

***NATIONAL ENVIRONMENTAL HEALTH ACTION PLAN
MALAYSIA***

***29 APRIL 2013 PICC,
PUTRAJAYA***

**Environmental Issues And Challenges –
Malaysian Scenario**

By

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INTRODUCTION

Environmental issues becoming more complex & challenging due to:

- Emerging of new types of products
 - Changes in manufacturing processes
 - Emerging new technologies for products
 - Level of housekeeping
 - Degree of cleaner technology use
 - Competency in handling environmental issues
 - Old environmental issues still not properly address
 - Regulations are not update
- 

ENVIRONMENTAL HEALTH AREAS OF CONCERN

- Air pollution – outdoor and indoor
- Solid waste management
- Food safety
- Occupational health and safety
- Soil contamination
- Urban sanitation
- Hazardous waste management
- Rural water supply and sanitation Recreational water
- Safe drinking water

(Extract: National Environmental Health Action Plan (2010), Ministry of Health)

NATIONAL POLICY ON THE ENVIRONMENT



POLICY STATEMENT

For continuous economic, social and cultural progress and enhancement of the **quality of life** of Malaysians, through environmentally sound and **sustainable development**

(21 October 2002)

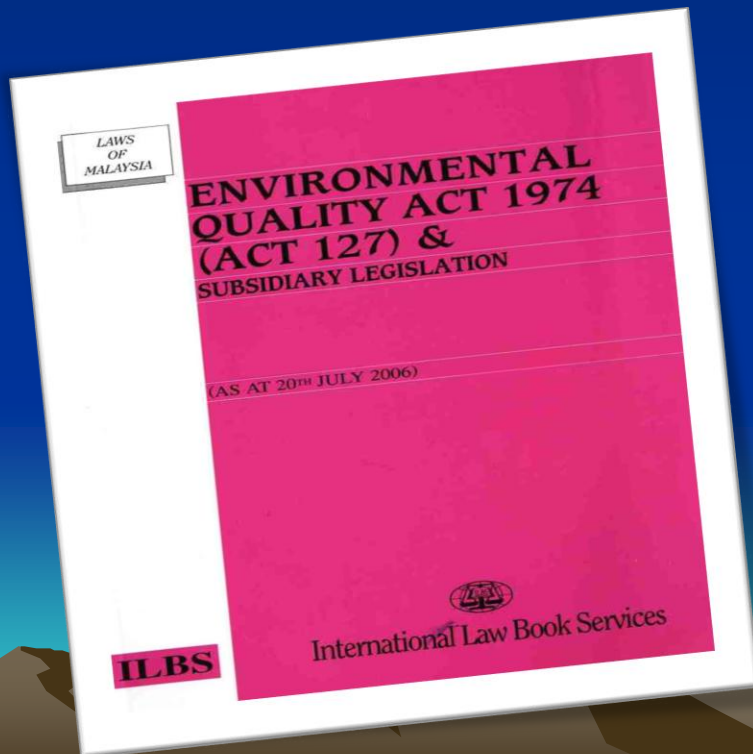
Clean, Safe ,
HEALTHY &
Sustainable Lifestyles



ENVIRONMENTAL MANAGEMENT STRATEGIES



- ✓ **EQA 1974 & Amendment 2012 (enforced 1 January 2013) &**
- ✓ **Section 4 EEZ Act 1984**



**ENVIRONMENTAL QUALITY
ACT, 1974
(ACT 127)**

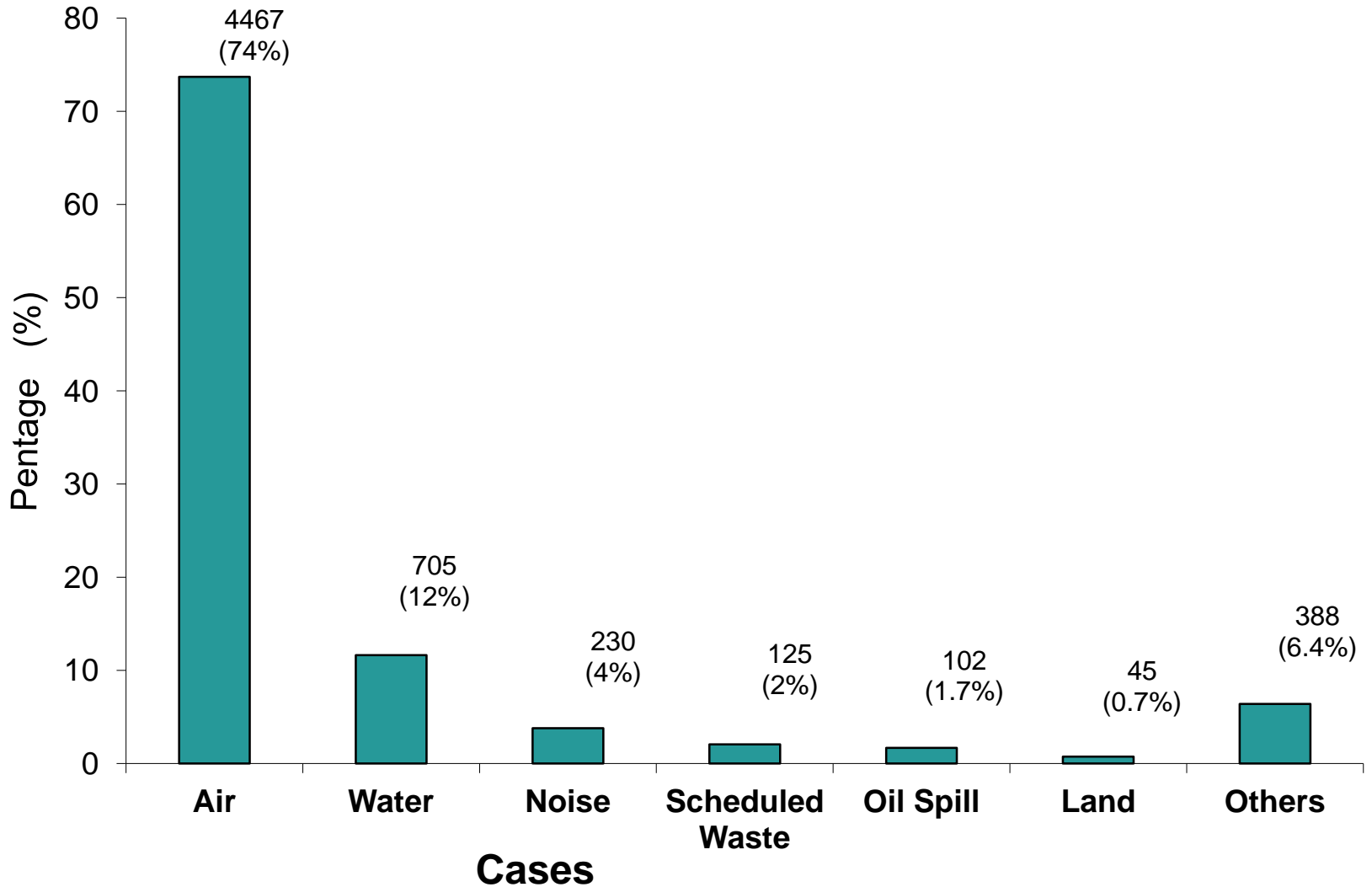
**Prevention, abatement,
control of pollution and
enhancement of the
environment in Malaysia**

