

Jadual 5.13 JAS : Penambakan Selat Johor Stesen Pengawasan Kualiti Marin, 2004
 Table 5.13 DOE: Straits of Johor Land Reclamation Marine Monitoring Stations, 2004

Bil No	Nama Stesen Station	Latitud Latitude	Longitud Longitude
1	LS1	N 01° 19' 54.70"	E 104° 05' 45.22"
2	LS3	N 01° 21' 27.35"	E 104° 05' 47.44"
3	LS5	N 01° 23' 01.78"	E 104° 05' 21.02"
4	LS10	N 01° 26' 20.14"	E 104° 01' 21.38"
5	LS12	N 01° 25' 39.48"	E 104° 00' 37.28"
6	SG1	N 01° 20' 56.47"	E 104° 05' 03.01"
7	SG2	N 01° 21' 06.56"	E 104° 05' 25.60"
8	SG3	N 01° 21' 15.14"	E 104° 05' 46.69"
9	SG4	N 01° 21' 25.66"	E 104° 06' 05.24"
10	SG5	N 01° 21' 37.03"	E 104° 06' 23.14"
11	NG1	N 01° 23' 22.96"	E 104° 05' 28.14"
12	NG2	N 01° 23' 23.65"	E 104° 05' 48.16"
13	NG3	N 01° 23' 25.36"	E 104° 06' 09.88"
14	NG4	N 01° 23' 27.41"	E 104° 06' 28.88"
15	NG5	N 01° 23' 29.47"	E 104° 06' 46.53"
16	TK1	N 01° 25' 54.57"	E 104° 00' 52.86"
17	TK2	N 01° 26' 11.59"	E 104° 00' 51.86"
18	TK3	N 01° 26' 31.06"	E 104° 00' 50.50"
19	TK4	N 01° 26' 47.79"	E 104° 00' 48.79"
20	TK5	N 01° 27' 06.57"	E 104° 00' 47.43"
21	W1	N 01° 15' 09.50"	E 103° 34' 49.00"
22	W2	N 01° 15' 23.30"	E 103° 35' 03.30"
23	W3	N 01° 15' 42.60"	E 103° 35' 03.30"
24	W4	N 01° 16' 10.10"	E 103° 35' 28.70"
25	W5	N 01° 16' 41.10"	E 103° 35' 47.60"
26	W6	N 01° 17' 35.80"	E 103° 36' 07.20"
27	W7	N 01° 18' 26.40"	E 103° 36' 33.30"
28	W8	N 01° 19' 02.20"	E 103° 36' 53.60"
29	W9	N 01° 20' 03.90"	E 103° 37' 20.30"
30	W10	N 01° 20' 58.40"	E 103° 38' 03.30"



Gambarfoto 5.10 JAS: Aktiviti Pembersihan Pantai Akibat Tumpahan Minyak
 Photo 5.10 DOE : Clean-up Beach Oil Spill Incident



Gambarfoto 5.11 JAS: Latihan Kawalan Tumpahan Minyak di Kota Kinabalu, Sabah pada 24 Jun 2004
 Photo 5.11 DOE: Oil Spill Response Exercise, Kota Kinabalu, Sabah on 24 June 2004



Pengawasan Kualiti Air Marin Pulau-pulau

Marine Water Quality Monitoring in Islands

Malaysia dikurniakan dengan banyak pulau yang kesemuanya kaya dengan sumber akuatik. Kualiti air marin memainkan peranan yang penting dan merupakan faktor yang kritikal dalam penjagaan sumber semulajadi ini. Program Pengawasan Kualiti Air Marin Pulau-pulau ini telah dimulakan pada Julai 1998. Program ini melibatkan pengawasan di sekitar 71 buah pulau terpilih dengan 85 buah stesen pengawasan. Rangkaian pelaporan dikelaskan kepada empat kategori iaitu pulau-pulau pembangunan (3 buah); pulau-pulau peranginan (25 buah); pulau-pulau taman laut (38 buah); dan pulau-pulau yang dilindungi (5 buah) (rujuk kepada Jadual 5.14).

Pada bulan Jun, lokasi stesen pengawasan pulau-pulau telah disemak semula. Satu rangkaian pengawasan yang melibatkan 40 buah pulau dan 60 stesen telah dipilih berdasarkan keperluan; 3 untuk pulau pembangunan, 18 untuk pulau peranginan, 16 untuk pulau taman laut dan 3 untuk pulau yang dilindungi (Jadual 5.15).

Program ini melibatkan kerja-kerja percontohan air laut untuk analisis makmal dan menjalankan pengukuran *in-situ*. Sistem Maklumat Geografi (GIS) digunakan untuk menyediakan maklumat mengenai sumber marin, aktiviti dan sumber pencemaran. Percontohan bebola tar di pantai juga dilaksanakan.

Malaysia is endowed with many islands whose marine environment is generally rich in aquatic resources. The quality of marine waters plays an important role in the conservation of these resources. The Island Marine Water Quality Monitoring Programme was started in July 1998. The programme involves the monitoring of 71 islands at 85 stations. These islands are classified into four categories : development islands (3); resort islands (25); marine park islands (38); and protected islands (5) (Table 5.14).

The location of these monitoring stations was revised in June 2004. A network of 40 islands and 60 stations was established based on specific monitoring needs; 3 for development islands, 18 for resort islands, 16 for marine park islands and 3 for protected islands (Table 5.15).

The programme involved taking water samples for laboratory analysis and *in-situ* measurements. The Geographical Information System (GIS) was used to provide information on marine resources, activities and pollution sources. Tar ball sampling on beaches was also conducted.



Jadual 5.14 JAS: Pengawasan Kualiti Air Marin Pulau-Pulau (Jan-Jun 2004)
 Table 5.14 DOE: Marine Island Water Quality Monitoring (Jan-Jun 2004)

Bil No	Negeri State	Pulau Island	Kategori Category	Bil. Stesyen No. of stations
1	Kedah	Singa Besar	R	1
		Dayang Bunting	R	1
		Payar	M	1
		Kaca	M	1
		Lembu	M	1
		Segantang	M	1
		Langkawi	D	4
2	Perak	Pangkor	R	2
		Pangkor Laut	R	1
		Sembilan	R	1
3	Pulau Pinang	Aman	R	1
		Jerejak	R	1
		Gedong	R	1
		Kendi	R	1
		Rimau	R	1
		P.Pinang	D	4
4	Selangor	Ketam	R	1
		Angsa	R	1
		Lumut	R	1
5	Melaka	Besar	R	1
		Upeh	R	1
6	Pahang	Tioman	M	2
		Tulai	M	1
		Chebeh	M	1
		Labas	M	1
		Sepui	M	1
		Seri Buat	M	1
		Sembilang	M	1
		Tokong Bahara	M	1
		But	M	1
7	Johor	Setindan	R	1
		Harimau	M	1
		Mensirip	M	1
		Gual	M	1
		Rawa	M	1
		Pemanggil	M	1
		Babi Hujung	M	1
		Babi Tengah	M	1
		Sibu Tengah	R	1



Jadual 5.14 JAS: Pengawasan Kualiti Air Marin Pulau-Pulau (Jan-Jun 2004)
 Table 5.14 DOE: Marine Island Water Quality Monitoring (Jan-Jun 2004)

Bil No	Negeri State	Pulau Island	Kategori Category	Bil. Stesyen No. of stations
7	Johor	Dayang	R	1
		Aur	M	1
		Besar	M	1
		Tinggi	M	1
		Nanga Besar	M	1
		Sibu Besar	M	1
		Sibu Hujung	M	1
8	Terengganu	Gumia	R	1
		Kapas	M	1
		Tenggol	P	1
		Nyireh	P	1
		Bidong	R	1
		Duyong	R	1
		Susu Dara	M	1
		Perhentian Besar	M	2
		Redang	M	2
		Perhentian Kecil	M	1
		Lang Tengah	M	1
		Pinang	M	1
		Ekor Tebu	M	1
		Lima	M	1
9	Sabah	Gaya	R	1
		Layang-layang	R	1
		Mabul	R	1
		Sipadan	R	2
10	Labuan	Labuan	D	4
		Kuraman	M	1
		Rusukan Kecil	M	1
		Rusukan Besar	M	1
11	Sarawak	Satang	P	1
		Talang-talang Kecil	P	1
		Talang-talang Besar	P	1
Kategori Category		Jumlah Pulau No. of Islands	Jumlah Stesen No. of Stations	
i.	Pulau Peranginan/ Resort Island (R)	25	27	
ii.	Pulau Taman Laut / Marine Park Island (M)	38	41	
iii.	Pulau Di Lindungi / Protected Island (P)	5	5	
iv.	Pulau Pembangunan / Development Island (D)	3	12	
	Jumlah / Total	71	85	



Jadual 5.15 JAS: Pengawasan Kualiti Air Marin Pulau-Pulau 2004
 Table 5.15 DOE: Marine Island Water Quality Monitoring, 2004

Bil No	Negeri State	Pulau Island	Kategori Category	Bil. Stesyen No. of stations
1	Kedah	Payar	M	1
2	Langkawi	Langkawi	D	4
		Singa Besar	R	1
		Dayang Bunting	R	1
3	Perak	Pangkor	R	2
4	Terengganu	Redang	M	5
		Pinang	M	1
		Duyong	R	1
		Gumia	R	1
		Kapas	M	1
		P.Besar	M	2
		P.Kecil	M	4
5	Pahang	Tioman	M	2
6	Selangor	Ketam	R	1
		Angsa	R	1
		Lumut	R	1
7	Pulau Pinang	P.Pinang	D	4
		Aman	R	1
		Jerajak	R	1
		Gedong	R	1
		Kendi	R	1
		Rimau	R	1
8	Melaka	Upeh	R	1
9	Johor	Aur	M	1
		Pemanggil	M	1
		Gual	M	1
		Sibu Tengah	R	1
		Sibu Besar	M	1
		Sibu Hujung	M	1
		Tinggi	M	1
10	Sabah	Gaya	R	1
		Mabul	R	1
		Sipadan	R	2
		Labuan	D	4
11	Labuan	Kuraman	M	1
		Rusukan Kecil	M	1
		Rusukan Besar	M	1
12	Sarawak	Satang Besar	P	1
		Talang Besar	P	1
		Talang Kecil	P	1
		Kategori Category	Jumlah Pulau No. of Islands	Jumlah Stesen No. of Stations
i.		Pulau Peranginan/ Resort Island (R)	18	20
ii.		Pulau Taman Laut / Marine Park Island (M)	16	25
iii.		Pulau Di Lindungi / Protected Island (P)	3	3
iv.		Pulau Pembangunan / Development Island (D)	3	12
		Jumlah / Total	40	60



Pencemaran Marin

Marine Pollution

Pada tahun 2004, terdapat tiga belas (13) kes pencemaran marin berpunca daripada tumpahan minyak dilaporkan; 7 kes dikesan di Laut China Selatan, 5 di Selat Melaka dan 1 di Selat Johor (Jadual 5.16).

In 2004, thirteen cases of marine pollution from oil spills were reported; 7 in the South China Sea, 5 in the Straits of Malacca and 1 in the Johor Straits (Table 5.16).

Jadual 5.16 JAS: Laporan Tumpahan Minyak, 2004
Table 5.16 DOE: Oil Spills Report, 2004

Lokasi Perairan Location	Kawasan Area	Bilangan Kes Number of Cases
Laut China Selatan South China Sea	Perairan Malaysia Malaysian Territory	Semenanjung/ Peninsular 2
		Malaysia Timur/East Malaysia 4
		Zon Ekonomi Eksklusif (EEZ)/ Exclusive Economic Zone (EEZ) 1
Selat Melaka Straits of Malacca	Perairan Malaysia / Malaysian Territory	5
		Zon Ekonomi Eksklusif (EEZ)/ Exclusive Economic Zone (EEZ) -
Selat Johor/ Johor Straits	Perairan Malaysia Malaysian Territory	Bahagian Barat / West Coast -
		Bahagian Timur/ East Coast 1
JUMLAH/ TOTAL		13

Rancangan Kontigensi Kebangsaan Kawalan Tumpahan Minyak (RKKKTM)

Di bawah RKKKTM, peralatan kawalan tumpahan minyak telah disediakan di lokasi-lokasi yang strategik di Malaysia bagi tujuan mengawal tumpahan minyak yang mungkin berlaku di perairan negara. Kebanyakan kejadian tumpahan minyak adalah disebabkan oleh insiden pelanggaran kapal, perbuatan pembuangan sisa minyak yang disengajakan atau tumpahan minyak yang dihanyutkan daripada perairan negara-negara jiran. Selain daripada peralatan yang disediakan oleh Jabatan Laut dan 'Petroleum Industry Malaysia Mutual Aid Group' (PIMMAG), stok peralatan kawalan tumpahan minyak Jabatan Alam Sekitar, ditempatkan di beberapa lokasi seperti di Kota Kinabalu, Sabah, Bintulu, Sarawak dan Pulau Langkawi, Kedah.

National Oil Spill Contingency Plan (NOSCP)

Under the existing NOSCP, oil spill response equipment stockpiles were established in strategic locations throughout the nation for purposes of combating oil spills in the Malaysian waters. Oil spills were mainly due to vessel collisions, illegal discharges and accidental spills or even spills from neighboring countries. In addition to the equipment stockpile belonging to the Marine Department of Malaysia and the Petroleum Industry Malaysia Mutual Aid Group (PIMMAG), the Department of Environment also has its own equipment stockpile at Kota Kinabalu, Sabah, Bintulu, Sarawak, and Langkawi Island, Kedah.



Sebagai usaha untuk mempertingkatkan kecekapan dalam kawalan tumpahan minyak, kursus-kursus serta latihan berjadual dan menyeluruh telah dilaksanakan. Pada tahun 2004, beberapa latihan telah dilaksanakan bagi menguji keberkesanan tindakbalas, mobilisasi dan respons kawalan tumpahan minyak di bawah RKKKTM (Jadual 5.17).

Pada tahun 2004 juga, Pelan Tindakan Pembersihan Pantai akibat Tumpahan Minyak Peringkat Negeri telah diterbitkan oleh Negeri Kedah, Pulau Pinang, Perak dan Selangor (Rajah 5.9).

Jawatankuasa Tabung Pusingan Bagi Selat Melaka dan Selat Singapura (RFC)

Pada 11 Februari 1981, satu Memorandum Persefahaman (MoU) telah ditandatangani antara kerajaan Malaysia, Indonesia, Singapura dan Malacca Straits Council bagi Jepun untuk mewujudkan Tabung Pusingan Selat Melaka dan Selat Singapura sebagai salah satu usaha untuk mengawal kejadian tumpahan minyak yang berpunca daripada kapal-kapal yang melalui perairan Selat Melaka dan Selat Singapura.

Malaysia telah dipertanggungjawabkan bagi mengurus Tabung Pusingan Selat Melaka dan Selat Singapura (Revolving Fund Committee–RFC) bagi tempoh 1 April 2001- 31 Mac 2006. Pada tahun 2004, Mesyuarat Jawatankuasa Pengurusan Tabung Pusingan Selat Melaka dan Selat Singapura (RFC) yang ke-25 telah diadakan pada 1 Julai 2004, di Kuala Lumpur dan dipengerusikan oleh Ketua Pengarah Alam Sekitar. Mesyuarat Jawatankuasa Teknikal RFC pula telah diadakan pada 4 – 5 Ogos 2004 di Kuala Lumpur dan dipengerusikan oleh Timbalan Ketua Pengarah Alam Sekitar (Operasi). Kedua-dua mesyuarat ini telah dihadiri oleh delegasi dari Indonesia, Malaysia dan Singapura serta wakil daripada Malacca Straits Council (MSC).

Antara aktiviti utama yang telah dilaksanakan di bawah RFC sepanjang tahun 2004 adalah seperti berikut:

- i. Persidangan dan Pameran Antarabangsa berkenaan Pencemaran Kimia dan Minyak di Hotel Shangri-La, Singapura dari 22 hingga 24 Mac 2004.
- ii. Bengkel Prosedur Tuntutan dan Pampasan Tumpahan Minyak di Indonesia, dari 14 hingga 16 Disember 2004.

In line with efforts to enhance the efficiency of Oil Spill Response, scheduled and comprehensive training and exercises were conducted. In 2004, a number of exercises was held to test the response and equipment mobilisation capabilities in combating oil spills under the NOSCP (Table 5.17).

In 2004, the State level Oil Spill and Beach Clean-up Plans of the States of Kedah, Penang, Perak and Selangor were published (Figure 5.9).

Straits of Malacca and Singapore Revolving Fund Committee (RFC)

On 11 February 1981, a Memorandum of Understanding (MoU) was signed between the Government of Malaysia, Indonesia, Singapore and the Japanese Malacca Straits Council, for the establishment of a Revolving Fund to combat oil spills from vessels plying the Straits of Malacca and Singapore.

Malaysia has been entrusted with managing the Revolving Fund for a duration of five years from 1 April 2001 to 31 March 2006. On 1 July 2004, the 25th Revolving Fund Management Committee Meeting was held in Kuala Lumpur and chaired by the Director General of Environment. The RFC Technical Committee Meeting from 4 – 5 August 2004 at Kuala Lumpur was chaired by the Deputy Director General of Environment (Operations). Both meetings were attended by officials from Indonesia, Singapore and representatives from the Malacca Straits Council (MSC).

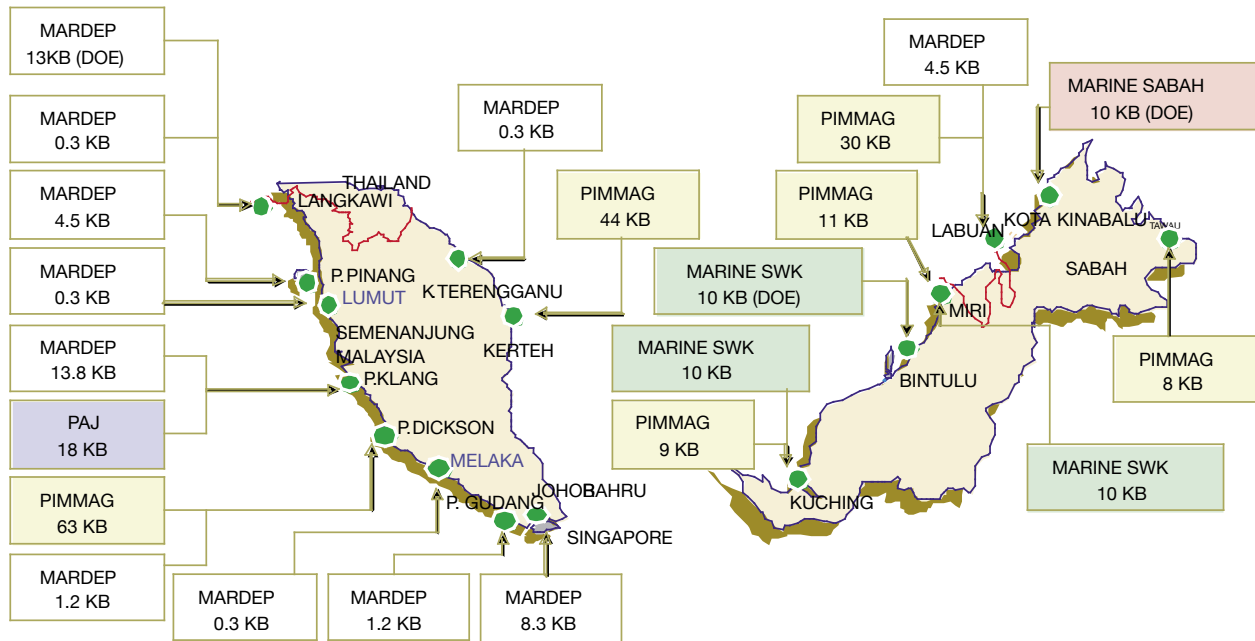
Among the activities carried out by the RFC in 2004 were:

- i. International Chemical and Oil Pollution Conference and Exhibition at the Shangri-La Hotel, Singapore from 22 – 24 March 2004.
- ii. Oil Pollution Claims and Compensation Procedure Workshop held in Indonesia, from the 14 – 16 December 2004.



Jadual 5.17 JAS: Laporan Tumpahan Minyak, 2004
Table 5.17 DOE: Oil Spills Report, 2004

Bil./No.	Tarikh/ Date	Lokasi Latihan Diadakan/Excercise Location
1.	19 – 21 Januari 2004 19th – 21st January 2004	Pulau Langkawi, Kedah Langkawi Island, Kedah
2.	23 & 24 Jun 2004 23rd & 24th June 2004	Kota Kinabalu, Sabah Kota Kinabalu, Sabah
3.	17 & 18 Ogos 2004 17th & 18th August 2004	Bintulu, Sarawak Bintulu, Sarawak



Pantai Barat Semenanjung: 122.7 KB
Pantai Timur Semenanjung: 44.3 KB
Sabah & Sarawak: 102.5 KB

KB KILO BARREL
PAJ PETROLEUM ASSOCIATION OF JAPAN
PIMMAG PETROLEUM INDUSTRY OF MALAYSIA MUTUAL AID GROUP
MARDEP MARINE DEPARTMENT
MAKLUMAT TERKINI SEHINGGA : JANUARI 2004

Rajah 5.9 JAS: Lokasi serta keupayaan peralatan kawalan tumpahan minyak di Malaysia
Figure 5.9 DOE : Location and Capability of Oil Spill Response Equipment in Malaysia





Gambarfoto 5.12 JAS: Mesyuarat Jawatankuasa Pengurusan RFC pada 1 Julai 2004, Hotel Corus, Kuala Lumpur
Photo 5.12 DOE: RFC Management Committee Meeting in Kuala Lumpur



Gambarfoto 5.13 JAS: Mesyuarat Jawatankuasa Teknikal RFC pada 4 & 5 Ogos 2004, Mines Beach Resort, Kuala Lumpur
Photo 5.13 DOE: RFC Technical Committee Meeting in Kuala Lumpur



Gambarfoto 5.14 : Stokpile Peralatan Jabatan Alam Sekitar di Pulau Langkawi, Kedah
Photo 5.14 DOE's Equipment Stockpile in Langkawi Island, Kedah



Pemantauan Kualiti Air Tanah

Groundwater Monitoring

Pada tahun 2004, sebanyak 274 sampel daripada 122 buah telaga pemantauan kualiti air tanah di seluruh Malaysia telah dianalisis. Sampel-sampel yang dianalisa ini adalah diperolehi dari telaga yang terletak di kawasan-kawasan mengikut kategori guna tanah : pertanian, perindustrian, padang golf, tapak pelupusan sampah, tapak penstoran radioaktif, pelupusan tapak J.E, kawasan bekalan air, bekas tapak perlombongan, perbandaran dan luar bandar di seluruh Malaysia (Jadual 5.18).

Pengukuran parameter-parameter fizikal kualiti air tanah dibuat secara in-situ manakala parameter kimia dan biologi dianalisis di makmal. Parameter in-situ yang diukur adalah suhu, pH, konduktiviti, turbiditi, saliniti (kemasinan) dan oksigen terlarut. Parameter yang dianalisis di makmal pula ialah bahan kimia organik meruap (VOC), hidrokarbon, racun perosak, logam berat, anion, bakteria, sebatian berfenol, radioaktif, jumlah keliatan dan jumlah pepejal terlarut.

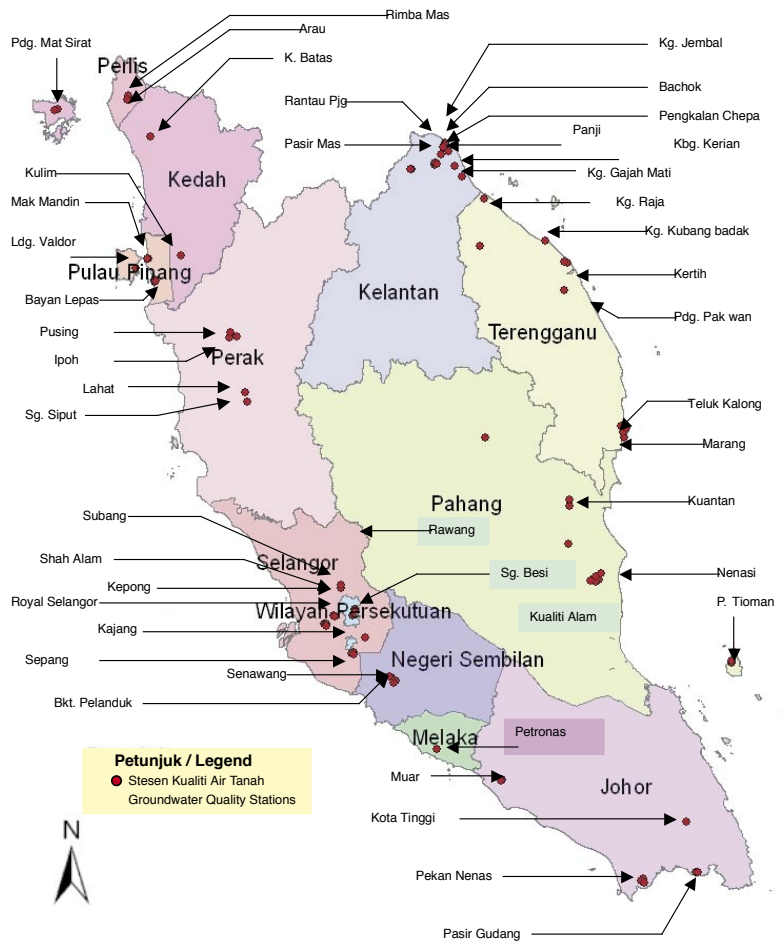
In 2004, 276 groundwater samples were drawn on a quarterly basis from 122 monitoring wells in Malaysia for analysis. The wells had been constructed in areas categorized according to landuse: agriculture, industrial, golf course, solid waste landfill, radioactive storage, animal burial, municipal water supply, ex-mining (gold mine) and urban/suburban areas (Table 5.18).

