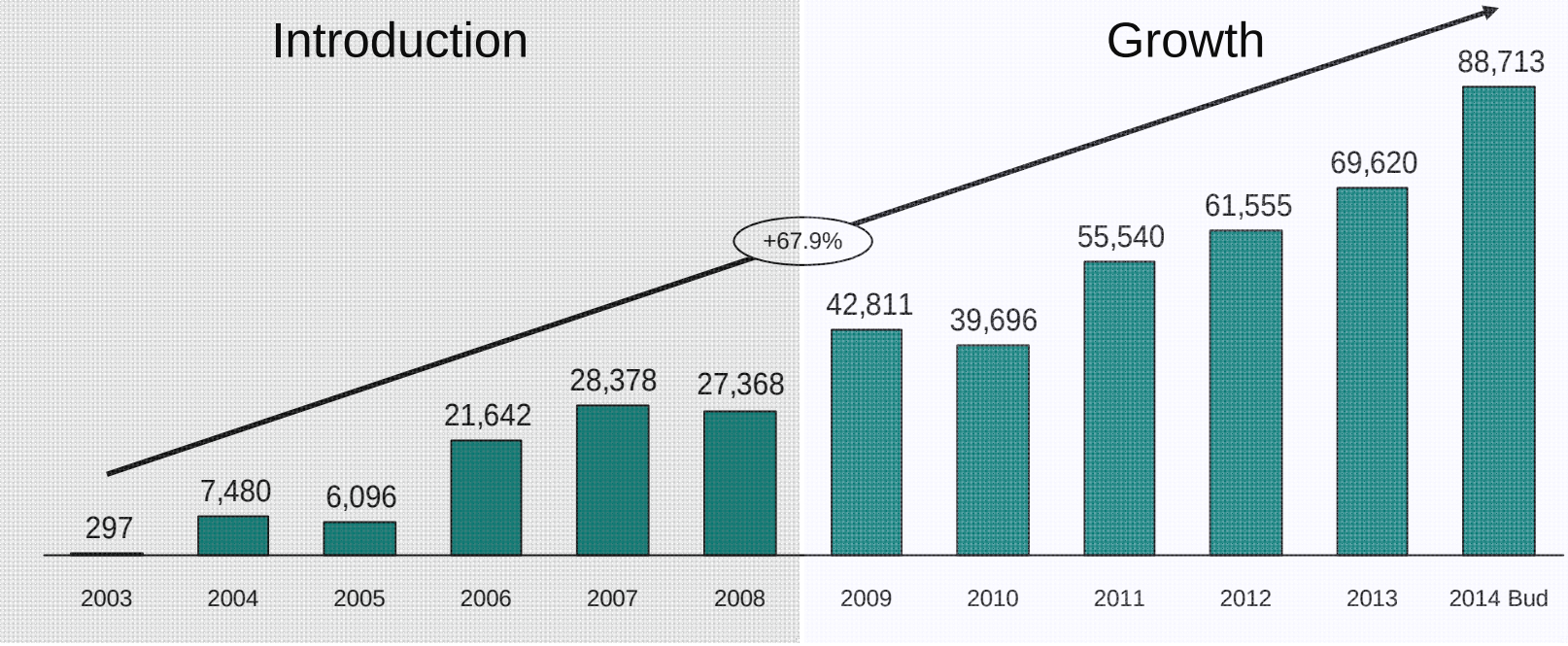


Banned Wastes

- *Banned wastes for process at any point. (both pre-processing and co- processing)*
  - *Radioactive waste*
  - *Asbestos-containing waste*
  - *Explosives and ammunition / weapons*
  - *Anatomical medical waste*

- *Banded waste list for co-process*
  - *Electronic fractions of electrical and electronic waste (e-waste) .*
  - *Whole batteries as a targeted material stream.*
  - *Waste of unknown or unpredictable composition, including unsorted municipal waste.*

Progress of waste material co-processing



- 2009 Higher Alternative Fuel(AF) volumes co-processed with clinker capacity increase - stepping in to industrial non hazardous waste.
- 2010 onwards – penetrate more and more in to industrial waste mainly targeting hazardous waste (*e.g.: expired pharmaceuticals, sludge, pesticide waste,…*) and introduction of Alternative Raw Materials.

Lesons Learned / Success Stories

- PCB Test burn in cement kilns
  - The 3d test burn demonstrated that the Sri Lanka cement kiln was able to destroy BCB in an irreversible and environmental sound manner
  - Without causing new formation of PCDD/PCDF or HCB
  - Destruction and removal effacing was better than 99.9999%

PCB management

- Current stock is 3000MT
- Current national (regional) estimate for disposal is us$ 780 per Ton of PCB contaminated Oil
- Total cost = us$ 2,340,000 (which is unbearable at present)

- Controlling the Asbestos related diseases

- Blue asbestos (crocidolite) are regulated since 1987
- Chryotile is still in use which is not a member in the listing of Annex – III
- Alternatives are explored
- “Situation and Policy Recommendations Report on the Use of Asbestos in Sri Lanka was prepared
- A National Consultative Forum on the elimination of the Asbestos related diseases has been appointed
- (a national Policy is to be prepared with short term & long term solutions for controlling and mpt of Asbestos

Controlling the lead (Pb) content in all decorative paints used in Sri Lanka

- Toys and accessories for children 90 mg/kg
- Enamel paints = 600 mg/kg
- Emulsion paints for exterior use 90 mg/kg
- Emulsion paints for interior use 90 mg/kg
- Floor paints 600 mg.kg