**38
Regulations &
Orders**

Environmental Issues & Challenges



Environmental Complaints 2012



INCOMPATIBLE DEVELOPMENT

QUARRY

RESIDENTIALS



MASSIVE LAND DISTURBANCE

Land clearance without proper erosion control



AIR POLLUTION



Air Pollution Sources

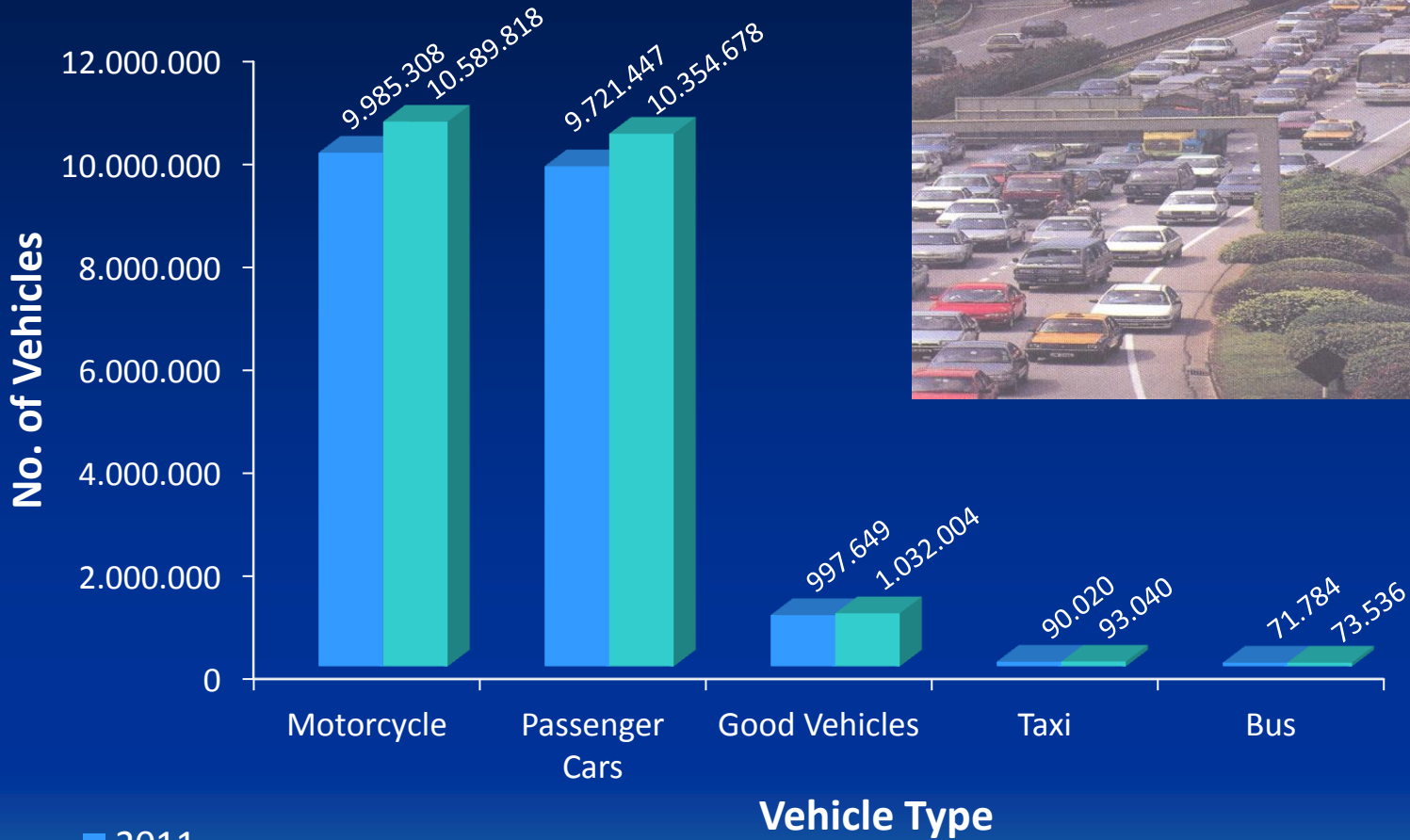


Industries (Point Sources)