Samples for *in-situ* measurement and samples for laboratory analysis were collected at each station. *In-situ* parameters were temperature, pH, conductivity, salinity, dissolved oxygen and turbidity. For laboratory analysis, the parameters were total volatile organic compounds (VOC), pesticides, heavy metals, anions, bacteria, phenolic compounds, radioactivity, total hardness and total dissolved solids.

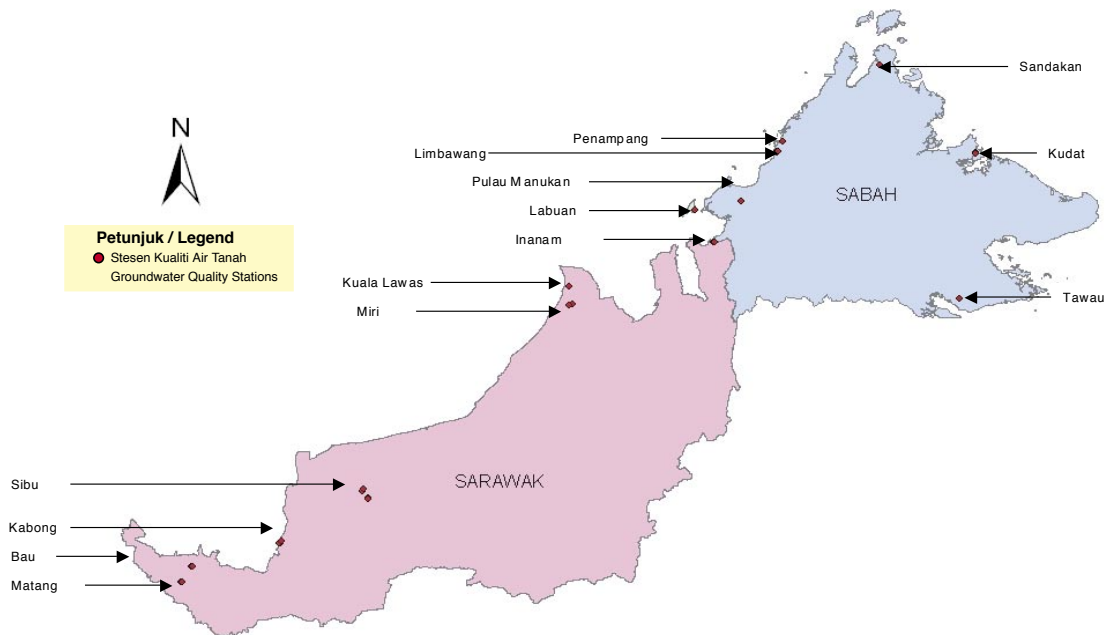
Jadual 5.18 JAS: Taburan Telaga-telaga Pemantauan Air Bawah Tanah, 2004
Table 5.18 DOE : Distribution of Groundwater Monitoring Wells, 2004

Kategori/ Category	Bilangan Telaga/ Number of Wells
Kawasan Pertanian/ Agricultural Areas	12
Bandar / Urban Suburban Areas	12
Tapak Perindustrian/ Industrial Sites	18
Tapak Pelupusan Sampah/ Landfills	27
Padang Golf/ Golf Courses	7
Tapak Radioaktif/ Radioactive Sites	1
Luarbandar / Rural Areas	5
Bekas Lombong/ Ex-Mining	3
Bekalan Air Tempatan/ Municipal Water Supply	11
Tapak Pelupusan Bangkai Haiwan/ Animal Burial	16
Kolam Akuakultur/ Aquaculture Farms	6
Peranginan/ Resorts	1
Kolam Air Masin/ Saltwater	3
Jumlah/ Total	122





Peta 5.4 : Lokasi Stesen Pemantauan Kualiti Air Tanah, Semenanjung Malaysia, 2004
 Map 5.4 : Location of Groundwater Quality Monitoring Stations, Peninsular Malaysia, 2004



Peta 5.5 : Lokasi Stesen Pemantauan Kualiti Air Tanah, Sabah dan Sarawak, 2004
 Map 5.5 : Location of Groundwater Quality Monitoring Stations, Sabah and Sarawak, 2004





Gambarfoto 5.15 JAS: Stesen Pemantauan Kualiti Air Tanah
Photo 5.15 DOE : Groundwater Quality Monitoring Station



Gambarfoto 5.16 JAS: Pelepasan Effluen Industri
Photo 5.16 DOE: Industrial Effluent Discharge

Pengurusan Buangan Terjadual

Scheduled Wastes Management

Kebenaran Bertulis dan Lesen Premis yang Ditetapkan

Empat Kebenaran Bertulis telah diluluskan oleh Ketua Pengarah untuk pembinaan premis yang ditetapkan bagi mengolah dan melupus buangan terjadual. Kebenaran Bertulis berkenaan telah diberi kepada tiga (3) kemudahan pemerolehan kembali dan satu (1) Penstoran luar tapak dan pengangkutan. Sejumlah 236 lesen diluluskan kepada kemudahan baru dan sedia ada untuk pemerolehan kembali, penstoran luar tapak, penunu, pengolahan atas tanah, tapak pelupusan selamat dan pelupusan buangan ke atas tanah.

Import dan Eksport Buangan Terjadual

Pada tahun 2004, sebanyak 10 permohonan telah diberi Kebenaran Bertulis untuk mengimport 354,390 tan metrik buangan untuk tujuan penggunaan sebagai bahan mentah industri (Jadual 5.19). Disamping itu, sejumlah 3,354 tan metrik buangan terjadual telah dieksport untuk tujuan pemerolehan kembali (Jadual 5.20). Buangan yang dieksport kebanyakannya terdiri daripada mangkin terpakai industri dan enapcemar logam berat daripada 36 pengeluar buangan untuk pemerolehan kembali logam di luar negara. (Jadual 5.21)

Written Permission and Licences for Prescribed Premises

In 2004, four Written Permissions were granted by the Director General for the construction of prescribed premises for the treatment and disposal of scheduled wastes: three off-site recovery plants and one for off-site storage and transport. A total of 236 licences were issued for both existing and new facilities for off-site recovery, off-site storage, incinerators, land treatment, off-site treatment, secured landfills and land disposal of wastes.

Import and Export of Scheduled Wastes

In 2004, 10 Written Approvals were issued for the import of 354,390 tonnes of wastes for use as raw materials in industrial processes (Table 5.19) and 3,354 tonnes of scheduled wastes were exported for recovery (Table 5.20). Exported wastes were derived from 36 waste generators and mainly comprised spent industrial catalysts and metal hydroxide sludges destined for metal recovery in foreign countries (Table 5.21).

Jadual 5.19 JAS: Kuantiti Jenis Buangan Terjadual yang Diimport (tan) 2000-2004

Table 5.19 DOE : Quantity & Types of Scheduled Wastes Imported (tonnes) 2000-2004

Jenis Buangan Type of Waste	Negara/Country	Tahun / Year				
		2000	2001	2002	2003	2004
Sangga Kuprum Copper Slag	Singapura Singapore	27,254	36,611	33,945	52,283	58,723
Sangga Peleburan G.B. Furnace Slag	Singapura Singapore	-	90	170	-	70
	Jepun/ Japan China/ China	-	16,054	15,000	234,644	293,614
		93,673	15,622	14,770	17,363	-
Mangkin Terpakai Spent Catalysts	Singapura Singapore	4,948	1,565	6,878	1,108	1,108
Buangan Plastik Plastic Waste	Holland Holland	-	-	-	-	875
Jumlah (tan) / Total (tonnes)		125,875	69,942	70,763	305,398	354,390



Jadual 5.20 JAS : Kuantiti & Jenis Buangan Terjadual Yang Dieksport (tan), 2000 – 2004
 Table 5.20 DOE : Quantity & Types of Scheduled Wastes Exported (tonnes), 2000 – 2004

Jenis Buangan Type of Waste	2000	2001	Tahun / Year 2002	2003	2004
Enapcemar Hidroksida Logam Metal Hydroxide Sludge	1,678	1,795	1,537	212	2,494
Mangkin Terpakai Spent Catalysts	2,905	816	1,365	693	722
Kuprum Oksida Copper Oxide	-	-	142	1,209	-
Bahan Blasting Used Blasting Material	36	19	-	-	25
Kadmium dan Nikel Oksida Cadmium Nickel Oxide	108	-	67	30	-
Sanga Aluminium Aluminium Dross	10	-	-	-	-
Nikel-Kadmium Bateri Nickel Cadmium Battery	-	-	-	217	103
Kutlet Kaca Glass Cutlet	141	45	-	-	-
Bekas-bekas Terpakai Mengandungi Bahan Kimia Used Drums Containing Chemicals	-	-	-	-	10
Jumlah (tan) Total (tonnes)	4,878	2,675	3,110	2,361	3,354

Jadual 5.21 JAS : Kuantiti Buangan Terjadual Yang Dieksport Berdasarkan Destinasi (tan), 2000 - 2004
 Table 5.21 DOE : Quantity of Scheduled Wastes Exported by Destination (tonnes), 2000 - 2004

Negara Pengimport Importing Country	2000	2001	Tahun / Year 2002	2003	2004
Amerika / America	753	1,295	533	60	25
Australia / Australia	69	-	315	209	-
Filipina / Philippines	-	532	-	-	1,000
Finland / Finland	-	-	100	23	190
Belgium / Belgium	-	-	-	140	51
Kanada / Canada	-	-	-	-	80
Holland / Holland	1,235	487	569	323	295
Itali / Italy	-	107	44	28	-
Jepun / Japan	1,530	68	1,035	1,006	1,019
Jerman / Germany	470	159	128	349	476
Korea Selatan / South Korea	-	-	-	118	-
Perancis / France	108	-	67	98	189
Singapura / Singapore	500	-	169	-	23
Sweden / Sweden	203	27	149	7	6
Switzerland / Switzerland	10	-	-	-	-
Jumlah (tan) Total (tonnes)	4,878	2,675	3,110	2,361	3,354





Gambarfoto 5.17 JAS: Penguatkuasaan Bersama Pihak Berkuasa Tempatan
Photo 5.17 DOE : Joint Enforcement with Local Authorities



Gambarfoto 5.18 JAS: Persampelan Rasmi Buangan Toksid dan Berbahaya
Photo 5.18 DOE: Formal Sampling of Toxic and Hazardous Wastes



Gambarfoto 5.19 JAS: Pelupusan Haram Buangan Terjadual
Photo 5.19 DOE : Illegals Dumping of Scheduled Wastes



Gambarfoto 5.20 JAS: Persampelan Rasmi Buangan Toksid dan Berbahaya
Photo 5.20 DOE: Formal Sampling of Toxic and Hazardous Wastes



Penguatkuasaan Terhadap Aktiviti Pembakaran Terbuka

Enforcement against Open Burning Activities

Bagi mengelakkan berlaku kejadian jerebu yang diakibatkan oleh sumber tempatan, pada tahun 2004, semua pejabat JAS negeri telah meneruskan operasi rondaan mencegah pembakaran terbuka di kawasan-kawasan yang dikenalpasti sebagai kawasan yang cenderung berlaku kebakaran. Sepanjang tahun 2004, sejumlah 2255 kes pembakaran terbuka yang dikesan dan disiasat termasuk hotspot yang dikesan melalui satelit (Rajah 5.10 & Rajah 5.11).

Kejadian pembakaran terbuka yang sering berlaku adalah di kawasan ladang (373), belukar (370) dan tapak pembinaan (341), terutamanya semasa cuaca panas dan kering iaitu pada bulan-bulan Februari (299), April (291), Jun (264) dan Ogos (299). Daripada 2255 kes pembakaran terbuka tersebut 476 kes telah dikompaun sebanyak RM 746,600.00 dan 41 kes telah dikenakan tindakan mahkamah dan daripada 41 kes tersebut, 16 kes telah dijatuhkan hukuman dan didenda sebanyak RM 206,000.00.

Pengawasan Melalui Udara

Program Pengawasan Udara diteruskan pelaksanaannya pada tahun 2004 untuk mengawasi dan mengesan dari udara kejadian pencemaran alam sekitar seperti aktiviti pembakaran terbuka, pelepasan dari industri, pencemaran pantai dan laut dan aktiviti pembukaan tanah dan pembangunan kawasan tanah tinggi dan pulau-pulau. Maklumat mengenai kejadian pencemaran alam sekitar yang dikesan melalui pengawasan dari udara ini akan disalurkan ke Bilik Operasi JAS untuk diambil tindakan penguatkuasaan susulan oleh pegawai penguatkuasa di lapangan.

Pada tahun 2004, sebanyak RM 2,418,750.00 telah diperuntukkan bagi pelaksanaan program tersebut di mana JAS telah memperolehi perkhidmatan pesawat udara dari Unit Udara Polis dan 2 syarikat swasta meliputi kawasan-kawasan di Semenanjung Malaysia, Sabah dan Sarawak.

Sebanyak 460 bilangan penerbangan yang melibatkan 1515 jumlah jam penerbangan telah dibuat sepanjang tahun 2004. Sebanyak 252 kes pembakaran terbuka

To prevent haze occurrence due to local sources, all DOE State Offices regularly conducted daily ground surveillance of fire prone areas in 2004. Throughout 2004, a total of 2255 open burning cases were detected and investigated, including hotspots detected via satellites (Figure 5.10 & Figure 5.11).

Frequent open burning incidents were found to occur in plantations (373), bushes (370) and construction areas (341) especially during the dry period in the months of February (299), April (291), June (264), and August (299). Of the 2255 open burning cases detected, 476 cases were given compounds amounting to RM 746,600.00 and 41 cases were prosecuted in court resulting in 16 cases being fined a total of RM 206,000.00.

Airborne Surveillance

The National Airborne Surveillance Programme continued in 2004 to monitor and detect environmental pollution emanating from open burning activities, emissions from industries, coastal and marine activities, land clearing activities at the highlands and island development. Information on environmental pollution activities detected from the air were then transmitted to the DOE Operations Room for follow-up enforcement action by ground surveillance staff.

For 2004, an allocation of RM 2,418,750 was provided for aircraft services from the Royal Malaysian Police Air Wing and two other private aviation companies in Sabah and Sarawak.

In 2004, 460 flights with a total of 1515 flight hours were undertaken under the Airborne Surveillance Programme. Of the 252 cases of open burning activities detected during the surveillance, 14 cases were compounded and 1 case was prosecuted in



telah dikesan melalui program ini di mana 14 kes telah dikenakan kompaun dan 1 kes dikenakan tindakan mahkamah. Sebanyak 34 kes masih dalam siasatan lanjut, manakala baki kes yang dikesan iaitu sebanyak 203 kes merupakan aktiviti yang diisytiharkan.

Status Pematuhan Terhadap Peraturan-Peraturan Kualiti Alam Sekeliling (Udara Bersih) 1978

Sepanjang tahun 2004, sebanyak 4974 lawatan penguatkuasaan telah dijalankan ke atas 3900 premis-premis perindustrian (industri pembuatan dan premis yang ditetapkan) yang tertakluk di bawah Peraturan - Peraturan Kualiti Alam Sekeliling (Udara Bersih) 1978 dan didapati jumlah keseluruhan tahap pematuhan adalah sebanyak 87%. Daripada jumlah ini, didapati industri jentera dan penapisan petroleum mencapai pematuhan sebanyak 100%, diikuti dengan industri kuari (99%) dan kilang getah asli (93%). Kilang penapisan minyak masak, penyaduran logam dan kilang berasaskan kayu merekodkan tahap pematuhan yang rendah (70%; 71%; 74%) (Rajah 5.12). Secara amnya kebanyakan industri gagal mematuhi had pelepasan asap hitam dan pelepasan habuk yang ditetapkan di bawah Peraturan ini berikutan daripada penggunaan dan penyelenggaraan alat kawalan pencemaran yang tidak cekap.



Gambarfoto 5.21 JAS: Kesan Kebakaran Hutan
Photo 5.21 DOE : Forest Fire Impact

court, 34 cases under investigation and 203 cases were declared activities under (Declared Activities) (Open Burning) Order 2003.

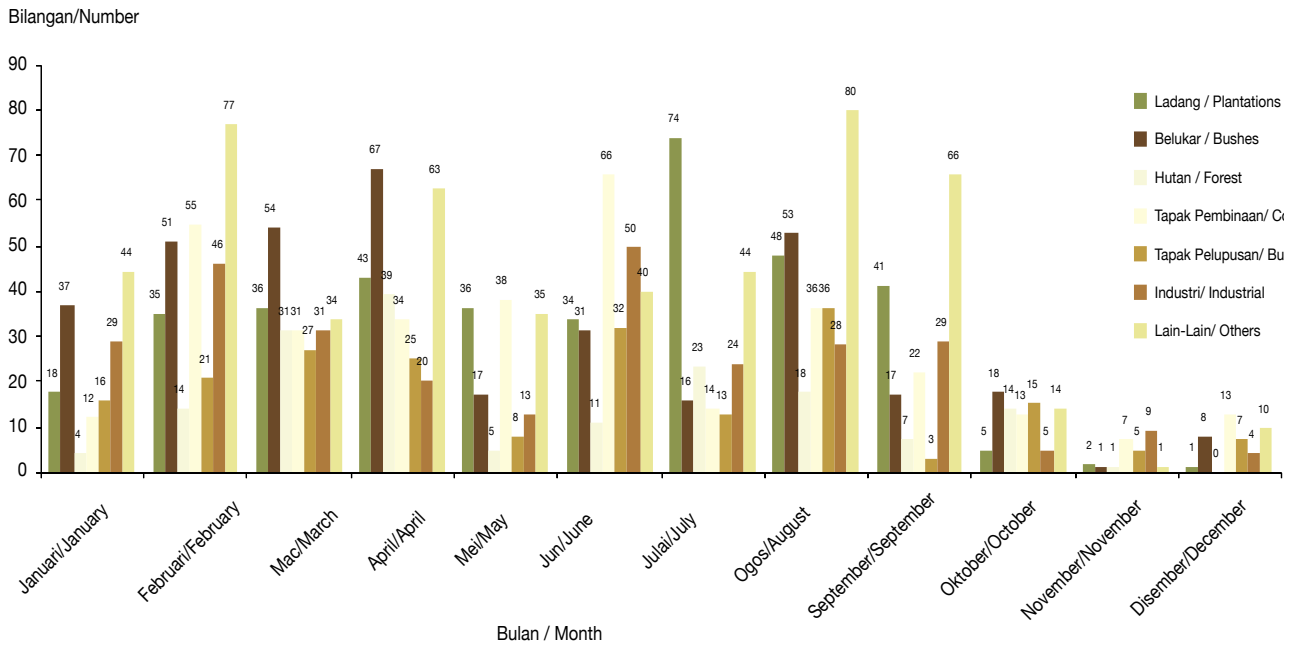
Status of Compliance with the Environmental Quality (Clean Air) Regulations 1978

Throughout 2004, a total of 4974 enforcement visits was conducted on 3900 premises (both manufacturing industries and prescribed premises) that were subjected to the Environmental Quality (Clean Air) Regulations 1978. Overall compliance was found to be 87%. Analysis of compliance by industry showed that both machinery and petroleum refinery sectors achieved 100% compliance, followed by quarries and raw natural rubber industry (93%). Edible oil refineries, metal finishing and electroplating and wood based industries recorded low compliance levels (70%; 71%; 74%) respectively (Figure 5.12). Generally, most industries failed to comply with the dark smoke and dust permissible limits under these regulations due to inefficient pollution control equipment.

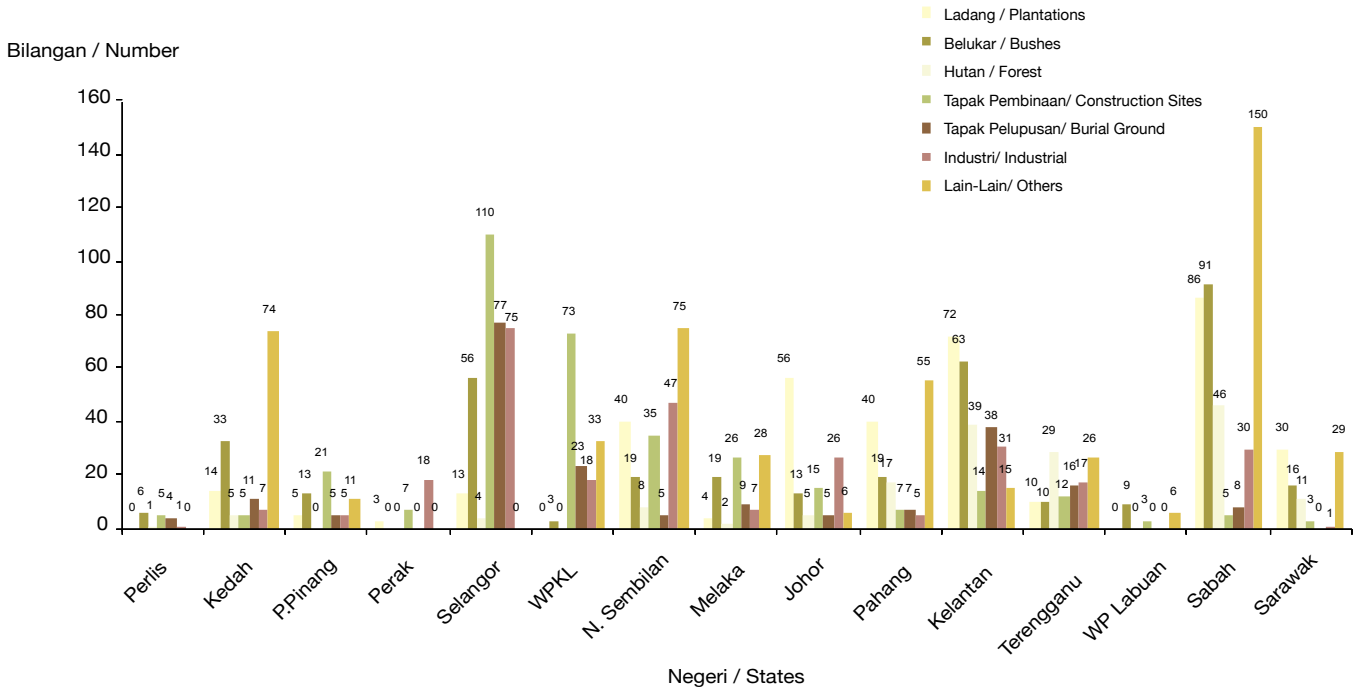


Gambarfoto 5.22 JAS: Pembakaran Terbuka Di Kawasan Pertanian
Photo 5.22 DOE: Open Burning at Agricultural Site





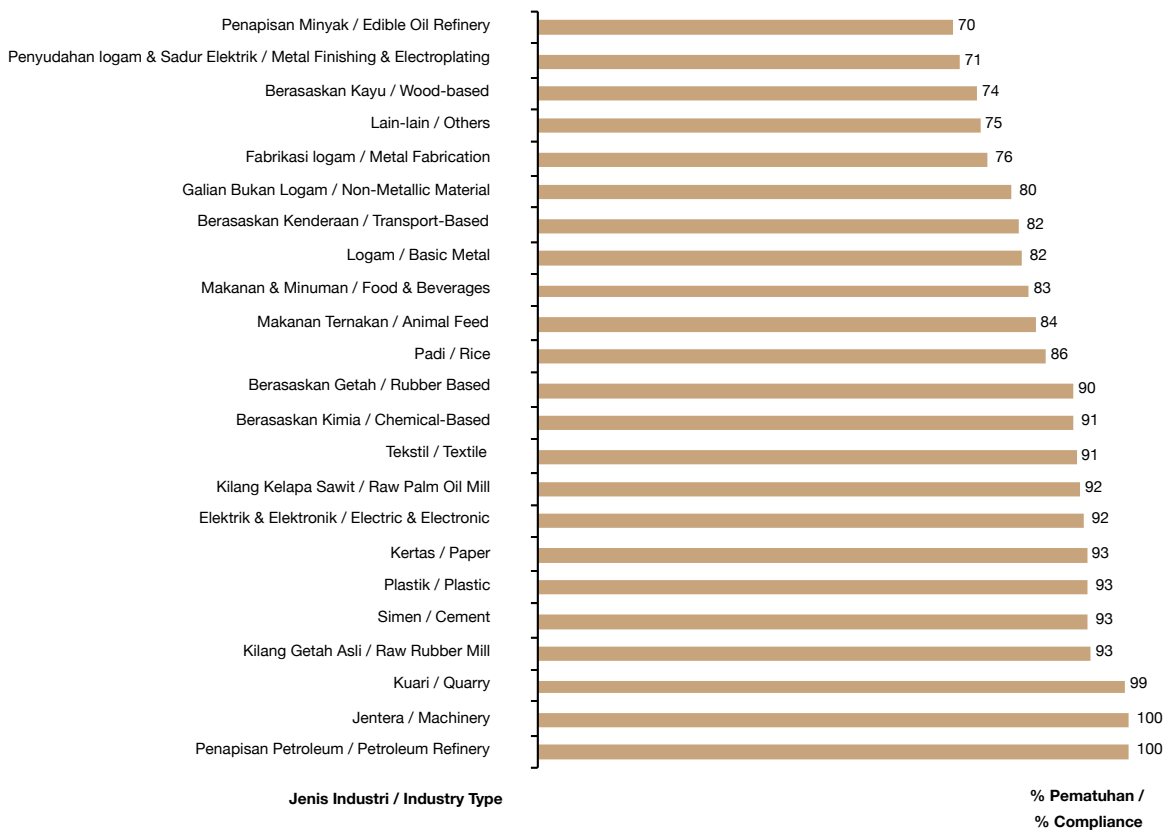
Rajah 5.10 JAS: Bilangan Pembakaran Terbuka Mengikut Bulan, 2004/
Figure 5.10 DOE: Number of Open Burning Cases by Month, 2004



Rajah 5.11 JAS: Bilangan Pembakaran Terbuka Mengikut Negeri, 2004
Figure 5.11 DOE: Number of Open Burning Cases by State, 2004



Status Pematuhan Industri Pembuatan Terhadap PUB 1978 Bagi Tahun 2004



Rajah 5.12 JAS: Status Pematuhan* Premis Perindustrian terhadap PUB,1978; 2004
 Figure 5.12 DOE : Compliance* to Environmental Quality (Clean Air) Regulations, 1978; 2004

* Berdasarkan bilangan lawatan penguatkuasaan/ based on total number of enforcement visits



Punca-punca Bergerak (Kenderaan Bermotor)

Mobile Sources (Motor Vehicles)

Bilangan kenderaan bermotor yang berdaftar di Malaysia sehingga akhir tahun 2004 adalah sebanyak 13,764,837 penambahan sebanyak 945,589 buah kenderaan (6.87 %) berbanding tahun 2003. Pecahan keseluruhan kenderaan bermotor yang berdaftar mengikut jenis kenderaan adalah seperti di Rajah 5.13.

