



**Asia-Pacific
Economic Cooperation**

2015/SOM3/CD/WKSP/010

Regulatory Issues for Metals in the Philippines

Submitted by: Philippines



**Workshop on Metals Risk Assessment
Cebu, Philippines
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Regulatory Issues for Metals in the Philippines

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International Conventions/MEAs

International Agreements	Year Adopted/Entered into Force	Year of Agreement (Signed and Ratified)
Agenda 21 - Commission for Sustainable Development		
Montreal Protocol on Substances that Deplete the Ozone Layer and 5 amendments	1985/ January 1989	Ratified
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	March 22, 1989/May 5, 1992	March 22, 1989/October 21, 1993
Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemicals Weapons and on their Destruction	September 3, 1992/ April 29, 1997	Ratified
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	October 9, 1998/ February 24, 2004	September 11, 1998/July 31, 2006
Stockholm Convention on Persistent Organic Pollutants	May 17, 2004	May 23, 2001/February 27, 2004
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)	2002	2
Strategic Approach to International Chemicals		

National Laws, Policies, Rules and Regulations

- **Presidential Decree (PD) 1586:** The Philippine Environmental Impact Statement (EIS) System [1978]
- **Republic Act 7942:** Philippine Mining Act of 1995
- **Republic Act (RA) 8749:** The Philippine Clean Air Act of 1999
- **RA 9003:** The Philippine Ecological Solid Waste Management Act of 2000
- **RA 9275:** The Philippine Clean Water Act of 2004
- **PD 856 Sanitation Code of the Philippines**
- **PD 442 under the Labor Code of the Philippines**

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POLICY/LEGISLATION

Republic Act 6969 Toxic Substances & Hazardous and Nuclear Waste Act

- The Act directs the Department of Environment and Natural Resources (DENR) to establish rules, regulations, and programs for controlling chemical substances and hazardous wastes in the Philippines.

Signed on October 26, 1990 by then Pres. CAquino

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DENR Laws and Policy


RA 6969: Toxic Substances and Hazardous and Nuclear Wastes Act

DENR AO 29, S. of 1992 IRR: Includes general Provisions on Toxic Chemical Substances and Hazardous Waste Management


**Chemical Control Order on Asbestos
DENR Administrative Order No. 2000-02
CCO for Asbestos"**

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Chemical Control Orders




DENR Administrative Order No. 97-38 - "The Chemical Control Order for Mercury and Mercury Compounds".
This regulates the importation, manufacture, processing, use, transport and distribution of mercury and its compounds




DENR Administrative Order No. 97-39 - "The Chemical Control Order for Cyanide and Cyanide Compounds".
This regulates the importation, manufacture, processing, use, transport and distribution of cyanide and its compounds



DENR Administrative Order No. 2000-18 - "The Chemical Control Order for Ozone Depleting Substances".
This regulates the importation, manufacture, processing, use, transport and distribution of ozone depleting substances.