**Open burning &
Haze (Trans-
boundary Pollution)**

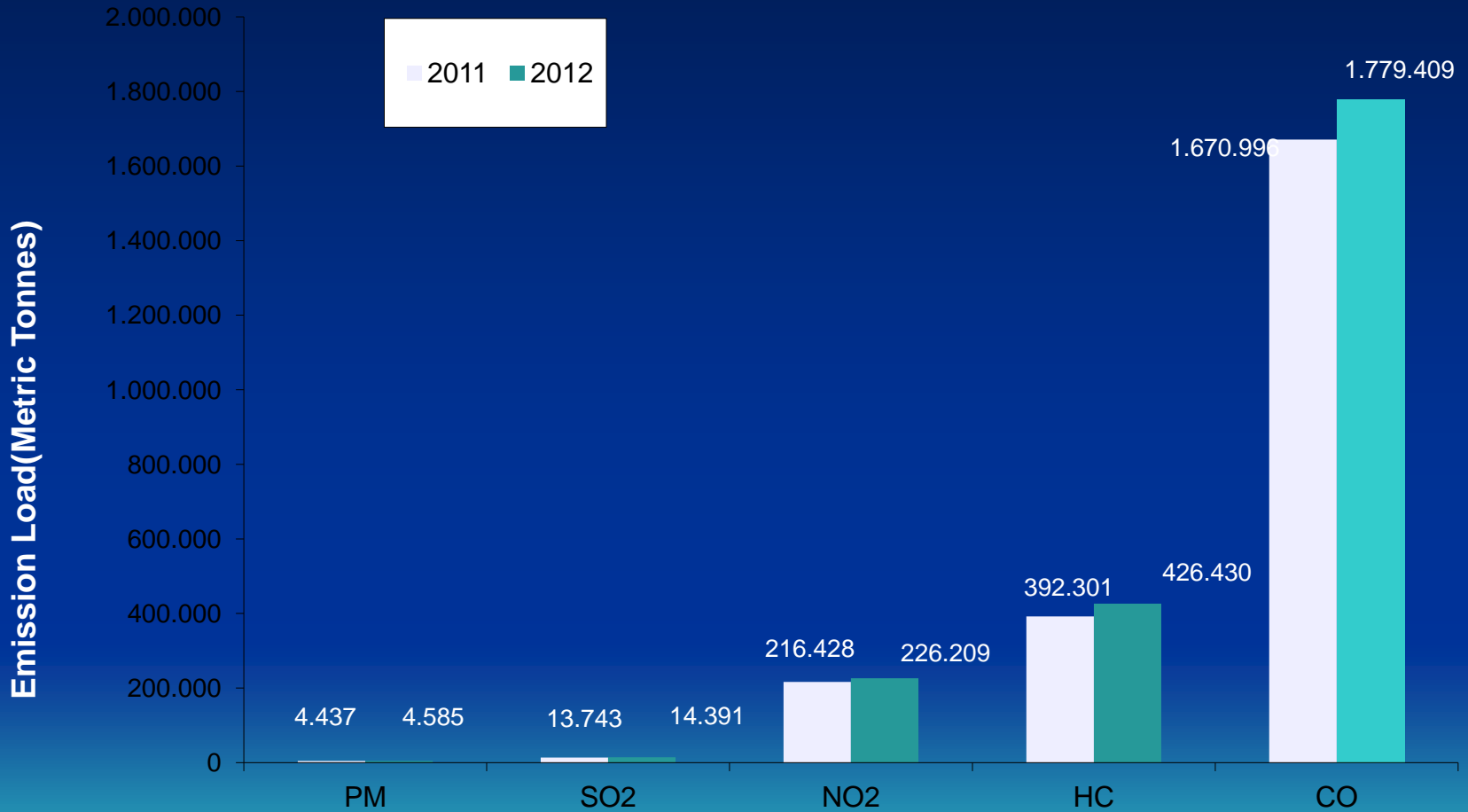


Black smoke from vehicle



Number of Motor Vehicles by Type, 2012
 (Source : Road Transport Department, 2012)

Air Pollutant Emission Load



Parameter

HAZE EPISODES IN MALAYSIA

1997

1998

2005

2006

2010

2011



AIR QUALITY MANAGEMENT INITIATIVES

- Air Quality Monitoring Network (52 Continuous Monitoring Stations)
- Legislation and Enforcement
- National Haze Committee & Action Plan
- Standard Operating Procedure in Fire Fighting
- Malaysian Air Quality Guidelines & Air Pollutant Index
- Fire Prevention & Peatland Management Programme to control peatland fire prone areas (Check Dams, Tube Wells & Watch Tower)



CHALLENGES IN AIR QUALITY MANAGEMENT

- Clean Air Action Plan (CAAP)
- New Clean Air Regulations 2013 (List of about 500 Hazardous Substances-Dioxins & Furans, Volatile Organic Substances, Gaseous Inorganic Substances, Particulate Organic Substances & Carcinogenic Substances) & Isokinetic Measurements
- Propose New Standard for Malaysia Ambient Air Quality (Particulate Matter –PM_{2.5} and PM₁₀ micron, O₃, CO, SO₂,NO₂) and emerging HCN standard?
- New Odour Regulations (to be finalized by AG)?
- Continuous Emission Monitoring System (CEMS) & Performance Emission Monitoring System (PEMS)

MONTREAL PROTOCOL

- International Agreement Designed to protect the ozone layer
- Phasing out production of ozone depleting substances (ODS) and HCFC



Water Pollution



Klang Valley, Johor river polluters to be identified

THE Department of Environment (DOE) is to map all polluted rivers in the Klang Valley and Johor. Natural Resources and Environment Minister Datuk Seri Douglas Uggah Embas said DOE would identify the sources of pollution.

"Once the mapping is completed, we will be able to identify the most polluted rivers and why it is so," Douglas said after launching the National River Forum 2012.

He hoped the mapping work would be completed by the year-end. After that, DOE would proceed to do the same in other states.

Douglas said the populated areas were mainly in cities and the vicinity of industrial and illegal manufacturing activities.

"Major sources of pollution include improper discharge from sewerage treatment plants, agro-based factories, livestock farming, land clearing and domestic sewage."

Douglas said rapid development and the high population concentration of more than four million in the Klang Valley had contributed to pollution of the Klang River, with 77,000 tonnes of waste being dumped yearly.

Water quality monitoring of 464 rivers

nationwide, undertaken by DOE last year, showed that 59.3 per cent of rivers were categorised as clean, 32.3 per cent as slightly polluted and 8.4 per cent as polluted.

Douglas said this situation was better than the previous year when 51.4 per cent of the rivers were categorised as clean, 35.6 per cent as slightly polluted and 13 per cent as polluted.

"River pollution is a serious matter because 97 per cent of our raw water supply comes from surface water sources."

Douglas said all parties had to assume collective responsibility for the sustainable use and management of rivers and water sources.

The forum, organised by Guinness Anchor Berhad Foundation, was participated by two local and five foreign experts from Singapore, the United Kingdom, Japan, Australia and Vietnam. They shared the best practices of sustainable river management.