Dari sejumlah 945,589 buah kenderaan baru yang didaftarkan dalam tahun 2004, kategori motosikal dan motokar adalah yang paling tinggi bilangannya dengan masing-masing sebanyak 407,408 unit (43.09 %) dan 482,978 unit (51.08 %), manakala baki selebihnya sebanyak 55,203 unit (5.84 %) adalah dari lain-lain jenis kenderaan termasuk lori, bas, van dan sebagainya.

Taburan bilangan kenderaan bermotor di Malaysia mengikut negeri adalah seperti di Rajah 5.14. Wilayah Persekutuan Kuala Lumpur masih mendahului negeri-negeri lain dengan mempunyai bilangan tertinggi bagi kenderaan yang berdaftar di negara ini iaitu sebanyak 2.9 juta (21.55 %); diikuti oleh negeri Johor, Selangor, Pulau Pinang dan Perak.

Kawalan Pelepasan Asap dan Gas dari Kenderaan Bermotor

Pelepasan asap serta gas-gas pencemar seperti karbon monoksida (CO), hidrokarbon (HC), oksida-oksida nitrogen (NO_x) serta partikulat (PM) yang dilepaskan melalui ekzos kenderaan bermotor adalah dikawal dibawah Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan Daripada Enjin Diesel) 1996 dan Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan Daripada Enjin Petrol) 1996.

Kawalan Pelepasan Asap Hitam Dari Kenderaan Diesel

Kawalan pelepasan asap hitam berlebihan dari ekzos kenderaan diesel dilaksanakan melalui Program AWASI (Area Watch And Sanction Inspection). Melalui Program AWASI ini, skuad peronda JAS akan menjalankan rondaan, pemerhatian pelepasan asap hitam dari ekzos kenderaan, memberhentikan kenderaan untuk menjalankan ujian asap ke atas kenderaan-kenderaan diesel yang diperhatikan mengeluarkan asap hitam berlebihan. Tindakan kompaun akan diambil secara serta merta kepada

By the end of 2004, there were about 13,764,837 registered motor vehicles in Malaysia, an increase of 945,589 (6.87 %) compared to 2003. Breakdown of total registered vehicles by vehicle type is given in Figure 5.13.

Of the 945,589 new registered vehicles, motorcycles and motocars made up the highest number with 407,408 (43.09 %) and 482,978 (51.08 %) respectively, while the remaining 55,203 (5.84 %) fell into the other vehicle type categories such as lorry, bus and van.

The distribution of registered vehicles at the States is given in Figure 5.14. The Federal Territory of Kuala Lumpur recorded the highest number of vehicles registered with 2.9 million (21.55 %) followed by Johor, Selangor, Pulau Pinang and Perak.

Control of Smoke and Gaseous Emissions from Motor Vehicles

Emissions of smoke and gaseous pollutants such as carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NO_x) and particulate matters (PM) from motor vehicle exhausts are controlled under the Environmental Quality (Control of Emission from Diesel Engines) Regulations 1996 and the Environmental Quality (Control of Emission from Petrol Engines) Regulations 1996.

Control of Black Smoke Emissions From Diesel Vehicles

Excessive black smoke emissions from diesel vehicle exhausts is implemented under the AWASI (Area Watch and Sanction Inspection) Programme involving patrols by the DOE's mobile squad. Observation and testing of diesel vehicles belching excessive smoke is carried out. On-the-spot compounds are issued to drivers and owners if their vehicles fail to comply with the stipulated smoke limit of 50 HSU, and a prohibition order



pemandu dan tuannya kenderaan yang didapati gagal mematuhi had pelepasan asap 50 Unit Asap Hartridge (HSU); kompaun serta perintah larangan menggunakan kenderaan di jalanraya akan dikeluarkan sekiranya kenderaan didapati melepaskan asap hitam melebihi 70 HSU.

Sepanjang tahun 2004, sebanyak 1,361 operasi penguatkuasaan AWASI telah dilaksanakan di seluruh negara. Dalam operasi tersebut, sebanyak 98,044 buah kenderaan diesel telah diperiksa, dari jumlah tersebut sebanyak 4,578 (4.7%) buah kenderaan telah disaman kerana gagal mematuhi had 50 HSU, manakala 923 (0.9%) daripadanya telah dikenakan perintah larangan beroperasi sehingga dibaikpulih dan lulus ujian asap semula oleh JAS (Rajah 5.15, 5.16, 5.17). Tindakan mahkamah telah juga diambil ke atas 96 pemandu serta tuan-tuan punya kenderaan kerana gagal menjelaskan kompaun yang telah dikenakan.

Program penguatkuasaan dan kesedaran untuk kenderaan juga dilaksanakan di sepanjang lebuhraya dan jalan utama di seluruh negara. Upacara perasmian program Kempen Kawalan Pelepasan Asap Hitam Kenderaan Diesel Di Sepanjang Lebuhraya dan Jalan Utama di Seluruh Negara bagi peringkat kebangsaan telah disempurnakan oleh Y.B. Sazmi Miah, Setiausaha Parlimen, Kementerian Sumber Asli dan Alam Sekitar Malaysia pada 14 Jun 2004 di Plaza Tol Sungai Besi, Kuala Lumpur. Sebanyak dua (2) kempen telah dilaksanakan secara serentak oleh semua pejabat-pejabat JAS negeri. Dari kempen tersebut sebanyak 13,655 kenderaan diesel telah diperiksa, di mana 960 (7.0%) telah disaman dan 311 (2.3%) telah dikenakan perintah larangan menggunakan kenderaan.

Kawalan Pelepasan Gas CO dan HC Dari Kenderaan Petrol

Sepanjang tahun 2004, sejumlah 2,815 buah kenderaan petrol telah diuji dengan menggunakan metergas CO-HC Analyzer melalui kaedah 'ujian idling' di jalan raya. Dari sejumlah ini, 2,277 (80.9%) kenderaan telah mematuhi had CO dan HC; 538 (18.1%) kenderaan telah dikenakan kompaun kerana gagal mematuhi had CO dan HC.

Ujian Kelulusan Jenis (Kenderaan Petrol)

Di bawah Peraturan-peraturan Alam Sekitar (Kawalan Pelepasan Daripada Enjin Petrol) 1996, kenderaan baru dikehendaki mematuhi standard pelepasan yang lebih berat selepas 1 Januari 2000. Jisim karbon monoksida yang dibenarkan hendaklah tidak melebihi 2.2 g/km, manakala kombinasi hidrokarbon dan nitrogen

(prohibiting vehicle usage) is issued if the smoke limit exceeds 70 HSU.

In 2004, a total of 1,361 AWASI enforcement operations were conducted throughout the country. Of the 98,044 diesel vehicles that were visually inspected, 4,578 (4.7%) were compounded for failing to comply with the 50 HSU smoke limit, of which 923 (0.9%) vehicles were issued with prohibition order. Vehicles issued with prohibition order were required to send in their vehicles within a week for a smoke retest by DOE (Figure 5.15, 5.16, 5.17). Court action was also taken against 96 drivers and vehicle owners for failing to settle the compounds issued.

An enforcement & enforcement programme for vehicles along highways and main roads was also conducted. The "Black Smoke Emission from Diesel Vehicles Along the Highways and Main Roads Campaign" was launched by the Honourable Sazmi Miah, Parliamentary Secretary, Ministry of Natural Resources and the Environment at the Plaza Tol Sungai Besi, Kuala Lumpur on 14 June 2004. Two such campaigns were conducted simultaneously by all DOE State Offices in 2004. As a result of these campaigns, a total of 13,655 diesel vehicles were inspected, 960 (7.0%) vehicles compounded and 311 (2.3%) issued with prohibition order.

Control of CO and HC Gas Emissions from Petrol Vehicles

Throughout 2004 were tested for emissions using the CO-HC gas analyzer by the idling test method. This test was conducted at road kerbs. Of this number, 2,277 (80.9%) vehicles were found to comply with the stipulated CO and HC limits while the remaining 538 (19.1%) vehicles were compounded.

Type Approval Test (Petrol Vehicles)

Under the Environmental Quality (Control of Emission from Petrol Engines) Regulation 1996, all new vehicles are required to comply with stringent emission standards after 1 January 2000. The Regulations stipulate that the carbon monoxide mass shall not exceed 2.2 g/km while the combination of hydrocarbons and nitrogen oxides shall not exceed



oksida hendaklah tidak melebihi 0.5 g/km. Sepanjang tahun 2004, Jabatan Alam Sekitar telah mengeluarkan sebanyak 42 Sijil Ujian Kelulusan Jenis bagi model baru kenderaan yang akan dipasarkan di Malaysia.

Pengwujudan Kemudahan Yang DiLuluskan

Bagi membolehkan orang ramai menghantar kenderaan untuk menjalani ujian pelepasan asap dan gas, JAS telah memberi pengiktirafan ujian kepada beberapa bengkel-bengkel kenderaan sebagai “Kemudahan yang Diluluskan” sebagai pusat membaiki kenderaan yang tidak mematuhi had pelepasan asap dan gas.

Sehingga akhir tahun 2004, 48 bengkel serta pusat-pusat pemeriksaan kenderaan di seluruh negara telah diberikan sijil pengiktirafan sebagai “Kemudahan Yang Diluluskan” oleh JAS. Jumlah itu termasuk dua (2) pusat untuk menguji pelepasan gas CO dan HC, 35 pusat untuk menguji pelepasan asap daripada enjin diesel dan tujuh (7) pusat atau bengkel adalah bagi tujuan menguji pelepasan asap dan gas dari kenderaan diesel dan petrol.

Kawalan Pelepasan Asap Daripada Motosikal

Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan Daripada Motosikal), 2003 mula dikuatkuasa pada 1 Januari 2004. Peraturan ini telah menggariskan piawai pelepasan seperti berikut :-

- Standard Kelulusan Jenis bagi motosikal baru : 97/24/EC
- Standard pelepasan (Idling) bagi motosikal terpakai : 4.5 % CO(Karbon Monoksida)

Pengimport motosikal adalah dikehendaki mematuhi standard baru pelepasan berkuatkuasa 1 Januari 2005 bagi model baru dan 1 Julai 2005 bagi model sediaada, manakala pembuat tempatan hendaklah mematuhi standard pelepasan baru berkuatkuasa 1 Julai 2005 bagi model baru dan 1 Julai 2006 bagi model sediaada.

Bunyi Bising Kenderaan Bermotor

Pelepasan bunyi bising daripada kenderaan bermotor dikawal di bawah Peraturan-Peraturan Kualiti Alam Sekeliling (Bunyi Bising Kenderaan Bermotor) 1987.

Operasi penguatkuasaan bagi mengawal pelepasan bunyi bising dari kenderaan bermotor telah dilaksanakan secara bersama oleh pejabat-pejabat JAS negeri dengan kerjasama Polis DiRaja Malaysia(Cawangan Trafik). Sepanjang tahun 2004, sejumlah 3,720 kenderaan motosikal telah di tahan

0.5 g/km. In 2004, the DOE issued 42 Type Approval Test Certificates for new vehicles models to be marketed in Malaysia.

Establishment of Approved Testing Facilities

To facilitate public access to workshops for smoke and gaseous emission testing, DOE accredited a number of workshops as “Approved Testing Facilities” to serve as repair centres for these non-complying vehicles.

By the end of 2004, 48 workshops and vehicle testing centers throughout the country had been registered as “Approved Testing Facilities” by DOE; of which 2 facilities were approved for testing CO and HC emissions from petrol vehicles, 35 for testing diesel vehicle emissions and 7 facilities were approved as test centres for both petrol and diesel vehicles.

Control of Emission from Motorcycles

The Environmental Quality(Control of Emission from Motorcycles) 2003 came into effect on 1 January 2004. The emissions standards adopted are:

- Type Approval Emission Standard for new motorcycles : 97/24/EC
- Idling Emission Standard for in-use motorcycles : 4.5 % CO(Carbon Monoxide)

Motorcycles importers are required to comply with the new emission standards effective 1 January 2005 for new models and 1 July 2005 for existing models, while local manufactures will have to comply with the new emission standards effective 1 July 2005 for new models and 1 July 2006 for existing models.

Noise from Motor Vehicles

The control of noise from motor vehicles is regulated under the Environmental Quality (Motor Vehicle Noise) Regulations 1987.

Enforcement campaigns were jointly conducted by the DOE and the Traffic Police. In 2004, a total of 3,720 motorcycles were stopped for noise measurement. Of this total, 461 motorcyclists were summoned for violating the stipulated noise limits.



untuk menjalani ujian pelepasan bunyi bising. Dari jumlah ini, 461 telah disaman kerana melanggar had bunyi bising yang dibenarkan. Peratus pematuhan secara keseluruhannya ialah 87.61 % (Rajah 5.18).

Ujian paras bunyi ke atas motosikal baru yang dipasang di Malaysia telah juga dilaksanakan oleh kesemua lima (5) syarikat pemasangan motosikal di negara ini. Pada tahun 2004, sejumlah 3,911 buah motosikal baru yang meliputi 35 model yang berlainan telah diuji di kilang pemasangan. Semua motosikal berkenaan telah dapat mematuhi had pelepasan bunyi bising yang telah ditetapkan di bawah Peraturan ini (Rajah 5.19).

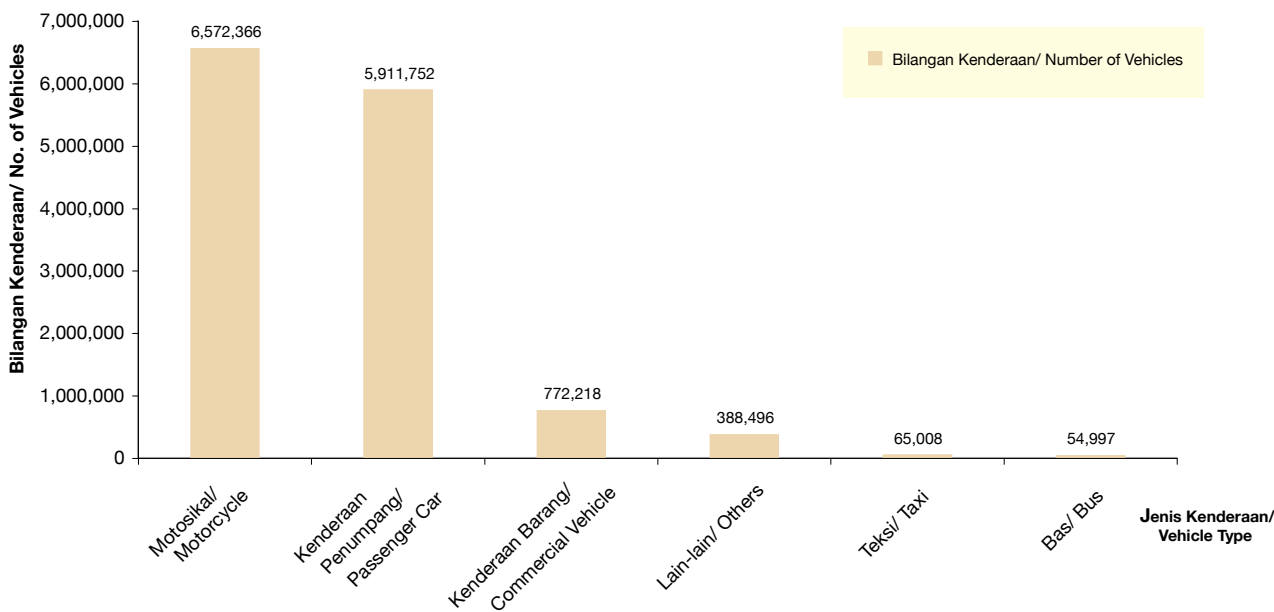
The overall level of compliance was 87.61 % (Figure 5.18).

Noise testing of new motorcycles was also conducted in all the five motorcycle assembly plants in the country. In 2004, a total of 3,911 newly assembled motorcycles from 35 different models were tested in their respective assembly plants. All new motorcycles tested were found to comply with the stipulated noise limit (Figure 5.19).

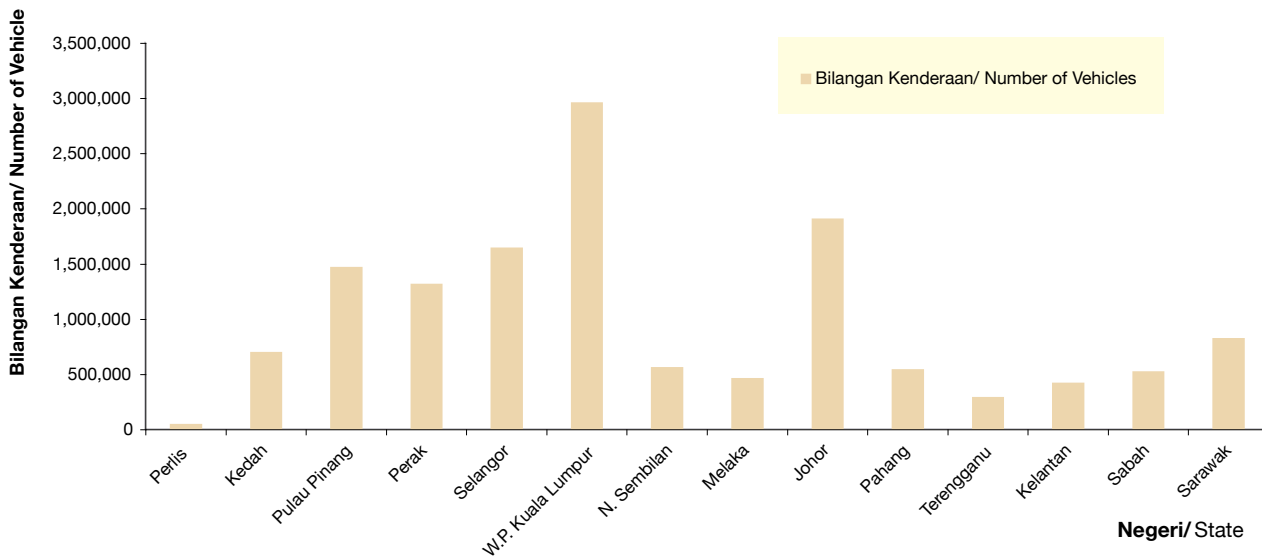


Gambarfoto 5.23 JAS: Penguatkuasaan Asap Hitam Kenderaan
Photo 5.23 DOE: Vehicular Black Smoke Enforcement



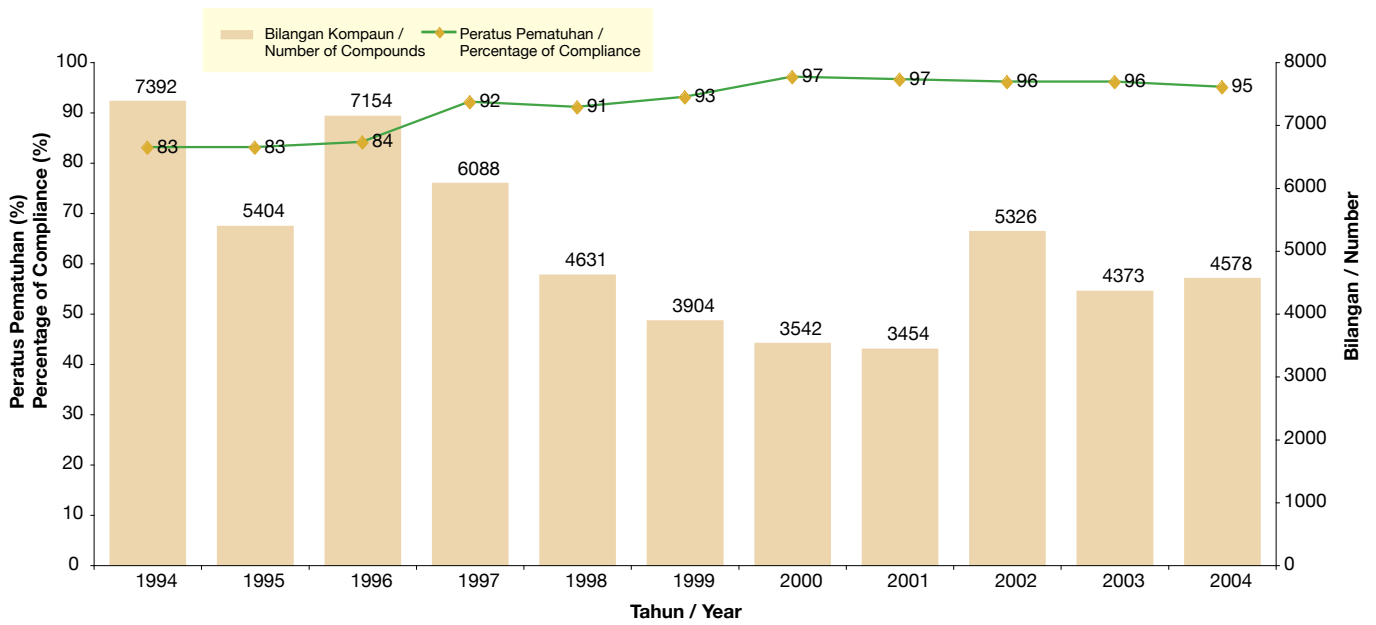


Rajah 5.13 JAS: Bilangan Kenderaan Bermotor Mengikut Jenis, 2004
 Figure 5.13 DOE : Number of Motor Vehicles by Type, 2004



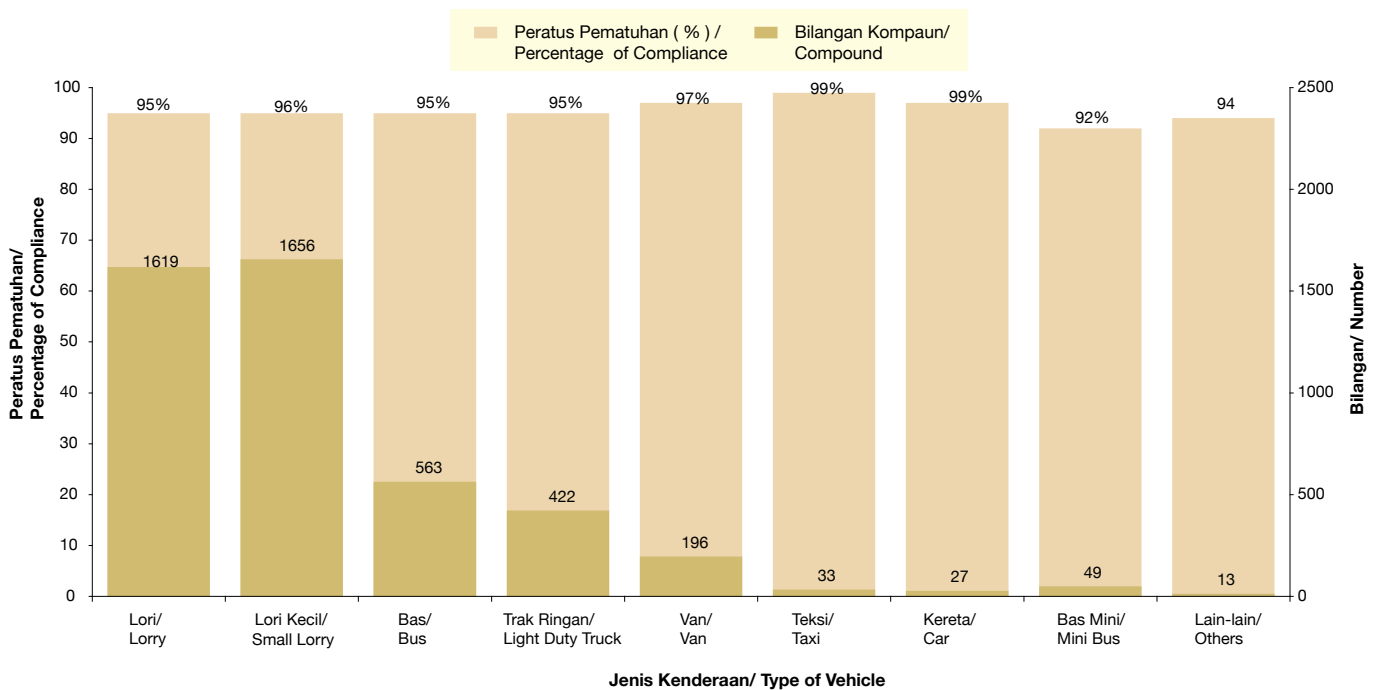
Rajah 5.14 JAS: Bilangan Kenderaan Bermotor Mengikut Negeri, 2004
 Figure 5.14 DOE: Number of Motor Vehicles by State, 2004