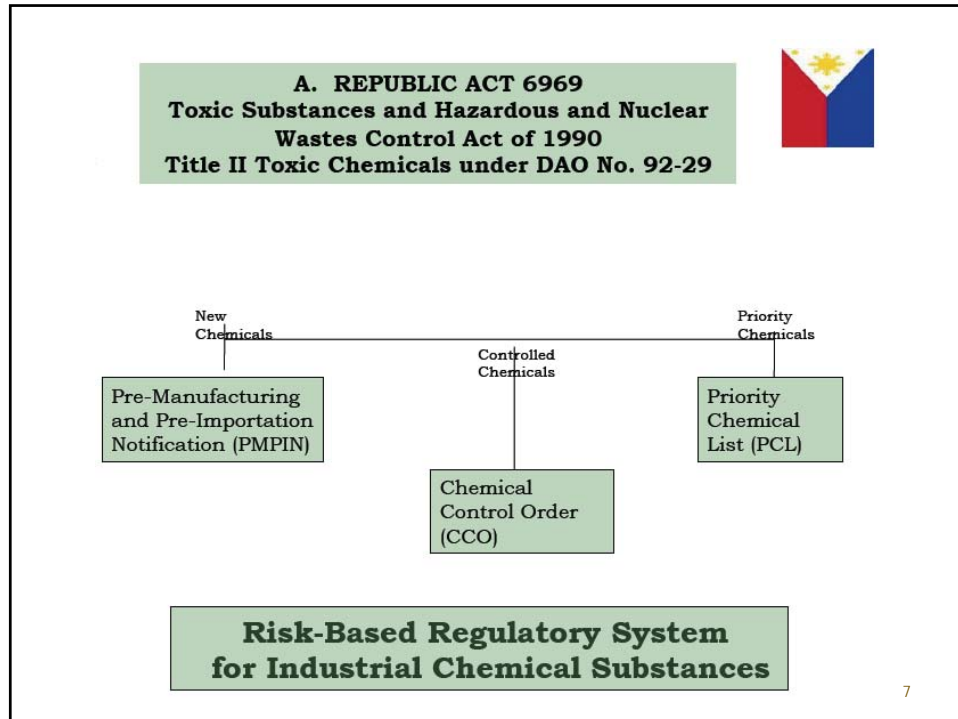
DENR Administrative Order No. 2000-02 - "The Chemical Control Order for Asbestos"
This is to control and regulate the use, import, storage, transport and disposal of asbestos



DENR Administrative Order No. Chemical Control Order for Polychlorinated Biphenyls (PCB)
This regulates the importation, manufacture and industrial uses of PCBs. It also addresses the storage and disposal of wastes including the containers and discarded materials contaminated with this chemical.

← **Chemicals** →

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Chemical Control Order (CCO)

1. Ozone Depleting Substances
 2. Cyanide
 3. PCBs
 4. Asbestos
 5. Mercury
 6. Lead
- **Initial TWG meeting for the issuance of a CCO for arsenic and chromium**
 - Registration (for importers, users, manufacturers and distributors)
 - Import Clearance per shipment
 - Reduction, phaseout, ban

DAO 2005-27: Revised Priority Chemical List

- **Priority chemical list:**
 - List of existing and new chemicals that DENR has determined to potentially pose unreasonable risk to public health, workplace and the environment
 - There are 48 chemicals listed on the PCL

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Priority Chemical List		
Chemical Abstract Services No.	Philippine Inventory of Chemicals and Chemical Substances (PICCS) Name	Chemical Abstract Services (CAS)/ INDEX Name
108-90-7	1,4-CHLOROENZENE	Benzene, chloro-
106-93-4	1,2-DIBROMOETHANE	Ethane, 1,2-dibromo
95-50-1	0-DICHLOROENZENE	Benzene, 1,2-dichloro
106-46-7	1,4-DICHLOROENZENE	Benzene, 1,4-dichloro-
107-06-2	1,2-DICHLOROETHANE	Ethane, 1,2-dichloro-
122-66-7	1,2 DIPHENYLHYDRAZINE	Hydrazobenzene
108-46-3	3-HYDROXYPHENOL	1,3-Benzenediol
7647-18-9	ANTIMONYPENTACHLORIDE	Antimony chloride
7440-38-2	ARSENIC COMPOUNDS	Arsenic
1332-21-4	ASBESTOS*	Asbestos
71-43-2	BENZENE	Benzene
7440-41-7	BERYLLIUM COMPOUNDS	Beryllium
7440-43-9	CADMIUM COMPOUNDS	Cadmium
56-23-5	CARBON TETRACHLORIDE**	
General Name	CHLORINATED ETHERS	
General Name	CHLOROFLUORO CARBONS**	
67-66-3	CHLOROFORM	Trichloromethane
76-06-2	CHLOROPICRIN	Methane, trichloronitro
18540-29-9	CHROMIUM COMPOUNDS	Chromium
57-12-5	CYANIDE COMPOUNDS*	Cyanide
64-67-5	DIETHYL SULFATE	Sulfuric acid, diethyl ester
106-93-4	ETHYLENE DIBROMIDE	1,2 Dibromoethane