Foundation chairman Tan Sri Saw Huat Lye said five years ago, it embarked on a water project with Global Environment Centre and the community to rehabilitate the Sungai Way river, a tributary of Sungai Penchala, in Selangor.

"Today, the water quality and biodiversity have been enhanced."

"River pollution is a serious matter because 97 per cent of our raw water supply comes from surface water sources."

Datuk Seri Douglas Uggah Embas
Natural Resources and Environment minister

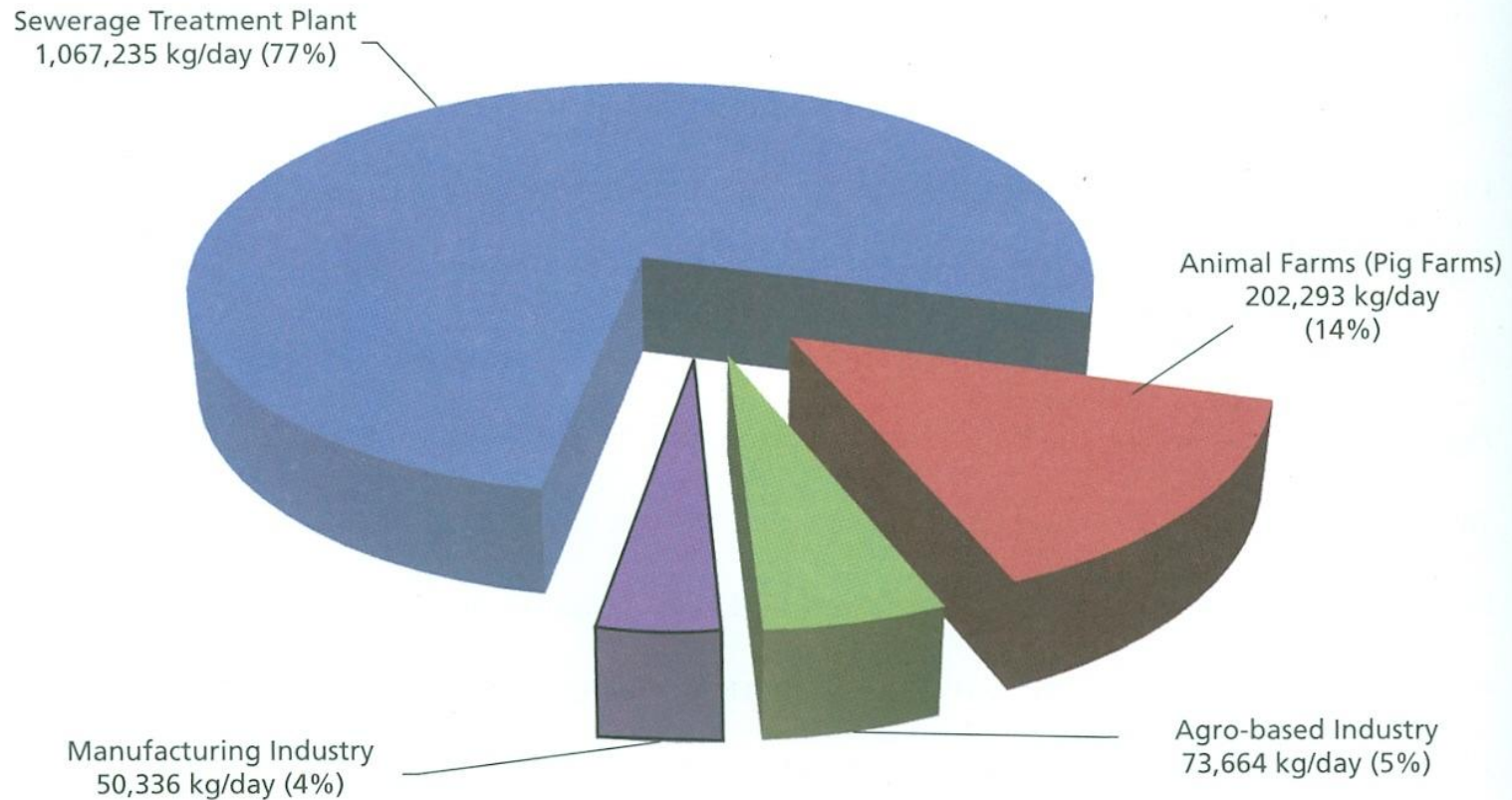
RIVER MONITORING

(Major Pollutants & Sources)

- **Biological Oxygen Demand (BOD)**
 - Sources : Sewage, Agro based, Manufacturing Industry
- **Ammoniacal Nitrogen (AN)**
 - Sources : Sewage & Animal Farming
- **Suspended Solids (SS)**
 - Sources : Earthwork and Land Clearing