Rajah 5.15 JAS : Penguatkuasaan Asap Hitam, Kompaun dan Peratus Pematuhan, 1994-2004

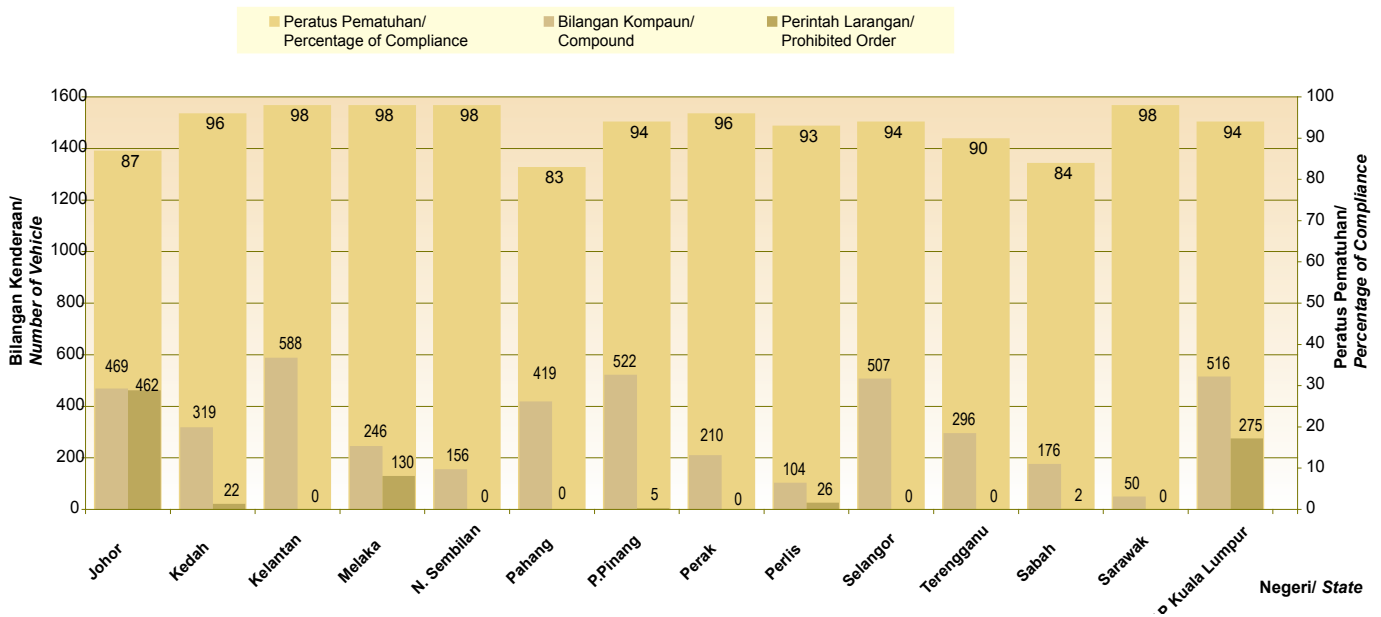
Figure 5.15 DOE: Enforcement of Vehicular Black Smoke Emission, Compounds and Percentage of Compliance, 1994-2004



Rajah 5.16 JAS: Penguatkuasaan Pelepasan Asap Hitam, Kompaun dan Peratus Pematuhan Mengikut Jenis Kenderaan 2004

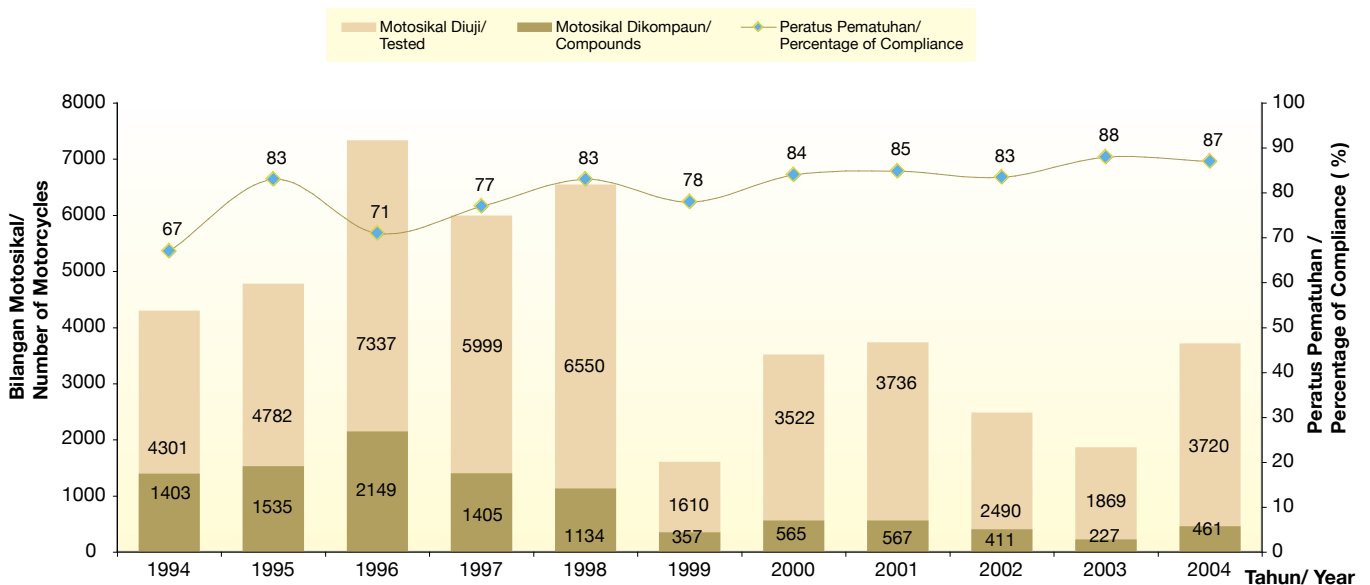
Figure 5.16 DOE : Enforcement of Vehicular Black Smoke Emission, Compounds and Percentage of Compliance by Vehicle Type, 2004





Rajah 5.17 JAS : Penguatkuasaan Pelepasan Asap Hitam Kenderaan, Bilangan Kenderaan Disaman, Perintah Larangan dan Peratus Pematuhan Mengikut Negeri, 2004

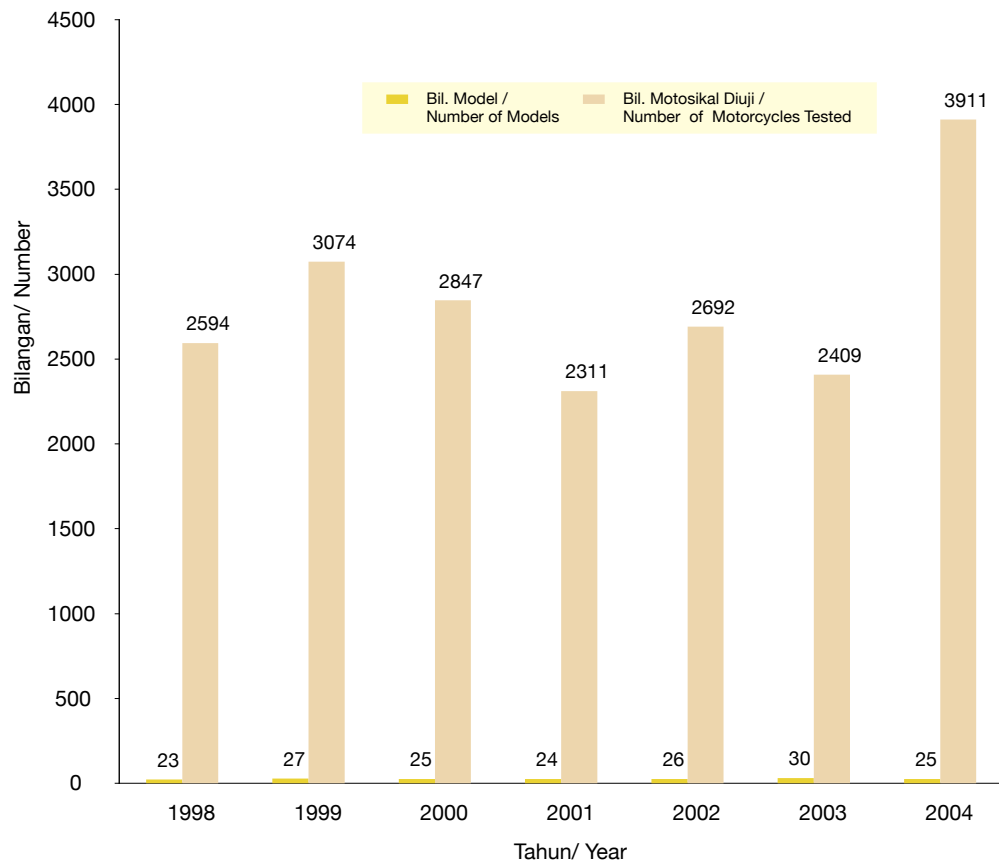
Figure 5.17 DOE: Enforcement of Vehicular Black Smoke Emission, Compounds, Prohibition Order and Percentage of Compliance by State, 2004



Rajah 5.18 JAS : Penguatkuasaan Pelepasan Bunyi Bising Motosikal Diuji, Dikompaun dan Peratus Pematuhan, 1994-2004

Figure 5.18 DOE : Enforcement of Motorcycle Noise Emission, Tested, Compounded and Percentage of Compliance, 1994-2004





Rajah 5.19 JAS: Ujian Pelepasan Bunyi Bising Motosikal oleh Syarikat Pemasangan Motosikal, 2000-2004
 Figure 5.19 DOE : Noise Testing by Motorcycle Assemblers- 2000-2004



Tindakan Undang-undang

Legal Action

Pendakwaan

Pada tahun 2004, sejumlah 208 kesalahan di bawah peraturan alam sekitar telah disabitkan oleh mahkamah ke atas premis atau syarikat yang melibatkan denda berjumlah RM 2, 364, 350.00 (Rajah 5.20, 5.21). Daripada jumlah keseluruhan tersebut, sebanyak 63 (30 %) kes mahkamah adalah melibatkan kesalahan mencemar perairan daratan melalui pelepasan effluen melebihi had yang ditetapkan dibawah Seksyen 25(1) AKAS 1974 dengan jumlah denda sebanyak RM 1, 664, 000.00. Terdapat 16 (7 %) kes mahkamah adalah melibatkan kesalahan pembakaran terbuka dengan jumlah denda sebanyak RM 206,000.00.

Kompaun

Sejumlah 5,128 kompaun telah dikeluarkan sepanjang tahun 2004 kepada premis dan syarikat untuk pelbagai kesalahan di bawah AKAS 1974. Daripada jumlah keseluruhan tersebut, sebanyak 3,692 (72 %) kompaun adalah kesalahan di bawah Peraturan Kualiti Alam sekeliling (Kawalan Pelepasan Dari Enjin Diesel) 1996, sebanyak 473 (9 %) kompaun adalah kesalahan di bawah Seksyen 29A, AKAS 1974, sebanyak 445 (9 %) kompaun adalah kesalahan di bawah Peraturan Kualiti Alam Sekeliling (Udara Bersih) 1978, sebanyak 408 (8 %) kompaun adalah kesalahan di bawah Peraturan Kualiti Alam Sekeliling (Buangan Terjadual) 1989 dan sebanyak 110 (2 %) kompaun adalah kesalahan di bawah Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan dari Enjin Petrol) 1996 (Rajah 5.22, Rajah 5.23 dan Rajah 5.24).

Maklumbalas Terhadap Pengaduan Awam

Pada tahun 2004, sejumlah 3,608 aduan pencemaran alam sekitar telah diterima oleh Jabatan Alam Sekitar (Rajah 5.25). Daripada jumlah keseluruhan aduan, sebanyak 2,812 kes (78%) aduan telah disiasat dan tindakan telah diambil di bawah peruntukan AKAS 1974 dan peraturan-peraturan yang berkaitan telah diambil oleh pejabat JAS Negeri. Sementara 796 kes aduan adalah diluar bidangkuasa JAS dan telah

Prosecution

In 2004, a total of 208 environmental offences were prosecuted in court and fined a total of RM 2, 364, 350.00 (Figures 5.20, 5.21). Of these cases, 63 (30 %) cases were involved in offences related to pollution of inland waters under Section 25(1) of the EQA 1974 and fined a total of RM1, 664, 000.00. For open burning cases, 16 (7 %) cases were prosecuted and fined a total of RM 206, 000.00.

Compounds

A total of 5,128 compounds was issued in 2004 against premises and companies for various offences under EQA 1974. Of this total, 3,692 (72 %) were offences under the Environmental Quality (Control of Emissions from Diesel Engine) Regulations 1996; 473 (9 %) were offences under Section 29A of EQA 1974; 445 (9 %) were offences under Environmental Quality (Clean Air) Regulations 1978; 408 (8 %) were offences under Environmental Quality (Schedules Wastes) Regulations 1989; and 110 (2 %) were offences under Environmental Quality (Control of Emission from Petrol Engine) Regulations 1996 (Figures 5.22, 5.23 and 5.24).

Response to Public Complaints

The Department of Environment received 3,608 environmental complaints in 2004 (Figure 5.25). Of this total 2,812 cases (78%) were dealt by the State DOE Offices; and the other 796 cases which were not within DOE's jurisdiction were referred to other relevant agencies.

In 2004, Selangor recorded the highest number of complaints received with 769 (21 %), followed by Johor 409 (11 %) and the Federal Territory of Kuala Lumpur with 381 (10%). The Federal



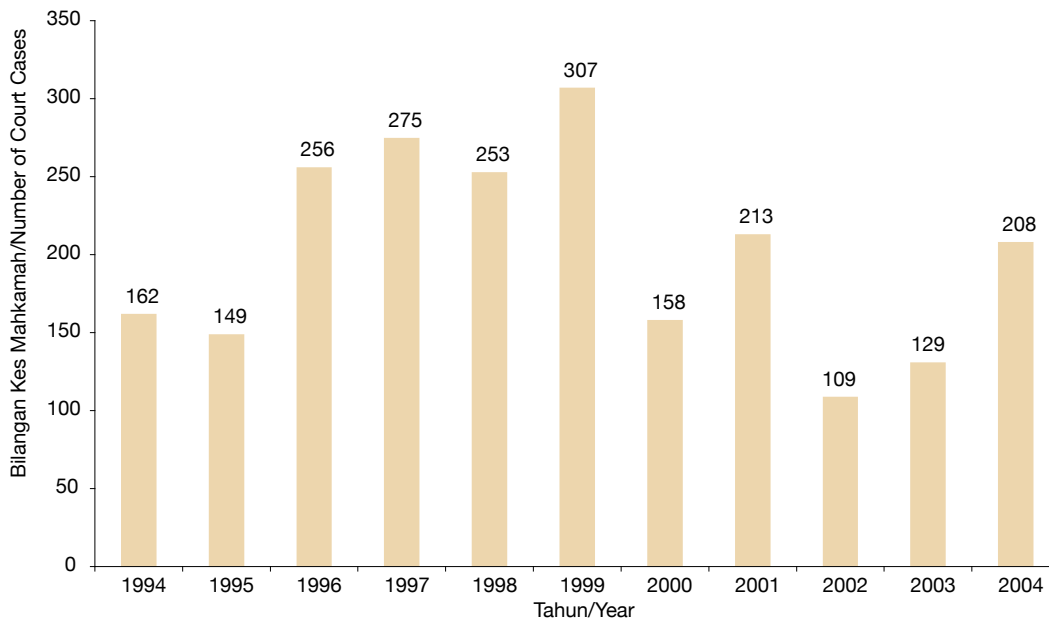
dirujuk kepada agensi lain yang berkaitan untuk diambil tindakan.

Pada tahun 2004, Selangor menerima aduan yang tertinggi iaitu sebanyak 769 (21 %) kes, diikuti oleh Johor sebanyak 409 (11 %) kes dan Wilayah Persekutuan Kuala Lumpur sebanyak 381 (10 %) kes. Wilayah Persekutuan Labuan menerima aduan yang paling sedikit iaitu sebanyak 33 (1 %) kes dan diikuti dengan Perlis iaitu sebanyak 71 (2 %) kes (Rajah 5.26).

Seperti tahun-tahun yang sebelumnya, bilangan aduan pencemaran yang tertinggi adalah berkaitan pencemaran udara sebanyak 2643 (73%) kes, sebanyak 363 (10 %) kes berkaitan pencemaran air, sebanyak 177 (5%) kes berkaitan pencemaran bunyi, sebanyak 122 (3%) kes berkaitan pelupusan haram buangan terjadual (Rajah 5.27).

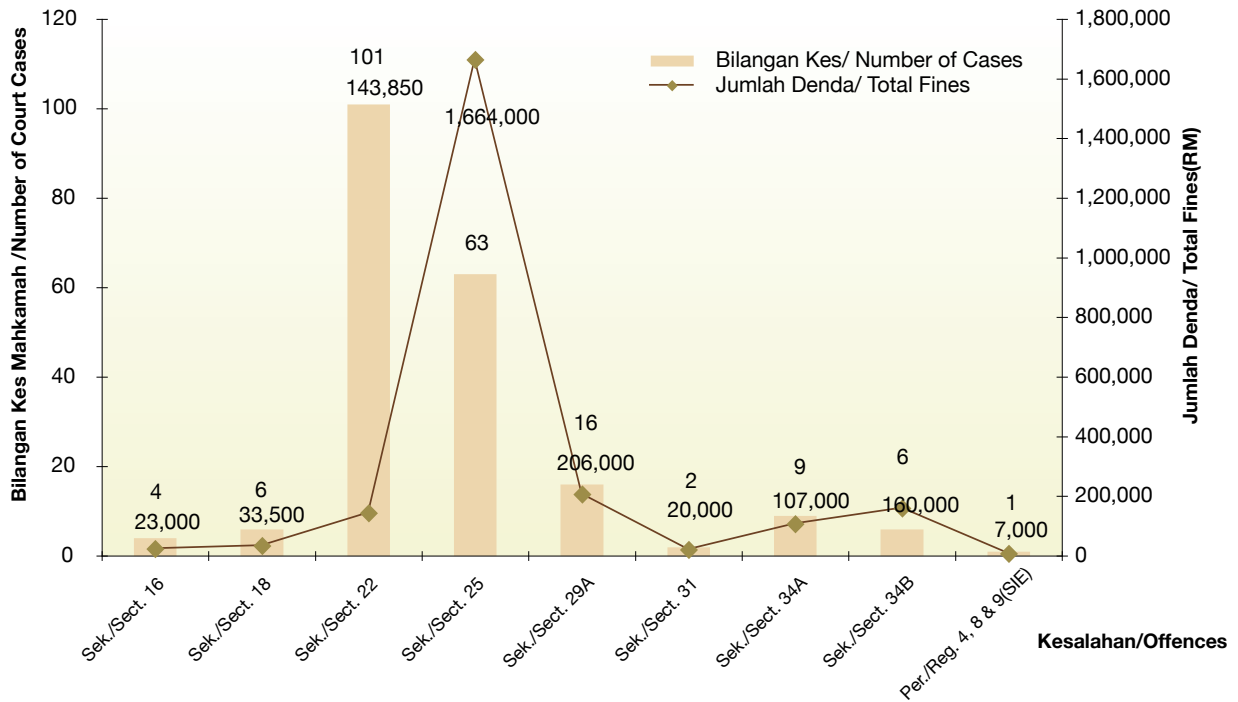
Territory of Labuan recorded the least number of complaints received with 33(1%) and followed by Perlis with 71 (2%)(Figure 5.26).

As in the previous years, the number of air pollution complaints far exceeded other types of complaints totalling 2643 (73%); 363 (10%) for water pollution; 177 (5%) for noise pollution; 122 (4%) on illegal dumping of scheduled or toxic wastes (Figure 5.27).

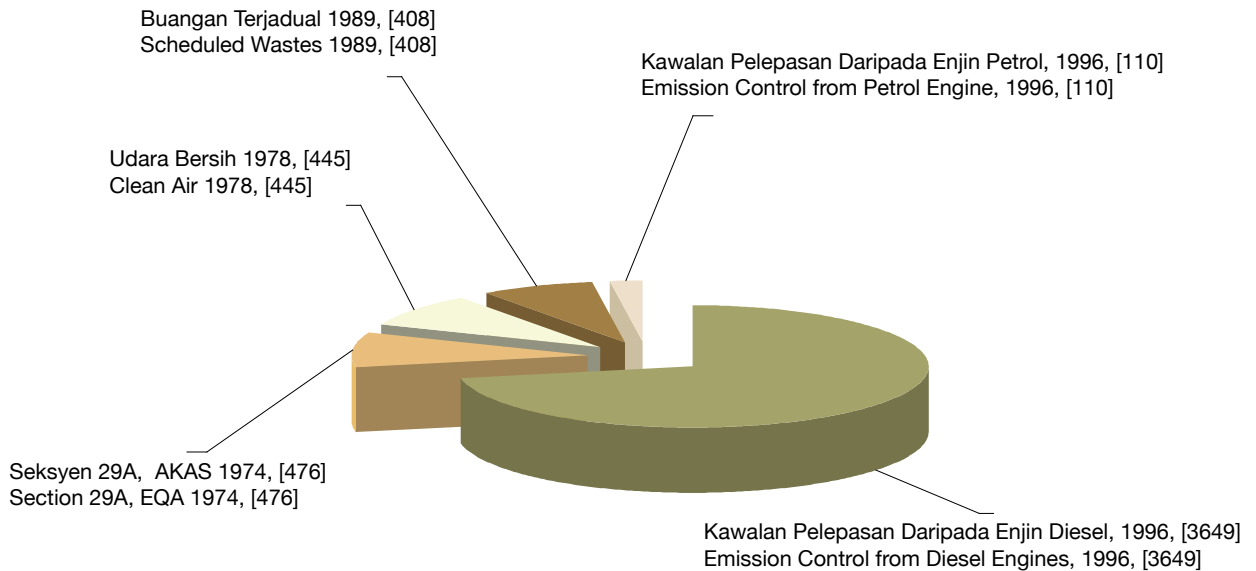


Rajah 5.20 JAS: Bilangan Kes Mahkamah, 1994 - 2004
 Figure 5.20 DOE: Number of Court Cases, 1994 - 2004



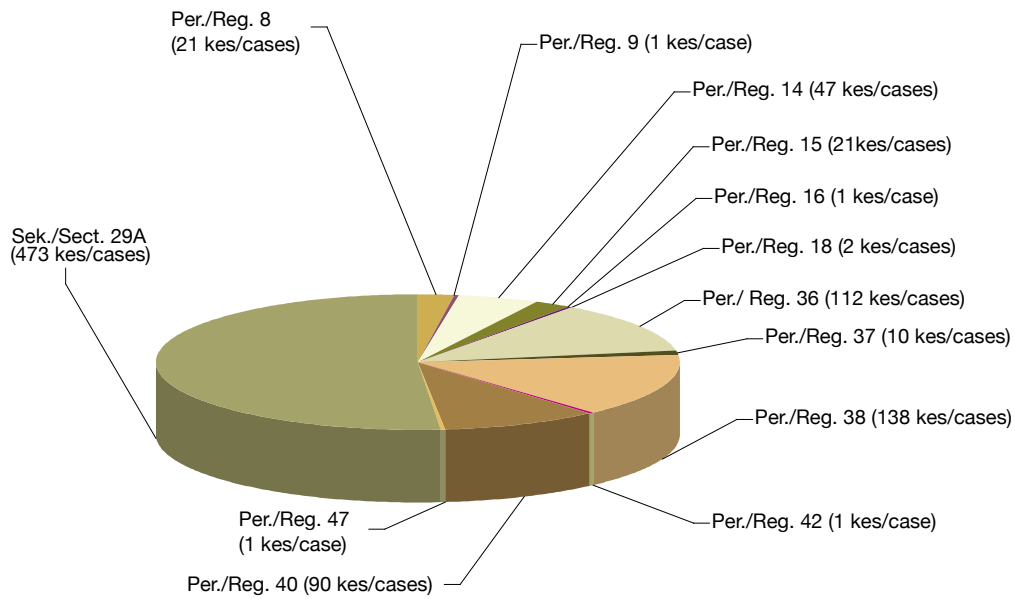


Rajah 5.21 JAS: Bilangan Kes Mahkamah dan Jumlah Denda, 2004
 Figure 5.21 DOE: Number of Court Cases and Fines Collected, 2004