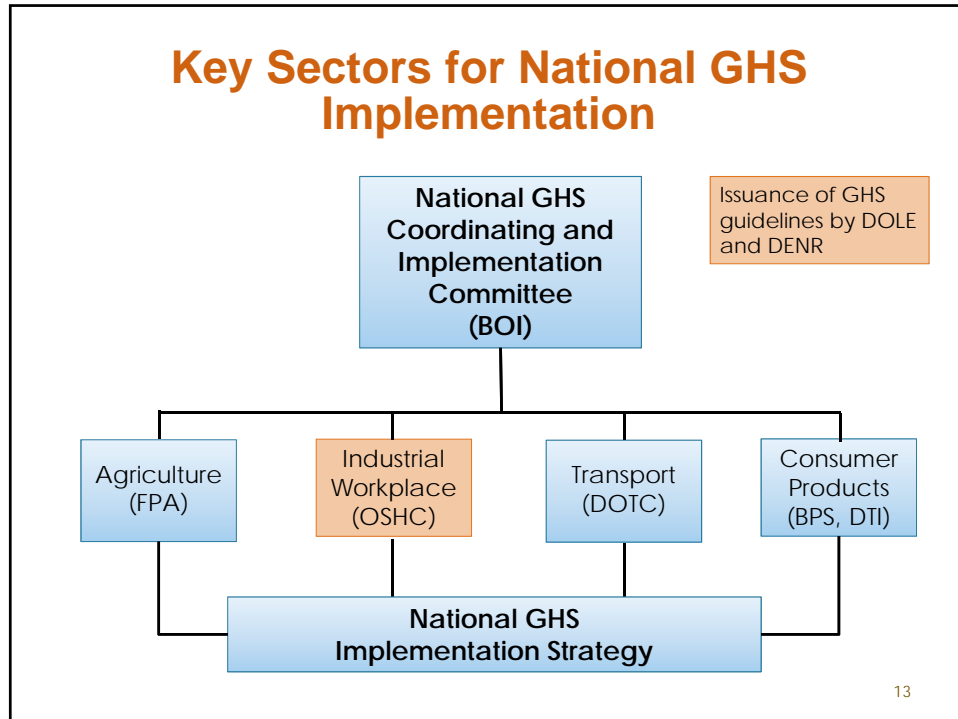
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Priority Chemical List		
Chemical Abstract Services No.	Philippine Inventory of Chemicals and Chemical Substances (PICCS) Name	Chemical Abstract Services (CAS)/ INDEX Name
75-21-8	ETHYLENE OXIDE	Oxirane
111-30-8	GLUTARALDEHYDE	Pentanedial
50-00-0	FORMALDEHYDE	Formaldehyde
9002-83-9	HALONS**	Ether, chlorotrifluoro-homopolymer
118-74-1	HEXACHLOROBENZENE	Benzene, hexachloro
67-72-1	HEXACHLOROETHANE	Ethane, hexachloro
302-01-2	HYDRAZINE	Hydrazine
7439-92-1	LEAD COMPOUNDS	Lead
149-30-4	MBT	2(3H)-Benzothiazolethione
594-42-3	MERCAPTAN,PERCHLOROMETHYL	Methanesulfonyl chloride, trichloro-
7439-97-6	MERCURY COMPOUNDS*	Mercury
74-87-3	METHYL CHLORIDE	Methane, chloro
75-09-2	METHYLENECHLORIDE	Methylene, dichloro
2385-85-5	MIREX	
87-86-5	PENTACHLOROPHENOL	Phenol, pentachloro
127-18-4	PERCHLOROETHYLENE	Ethene, tetrachloro
108-95-2	PHENIC ACID	Phenol
75-44-5	PHOSGENE	Carbonyl chloride/ Carbonicdichloride
85-44-9	PHTHALIC ANHYDRIDE	1,3 Isobenzofurandione
59536-65-1	POLYBROMINATED BIPHENYLS	Fire Master BP6
1336-36-3	POLYCHLORINATED BIPHENYLS*	1,1-Biphenyl chloroderivatives
	1,1,1-TRICHLOROETHANE**	
79-01-6	TRICHLOROETHYLENE	Ethene, trichloro
	TRIBUTYL TIN	
7782-49-2	SELENIUM	Selenium
75-01-4	VINYL CHLORIDE	Chloroethylene