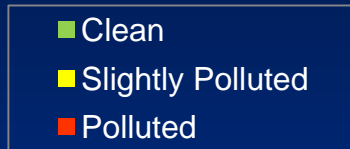


Water Pollution Sources of 4 Sectors

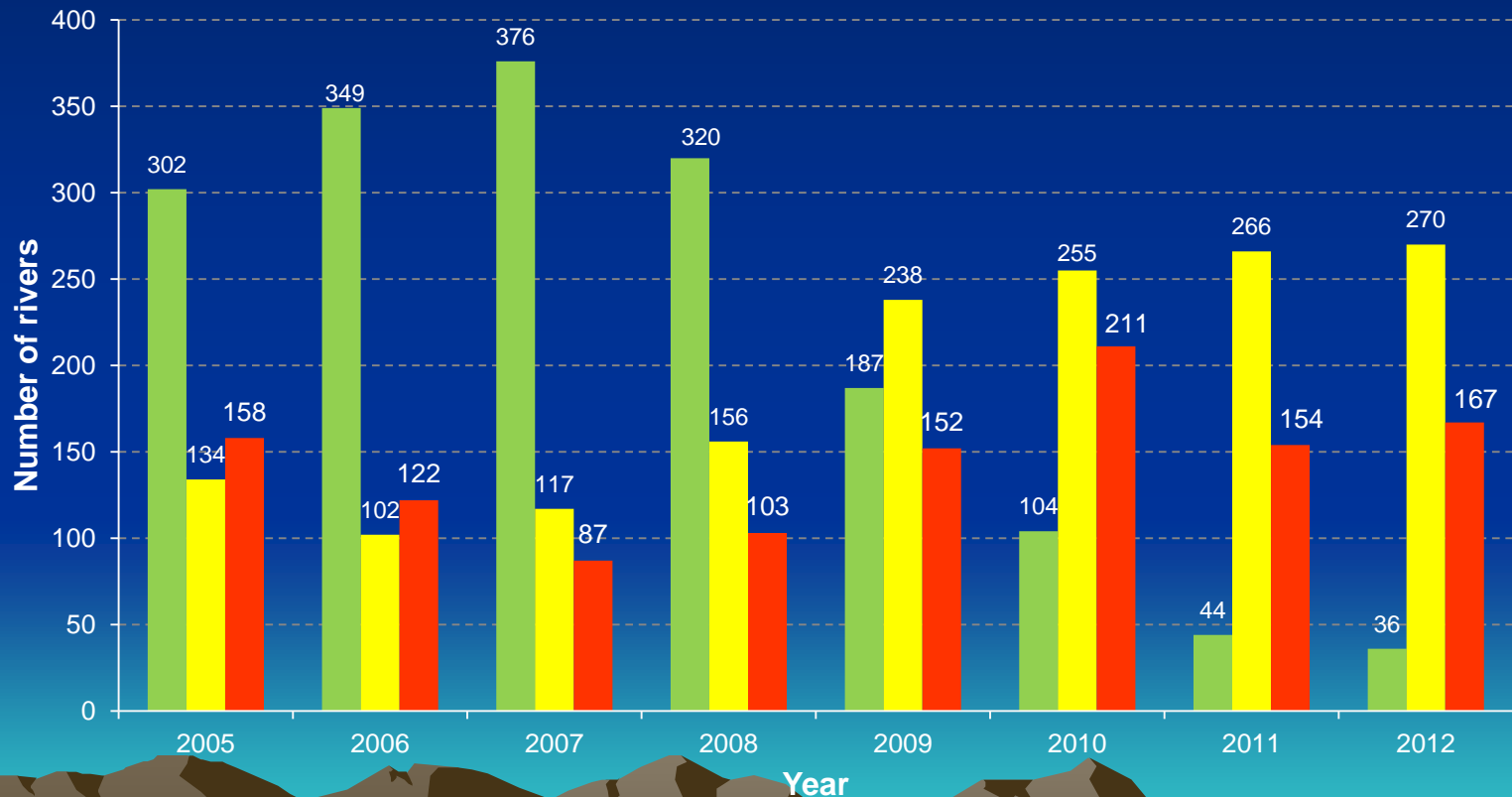


Composition of Water Pollution Sources by BOD Loading, 2011

River Water Quality Trend based on BOD sub-index



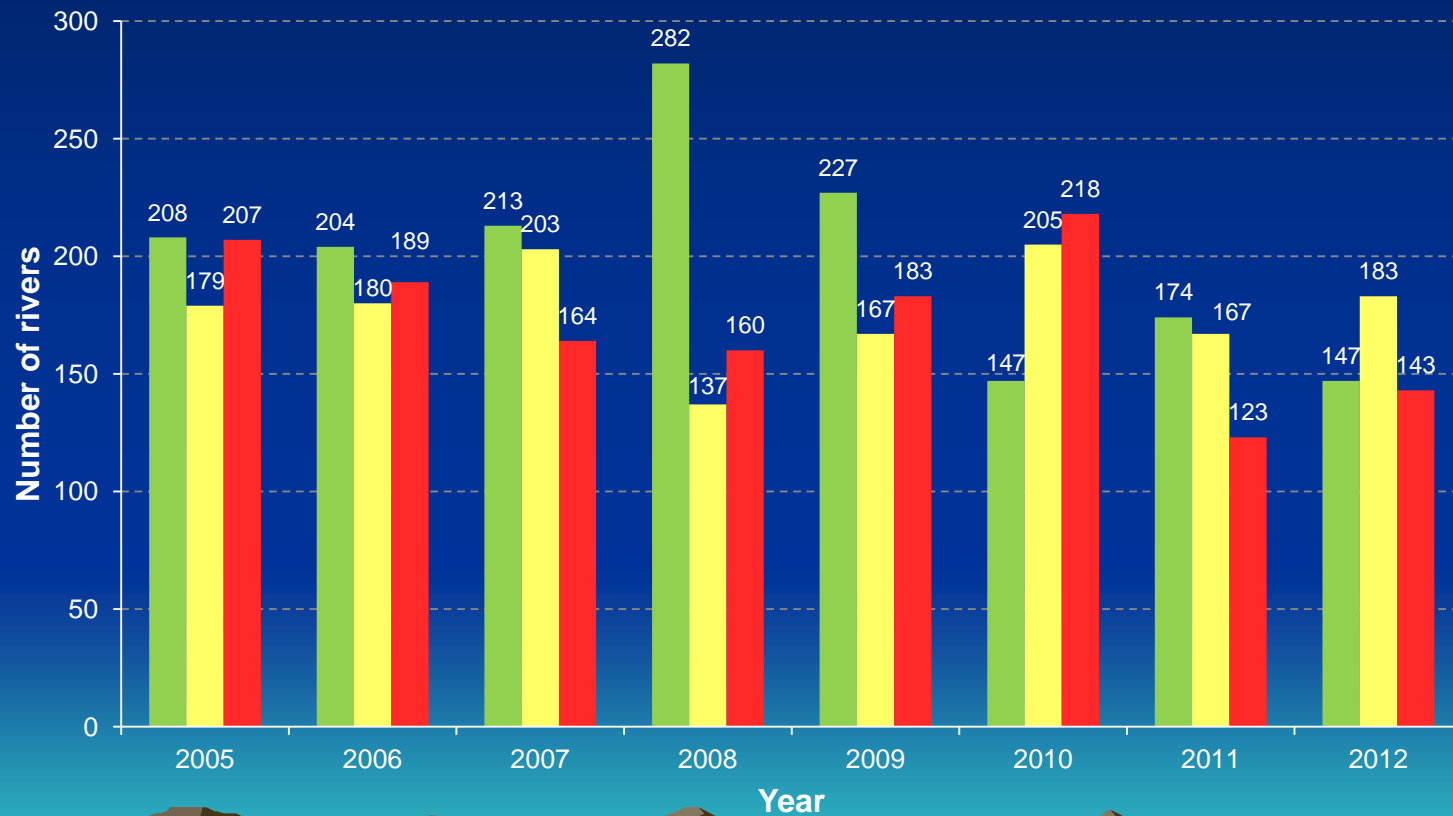
Source of Pollution (Activity) : Sewage, Agro based and Manufacturing Industries