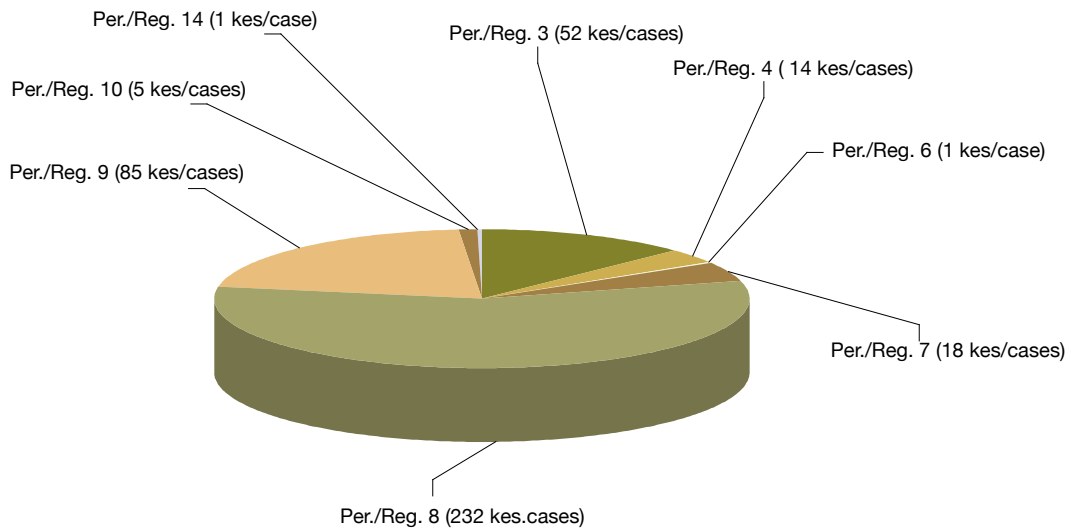


Rajah 5.22 JAS: Bilangan Kompaun, 2004
 Figure 5.22 DOE: Number of Compounds, 2004



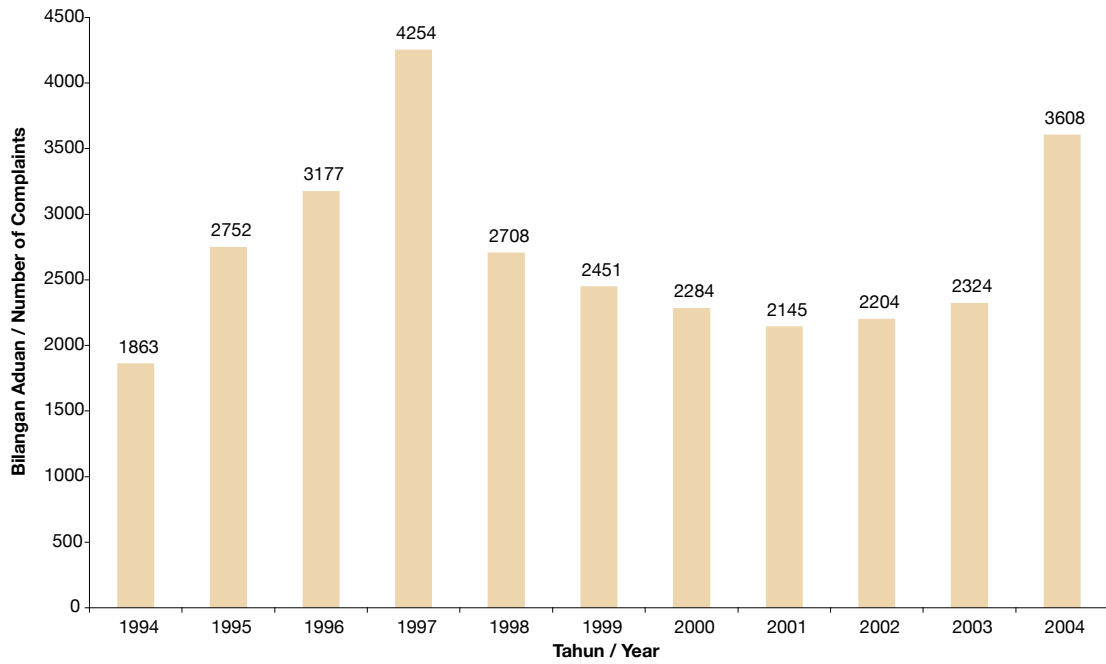


Rajah 5.23 JAS: Kompaun di bawah Peraturan Kualiti Alam Sekeliling (Udara Bersih) 1978 dan Seksyen 29A AKAS 1974, 2004
 Figure 5.23 DOE: Compounds under Environmental Quality (Clean Air) Regulations 1978 and Section 29A EQA 1974, 2004

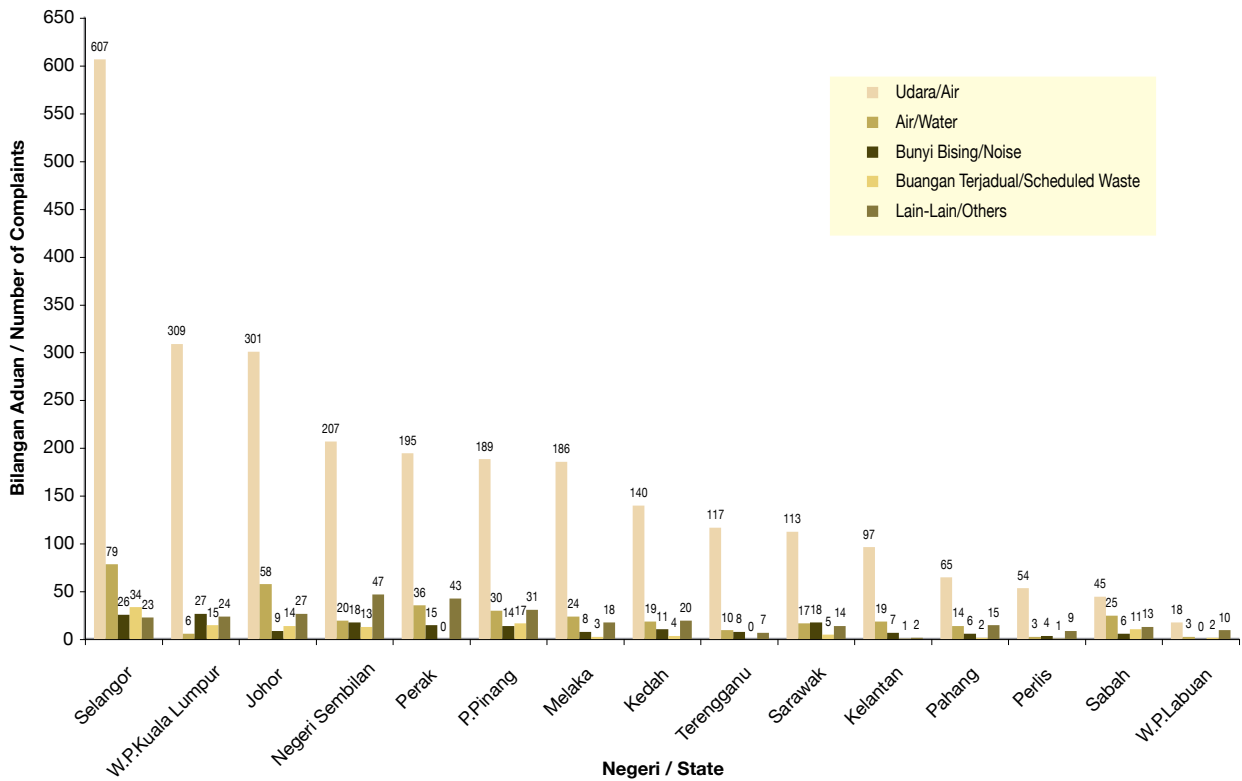


Rajah 5.24 JAS: Kompaun di bawah Peraturan Kualiti Alam Sekeliling (Buangan Terjadual) 1978, 2004
 Figure 5.24 DOE: Compounds under Environmental Quality (Scheduled Wastes) Regulations 1978, 2004



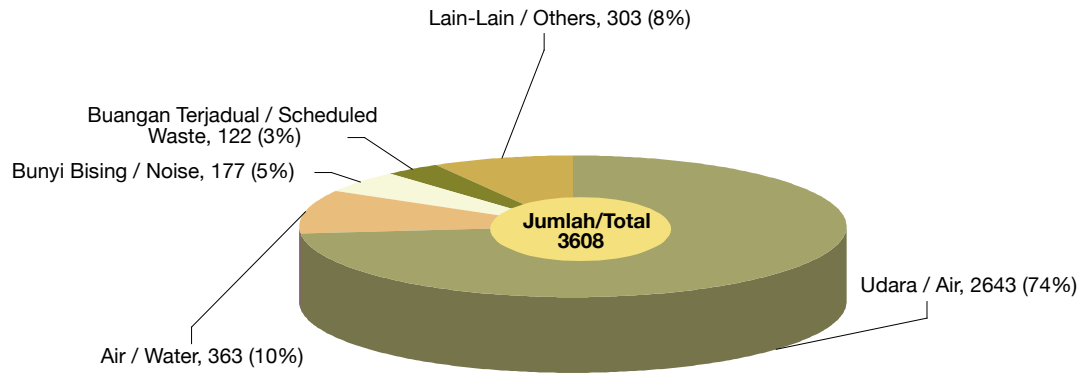


Rajah 5.25 JAS: Kes Aduan Pencemaran yang diterima, 1994 - 2004
 Figure 5.25 DOE: Environment Complaints Received, 1994 - 2004



Rajah 5.26 JAS: Bilangan dan Jenis Aduan Pencemaran Mengikut Negeri, 2004
 Figure 5.26 DOE: Number and Type of Environment Complaints by State, 2004





Rajah 5.27 JAS: Jenis Aduan Pencemaran, 2004
Figure 5.27 DOE: Type of Pollution Complaints, 2004





Bandar Lestari – Anugerah Alam Sekitar 2003/2004

Bandar Lestari – Environment Award 2003/2004

Jabatan Alam Sekitar, dengan kerjasama Jabatan Kerajaan Tempatan di bawah Kementerian Perumahan & Kerajaan Tempatan, agensi kerajaan yang berkaitan dan organisasi komuniti telah mengambil inisiatif untuk mengiktiraf Pihak Berkuasa Tempatan yang telah menerapkan dimensi alam sekitar di dalam perancangan, pentadbiran dan pelaksanaan program-program, projek-projek dan aktiviti-aktiviti mereka. Kriteria anugerah ini, yang dikenali sebagai 'Bandar Lestari- Anugerah Alam Sekitar' merangkumi komitmen pengurusan dan usaha-usaha secara menyeluruh ke arah mencapai kelestarian alam sekitar. Penilaian dibuat berasaskan lima bidang yang berkaitan alam sekitar iaitu alam sekitar fizikal, inisiatif ekologi, perkhidmatan perbandaran, pentadbiran alam sekitar, pendidikan dan kesedaran alam sekitar.

Bagi tahun 2003/2004, sebanyak 6 buah Pihak Berkuasa Tempatan telah mengambil bahagian secara sukarela di dalam program ini iaitu Majlis Bandaraya Johor Bahru, Majlis Perbandaran Kuantan, Majlis Bandaraya Melaka Bersejarah, Majlis Perbandaran Pulau Pinang, Majlis Perbandaran Kuching Selatan dan Majlis Bandaraya Shah Alam. Penilaian dijalankan dalam 4 peringkat:

- Perolehan Maklumat yang disumbangkan
- Tinjauan Persepsi Awam
- Penilaian Lapangan oleh Panel Bebas
- Penilaian Data Fizikal Alam Sekitar

Minggu Alam Sekitar Malaysia (MASM) 2004

Minggu Alam Sekitar Malaysia adalah merupakan acara tahunan Jabatan Alam Sekitar yang disambut dengan objektif utama untuk menyemai dan meningkatkan kesedaran alam sekitar yang tinggi di kalangan masyarakat Malaysia. Sambutan Minggu Alam Sekitar 2004, melibatkan semua agensi di bawah Kementerian baru iaitu Kementerian Sumber Asli dan Alam Sekitar (NRE). Majlis pelancaran telah diadakan pada 2 Disember 2004 bertempat di Institut Penyelidikan Perhutanan Malaysia (FRIM), Kepong, Selangor oleh YAB Datuk Seri Najib bin Tun Abdul Razak. Seramai 5,000 orang tetamu hadir yang terdiri daripada kakitangan kerajaan dan orang awam. Di antara dif-dif

The Department of Environment, in collaboration with the Local Government Department of the Ministry of Housing and Local Government, relevant government agencies and community-based organizations initiated a program to give recognition to local authorities for incorporating the environmental dimension in planning, administration and implementation of their programmes, projects and activities. The criteria for the "Bandar Lestari – Environment Award", inter-alia, includes management commitment and efforts towards achieving environmental sustainability. Assessment would be based on accomplishments in five areas namely physical environment, ecological initiatives, urban services, environmental governance, education and awareness.

For 2003/2004, six local authorities voluntarily participated: Johor Bahru City Council, Kuantan Municipality, Malacca Historical City Council, Penang Municipality, South Kuching City Council and Shah Alam City Council. The assessment was carried out in 4 stages:

- Assessment of Information submitted
- Public Opinion Survey
- Field Assessment by Independant Panel
- Environmental Physical Data Assessment

Malaysia Environment Week (MASM) 2004

The Malaysia Environment Week is an annual event with the principal objective of inculcating and enhancing environmental awareness among Malaysians. The MASM celebrations for 2004, involved all agencies under the newly-established Ministry of Natural Resources and Environment (NRE). The national-level launching was held on 2 December 2004 at the Forest Research Institute of Malaysia, Kepong, Selangor by the Deputy Prime Minister, Y.A.B Datuk Seri Najib bin Tun Abdul Razak. A big crowd of about 5000 government employees and members of the public were present. Among the dignitaries present were the



kehormat yang turut hadir ialah Menteri Sumber Asli dan Alam Sekitar, Ketua Setiausaha Negara dan Menteri Besar Selangor. Tema bagi tahun 2004 ialah 'Alam Sekitar: Milik Kita, Amanah Bersama' adalah selaras dengan keperluan untuk menyemaikan lagi kesedaran dan hasrat menjaga alam sekitar supaya semua rakyat Malaysia dapat bersama berusaha ke arah memelihara alam sekitar sebagai warisan bersama.

Antara aktiviti-aktiviti yang dijalankan oleh JAS sempena dengan MASM adalah seperti Pameran Alam Sekitar, Pertandingan Menulis Esei Alam Sekitar, Forum Alam Sekitar, Program "Think Future, Go Nature" Enviro-Walk yang dijalankan dengan kerjasama erat dan sokongan padu dari sektor swasta dan orang ramai.

Anugerah Langkawi 2004

Pada tahun 2004, Prof. Dato' Dr. Abdul Latiff bin Mohamad dari Universiti Kebangsaan Malaysia telah dipilih sebagai penerima bagi Anugerah Langkawi. Pemilihan beliau adalah berdasarkan usaha-usaha ke arah pemuliharaan alam sekitar dan kecenderungan serta minat yang ditunjukkan oleh beliau dalam mengajar, melatih dan membangunkan bidang taksonomi tumbuhan, ekologi dan kepelbagaian biologi serta usaha signifikan beliau dalam ekspedisi dan pembangunan Taman-Taman Alam di Malaysia.

Prof. Dato' Dr. Abdul Latiff merupakan individu yang ke-13 di Malaysia untuk menerima anugerah yang berprestij ini yang mana akan menerima wang sejumlah RM10,000, sebuah plak penghargaan dan sijil pengiktirafan yang ditandatangani oleh Seri Paduka Baginda Yang Di-Pertuan Agong XII Tuanku Syed Sirajuddin Putra Jamalullail.

"Think Future, Go Nature" Enviro-Walk 2004 Bersama Industri Kecil dan Sederhana (IKS)

"Think Future, Go Nature" adalah satu program yang diwujudkan bertujuan untuk meningkatkan tahap kesedaran dan komitmen dalam mencapai pembangunan lestari dengan mengambilkira perhubungan di antara manusia, sumber, alam semula jadi dan pembangunan.

Enviro-Walk 2004 diilhamkan untuk mengajak semangat menghargai dan menyayangi alam semula jadi di samping mempromosikan amalan hidup

Minister of Natural Resources and Environment, the Chief Secretary to the Government and the Chief Minister of the State of Selangor. The 2004 MASM theme was 'Environment: Our Possession, Our Mutual Trust', appropriately chosen in view of the need for Malaysians to take ownership and care for the environment and to work together to protect this common heritage.

Among the activities conducted by DOE for the MASM Week were Environmental Exhibitions, Environmental Essay Writing Competitions, Forums & Seminars and the 'Think Future, Go Nature' Enviro-Walk. All these activities were conducted with the full cooperation and strong support of both the private and public sectors.

Langkawi Award 2004

The 2004 Langkawi Award was given to Prof. Dato' Dr. Abdul Latiff bin Mohamad of Universiti Kebangsaan Malaysia. His selection was based on his efforts towards environmental conservation, education and development of training in plant taxonomy, ecology and biodiversity as well as for his expeditions and significant contributions towards the development of Nature Parks in Malaysia.

Prof. Dato' Dr Abdul Latiff was the 13th individual in Malaysia to receive the prestigious Langkawi Award which included RM10,000, a plaque and a Certificate of Recognition signed by Seri Paduka Baginda Yang Di-Pertuan Agong XII Tuanku Syed Sirajuddin Putra Jamalullail.

"Think Future, Go Nature" Enviro-Walk 2004 together with Small & Medium Industries

The "Think Future, Go Nature" programme was designed to enhance environmental awareness and commitment towards sustainable development taking into account the inter-relationships between people, resources, environment and development.

The Enviro-Walk 2004 aimed to kindle the love and appreciation of nature as well as to promote environmentally-healthy living. The other objectives



mesra alam. Objektif yang lain adalah:

- Meningkatkan kerjasama dan mewujudkan kesefahaman di antara sektor awam dengan sektor swasta dalam penjagaan dan pemuliharaan alam sekitar.
- Memupuk nilai-nilai positif dan beretika terhadap alam sekitar.
- Meningkatkan kesedaran mengenai kepentingan pemuliharaan kepelbagaian biologi.

Program “Think Future, Go Nature” Enviro-Walk 2004 telah dirasmikan oleh Y.B. Dato’ S. Sothinthan, Timbalan Menteri Sumber Asli dan Alam Sekitar pada 5 Disember 2004 bertempat di Taman Botani, Putrajaya. Seramai 420 orang peserta telah menyertai program tersebut yang terdiri daripada Pegawai-Pegawai Kanan Kementerian Sumber Asli dan Alam Sekitar dan Agensi di bawahnya serta Ketua Pegawai Eksekutif (CEO) dari Industri Kecil dan Sederhana. Aktiviti yang julung kali diadakan ini telah dianjurkan dengan jayanya oleh Jabatan Alam Sekitar dengan kerjasama di antara dengan Perbadanan Pembangunan Industri Kecil & Sederhana (SMIDEC) dan Persekutuan Pekilang-Pekilang Malaysia (FMM) dengan sokongan daripada Persatuan Industri Kecil dan Sederhana Malaysia, Mutiara Hotels And Resorts, Perbadanan Taman Negara Johor, Kualiti Alam Sdn. Bhd, Alam Sekitar Malaysia Sdn. Bhd. (ASMA), Global Environment Centre (GEC), Shriro Paper (Malaysia) Sdn. Bhd. dan Green World Biopolymers Sdn. Bhd.

Dialog Antara Menteri Sumber Asli dan Alam Sekitar Dan Pertubuhan Bukan Kerajaan (NGO) Berkaitan Alam Sekitar

Satu majlis dialog antara Menteri Sumber Asli dan Alam Sekitar dan Pertubuhan Bukan Kerajaan (NGO) telah dianjurkan pada 22 Julai 2004 di Putrajaya. Objektif utama sesi dialog adalah untuk memberi peluang kepada wakil-wakil NGO untuk menyuarakan cadangan atau komen mereka terhadap pengurusan alam sekitar. Seramai 49 buah NGO telah dijemput bagi menghadiri majlis ini dan 29 telah menghantar wakil masing-masing di mana 19 daripadanya mengemukakan memorandum. Walau bagaimanapun, dianggarkan hanya 30% daripada isu yang dibangkitkan melibatkan isu yang berada di bawah bidangkuasa JAS.

were:

- To enhance cooperation and foster understanding between the public and private sector with regard to environmental protection and conservation;
- To inculcate positive and ethical environmental values; and
- To increase awareness on the importance of biodiversity conservation.

The “Think Future, Go Nature” Enviro-Walk 2004 was launched by Y.B. Dato’ S. Sothinthan, Deputy Minister of Natural Resources and Environment on 5 December 2004 at the Botanical Gardens in Putrajaya. A total of 420 participants attended comprising Senior Government Officials of the Ministry of Natural Resources and Environment, Chief Executive Officers (CEOs) and senior staff from Small and Medium Industries and members of Non-Governmental Organisations. The first-ever activity was spearheaded by the Department of Environment in collaboration with the Small & Medium Industries Development Corporation (SMIDEC), the Federation of Malaysian Manufacturers (FMM), and supported by the SMI Association of Malaysia, Mutiara Hotels & Resorts, Johor National Park Corporation, Kualiti Alam Sdn. Bhd, Alam Sekitar Malaysia Sdn. Bhd. (ASMA), the Global Environment Centre (GEC), Shriro Paper (Malaysia) Sdn. Bhd. and Green World Biopolymers Sdn. Bhd.

Dialogue between the Minister of Natural Resources and Environment with Environmental Non-Governmental Organisations (NGOs)

A dialogue between the Minister of Natural Resources and Environment and members of Non-Governmental Organisations (NGOs) was held on 22 July 2004 at Putrajaya. The principal objective was to provide an avenue for NGOs to voice their views or offer suggestions for more effective environmental governance. A total of 49 NGOs were invited, 29 were represented and 19 submitted written issues for the Minister’s attention. About 30% of the total issues raised were under the jurisdiction of DOE.



Isu Alam Sekitar Semasa Majlis Dialog
Environmental Issues at Dialogue

Jenis Isu /Type of Issues	Bilangan Isu/ Number of Issues
Penilaian Impak / Impact Assessment	32
Bahan Berbahaya / Hazardous Wastes	1
Udara /Air	5
Air Dan Marin / Marine	2
Sungai / River	3
Polisi / Policy	5
Kesedaran & Pendidikan / Awareness & Education	9
Jumlah/Total	57



Gambarfoto 6.1 JAS: Pemenang Anugerah Langkawi 2004 dengan Pegawai Kanan JAS
Photo 6.1 DOE : Langkawi Award 2004 Recipient with DOE Senior Officials



Gambarfoto 6 .2 JAS: Permulaan Enviro-Walk 2004
Photo 6.2 DOE : Starting Point for Enviro-Walk 2004





Gambarfoto 6.3 JAS: Penamatan Enviro-Walk 2004
Photo 6.3 DOE : Finishing Point for Enviro-Walk 2004



Gambarfoto 6.5 JAS: Program Kanak-kanak semasa Enviro-Walk 2004
Photo 6.5 DOE : Enviro-Walk 2004 Children's Programme



Gambarfoto 6.4 JAS: Persediaan sebelum Enviro-Walk 2004
Photo 6.4 DOE : Warming up before Enviro-Walk 2004



Sekolah Lestari- Anugerah Alam Sekitar

Sustainable School- Environment Award 2003/2004

Program ini merupakan program usahasama di antara Jabatan Alam Sekitar, Kementerian Pelajaran Malaysia dan Institut Alam Sekitar dan Pembangunan (LESTARI), Universiti Kebangsaan Malaysia bertujuan untuk membantu sekolah memperkukuhkan proses pelaksanaan pendidikan alam sekitar yang sedia ada. Melalui program ini, elemen pendidikan alam sekitar dapat diterapkan di kalangan guru dan pelajar secara langsung dan komuniti setempat secara tidak langsung dengan mengintegrasikan pengetahuan, kemahiran dan nilai murni alam sekitar dalam empat komponen iaitu Pengurusan, Kurikulum, Kokurikulum dan Penghijauan.

Dua dokumen masing-masing bertajuk “Asas Pembentukan Sekolah Lestari-Anugerah Alam Sekitar” dan “Garis panduan Pelaksanaan dan Penilaian Sekolah Lestari-Anugerah Alam Sekitar” telahpun diterbitkan.

Projek Wira Alam

Projek Wira Alam adalah program kebangsaan JAS dengan kerjasama Persatuan Pencinta Alam Malaysia (MNS) dan Kementerian Pelajaran Malaysia. Projek ini dibahagikan kepada tiga tahap iaitu Tahap 1 - Wira Diri, Tahap 2-Wira Komuniti dan Tahap 3 - Wira Alam. Setiap pelajar perlu menyelesaikan tugas yang ditetapkan di dalam buku aktiviti Projek Wira Alam pada setiap tahap sebelum ke peringkat seterusnya.

Sejak dilancarkan pada 5 Jun 1998 sehingga tahun 2004, seramai 9,727 pelajar telah menyertai Tahap 1 - Wira Diri, sejumlah 1,114 pelajar menyertai Tahap 2 - Wira Komuniti dan 277 pelajar di Tahap 3 - Wira Alam.

JAS juga telah mengadakan beberapa bengkel Projek Wira Alam di Maktab-Maktab Perguruan di sekitar Lembah Kelang bertujuan untuk mempromosi dan melatih guru memahami serta menambah pengetahuan tentang aktiviti-aktiviti alam sekitar yang boleh dijalankan di sekolah.

The Sekolah Lestari Programme is a collaborative programme between the Department of Environment, the Ministry of Education Malaysia and the Institute of Environment and Development (LESTARI) of Universiti Kebangsaan Malaysia to facilitate and strengthen the process of implementing existing environmental education programmes in schools. Through this programme the elements of environmental education can be incorporated directly by teachers and students, and indirectly by local communities through the integration of knowledge, skills and environmental values under the four-key components of Management, Curriculum, Co-Curriculum, and Greening.

Two documents entitled “The Basis for Sekolah Lestari-Environment Award” and “Implementation and Evaluation Guidelines for Sekolah Lestari-Environment Award” had been published.