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Joint Administrative Order (JAO), signed by concerned government agencies involved in the implementation of GHS in Y2009

- Basically, the JAO requires implementing agencies to draft or revise their respective implementing rules and regulations (IRRs) or department orders, as the case may be, to incorporate the provisions of GHS



Department of Labor and Employment: Standards, Policies and Guidelines

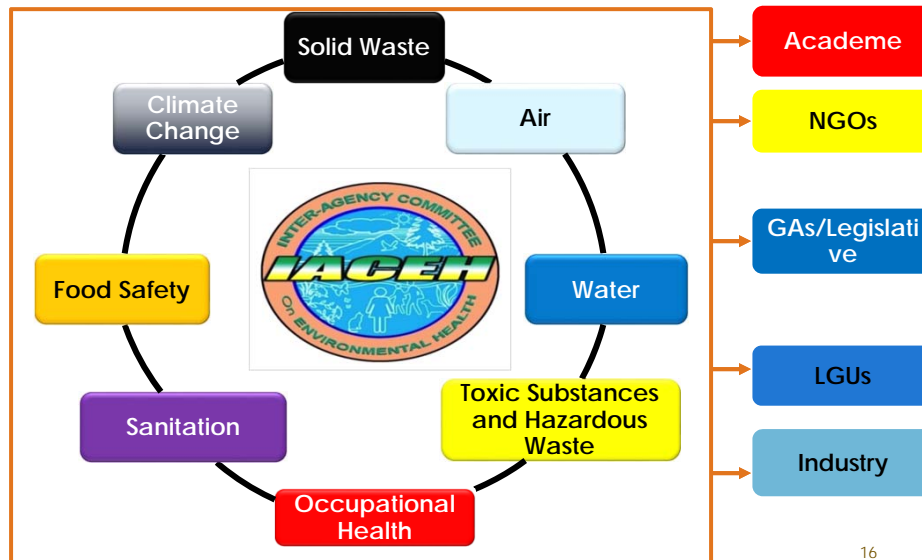
- **Occupational Safety and Health Standards**
 - Rule 1050
 - Notification and keeping of records of accidents and/or occupational illnesses
 - Rule 1070
 - Occupational Health and Environment Control
 - TLV – TWA
 - Rule 1960
 - Occupational Health Services

P.D. 626 Employees Compensation and State Insurance Fund

- Prescribed minimum standards for periodic medical examinations designed for the early detection of occupational diseases:
 - Periodic examinations at intervals not exceeding one year in cases of all other exposure enumerated in the "List of Occupational Diseases"
 - The medical examination shall be as complete as possible, but shall primarily be directed towards the early detection of occupational diseases. This necessitates that certain aspects of the examination be stressed in certain types of exposures.

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IACEH Reconstituted: Sectoral Task Forces



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Other Government Coordination Mechanisms