River Water Quality Trend based on AN sub-index

- Clean
- Slightly Polluted
- Polluted

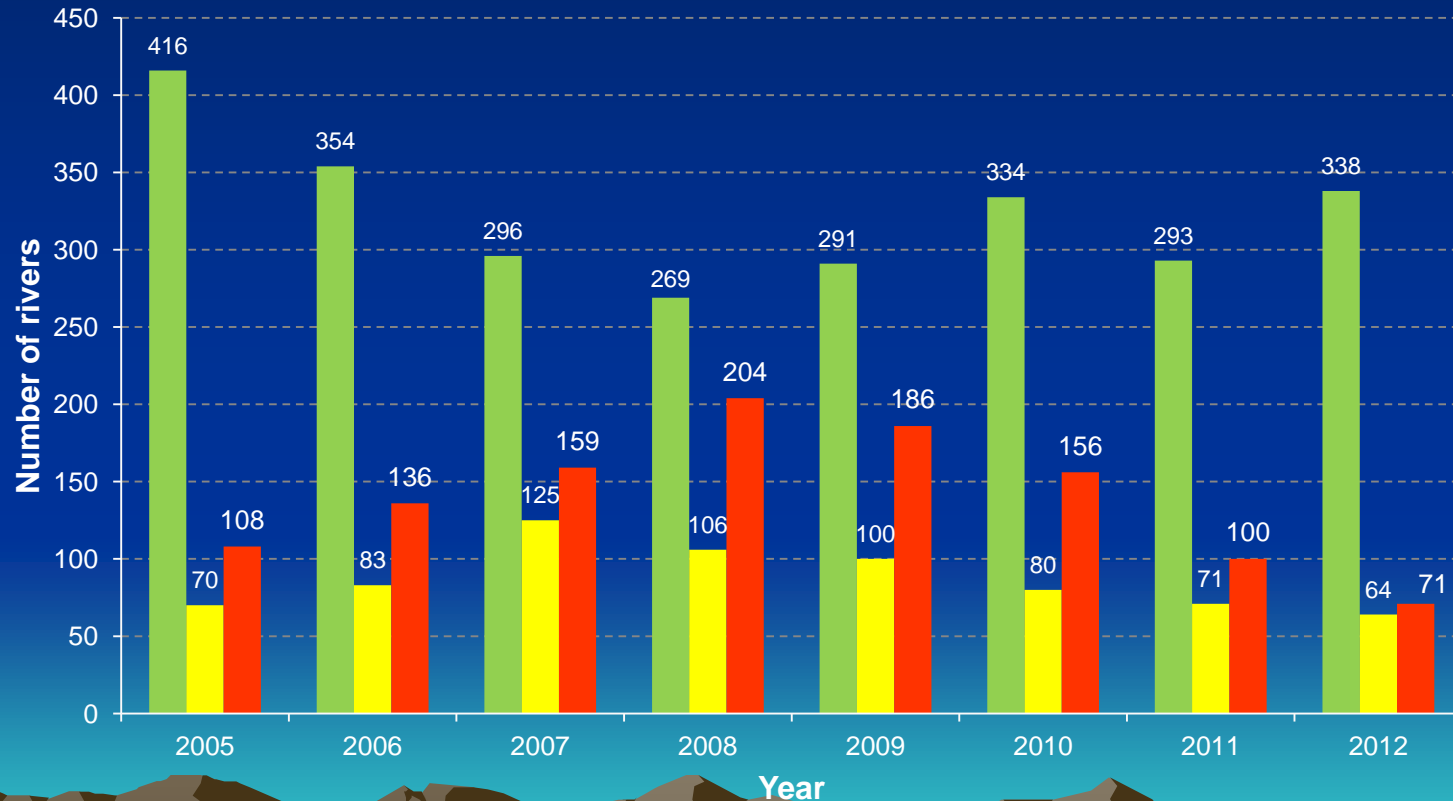
Source of Pollution (Activity) : Sewage & Animal Farming
Pollution Indicator : Ammoniacal Nitrogen (NH₃-N)



River Water Quality Trend based on SS sub-index



Source of Pollution (Activity) : Earthworks & Land clearings
Pollution Indicator (Parameter) : Suspended solids



DOE NEW INITIATIVES

1. New Regulations for Animal Farming Activities Soon (Issues to be resolved)
2. New Regulations for Public Wet Market Discharges
3. Hypermarket (Private Wet Market) subject to Sewage Regulations 2009



CHALLENGES IN WATER POLLUTION CONTROL

- Only 65% out of 150 Local Authorities, enforce installation of FOG Traps in Restaurants and Food Courts
- Sullage direct discharge into drain/rivers
 - ❖ High in E Coli
 - ❖ Ratio BOD,COD,O&G,TSS is 1:4:2:3
 - ❖ Higher than industrial discharges limits for BOD:COD:O&G by 1:2:14 times
- Cooperation with MOH enforcing Food Act 1983 (ACT 281) on FOG

Number of Water Pollution Sources Increasing

No	Type of sources	No. of sources
1	Manufacturing Industries	4,595
2	Agro-based industries	512
3	Pig farms^ equivalent to 1,792,666 livestock population	754
4	Sewage treatment plant@	
	- Public sewage	5,800
	- Private sewage	4,004
	- Septic tank	1,449,383
	- CST	3,631
5	Restaurant/ food stalls/ caterers*	192,710
6	Hotels+	1,333
7	Schools#	10,083
8	Universities (public & private)	70
9	Education Institutes#	1,072
10	Wet markets"	865
11	Hospitals	386

Sources of information

2012:-

The number of of restaurants/ food stalls/ caterers was registered in Food Safety Information System for Malaysia - Domestic (FoSIM) under Ministry of Health Malaysia and Local Government Department