Wira Alam Project

The Wira Alam Project is another national DOE Environmental Education Project for school children in collaboration with Malaysian Nature Society (MNS) and the Ministry of Education (MoE). The project is divided into three stages; Level 1 (Wira Diri), Level 2 (Wira Komuniti) and Level 3 (Wira Alam). Each participating student must complete the tasks provided in the Activity Book at each level before advancing to the next level.

Since 5 June 1998 till the end of 2004, a total of 9,727 students had participated at Level 1 (Wira Diri); 1,114 students at Level 2 (Wira Komuniti) and 277 students had reached Level 3 (Wira Alam).

DOE also conducted several workshops at selected Teachers' Training Colleges in the Klang Valley to promote Wira Alam and to provide training to trainee teachers to enable them to conduct environmental activities in schools.



Nama Maktab/ Name of College	Tarikh/ Date	Bil. Pelatih/ Number of Participants
Maktab Perguruan Ilmu Khas, Cheras Specialist Teachers' College Cheras	6 Oktober 2004/ 6 October 2004	100
Maktab Perguruan Ilmu Khas, Cheras Specialist Teachers' College Cheras	7 Oktober 2004/ 7 October 2004	100
Maktab Perguruan Teknik, Cheras Cheras Teachers' Technical College	11 Oktober 2004/ 11 October 2004	150
Maktab Perguruan Islam, Bangi Bangi Islamic Teachers' College	12 Oktober 2004/12 October 2004	100

Kem Kesedaran Alam Sekitar (KeKAS)

Pada tahun 2004, sejumlah 49 KeKAS yang dihadiri oleh seramai 2348 pelajar telah dilaksanakan oleh JAS Negeri di seluruh Malaysia dengan kerjasama pelbagai agensi seperti Jabatan Pelajaran Negeri. Modul yang digunapakai semasa KeKAS ini merupakan terbitan JAS iaitu Ekosistem Marin, Hutan, Tanah Tinggi, Pertanian Organik, Urbanisasi dan Perladangan Kelapa Sawit.

Pertandingan Debat Alam Sekitar Antara Institusi Pengajian Tinggi (IPT)

Pertandingan ini adalah anjuran bersama Jabatan Alam Sekitar dengan Majlis Debat Universiti-Universiti Malaysia (MADUM), Dewan Bahasa dan Pustaka dan Kementerian Pengajian Tinggi, Malaysia. Tahun ini merupakan kali keempatbelas ianya dianjurkan di mana 20 pasukan debat dari 19 Institusi Pengajian Tinggi Malaysia telah mengambil bahagian dalam pertandingan ini yang diadakan pada 31 Julai – 3 Ogos 2004 bertempat di Universiti Pendidikan Sultan Idris, Tanjung Malim, Perak.

19 Institusi Pengajian Tinggi yang mengambil bahagian ialah:-

- Universiti Islam Antarabangsa (UIA)
- Universiti Putra Malaysia (UPM)
- Universiti Kebangsaan Malaysia (UKM)
- Universiti Malaya (UM)
- Universiti Teknologi Malaysia (UTM)
- Universiti Sains Malaysia (USM)
- Universiti Utara Malaysia (UUM)
- Universiti Teknologi Mara (UiTM)
- Universiti Malaysia Sarawak (UNIMAS)
- Universiti Malaysia Sabah (UMS)
- Universiti Pendidikan Sultan Idris (UPSI)

Environmental Awareness Camp (KeKAS)

In 2004, a total of 49 KeKAS camps involving 2348 students were conducted throughout Malaysia by DOE in collaboration with the State Education Departments and other agencies. The modules implemented were Marine, Forest, Highland, Urbanisation, Oil Palm Plantation Ecosystems and Organic Farming.

Inter-varsity Environmental Debate Among Institutions of Higher Learning (IPT)

The 2004 IPT Debate was organised by DOE in collaboration with the Malaysian Universities Debating Council (MADUM), Dewan Bahasa dan Pustaka and the Ministry of Education. The 14th Inter-Varsity Environmental Debate saw participation from 20 teams from 19 Institutions of Higher Learning in Malaysia. The venue was at Universiti Pendidikan Sultan Idris (UPSI), Tanjung Malim, Perak from 31 July – 3 August 2004.

The 19 participating Institutions of Higher Learning were as follows:

- Universiti Islam Antarabangsa (UIA)
- Universiti Putra Malaysia (UPM)
- Universiti Kebangsaan Malaysia (UKM)
- Universiti Malaya (UM)
- Universiti Teknologi Malaysia (UTM)
- Universiti Sains Malaysia (USM)
- Universiti Utara Malaysia (UUM)
- Universiti Teknologi Mara (UiTM)
- Universiti Malaysia Sarawak (UNIMAS)
- Universiti Malaysia Sabah (UMS)
- Universiti Pendidikan Sultan Idris (UPSI)



- Kolej Universiti Islam Malaysia (KUIM)
- Kolej Universiti Teknologi Tun Hussien Onn (KUiTTTHO)
- Kolej Universiti Sains dan Teknologi Malaysia (KUSTEM)
- Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM)
- Kolej Universiti Kejuruteraan Utara Malaysia (KUKUM)
- Kolej Universiti Kejuruteraan dan Teknologi Malaysia (KUKTM)
- Universiti Tenaga Nasional (UNITEN)
- Universiti Multimedia (MMU)

Pertandingan menggunakan kaedah sistem 'power match berkumpulan' (bracket power match) dalam pusingan awal untuk menentukan pasukan yang akan berlawan dan juga peranan mereka (kerajaan / pembangkang). Setiap pasukan akan ditentukan kedudukan (ranking) mereka berdasarkan menang/kalah, juri, margin (julat kemenangan) dan keseluruhan markah.

Pertandingan Peringkat Awal melibatkan 6 pusingan. Lapan (8) pasukan terbaik berdasarkan kedudukan akan dipilih untuk ke peringkat suku akhir dan pasukan yang menang akan ke separuh akhir secara kalah mati. Akhirnya, dua (2) pasukan akan ke peringkat akhir (Jadual 6.1).

Pertandingan Akhir Debat Alam Sekitar 2004 telah diadakan di Dewan Besar, Universiti Pendidikan Sultan Idris di antara Universiti Sains Malaysia (USM) dan Universiti Malaya (UM). USM diwakili oleh Mohd Shahrizal Abd. Rahim, Mohd Tramizi Hussin, Ridwan Ali dan pendebat simpanan, Abdul Hadi Abdul Apet. UM selaku pihak pembangkang diwakili oleh Mohd Faizi Che Abu, A.Akhiruddin @ Boy Acho, Noorsyakina Simin dan pendebat simpanan, Habiburrahman Johari.

UM berjaya menjadi johan pertandingan Debat Alam Sekitar 2004 dengan menerima Piala Pusingan Menteri Sumber Asli dan Alam Sekitar serta wang tunai RM8,000.00 dan sijil penyertaan. Manakala USM, sebagai naib johan menerima wang tunai RM 5,000.00 dan sijil penyertaan. Dua pasukan yang layak ke separuh akhir iaitu Universiti Islam Antarabangsa (UIAM) dan Universiti Teknologi MARA (UiTM), masing-masing menerima wang tunai RM1,000.00 dan sijil penyertaan. Pendebat

- Kolej Universiti Islam Malaysia (KUIM)
- Kolej Universiti Teknologi Tun Hussien Onn (KUiTTTHO)
- Kolej Universiti Sains dan Teknologi Malaysia (KUSTEM)
- Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM)
- Kolej Universiti Kejuruteraan Utara Malaysia (KUKUM)
- Kolej Universiti Kejuruteraan dan Teknologi Malaysia (KUKTM)
- Universiti Tenaga Nasional (UNITEN)
- Universiti Multimedia (MMU)

The bracket power match system was adopted in the preliminary rounds to determine their role (government or opposition). Each team's ranking will be based on 'win or loose', jury, margin and their overall score.

The preliminary six rounds involved all teams. The eight highest ranking teams were selected to compete in the Quarterfinals, out of which four successful teams qualified for the Semi-finals. Eventually two teams entered the Finals (Table 6.1).

The finals of the 2004 IPT Environmental Debate held at the Grand Hall of Universiti Pendidikan Sultan Idris was between Universiti Sains Malaysia (USM) and Universiti Malaya (UM). USM was represented by Mohd Shahrizal Abd. Rahim, Mohd Tramizi Hussin, Ridwan Ali with Abdul Hadi Abdul Apet as reserve while UM as the opposition team was represented by Mohd Faizi Che Abu, A.Akhiruddin @ Boy Acho, Noorsyakina Simin with Habiburrahman Johari as reserve.

The Universiti Malaya (UM) team emerged the overall winner of the 2004 Inter-Varsity Environmental Debate, receiving the Minister of Natural Resources and Environment Challenge Trophy, a cash prize of RM8,000, and certificates of participation. Universiti Sains Malaysia (USM), as the runners-up received a cash prize of RM5,000 and certificates of participation. The two teams which qualified for the semi-finals, namely Universiti Islam Antarabangsa (UIA) and Universiti Teknologi Mara (UiTM) each received a cash prize of RM1,000.00 and certificates of participation. Mohd



Jadual 6.1 JAS:

Table 6.1 DOE: The Rounds of the Inter-Varsity Environmental Debate among Institutions of Highes Learning

Peringkat Awal / Preliminary Rounds

Pusingan Pertama/ First Round:

Makanan Terubahsuai Genetik; Suatu Ancaman

Pusingan Kedua/ Second Round:

Urbanisasi Mengancam Kepelbagaian Biologi

Pusingan Ketiga/ Third Round:

Perlindungan Alam Sekitar; Tapak Warisan Dunia Jawapannya

Pusingan Keempat/ Fourth Round:

NGO Alam Sekita, Sekadar Melepas Batok di Tangga

Pusingan Kelima/ Fifth Round:

Sikap Lebih Utama Daripada Teknologi Dalam Pengurusan Alam Sekitar

Pusingan Keenam/ Sixth Round :

Cinta Alam Sekitar, Bukan Cinta Biasa

Peringkat Suku Akhir/Quarter-finals

Kita Tidak Sepakat Menangani Isu Alam Sekitar

UUM lwn/vs UIAM
UNITEN lwn/vs UiTM

USM lwn/vs UTM
KUSTEM lwn/vs UM

Peringkat Separuh Akhir/ Semi-finals:

Isu Alam Sekitar; Sudah Terhantuk Baru Tergaduh

UIAM lwn/vs USM

UiTM lwn/vs UM

Peringkat Akhir/ Finals :

Aktiviti Kitar Semula : Demi Ekonomi Bukannya Alam Sekitar

USM lwn/vs UM

**Nota : Pasukan yang digelapkan menang dalam perdebatan*

USM, Mohd Tramizi Hussin muncul Pendebat Terbaik dan menerima Piala Ketua Pengarah Alam Sekitar dan wang tunai RM1,500.00. Buat pertama kalinya juga, hadiah untuk Pendebat Terbaik Liga telah diperkenalkan dan dimenangi oleh Rosman Abdul Rahman daripada UPSI yang menerima pi-ala dan wang tunai berjumlah RM300.00. Hadiah disampaikan oleh YB. Dato' S. Sothinathan, Timbalan Menteri Sumber Asli dan Alam Sekitar.

Tramizi Hussin from USM who was judged the Best Debater received the Director-General of Environment Trophy, together with a cash prize of RM1,500.00. For the first time, a prize was awarded to the Best League Debater and this was won by Rosman Abdul Rahman from UPSI who received a trophy together with a cash prize of RM300.00. The prize giving ceremony was graced by YB. Dato' S. Sothinathan, the Deputy Minister of Natural Resources & the Environment.



Kerjasama dengan Agensi Luar

i) Kem Kesedaran Alam Sekitar Ekosistem Perladangan Kelapa Sawit

Kem ini adalah anjuran bersama Golden Hope Plantations Berhad dengan Jabatan Alam Sekitar dan Kementerian Pelajaran Malaysia yang telah diadakan di Pulau Carey, Selangor pada 13-18 Mac 2004. Seramai 60 pelajar dari sekolah-sekolah di sekitar Lembah Kelang telah menyertai kem ini. Di antara objektif utama kem ini diadakan ialah untuk memberi pengetahuan dan kesedaran kepada para peserta mengenai kepentingan Ekosistem Perladangan Kelapa Sawit.

ii) Projek Riadah Alam Sekitar (PRIAS)

Program tahunan ini yang bermula sejak 1992 merupakan kerjasama antara Jabatan Alam Sekitar, Persatuan Ahli-Ahli Sains Malaysia (MSA), Tetra Pak (M) Sdn. Bhd. dan Kementerian Pelajaran Malaysia. Projek ini memerlukan pelajar membuat kajian mengenai isu permasalahan semasa alam sekitar di sekolah atau komuniti setempat di samping berusaha memulakan inisiatif untuk menyelesaikan masalah yang berkenaan.

Tema PRIAS untuk 2004 ialah Kitar Semula dan pemenangnya ialah:

Cooperation with other Agencies

i) Environmental Awareness Camp: Palm Oil Plantation Ecosystem

DOE co-organized a Plantation Ecosystem Awareness Camp with Golden Hope Plantations Berhad and the Ministry of Education, Malaysia at Pulau Carey, Selangor from 13-18 March 2004. About 60 students from schools in the Klang Valley participated in this camp. The main objective was to provide knowledge and create awareness among the participants on the importance of the palm oil plantation ecosystem.

ii) Riadah Alam Sekitar (PRIAS) Project

This annual programme which began in 1992 is a joint environmental initiative between DOE, the Malaysian Scientific Association (MSA), Tetra Pak (M) Sdn. Bhd. and the Ministry of Education (MoE). The project requires students to undertake research on current environmental issues affecting the school or the local communities, as well as initiating efforts to solve the identified problem.

The theme for PRIAS 2004 was 'Recycling' and the winners were:

Pemenang Pertama/ 1st Place : Sek. Men (P) Sri Aman, Petaling Jaya, Selangor

Nama Pelajar/ Name of Student

- i. Mayura Hanis Bt. Ahmad Damanhuri
- ii. Nur Zalikha Bt. Mohd Sabri
- iii. Nurshafina Bt. Wan Samsudin

RM2,500.00, Sijil & Lawatan ke Kilang Tetra Pak di Singapura
 RM2,500.00, Certificates and a visit to the Tetra Pak Factory in Singapore.

Pemenang Kedua/ 2nd place : SMK Lutong, Sarawak

Nama pelajar / Name of Student

- i. Leong Kah Hing
- ii. Desmond Hou Teck Ann
- iii. Catherine Bong Chieh Hui

RM 1,250.00, Sijil & Lawatan ke Kilang Tetra Pak di Malaysia
 RM1,250.00, Certificates and a visit to the Tetra Pak Factory in Malaysia



Pemenang Ketiga/ 3rd Place : **MRSM Kuala Terengganu, Terengganu**
 Nama pelajar/ Name of Student

- i. Muhammad Rudhan B. Rosli
- ii. Mohd Ariffuddin B. Che Mohd Arfffin
- iii. Muhammad Azani Azan B. Azra'Al

RM750.00 dan Sijil
 RM750.00 and Certificates

10 Hadiah Saguhati menerima RM100.00 setiap satu dan Sijil
 10 Consolation Prizes of RM 100.00 each and Certificates were presented to :

- i. SMK Marudi, Baram, Sarawak (2 penyertaan/2 entries)
- ii. SMK Three Rivers, Mukah, Sarawak
- iii. SMK Lutong, Lutong Sarawak
- iv. SM Lok Yuk, Kudat, Sabah (2 penyertaan/2 entries)
- v. SMK (P) Sultan Ibrahim, Johor Bharu, Johor
- vi. SMK Jalan Damai, Bukit Mertajam, Pulau Pinang
- vii. SMK Convent, Teluk Intan, Perak
- viii. MRSM Jalan Bukit Larut, Taiping, Perak
- ix. SMJK YU Hua, Kajang, Selangor
- x. SMK Kepong, Kuala Lumpur
- xi. SMK Seri Keramat, Hulu Kelang, Kuala Lumpur (2 penyertaan/2 entries)

iii) Kuiz dan Seminar Pengurusan Air Secara Mampan

Program ini merupakan anjuran Jawatankuasa Pendidikan, Latihan dan Penerangan Awam (JKPLPA) di mana Bahagian Hidrologi dan Sumber Air, Jabatan Pengairan dan Saliran (JPS) adalah sekretariat program. Di antara agensi yang menjadi jawatankuasa ialah Kementerian Pelajaran Malaysia, Jabatan Alam Sekitar, Jabatan Perkhidmatan Kajiucaca, Jabatan Mineral dan Geosains, Jabatan Pertanian Malaysia, Jabatan Perhutanan Malaysia, Institut Penyelidikan Teknologi Nuklear Malaysia (MINT) dan Institut Penyelidikan Perhutanan Malaysia (FRIM).

Kuiz mengenai Pengurusan Air Secara Mampan telah diadakan sebanyak 8 siri melalui Radio 1 dalam slot "Kak Yong bersama Adik-Adik" pada setiap Sabtu mulai dari 6 Mac – 8 Mei 2004.

Seminar Pengurusan Air Secara Mampan pula telah diadakan pada 14 Oktober 2004 di SMK Aminuddin Baki, Kuala Lumpur dan dihadiri oleh seramai 200 orang pelajar. JAS merupakan salah satu agensi yang terlibat menjadi penceramah dan

iii) Sustainable Water Management Seminar and Quiz

This programme was organised by the Committee for Education, Training and Public Information (JK-PLPA) and the Water Resources and Hydrology Division of the Department of Irrigation and Drainage (DID) which served as the Secretariat. Other agencies which were members of the Committee were the Ministry of Education, DOE, the Meteorological Service Department, the Mineral and Geoscience Department, the Agricultural Department, the Forestry Department, the Malaysian Research Institute of Nuclear Technology (MINT) and the Forest Research Institute of Malaysia (FRIM).

A series of 8 quizzes on Sustainable Water Management was organised through the "Kak Yong Bersama Adik-adik" slot on Radio 1, each Saturday, from 6 March to 8 May 2004.

A Seminar on Sustainable Water Management was held on 14 October 2004 at SMK Aminuddin Baki, Kuala Lumpur and was attended by about 200



fasilitator untuk tajuk “Pencemaran Air” dalam seminar ini.

iv) Persidangan Alam Sekitar Untuk Kanak-Kanak Peringkat Antarabangsa

Persidangan ini merupakan anjuran Yayasan Anak Warisan Alam (YAWA) dengan kerjasama Kerajaan Negeri Pulau Pinang. Tujuan utama persidangan ini diadakan adalah untuk memotivasi dan memberi peluang untuk bergiat aktif serta bertukar pendapat di kalangan peserta dalam aktiviti pemeliharaan dan pemuliharaan alam sekitar. Tema persidangan untuk tahun ini ialah “Save the Seas Around Us”. Seramai 260 peserta yang berumur di antara 10 – 16 tahun menghadiri persidangan ini yang diadakan di Teluk Bahang, Pulau Pinang pada 11 – 15 Disember 2004.



Gambarfoto 6.6 JAS: Debat Alam Sekitar Antara IPT 2004; Pasukan Pemenang adalah UM
Photo 6.6 DOE : Intersivity Debate 2004; UM The Champion Team



Gambarfoto 6.8 JAS: Model-Model Projek PRIAS Hasil dari Kreativiti Peserta
Photo 6.8 DOE : Creative Models for PRIAS Project

students. DOE’s facilitated the discussion and presented a paper on “Water Pollution”.

iv) International Children’s Conference on the Environment

This Conference was organized by Yayasan Anak Warisan Alam (YAWA) in collaboration with the State Government of Penang. The main objective of the Conference was to motivate participants and provide them an opportunity to be active as well as exchange ideas on conservation and preservation of the environment. The Conference theme was “Save the Seas Around Us”. About 260 participants, ranging in age from 10-16 years, attended the Conference which was held at Teluk Bahang, Penang from 11-15 December 2004.



Gambarfoto 6.7 JAS: Aktiviti Di Perkhemahan Pokok 2004
Photo 6.7 DOE: Tree Camp Activities 2004



Gambarfoto 6.9 JAS: Aktiviti Kem Kesedaran Alam Sekitar
Photo 6.9 DOE: Environmental Camp Activities





Gambarfoto 6.10 JAS: Majlis Pelancaran MASM Peringkat Kebangsaan Alam Sekitar di FRIM, Kepong, Selangor
Photo 6.10 DOE : Launching of Malaysia Environment Week 2004 at FRIM, Kepong, Selangor



Gambarfoto 6.11 JAS: Bacaan Ikrar semasa Majlis Pelancaran MASM Peringkat Kebangsaan Alam Sekitar
Photo 6.11 DOE : Environmental Oath during Malaysia Environment Week 2004



Gambarfoto 6.12 JAS: Majlis Pelancaran PRIAS 2004 oleh Menteri Sumber Asli dan Alam Sekitar
Photo 6.12 DOE : Launching of PRIAS 2004 by the Minister of Natural Resource and Environment



Gambarfoto 6.13 JAS: Perkhemahan Alam Sekitar
Photo 6.13 DOE: Environmental Camping



Pameran Bertemakan Alam Sekitar

Environmental Exhibitions

Pada tahun 2004, Jabatan Alam Sekitar telah menyertai sebelas pameran utama sebagai salah satu langkah untuk mempromosi dan meningkatkan kesedaran alam sekitar.

Pusat Sains Negara (PSN) di Desa
29 Februari – 5 Mac 2004, Kuala Selangor, Selangor Darul Ehsan

Hari Bersama Pelanggan Jabatan Alam Sekitar
14 Februari 2004, Putrajaya

Hari Bersama Pelanggan Jabatan Alam Sekitar
13 Mac 2004, Putrajaya

Hari Bersama Pelanggan Jabatan Alam Sekitar
10 April 2004, Putrajaya

Program Kad Kreatif Alam Sekitar & Radio Muzik
11 – 15 Mei 2004, Kuala Terengganu

Pusat Sains Negara (PSN) di Desa
9 – 12 Ogos 2004, Rembau, Negeri Sembilan

Hari Bersama Pelanggan Jabatan Alam Sekitar
14 Ogos 2004, Putrajaya

Program Sains Semulajadi
20 – 29 Ogos 2004, Pusat Sains Negara, Bukit Kiara

Hari Kualiti Kementerian Sumber Asli dan Alam Sekitar
12 Oktober 2004, Kuala Lumpur

Minggu Alam Sekitar 2004
2 Disember 2004, FRIM, Kepong

Enviro-Walk
5 Disember 2004, Taman Botani, Putrajaya

In 2004, DOE was invited to take part in 11 major exhibitions to promote greater environmental awareness.

National Science Centre in the Village
29 February – 5 March 2004, Kuala Selangor, Selangor Darul Ehsan

DOE's Client Day
14 February 2004, Putrajaya

DOE's Client Day
13 March 2004, Putrajaya

DOE's Client Day
10 April 2004, Putrajaya

Environmental Creative Card Programme and Radio Music
11 – 15 May 2004, Kuala Terengganu

National Science Centre in the Village
9 – 12 August 2004, Rembau, Negeri Sembilan

DOE's Client Day
14 August 2004, Putrajaya

Nature Science Programme
20 – 29 August 2004, Pusat Sains Negara, Bukit Kiara

NRE Quality Day
12 October 2004, Kuala Lumpur

Malaysian Environment Week 2004
2 December 2004, FRIM, Kepong

Enviro-Walk
5 December 2004, Taman Botani, Putrajaya



Kuiz Kesedaran Alam Sekitar

Jabatan Alam Sekitar dengan kerjasama Radio 1 dan Radio Muzik telah mengadakan Program Kuiz Kesedaran Alam Sekitar. Kuiz untuk pendengar Radio 1 diadakan pada pukul 8.00 - 11.00 pagi setiap hari Sabtu manakala Kuiz melalui Sistem Pesanan Ringkas (SMS) untuk pendengar Radio Muzik diadakan lima (5) kali seminggu iaitu hari Isnin hingga Jumaat. Setiap minggu satu topik khusus alam sekitar akan dibincangkan

Pertandingan Kad Kreatif Alam Sekitar

Jabatan Alam Sekitar dengan kerjasama Stesen Radio Muzik telah menganjurkan pertandingan kad-kad ucapan dan bentuk kad kreatif yang bertemakan alam sekitar. Pemenang pertama akan menerima wang tunai sebanyak RM500, kedua sebanyak RM300, ketiga RM200 dan sepuluh hadiah saguhati yang bernilai RM100 setiap pemenang.

Environmental Awareness Quiz

In collaboration with RTM Radio 1 and Radio Music, the Department of Environment, organised an Environmental Awareness Quiz Programme for radio listeners every Thursday, between 8.00 a.m-11.00 a.m. Each week a specific environmental topic of public interest was discussed. On Radio Music, Short Messaging System (SMS) contests were organised from Mondays to Fridays.

Environmental Creative Card Competition

The Department of Environment and Radio Music Station organized a Creative Card Competition for radio listeners involving the designing of creative greeting cards with environmental messages which were read out over the air. The first prize winner received a cash prize of RM500.00, the second RM300.00 and the third RM200.00. Ten consolation prizes of RM100.00 each were also awarded.



Gambarfoto 6.14 JAS: Pameran Alam Sekitar
Photo 6.14 DOE : Environmental Exhibition



Gambarfoto 6.15 JAS: Pelajar melawat Pameran Alam Sekitar
Photo 6.15 DOE : Students visiting Environmental Exhibition



Maklumat Alam Sekitar

Pada tahun 2004, JAS telah menerbitkan sejumlah 224,000 naskah bahan-bahan bacaan alam sekitar yang terdiri daripada Laporan Kualiti Alam Sekeliling 2003, Laporan Tahunan Jabatan Alam Sekitar 2003, risalah-risalah dan buku kecil mengenai alam sekitar serta kalendar meja dan dinding bermesejkan alam sekitar.