IAC

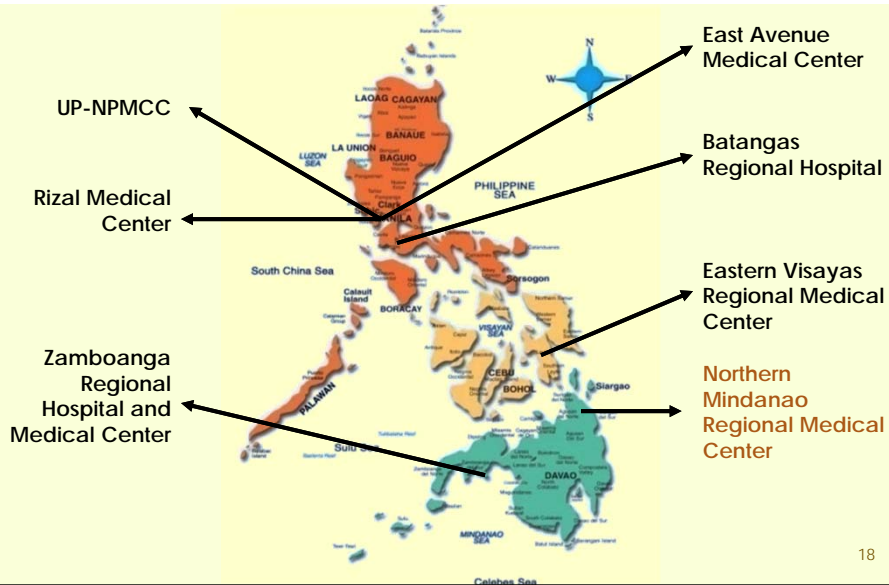
- Inter-Agency Committee on Occupational Safety and Health
- DOH-NCDCS, UP NPCIS, ECOP, LACC, FFW, TUCP, TUPAS, PCOM, IIRR, QCISCI, IOHSAD

IATAC

- Inter-Agency Technical Advisory Council of RA6969
- DENR, DOH, DTI, DOST, DND, DFA, DOLE, DOF, DA, Director of PNRI, Representative from the non-governmental organization on health and safety

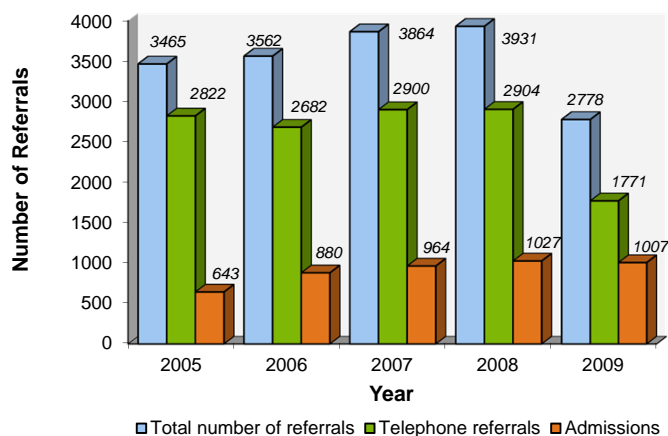
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Poison Control and Information Centers, Philippines



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Poisoning Cases and Referrals 2005–2009



Distribution of agents: (1) Pharmaceuticals, (2) Household cleaning agents
(3) hydrocarbons, (4) pesticides, (5) Others (arts and crafts, firecrackers)

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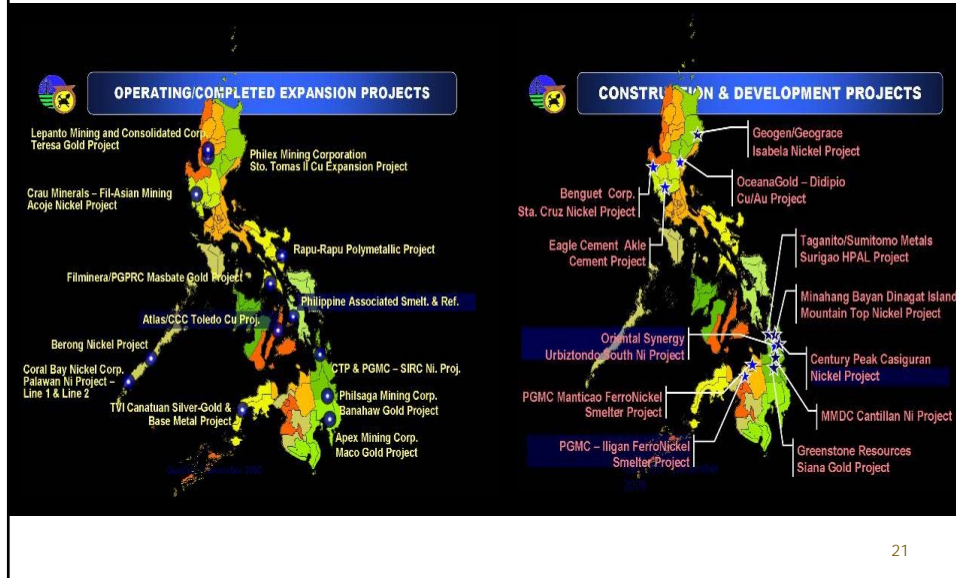
Cancer Facts and Estimates