Ministry of Education Malaysia
Ministry of Tourism Malaysia,
Indah Water Konsortium
Local Government Department
Department of Veterinary Services

River Water Quality Monitoring

- Started by DOE since 1978 and contract out to Alam Sekitar Malaysia Sdn. Bhd. (ASMA) from 1995 to 2015
- Monitoring by:
 - ❖ Manual and Automatic Continuous Stations
 - ❖ Objective- Establishing Baselines, Water Quality Index and Pollution Sources

GROUNDWATER MONITORING

- ❑ Started in 1997 for Peninsular Malaysia & extended to Sabah dan Sarawak in 2002
- ❑ Analyze for VOCs, Heavy Metals, Pesticides, Phenolic Compounds, Coliform, TDS, pH, Conductivity & DO
- ❑ Normally, high in As, Fe, Mn, Coliform & Phenolics comparing with National Raw Drinking Water Quality (MOH, 2000)



Cover 107 Groundwater Stations in 12 Land Use Areas

Land Use Area	Numbers of Stations
1) Agricultural Areas	12
2) Urban & Suburban Areas	11
3) Industrial Sites	18
4) Landfills	24
5) Golf Courses	7
6) Rural Areas	3
7) Ex - Mining	3
8) Municipal Water Supply	7
9) Animal Burial	14
10) Aquaculture Farms	6
11) Radioactive Landfill	1
12) Resorts	1
Total:-	107

Marine Water Quality Monitoring Programmes

- 314 Monitoring Stations and started in 1978 Peninsular and 1985 in Sabah and Sarawak
- Cover Estuary, Coastal and 74 Islands

(Islands include Development On Islands, Resort , Marine Park and Protected Islands)



HAZARDOUS WASTE MANAGEMENT



SCHEDULED WASTES

- Scheduled Wastes generated (in 2011) = 3.3 Million mTon (an **increased** of 6.3% compared to 2010)
- Manage Via Scheduled Wastes Regulations 2005 & Basel Convention
- Main categories generated:
Dross/slag/clinker/ash, gypsum, mineral sludge, heavy metal sludge and e-waste



FACILITIES HANDLING SCHEDULED WASTES

Facilities Handling Scheduled Wastes, 2011

No.	Facility	Tones	Percentage (%)
1	Special Management	1,659,537.67	50.57
2	Local Off-site Recovery Facilities	937,769.83	28.58
3	On-site Treatment	340,460.16	10.37
4	On-site Storage	189,861.05	5.79
5	Kualiti Alam Sdn. Bhd	119,684.03	3.65
6	Off-site Clinical Waste Incinerators	17,795.47	0.54
7	Trinekens (Sarawak) Sdn. Bhd.	14,500.00	0.44
8	Foreign Facilities (Export)	1,961.00	0.06
	Total	3,281,569.21	100.00