Bahan-bahan bercetak tersebut diedarkan kepada pelbagai agensi kerajaan, perpustakaan-perpustakaan, pusat rujukan, institusi pendidikan, persatuan bukan kerajaan dan orang individu (Rajah 6.1).

Sejumlah 15,000 naskah kalendar dinding yang memuatkan mesej alam sekitar telah diedarkan ke semua sekolah-sekolah rendah dan menengah bantuan Kerajaan (14,000 naskah), rumah-rumah kebajikan (700 naskah) dan hospital-hospital kerajaan di seluruh negara (300 naskah).

Sebaran Maklumat

JAS telah menerima sebanyak 1,421 pertanyaan pada tahun 2004 melalui pos, e-mel, laman web JAS dan pengguna-pengguna perpustakaan (Rajah 6.2). Pada tahun yang sama juga terdapat peningkatan dalam jumlah pertanyaan sebanyak 10% jika dibandingkan dengan tahun sebelumnya. Jenis-jenis maklumat yang dipohon adalah mengenai status kualiti air dan udara, kes pembakaran terbuka, garis panduan penilaian impak alam sekitar, aduan tentang pencemaran udara, pelupusan bahan terjadual, tumpahan minyak, bau busuk, marin, pelupusan haram, penipisan lapisan ozon, ISO 14001, status air bawah tanah, pelabelan-eko dan maklumat umum tentang kualiti alam sekitar.

Perkhidmatan Perpustakaan-Enviro

Perpustakaan-Enviro yang terletak di ibu pejabat Jabatan Alam Sekitar berfungsi sebagai pusat rujukan bukan sahaja kepada kakitangan jabatan tetapi juga kepada orang awam. Sehingga 31 Disember 2004, koleksi bahan rujukan adalah sebanyak 32,511 buah. Bilangan pengguna perpustakaan telah menurun kepada 929 orang jika dibandingkan dengan tahun sebelumnya iaitu seramai 1241 orang. 61.7% daripada pengguna perpustakaan pada tahun 2004 merupakan pelajar.

Environmental Information

In 2004, DOE published more than 224,000 copies of environmental reading materials consisting of the Environmental Quality Report 2003, the 2003 DOE Annual Report, brochures and other publications as well as wall and desk calendars with environmental messages.

These printed materials were distributed to various government agencies, libraries and reference centres, educational institutions, non-governmental organizations and individuals (Figure 6.1).

A total of 15,000 copies of wall calendars with environmental messages were distributed to all public schools (14,000 copies), welfare institutions (700 copies) and government hospitals in the country (300 copies).

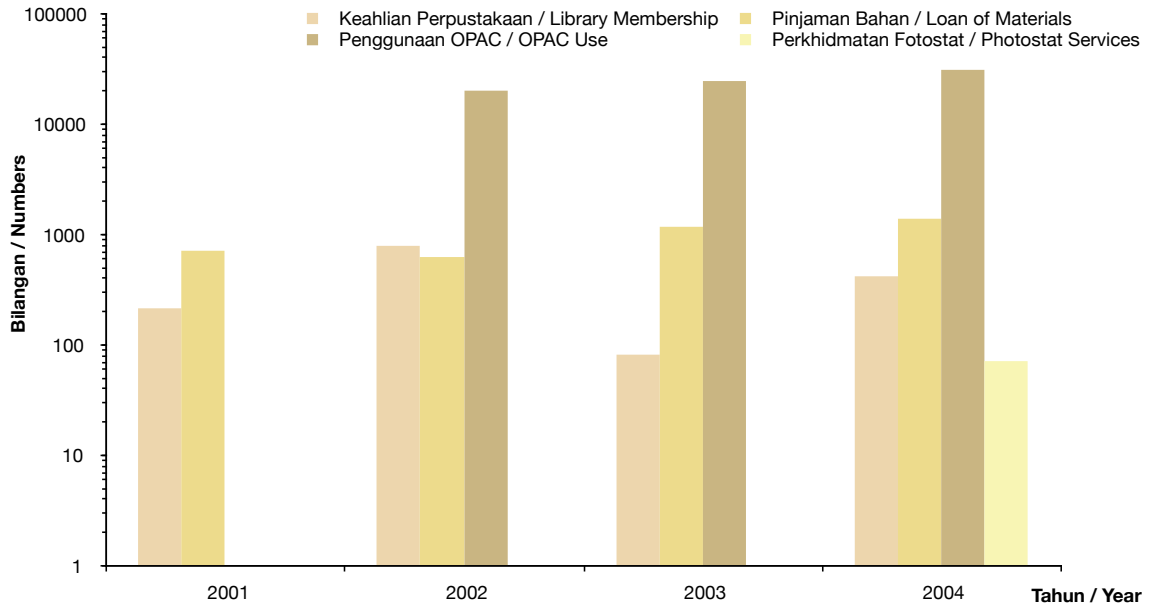
Dissemination of Environmental Information

The DOE received a total of 1,421 queries in 2004 through the post, e-mail, DOE websites and from library users. This represented a 10% increase over the 2003 figure (Figure 6.2). The information sought pertained to air and water quality status at specific locations, open burning, environmental impact assessment guidelines, public complaints, guidelines and information for disposal of scheduled wastes, oil spill incidents, noise and odour control, marine pollution, illegal dumping prevention, ozone depletion substances, ISO 14001 procedures, groundwater status, eco-labeling and general information on the state of the environment.

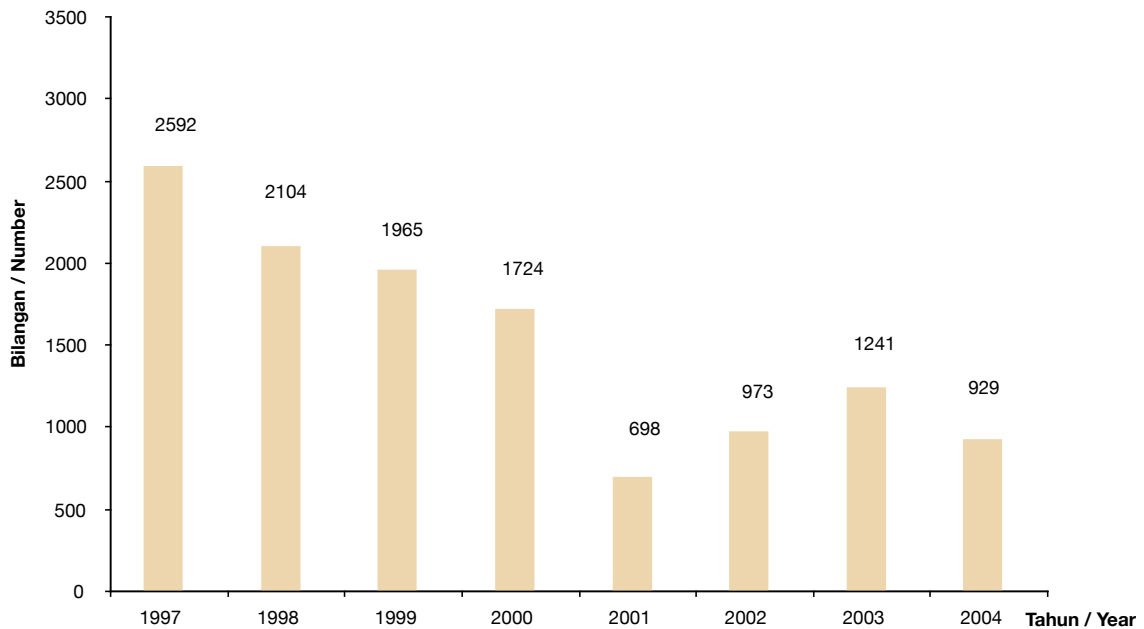
Enviro-Library Services

The Enviro-Library located at the DOE Head Office served as a reference centre not only for DOE staff but also for the public who are registered users. As of 31 December 2004, the entire collection of reference materials totalled 32,511. The number of library users decreased to 929 compared to 1241 in 2003. However, 61.7% of the library users in 2004 were students.



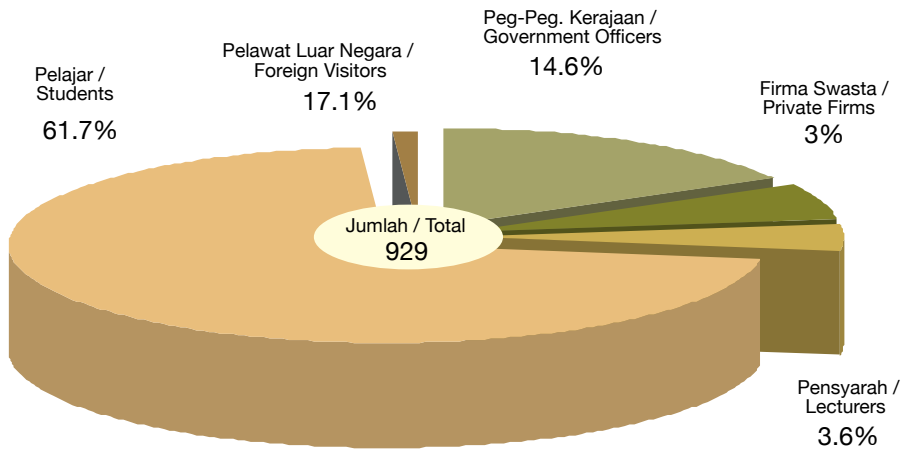


Rajah 6.1 Jabatan Alam Sekitar: Perkhidmatan Perpustakaan 2001-2004
 Figure 6.1 Department of Environment: Library Services, 2001-2004

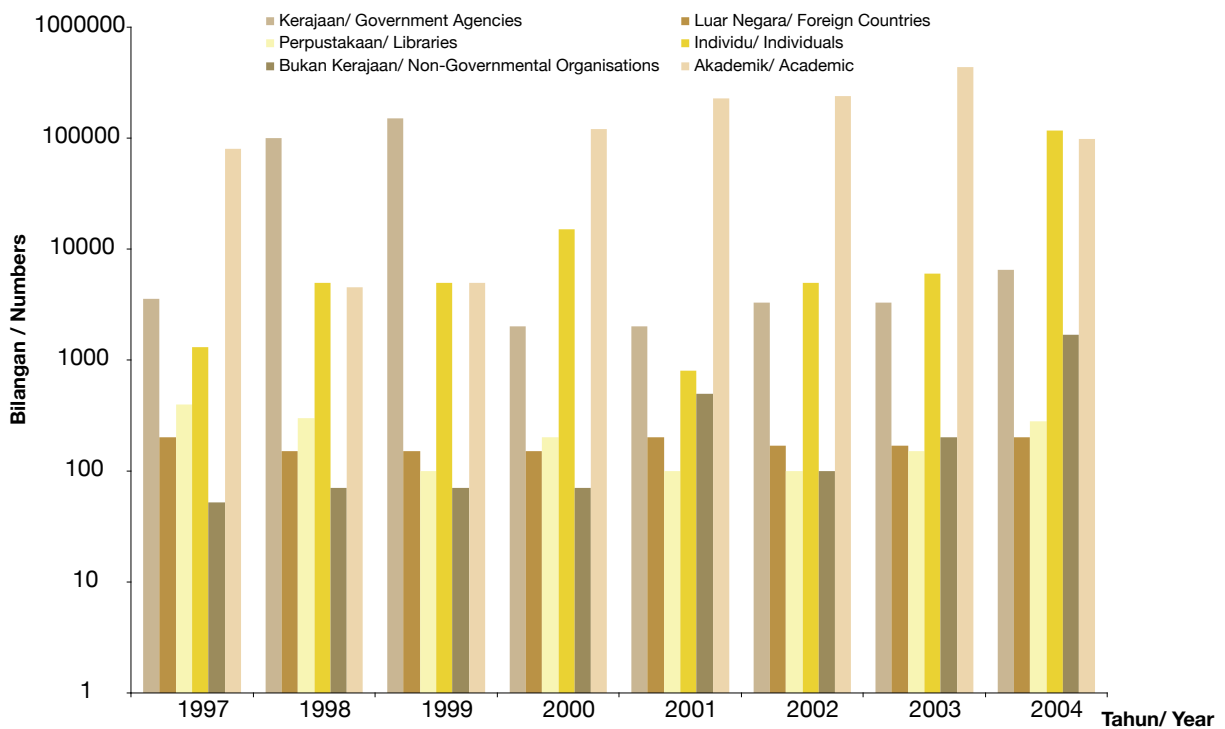


Rajah 6.2 Jabatan Alam Sekitar : Bilangan Pengguna Perpustakaan, 2004
 Figure 6.2 Department of Environment : Number of Library Users, 2004





Rajah 6.3 Jabatan Alam Sekitar : Kategori Pengguna-pengguna Perpustakaan Jabatan Alam Sekitar, 2004
 Figure 6.4 Department of Environment: Category of Library Users, 2004



Rajah 6.4 Jabatan Alam Sekitar: Kategori Penerima Terbitan-Terbitan Alam Sekitar, 1997-2004
 Figure 6.4 Department of Environment: Category of Environmental Publication Recipients, 1997-2004





Hal-Ehwal Alam Sekitar Antarabangsa - Kerjasama Dua Hala

International Environmental Affairs - Bilateral Cooperation

Malaysia-Bangladesh

Seorang pegawai penyelidik dari Kementerian Kesihatan dan Kebajikan Keluarga Bangladesh dibawah tajaan World Health Organisation (WHO) telah melawat JAS pada 19 Februari 2004. Beliau telah diringi oleh 2 orang pegawai dari Pusat Racun Negara (Pulau Pinang). Taklimat bertajuk "Pengurusan Bahan Kimia dan Bahan Buangan di Malaysia" telah diberikan.

Malaysia-Bhutan

Lawatan Sambil Belajar bertajuk Pengurusan Alam Sekitar oleh Delegasi Bhutan dari Kementerian Perdagangan dan Industri, Bhutan. Satu delegasi yang terdiri dari 12 orang pegawai Kerajaan dan Bukan Kerajaan telah mengadakan lawatan sambil belajar mengenai Pengurusan Alam Sekitar di Malaysia pada 14 – 26 Mac 2004. Lawatan selama 9 hari ini merangkumi program lawatan ke Ibu Pejabat JAS stesen pemantauan udara, Institut Alam Sekitar Malaysia (EiMAS)(Latihan), Alam Sekitar Malaysia Sdn Bhd (ASMA) (Pengawasan Kualiti Alam Sekitar), Alam Flora Sdn Bhd (Pengawasan Buangan Pepejal), Business Council for Sustainable Development (BCSDM)(Pengawasan Korporat Alam Sekitar), Malaysian International Chamber of Commerce and Industry (MICCI)(Pengawasan Korporat Alam Sekitar), Malaysian Industrial Development Authority (MIDA)(Insentif Pelabur & Prosedur) selain dari lawatan ke kilang industri plastik, perabot dan simen. Delegasi juga mengunjungi Pusat Sains Negara dan Pameran Perdagangan Pengurusan Bahan Buangan di Pusat Dagangan Dunia Putra (PWTC).

Malaysia – Amerika Syarikat

Duabelas orang pelabur dari Amerika Syarikat telah melawat JAS pada 29 Mac 2004. Tujuan mereka ke JAS adalah untuk mengetahui mengenai kawalan pencemaran di Malaysia.

Malaysia-Bangladesh

A Bangladesh research officer from the Ministry of Health and Family Welfare, sponsored by the World Health Organization (WHO), visited DOE on 19 February 2004. He was accompanied by two officers from the National Poison Centre in Penang. Area of interest: "Management of Chemicals and Wastes in Malaysia".

Malaysia- Bhutan

A delegation of 12 Government and Non-Government officials from the Kingdom of Bhutan participated in an Environmental Management Study Tour in Malaysia from 14 – 26 March 2004. The nine-day programme included visits to DOE State Offices, Air Monitoring Stations in the Klang Valley, the Environmental Institute of Malaysia (EiMAS)(Training & Capacity Building), Alam Sekitar Malaysia Sdn Bhd (ASMA) (Environmental Monitoring), Alam Flora Sdn Bhd (Solid Waste Management) the Business Council for Sustainable Development (BCSDM)(Corporate Environmental Governance), the Malaysian International Chamber of Commerce and Industry (MICCI)(Corporate Environmental Governance), the Malaysian Industrial Development Authority (MIDA)(Investors Incentive & Procedures) as well as visits to paper, plastic, furniture and cement industries. The delegation also visited the National Science Centre and an Exhibition on Management of Solid Waste at Putra World Trade Centre.

Malaysia – USA

Twelve investors from the United States of America visited DOE on 29 March 2004 with the objective of updating themselves on pollution control and environmental management in Malaysia.



Malaysia-Indonesia

Sebanyak 3 kali, beberapa pegawai dari Kementerian Lingkungan Hidup, Republik Indonesia telah melawat JAS. Lawatan pertama adalah pada 20 Mei 2004 seramai 3 orang pegawai kanan yang telah melakukan kunjungan hormat kepada Ketua Pengarah Alam Sekitar. Pada 1 Jun 2004 seramai 4 orang pegawai telah melawat JAS bertujuan ingin mengetahui dan mendalami mengenai kawalan jerebu di Malaysia serta perkembangan Sub-regional Fire Fighting Arrangements (SRFAs). Pada 21 Jun 2004 melibatkan sepuluh orang pegawai dari bahagian pentadbiran yang ingin mengetahui dan mendalami pengurusan dan pentadbiran di JAS, serta program latihan Institut Alam Sekitar Malaysia (EiMAS).

Malaysia-Singapura

Mesyuarat ke 2 Kumpulan Kerja Jawatankuasa Bersama Malaysia-Singapura Mengenai Alam Sekitar (WG of MSJCE) telah diadakan pada 26 – 27 Februari 2005 di Kuala Lumpur, Malaysia.

Antara isu alam sekitar yang telah dibincangkan ialah:

- Kawalan Pencemaran Kenderaan
- Kualiti Air di Selat Johor
- Pencemaran di Kawasan Tadahan Air Skudai
- Pelan Tindakan Kecemasan Tumpahan Bahan Kimia di Lintasan Kedua Malaysia -Singapura
- Kerjasama didalam Latihan Alam Sekitar diantara Institut Latihan Alam Sekitar Singapura (SEI) dan Institut Alam Sekitar Malaysia (EiMAS)

Laporan Kumpulan-kerja ini dibentangkan di dalam Mesyuarat ke 19 Jawatankuasa Bersama Malaysia-Singapura Mengenai Alam Sekitar (MSJCE) yang telah diadakan pada 16 September 2004 di Singapura.

Mesyuarat Tahunan Dua Hala ke 18 antara Menteri Alam Sekitar Malaysia- Singapura telah diadakan pada 17 September 2004 di Singapura. Kedua-dua Menteri telah meneliti perkembangan aktiviti yang telah dilaksanakan oleh Kumpulan Kerja Jawatankuasa Bersama Malaysia-Singapura Mengenai Alam Sekitar (MSJCE) dan bertukar-tukar pendapat mengenai isu jerebu merentasi sempadan, kawalan pencemaran dari kenderaan dan Pelan Tindakan Kecemasan bagi Tumpahan Minyak di Lintasan Kedua Malaysia-Singapura.

Malaysia- Indonesia

Several officials from the Ministry of Environment, of the Republic of Indonesia visited DOE thrice. On 20 May 2004, 3 senior officials paid a courtesy call on the Director General of Environment. On 1 June 2004, 4 officials visited DOE with the aim of enhancing their understanding on Haze Control in Malaysia, as well to acquaint themselves on the progress of the Sub-regional Fire Fighting Arrangements (SRFAs). On 21 June 2004, 10 officers from the Administrative Division came to study DOE's Management System as well as the training and capacity building programmes at the Environment Institute of Malaysia (EiMAS).

Malaysia – Singapore

The 2nd Working Group Meeting of the Malaysia-Singapore Joint Committee on the Environment (MSJCE) was held from 26 – 27 February 2004 in Kuala Lumpur, Malaysia.

Among the issues discussed were:

- Vehicle Emission Control
- Water Quality in the Straits of Johore
- Pollution in the Skudai Water Catchment
- Emergency Response Plan for Chemical Spill at Malaysia-Singapore Second Crossing
- Cooperation in Environmental Training between Environmental Institute of Malaysia (EiMAS) and Singapore Environment Institute (SEI)

The Report was presented to the 19th Malaysia-Singapore Joint Committee on the Environment (MSJCE) held on 16 September 2004 in Singapore.

The 18th Annual Exchange Visits between Malaysia and Singapore Environment Ministers was held on 17 September 2004 in Singapore. Both Ministers reviewed the progress of work carried out by the Malaysia-Singapore Joint Committee on the Environment and exchanged views on issues relating to transboundary haze, control of vehicular emissions and emergency response plan for chemical spills at the Malaysia-Singapore Second Crossing.



Mesyuarat Peringkat Pegawai Kanan Kerajaan Malaysia - Singapura Mengenai Aktiviti Penambakan Laut oleh Singapura telah diadakan pada 10-13 Februari 2004 di Singapura dan disusuli dengan mesyuarat seterusnya pada 6 – 10 Julai di Copenhagen, Denmark.

Satu kunjungan hormat kepada Ketua Pengarah Alam Sekitar, Malaysia oleh Pengerusi Eksekutif National Environment Agency (NEA) Singapura, BG (NS) Lam Joon Khoi telah diadakan pada 9 September 2004. Kunjungan hormat ini adalah bersempena dengan lawatan kerja Perdana Menteri Singapura yang baru dilantik iaitu Yang Berbahagia Encik Lee Hsien Loong ke Malaysia.

Malaysia- Brunei

Pada 25 Oktober 2004, seramai 3 orang pegawai kanan Kerajaan dari Brunei Darussalam telah melawat JAS sempena Program Penempatan bagi Kerja-Kerja Penyediaan Perancangan Jangka Panjang Negara Brunei Darussalam” bermula pada 11 – 30 Oktober 2004.



Gambarfoto 7.1 JAS: Lawatan Sambil Belajar oleh Pegawai dari Kementerian Alam Sekitar Indonesia, 21 Jun 2004
Photo 7.1 DOE : Study Visit by Officers from the Ministry of Environment, Indonesia, 21 June 2004

The High Level Meeting of Malaysia–Singapore Senior Officials on Coastal Reclamation Activities in Singapore was held on 10-13 February 2004 with a follow-up meeting on 6 – 10 July 2004 in Copenhagen, Denmark.

BG Lam Joon Khoi, the Chief Executive Officer of the National Environment Agency (NEA) Singapore, paid a courtesy call on the Director General of Environment, Malaysia on 9 September 2004. The courtesy call was held in conjunction with the working visit of the new Singapore Prime Minister, His Excellency Mr. Lee Hsien Loong to Malaysia.

Malaysia-Brunei

On 25 October 2004, 3 senior government officials from Brunei Darussalam visited DOE from 11 – 30 October 2004 under the “Program Penempatan bagi Kerja-Kerja Penyediaan Perancangan Jangka Panjang Negara Brunei Darussalam”.



Gambarfoto 7.2 JAS: Mesyuarat ke-2 Kumpulan Kerja MSJCE , 26-27 February 2004, Kuala Lumpur
Photo 7.2 DOE: 2nd MSJCE Working Group Meeting, 26-27 February 2004, Kuala Lumpur



Hal-Ehwal Alam Sekitar Antarabangsa - Kerjasama Serantau

International Environmental Affairs - Regional Cooperation

2nd SRFA Fire And Haze Disaster Table-top Exercise

Simulasi SRFA Fire and Haze Disaster yang kedua telah diadakan dengan jayanya pada 19 – 21 April 2004 di Kuala Lumpur. Latihan tersebut telah dihadiri oleh kesemua anggota Negara SRFAs iaitu Brunei Darussalam, Indonesia, Malaysia dan Singapura serta wakil dari SEA FDRS Project dan Sekretariat ASEAN. Di antara objektif latihan ini ialah untuk menguji skil komunikasi dan penyelarasan di kalangan anggota Negara SRFAs. Sehubungan ini latihan ini berjaya menguji kesemua peringkat dan aspek yang telah ditetapkan di bawah Standard Operating Procedure (SOP), suatu prosedur yang telah dibangunkan berdasarkan Perjanjian ASEAN mengenai Pencemaran Jerebu yang Merentasi Sempadan. Latihan ini bertujuan untuk menguji tugas dan tanggungjawab Pusat Rujukan Kebangsaan, Pusat Pemantauan Kebangsaan dan Badan Pelaksana yang dilantik di bawah Perjanjian ini.

Bengkel ASEAN tentang Promosi Teknologi Mesra Alam dan Pengeluaran Bersih

Bengkel ASEAN mengenai Promosi Teknologi Mesra Alam dan Pengeluaran Bersih telah dianjurkan pada 28 November – 1 Disember 2004 di Kuala Lumpur. Bengkel ini telah dihadiri oleh wakil dari Negara Brunei Darussalam, Malaysia, Myanmar, Singapura, Thailand dan wakil dari Sekretariat ASEAN. Malaysia adalah negara pen-eraju bagi Promosi Teknologi Mesra Alam (EST) dan Pengeluaran Bersih (CP).

Bengkel ini telah berbincang syor terhadap Laporan Penilaian untuk penubuhan ASEAN Regional Center/Network untuk mempromosi EST dan CP dan berpendapat bahawa sebagai langkah awal, satu rangkaian perlu ditubuhkan dalam usaha menghubungkan pusat rujukan setiap anggota Negara ASEAN.