- Cancer is the third leading cause of morbidity and mortality in the Philippines
- Leading cancer sites/types are lung, breast, cervix, liver, colon and rectum, prostate, stomach, oral cavity, ovary and leukemia

Japanese Journal of Clinical Oncology 32:S52-S61 (2002)
Corazon A. Ngelangel¹ and Edward H. M. Wang²

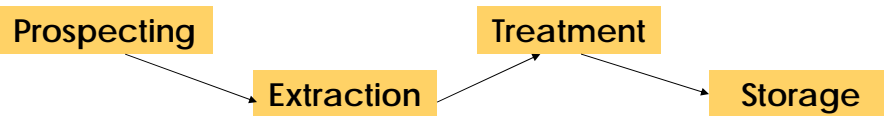
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Mining Projects in the Philippines

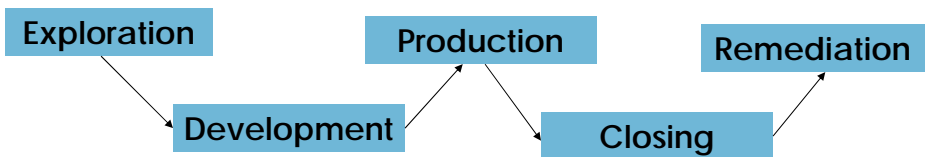


Planning: Life Cycle Analysis

Life cycle of mineral commodity (on-site)



Life cycle of mine project



Applications and Practices

A. Regulation of new and existing (priority and controlled) substances

B. Chemical Emergencies

C. Research and Policy Development

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A. Regulatory Risk Assessment

New & Priority Chemicals Assessment based on the following Criteria

Hazard Assessment

Information of inherent properties (Physical & Chemical Characteristics) - Nature of the physical (flammable), health (carcinogen) or environmental (aquatic) hazards + dose-response relationship

HAZARD ASSESSMENT BASED ON REVIEW OF LITERATURE - Item 2 (HAZARD IDENTIFICATION) of SAFETY DATA SHEET/ MATERIAL SAFETY DATA SHEET

Exposure Assessment

Predict or estimate the extent of chemicals exposure to the target environment through its production, use and disposal + Toxicity Assessment

Risk Characterisation

Outcome of the hazard assessment and exposure assessment (carcinogenic or non-carcinogenic)

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Industrial Applications and Practices – Risk Management and Risk Communication



CONTAINERS AND FACILITY LABELING



ISOLATED CHEMICALS STORAGE



Preventive and Control Measures

- * Labeling
- * Storage
- * Pollution Control
- * Treatment and Disposal
- * Personal Protective Equipment
- * Good Housekeeping Practices
- * Self-Monitoring, Reporting and Recordkeeping


PPEs





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Application of Risk Assessment, Management and Communication



Fish Advisory Calculations:

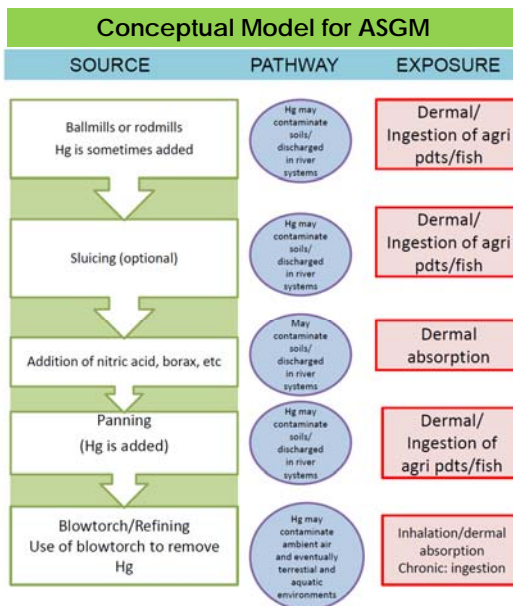
Kg BW	Consumption limit (g of fish/d)			
	caraballas (0.0116 ug/g)	bangsi (0.0131 ug/g)	bilang-bilong (0.0233 ug/g)	budburen (0.085 ug/g)
<20 kg	107.76	95.42	53.65	19.23
21-<40	262.93	232.82	130.90	46.92
41-<60	435.34	385.50	216.74	77.69
61-<80	607.76	538.17	302.58	108.46
81-<90	737.07	652.87	366.95	131.54
> 90	784.48	694.66	390.56	140.00

- A fish advisory was provided to the local government unit
- Fish advisory not intended to replace fish in the diet but reduce consumption of fish with higher Me-Hg concentrations or dietary restrictions as advised to pregnant and lactating mothers, children and women of reproductive ages (NRC, 2000)

EXPOSURE ASSESSMENT

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Application of Risk Assessment, Management and Communication



Gaps and Problems



- **Limited or unknown sources of information drawn from epidemiological, environmental and toxicological data in the country.**
- **Limited capacity building and expertise in the use of Risk Assessment and Risk Management**
- **Limited public awareness raising and consciousness/attitudes on matters pertaining to hazards and risks of chemicals**
- **Limited resources in addressing, implementing and sustaining the risk assessment's results and recommendations.**

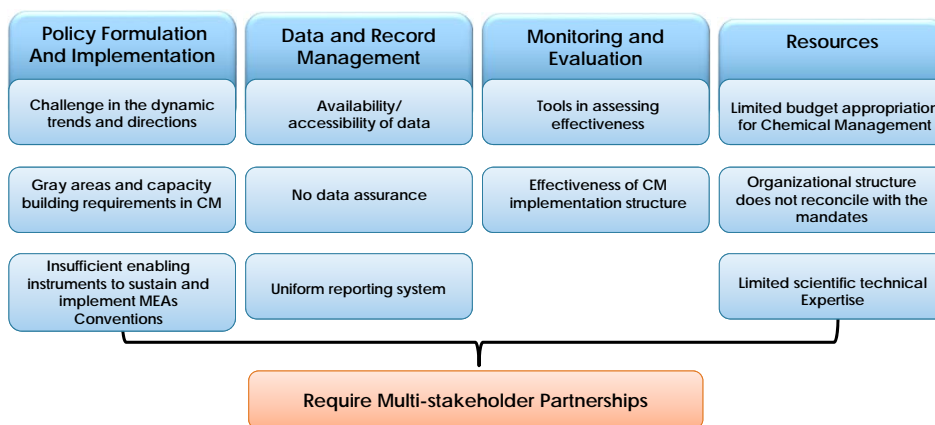
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Problem Areas: Chemical Safety SAICM Philippine National Profile

1. Unavailability and inaccessibility of data
2. Lack of data quality assurance
3. Lack of a unified reporting system for chemical inventories
4. Grey areas in implementing mandates related to chemical management
5. Lack of monitoring and evaluation tools for assessing the effectiveness of structures in implementing chemical management
6. No specific budget appropriated for chemical management except for the Fertilizer and Pesticide Authority and Environmental Management Bureau

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Four (4) Major Issues in Chemical Management



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Thank you