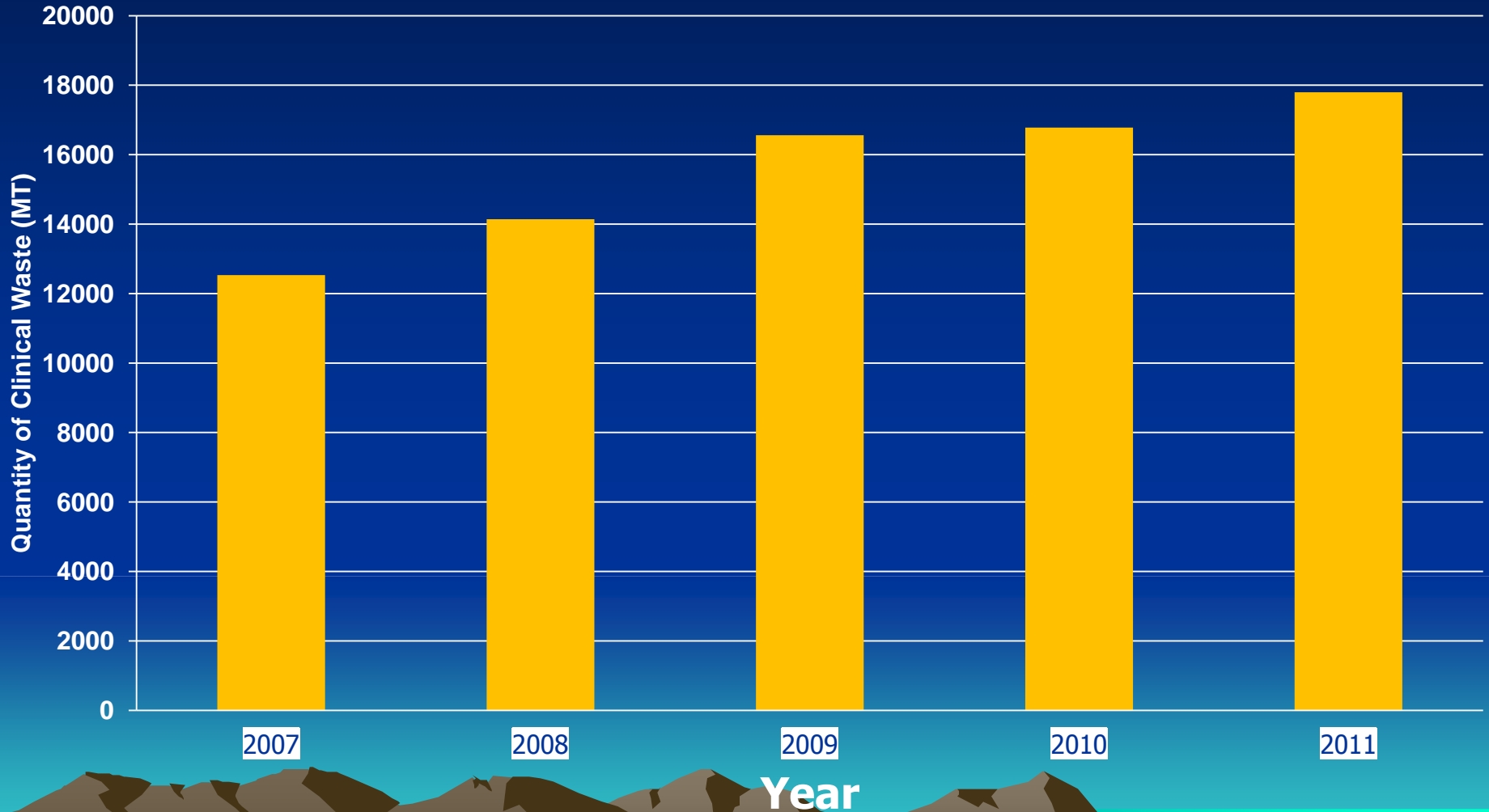
CLINICAL WASTES

- ❑ 25% Health-Care Waste Generated is Hazardous & Health Risks
- ❑ Clinical Wastes Subject to Environmental Quality (Schedule Waste) Regulations, 2005 and international requirements Basel Convention:
 - ❖ SW 403 - Discarded drugs containing psychotropic substances or containing substances that are toxic, harmful, carcinogenic, mutagenic or teratogenic;
 - SW 404 - Pathogenic and clinical waste and quarantined materials
 - ❖ SW 421 - A mixture of schedule waste
 - ❖ SW 422 - A mixture of schedule and non schedule waste

Sharps, Drugs, Tissues, Bloods, etc

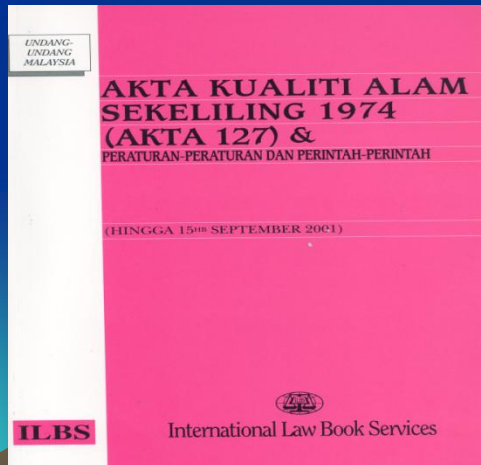


80,000 mTon Clinical Wastes Generated from 2007 - 2011



CHALLENGES In MANAGING CONTAMINATED LAND

- ❑ **Standards & Protocol yet to be Developed Under Section 24 EQA**
- ❑ **Sources Increasing**
 - **Industrial Sites, Motor Workshops, Petrol Stations, Fuel Depots, Railway Yards, Landfills & Ex-Mining Land**



ENVIRONMENTAL ISSUE: Persistent Organic Pollutants (POPs)

- POPS emerging environmental issue
- POPS subject to **The Stockholm Convention Treaty**
- POPS are toxic and accumulate in fatty tissue of living organisms, humans and wildlife
- POPS-remain intact in the environment for long periods and widely distributed geographically
- Managing them very challenging

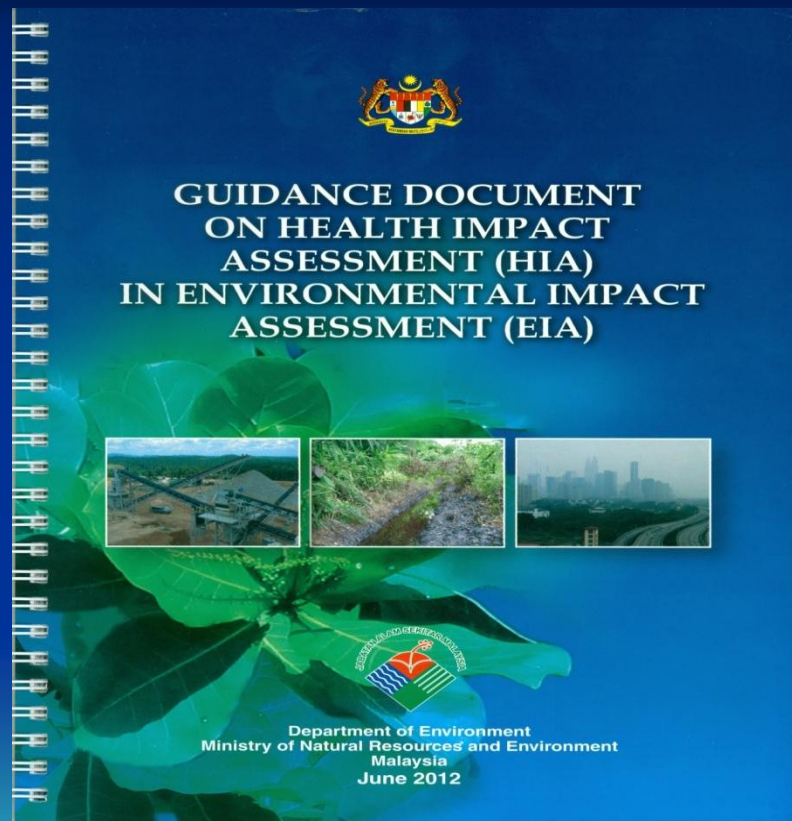


INTEGRATION OF HIA IN EIA

- **HIA has been integrated in EIA**
- **HIA for projects that may affect the environment and human health**
- **Examples: Incineration Plant, Landfills, Chemical Plants, Coal Fired Power Plant**



DOE NEW INITIATIVES ON HEALTH IMPACT ASSESSMENT



- **Guidance Documents on HIA in operation since 2012**
- **Include Scoping of HIA FOR EIA STUDIES & PROCEDURE**

CHALLENGES IN PROMOTING GREEN ACTIVITIES

- **Promoting Green Industries (Cleaner Production/Sustainable Consumption Production Principles) on SME Industries**
 - **Promotion of Green Technology (Green Economy)**
 - **Friend of Environment (RAS) Outreach Programme on 222 Parliamentary Constituencies**
 - **Awareness Raising on Sustainable Cities Program & Sustainable Schools Program**
- 

CHALLENGES ON ENVIRONMENTAL TRAINING

- Promoting “Competent Person” on DOE Staffs, Industries, Consultants & Service Providers via Certification Programmes in Executing Specialize Environmental Management Issues
- Promoting Accumulation of CPD Hours
- Timely, for Promoting Transformation of Command & Control of Enforcement Approach into Guided Self Regulation



CONCLUSION

- **Call for Action**

Due to complexity of Environmental Issues & Challenges in Managing them, collaboration along with Agencies and Ministries should be strengthened especially in Air & Water Pollution Control and Hazardous Waste Management & Disposal



Thank You