- Controlling of highly toxic washing powder containing oxalic acid

- Controlling Mercury (Hg) pollution
  - Sri Lanka is in the process of deciding on signing the Minamata convention
- Import of old cloths
- Import of cyanide based polyurethane
- Import of copper slag
- Import of fly ash

E – waste management

- Cooperate e-waste management programme is being implemented with private sector participation (PPP model)
- CFL bulbs can be handled now (a recovery facility is available)
- National e-waste collection week was declared(27th May to 02nd June 2014)
- 312 MT collected

Chemical Accident Prevention and Preparedness Programme for Sri Lanka

- SAICM project
- being implemented successfully
  - Country situation report prepared
  - Capacity building workshops conducted
  - Need assessment report prepared
  - Participated in meetings in Paris Head Office and China
  - Training workshops on Risk assessment and management
  - GHS initiatives (practical sessions for a preparing labels for multinationals.

Way Forward

- National Implementation Plan is available
  - 6 Action Plans
    1) Institutional and Regulatory strengthening measures
    2) Management of POPs pesticides
    3) Management of PCBs and Equipment's containing PCBs
    4) Management of unintentionally produced POPs by products (Dioxin & furan)
    5) Monitoring
    6) Public Awareness Information Dissemination and Training (Awareness creation on Stockholm convention)

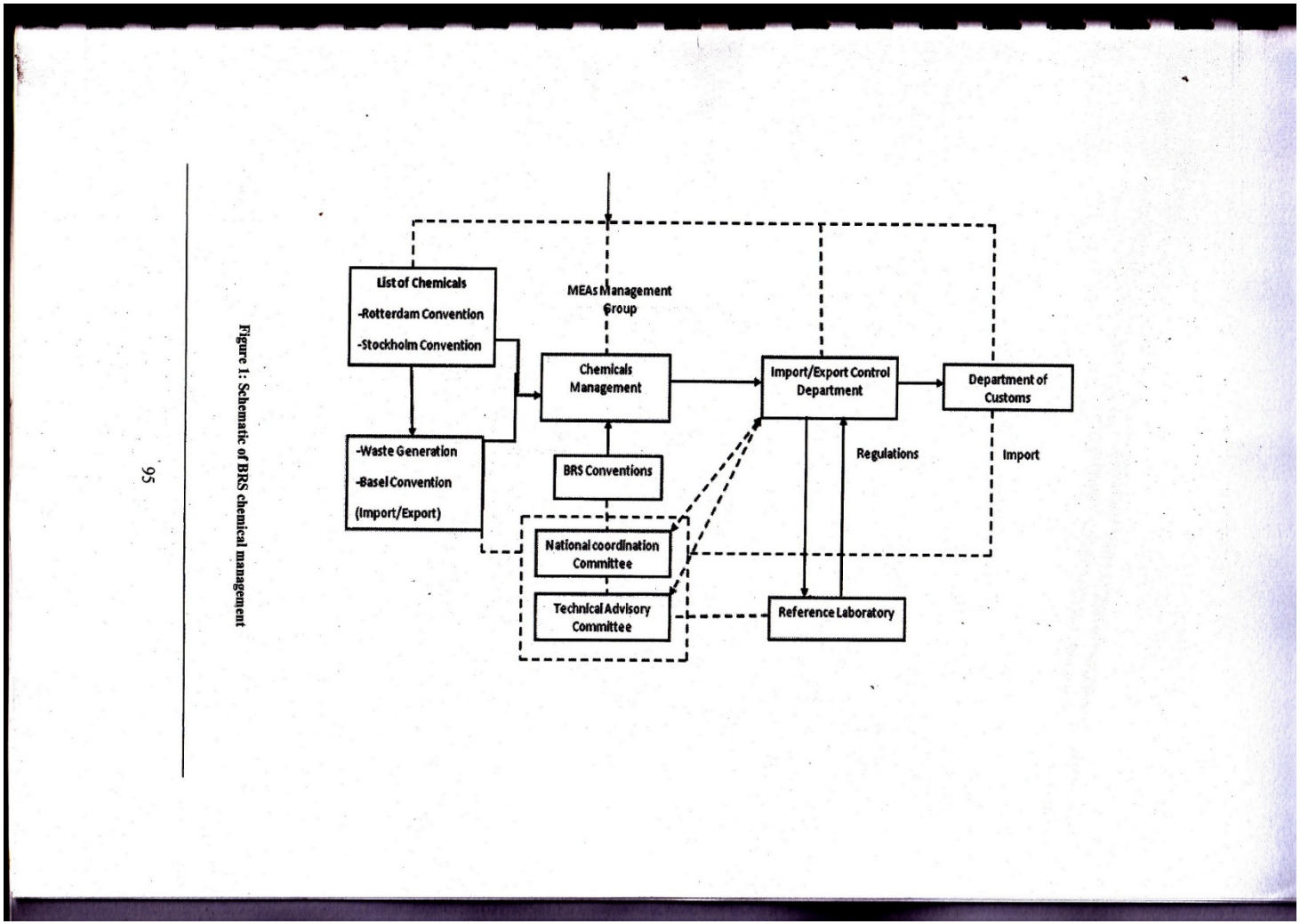


Figure 1: Schematic of BRS chemical management

Thank You