2nd SRFA Fire and Haze Disaster Table-Top Exercise

The 2nd SRFA Fire and Haze Disaster Table-top Exercise was successfully held from 19 – 21 April 2004 in Kuala Lumpur. The exercise saw participation from all SRFA Member Countries, namely Brunei Darussalam, Indonesia, Malaysia and Singapore and also representatives from the SEA FDRS Project and the ASEAN Secretariat. Among the objectives of this exercise were to test communication and coordination among SRFA Member Countries. The exercise was able to test all stages and aspects of the Standard Operating Procedure (SOP) which was developed based on the ASEAN Agreement on Trans-boundary Haze Pollution. The exercise was undertaken to fine-tune the roles and responsibilities of National Focal Points (NFPs), the National Monitoring Centres (NMCs) and Competent Authorities (CA) designated under the Agreement.

ASEAN Workshop on Promotion of Environmentally Sound Technologies and Cleaner Production

As the lead country for 'Promotion of Environmentally Sound Technologies (EST) and Cleaner Production (CP)', Malaysia organised The ASEAN Workshop on Promotion of Environmentally Sound Technologies and Cleaner Production from 28 November - 1 December 2004 in Kuala Lumpur. The Workshop was attended by delegates from Brunei Darussalam, Malaysia, Myanmar, Singapore, Thailand and representatives from the ASEAN Secretariat.

The Workshop on Promotion of EST and CP also discussed the recommendations of the Report on the Assessment for the establishment of an ASEAN Regional Center or Network to promote EST and CP and concluded that as a first step, a Network be established, linking the focal points of each ASEAN member country.



Mesyuarat Bersama Keempatbelas Kumpulan Kerja ASEAN mengenai 'Sub-Regional Fire-fighting Arrangements (SRFAs) untuk Sumatra dan Borneo

Mesyuarat Bersama Keempatbelas Kumpulan Kerja ASEAN mengenai Sub-Regional Fire-fighting Arrangements (SRFAs) untuk Sumatra dan Borneo. Mesyuarat tersebut telah diadakan pada 22 – 23 April 2004 di Kuala Lumpur. Mesyuarat ini telah dihadiri oleh kesemua anggota Negara SRFAs yang terdiri daripada Brunei Darussalam, Indonesia, Malaysia, Singapura, serta wakil dari South Sumatra Forest Fire Management Project, Global Environment Centre, SEA FDRS Project, Japan International Cooperation Agency (JICA) dan juga Sekretariat ASEAN.

Di antara isu yang telah dikemukakan dan dibincangkan adalah laporan peristiwa kebakaran dan jerebu serta ramalan keadaan meteorologi oleh ASEAN Specialised Meteorological Centre (ASMC), langkah pencegahan serta persediaan menghadapi musim kering oleh setiap negara anggota SRFA, laporan kemajuan berkenaan ASEAN Cooperative Projects on Transboundary Haze Pollution oleh Sekretariat ASEAN, penubuhan data GIS untuk Sumatra, Kalimantan dan Malaysia serta kajian penubuhan dan operasi institut respon kecemasan dan perancangan strategik untuk bencana alam sekitar.

Mesyuarat Bersama Kelimabelas Kumpulan Kerja ASEAN mengenai 'Sub-Regional Fire-fighting Arrangements (SRFA) untuk Sumatra dan Borneo

Mesyuarat Bersama Kelimabelas Kumpulan Kerja ASEAN mengenai 'Sub-Regional Fire-fighting Arrangements (SRFAs) untuk Sumatra dan Borneo telah diadakan di Pekanbaru, Sumatra, Indonesia pada 22 – 23 Julai 2004. Mesyuarat ini telah dihadiri oleh kesemua anggota Negara SRFAs yang terdiri daripada Brunei Darussalam, Indonesia, Malaysia, Singapura serta wakil dari Japan International Cooperation Agency (JICA), APRIL Riau Fiber, PT. Riau Andalan Pulp & Paper, Global Environment Centre, Sinar Mas Group dan juga Sekretariat ASEAN.

Di antara isu yang telah dikemukakan dan dibincangkan adalah laporan peristiwa kebakaran

Fourteenth Joint Meeting of the ASEAN Working Group on Sub-Regional Fire-fighting Arrangements (SRFAs) for Sumatra and Borneo

The 14th Joint Meeting of the ASEAN Working Group on Sub-Regional Fire-fighting Arrangements (SRFAs) for Sumatra and Borneo was held from 22 – 23 April 2004 in Kuala Lumpur. The Meeting was attended by SRFA Member Countries, namely Brunei Darussalam, Indonesia, Malaysia and Singapore and also by representatives from the South Sumatra Forest Fire Management Project, the Global Environment Centre, SEA FDRS Project, Japan International Cooperation Agency (JICA) and the ASEAN Secretariat.

Among the issues presented and discussed were the reports on fire and haze occurrences and forecast of the meteorological conditions by the ASEAN Specialised Meteorological Centre (ASMC), preventive measures and preparedness for the dry season by all the SRFA Member Countries, progress report on ASEAN Cooperative Projects on Transboundary Haze Pollution by the ASEAN Secretariat, and establishment of a GIS database for Sumatra, Kalimantan and Malaysia. There was also discussion on the need for a study on the establishment and operationalisation of an emergency response and strategic planning institute for environmental disaster.

Fifteenth Joint Meeting of the ASEAN Working Group on Sub-Regional Fire-fighting Arrangements (SRFA) for Sumatra and Borneo

The 15th Joint Meeting of the ASEAN Working Group on Sub-Regional Fire-fighting Arrangements (SRFAs) for Sumatra and Borneo was held from 22 – 23 July 2004 in Pekanbaru, Sumatra, Indonesia. The Meeting was attended by all the SRFA Member Countries, namely Brunei Darussalam, Indonesia, Malaysia, Singapore and also by representatives from the Japan International Cooperation Agency (JICA), APRIL Riau Fiber, PT. Riau Andalan Pulp & Paper, the Global Environment Centre, Sinar Mas Group and the ASEAN Secretariat.

Among the issues presented and discussed were



dan jerebu serta ramalan keadaan meteorologi oleh ASEAN Specialised Meteorological Centre (ASMC), langkah pencegahan serta persediaan menghadapi musim kering oleh setiap negara anggota SRFAs, laporan kemajuan berkenaan ASEAN Cooperative Projects on Transboundary Haze Pollution oleh Sekretariat ASEAN dan program bantuan antarabangsa.

Bengkel Garispanduan Pelaksanaan Polisi ASEAN tentang Pembakaran Sifar

Bengkel Garispanduan Pelaksanaan Polisi ASEAN tentang Pembakaran Sifar telah diadakan pada 14 – 15 Julai 2004 di Kuala Rompin, Pahang. Bengkel ini telah dianjurkan oleh Jabatan Alam Sekitar, Malaysia dengan kerjasama Sekretariat ASEAN. Bengkel ini telah dikendalikan oleh 6 orang fasilitator dan penceramah dari pelbagai agensi. Bengkel ini telah dihadiri oleh seramai 40 orang yang terdiri daripada wakil dari Negara Indonesia, Malaysia, Singapura, JICA dan Sekretariat ASEAN.

Objektif bengkel ini ialah untuk memperkenalkan dan mempromosi Pelaksanaan Polisi ASEAN tentang Pembakaran Sifar melalui demonstrasi teknik pembakaran sifar, lawatan tapak dan dengan mengadakan dialog di kalangan pengusaha perladangan, pemegang konsesi pembalakan, pakar-pakar dan agensi penguatkuasaan. Lokasi bengkel yang tersebut di atas dipilih agar para peserta dapat menyaksikan teknik pembakaran terbuka di kawasan penanaman berhampiran milik YP Plantation Holdings dan Tabung Haji Plantations Sdn Bhd.

reports on fire and haze occurrences and forecast of the meteorological conditions by the ASEAN Specialised Meteorological Centre (ASMC), preventive measures and preparedness for the dry season by all the SRFAs Member Countries, progress report on ASEAN Cooperative Projects on Transboundary Haze Pollution by the ASEAN Secretariat and the international assistance programme.

Workshop on the Guidelines for the Implementation of the ASEAN Policy on Zero Burning

The Workshop on the Guidelines for the Implementation of the ASEAN Policy on Zero Burning was held from 14 – 15 July 2004 in Kuala Rompin, Pahang. It was organised by Department of Environment in collaboration with the ASEAN Secretariat and was conducted by six facilitators and speakers from various agencies. The Workshop was attended by 40 participants from Indonesia, Malaysia, Singapore, JICA and the ASEAN Secretariat.

The fundamental objective of the Workshop was to introduce and promote the implementation of the ASEAN Policy on Zero Burning through demonstration of zero burning techniques, field visits and interactive dialogues among practitioners in plantation companies, timber concessionaires, experts and regulatory agencies. The Workshop venue was chosen to allow the participants to observe zero burning techniques in practice in nearby plantations belonging to YP Plantation Holdings Sdn Bhd and Tabung Haji Plantations Sdn Bhd.





Gambarfoto 7.3 JAS: Mesyuarat Bersama ke 14 Kumpulan Kerja ASEAN Mengenai SRFAs untuk Sumatera dan Borneo
Photo 7.3 DOE : 14th Joint Meeting of the ASEAN Working Group on SRFAs for Sumatera and Borneo



Gambarfoto 7.4 JAS: Mesyuarat Bersama ke 14 Kumpulan Kerja ASEAN Mengenai SRFAs untuk Sumatera dan Borneo
Photo 7.4 DOE : 14th Joint Meeting of the ASEAN Working Group on SRFAs for Sumatera and Boneo (Field Trip)



Gambarfoto 7.5 JAS: Bengkel ASEAN Tentang Promosi Teknologi Mesra Alam dan Pengeluaran Bersih
Photo 7.5 DOE : ASEAN Workshop on Promotion of Environmentally Sound Technologies and Cleaner Production



Gambarfoto 7.6 JAS: Perasmian Bengkel 'Zero Burning Workshop' Photo 7.6 DOE: Opening Ceremony of Zero Burning Workshop



Gambarfoto 7.7 JAS: Bengkel 'Zero Burning Workshop', 14-15 Julai 2004, Kuala Rompin, Pahang
Photo 7.7 DOE : Zero Burning Workshop, 14-15 July 2004, Kuala Rompin, Pahang



Gambarfoto 7.8 JAS: Seminar Mengenai Garispanduan untuk Melaksanakan Dasar ASEAN Tentang Pembakaran Sifar
Photo 7.8 DOE: Seminar on Guidelines for the Implementation of the ASEAN Policy on Zero Burning





Bahagian Teknologi Maklumat

Information Technology Division

Bahagian Teknologi Maklumat (BTM) bertanggungjawab untuk pembangunan sistem aplikasi, kemudahan prasana ICT, rangkaian komputer ke semua pejabat negeri/cawangan (JAS*Net) serta memberi latihan berasas komputer berkaitan aplikasi jabatan dan productivity tools.

Pelan Strategik ICT (ISP), JAS

Selaras dengan saranan MAMPU, Bahagian Teknologi Maklumat telah menyediakan Pelan Strategik ICT (ISP) JAS bagi keperluan ICT Jabatan Alam Sekitar dalam jangka masa lima tahun dari 2005 – 2009. ISP ini telah digunakan sebagai asas utama dalam penyediaan bajet dan pelaksanaan program ICT JAS bagi tahun 2005 - 2009.

Audit Sistem EKAS 1

Tugas pengauditan sistem EKAS 1 yang terdiri dari modul SIMPAS (Sistem Maklumat Asas Permis), PLDS (Pollution Load Database System), SWIS (Schedule Waste Information System), SMIWK (Sistem Maklumat Indah Water Konsortium), Pemantauan, Penguatkuasaan dan Pelesenan, telah dipertanggungjawabkan kepada Stake Holder modul-modul yang berkaitan dengan kerjasama Bahagian Teknologi Maklumat. Objektif utama pengauditan sistem ini adalah untuk :

- Mengenalpasti keberkesanan dan kelemahan pelaksanaan Sistem EKAS I;
- Mencari pendekatan yang terbaik didalam menyelesaikan sebarang kelemahan yang dikenalpasti dan
- Memastikan sistem EKAS dapat beroperasi dengan berkesan pada peringkat JAS Ibu Pejabat dan Negeri serta dapat menghasilkan laporan yang diperlukan oleh pihak pengurusan JAS.

Distributed Computing EKAS

Di antara laporan audit yang dijalankan ke atas Sistem EKAS 1 ialah pengoperasian dan transaksi tersangat perlahan dan sistem seringkali 'hang'. Bagi mengatasi masalah ini, konsep rekabentuk pemprosesan terserak telah dilaksanakan dengan menempatkan application server kecil di setiap JAS negeri. JAS Wilayah Persekutuan Kuala Lumpur dan Selangor telah dipilih sebagai 'pilot' untuk pengujian keberkesanan konsep.

The Information Technology Division is responsible for system development, ICT infrastructure, computer networking with State/Branches (JAS*Net) and basic computer training on office applications and desktop productivity tools.

ICT Strategic Plan (ISP), DOE

In line with MAMPU's requirement, the Information Technology Division prepared the ICT Strategic Plan (ISP) for 2005 – 2009. The ISP would be used as the main basis for budget preparation and JAS ICT programme implementation for 2005-2009.

Auditing System EKAS 1

The task of auditing System EKAS 1 which comprises module SIMPAS (Premises Basic Information System), PLDS (Pollution Load Database System), SWIS (Scheduled Waste Information System), SMIWK (Indah Water Konsortium Information System), Monitoring, Licensing and Enforcement was given to the respective module stakeholders in cooperation with the Information Technology Division. The objectives of system auditing were:

- To identify effectiveness and weakness of implementation of EKAS 1 system at the State and Head Office;
- To look for the corrective approach to solve the shortfalls identified; and
- To ensure the effective operation of the EKAS 1 System at the State and Head Office and to produce reports required by the management.

Distributed Computing EKAS

The audit reports showed that the operating capacity and transactions were slow. To overcome these problems, the concept of distributed computing was introduced and small application servers were placed at each State. Selangor and Federal Territory DOE Offices were selected as pilot sites to test effectiveness of the concept.



Sistem E-Permit

Pada tahun 2004, Sistem E-Permit telah dibangunkan untuk membolehkan JAS bekerjasama dengan Jabatan Kastam bagi memantau aktiviti pengimportan dan pengeksporan Buangan Terjadual yang dikendali oleh pengimport dan pengeksporthan dan forwarding agent yang telah mendapat permit dan kelulusan JAS. Pelaksanaan sistem tersebut dijangka bermula pada tahun 2005.

Portal JAS

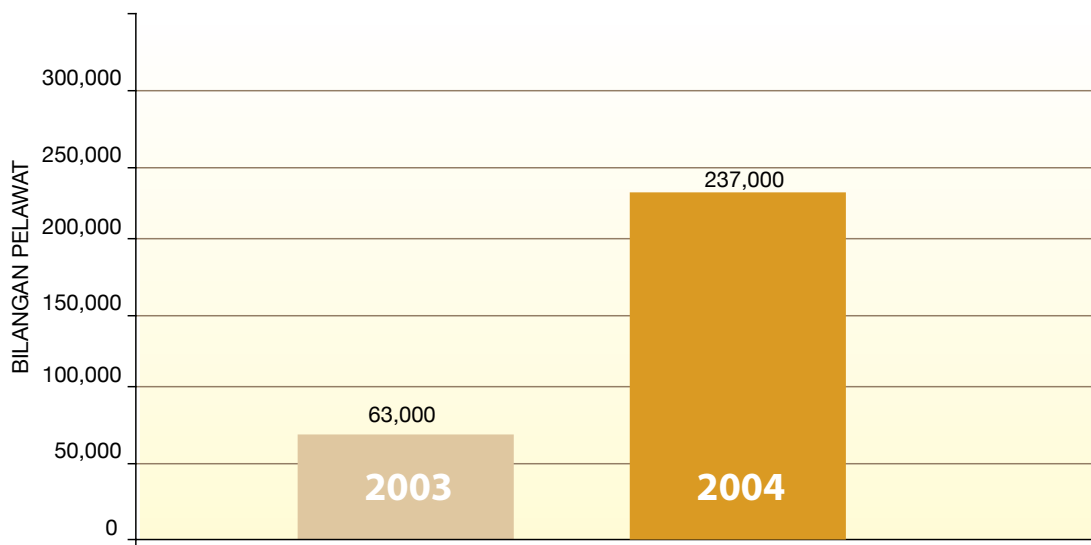
Portal JAS boleh dicapai melalui URL: <http://www.jas.sains.my>. Jumlah pelawat yang telah mengunjungi portal JAS sejak 1 Januari 2004 sehingga 31 Disember 2004 adalah sebanyak 237,000. Jumlah ini telah meningkat sebanyak 174,000 pelawat berbanding dengan 63,000 pada tahun 2003. Selain digunakan untuk menyalurkan maklumat berkaitan alam sekitar, portal ini juga menerima aduan, pertanyaan dan cadangan orang ramai mengenai alam sekitar.

System E-Permit

In 2004, the System E-Permit was developed to allow DOE to cooperate with the Customs Department in monitoring the import and export of scheduled wastes by importers, exporters and forwarding agents approved by DOE. The implementation of the system is expected to start in 2005.

Portal DOE

The DOE portal can be reached by URL: <http://www.jas.sains.my>. From 1 January 2004 to 31 December 2004, 237,000 hits were recorded. This number had increased by 174,000 in 2004 compared to 63,000 in 2003. Apart from channelling environmental information, the portal also received complaints, enquiries and suggestions from the public pertaining to the environment.



Rajah 8.1 JAS : Statistik Pelawat Portal
 Figure 8.1 DOE : Portal Visitor's Statistics



Perkakasan ICT

Perkakasan ICT di JAS pada tahun 2004 adalah seperti di jadual 8.1.

ICT Hardware

The ICT hardware status in 2004 is as shown in Table 8.1.

Jadual 8.1 JAS : Perkakasan ICT JAS

Table 8.1 DOE :Implementation of ICT Hardware for DOE

Perkakasan/ Hardware	1999		2000		2001		2002		2003		2004		Bilangan Number
	M	S	M	S	M	S	M	S	M	S	M	S	
Server	22	-	4	-	5	-	1	-	-	-	1	-	33
Komputer/ Computer	31	-	82	-	25	-	190	-	40	50	92	-	510
Pencetak / Printer	30	-	31	-	9	-	20	-	-	30	29	-	149
Switches / Hub	15	-	-	-	15	-	-	-	5	-	16	-	51
Scanner	-	-	-	-	23	-	-	-	-	-	-	-	23
Notebooks	1	-	33	-	12	-	18	-	-	-	20	-	84
Firewalls	-	-	1	-	1	-	-	-	-	-	-	-	2
17" Flat Panel	-	-	-	-	-	-	-	-	-	-	31	-	31
Pencetak Impak mudah alih	-	-	-	-	-	-	-	-	-	-	21	-	21

Dasar Keselamatan ICT

Jawatankuasa Pemandu ICT, JAS telah meluluskan Dokumen Dasar Keselamatan ICT yang disediakan oleh BTM, JAS dengan kerjasama pihak MAMPU pada 20 September 2004.

Dasar Keselamatan ICT ini mengandungi peraturan-peraturan yang perlu dipatuhi oleh kakitangan JAS dalam menggunakan aset teknologi maklumat dan komunikasi semasa menjalankan tugas rasmi serta menerangkan kepada semua pengguna, pelanggan, pembekal, perunding mengenai peranan dan tanggungjawab mereka terhadap keselamatan ICT.

Peningkatan Perkhidmatan Rangkaian JAS*NET

Bagi meningkatkan tahap perkhidmatan rangkaian di JAS Negeri dan Cawangan, kapasiti talian Internet telah dipertingkatkan daripada 128Kbps kepada 2Mbps. Peningkatan perkhidmatan JAS*NET ini diharap dapat meningkatkan kualiti kerja para pengguna di JAS Negeri dan Cawangan yang banyak bergantung pada rangkaian ini untuk mengakses perkhidmatan e-mel, portal dan sistem aplikasi di dalam jabatan.

ICT Security Policy

The DOE ICT Steering Committee approved the ICT Security Policy Document prepared by the Information Technology Division of DOE in collaboration with MAMPU on 20 September 2004.

The Security Policy spells out the procedures to be followed by DOE staff for use of ICT while performing their official work, as well as provides clarification to all users, customers, suppliers and consultants regarding their roles and responsibilities.

JAS*NET Networking Improvement Services

To improve the networking service level at DOE State and Branch Offices, the capacity of the Internet was increased from 128 kbps to 2 Bbps.

This improvement of JAS*Net is expected to increase the quality of work of users at DOE State and Branch Offices who depend on networking to access e-mail, portal and the application systems in the department.



Jadual 8.2 JAS : Bengkel Latihan & Kolokium ICT, 2004
 Table 8.2 DOE : ICT Training Workshop & Colloquium, 2004

Bil	Program	Tarikh/ Date
1	Kursus WASDA (Wastewater Treatment Plant Design Advisor Version 1.0)	25 – 26 Februari 2004
2	Kursus Pengeluaran Lesen Kilang Getah, Kelapa Sawit dan Premis Buangan Terjadual	24 Mac 2004
3	Kursus SISPEN (Sistem Maklumat Personel)	20 – 22 April 2004
4	Kursus Perisian Dreamweaver	19 – 20 Mei 2004
5	Kursus Scheduling in Microsoft Outlook and Web Access	25 Mei 2004
6	Kolokium Microsoft System Management Server	17 Mac 2004
7	Kolokium Keselamatan PC	27 Mac 2004
8	Kolokium X-Link	10 April 2004
9	Kolokium Microsoft Word XP	21 Mei 2004
10	Bengkel Penyediaan Deraf Keselamatan ICT	14 – 16 Julai 2004
11	Bengkel ICT Strategic Planning	9 Sept 2004
12	Taklimat SMS, Exchange Active Directory	21 Sept 2004





Bab 9

Chapter 9

Institut Alam Sekitar Malaysia (EiMAS)

Malaysian Institute of Environment (EiMAS)

Pada tahun 2004, EiMAS telah mengendalikan beberapa aktiviti latihan untuk pegawai JAS dan 'stakeholders'.

Seminar 'Good Manufacturing Practices'

Sempena Hari Bersama Pelanggan Jabatan Alam Sekitar pada 22 Mei 2004, Institut Alam Sekitar Malaysia (EiMAS) telah mengendalikan program Seminar "Good Manufacturing Practices" yang disertai oleh 30 peserta. Seminar ini merangkumi topik-topik seperti konsep CP, audit CP, hubungkait pengurusan alam sekitar dengan pelaksanaan CP, pengurangan pencemaran dan meningkatkan daya saing produk di peringkat antarabangsa.

Workshop on CP Implementation Status in State DOE

Pelaksanaan dan permasalahan CP di peringkat negeri telah dibincangkan dalam bengkel sehari yang diadakan di EiMAS pada 17 Jun 2004. Bengkel ini telah disertai oleh 24 pegawai-pegawai Jabatan Alam Sekitar yang telah mencadangkan langkah-langkah ke arah pelaksanaan CP yang lebih berkesan di peringkat Negeri.

Workshop on CP Pro Application

Pada 18 Jun 2004, para peserta bengkel di atas turut didedahkan dengan CP Pro Application, satu aplikasi yang dibangunkan oleh EiMAS dengan kerjasama pihak Universiti Malaya. Sistem aplikasi yang berasaskan laman web ini berfungsi sebagai bank maklumat berkaitan industri terutamanya industri kecil dan sederhana untuk melaksanakan opsyen-opsyen CP. Walaupun sistem aplikasi ini masih di peringkat penyelidikan dan penambahbaikan, sistem ini dijangka dapat membantu pihak industri mengenalpasti masalah dan kelemahan dalam mengendalikan operasi pengeluaran seterusnya mengatasinya seawal mungkin.

Seminar on Cleaner Production Audit

Seminar sehari yang disertai seramai 24 pegawai-pegawai Jabatan Alam Sekitar telah diadakan pada 8 Julai 2004. Seminar ini merangkumi kaedah pelaksanaan audit CP, cara mengatasi cabaran dalam melaksanakan CP dan juga kaitannya dengan

In 2004 EiMAS conducted a number of training activities for DOE officers and stakeholders.

Seminar on Good Manufacturing Practices

In conjunction with "Together with Consumers Day" on 22 May 2004, the Institute of Environment Malaysia (EiMAS) organized a Seminar on Good Manufacturing Practices which was attended by 30 participants. The seminar covered topics such as CP concepts and CP auditing, the relationship between environmental management vis-a-vis implementation of CP, pollution reduction and product competitiveness in the international market.

Workshop on CP Implementation Status at State DOEs

CP implementation and effectiveness at State level were discussed at a one-day workshop organized by EiMAS on 17 June 2004. 24 DOE officers attended this workshop and outlined measures to be undertaken to bring about more effective implementation of CP at the State level.

Workshop on CP Pro Application

On 18 June 2004, participants of the above workshop continued with another workshop on CP Pro Application, developed by EiMAS in collaboration with Universiti Malaya. This web-based application serves as an industry information bank for small and medium-sized industries in CP implementation. Though still at development stage, it is expected to assist industry to identify problems and weaknesses in running their production operations and rectify them as early as possible.

Seminar on Cleaner Production Audit

This one-day seminar, attended by 24 DOE officers was held on 8 July 2004, covering methods of CP audit implementation, overcoming challenges in CP implementation and its relationship to ISO 14000. This seminar was useful for DOE officers as



ISO 14000. Seminar seperti ini perlu supaya para pegawai JAS lebih berkemampuan mengenalpasti masalah serta berupaya untuk memberikan penyelesaian.

Seminar on Renewable Energy for Palm Oil Industries

EiMAS dengan kerjasama Pusat Tenaga Malaysia (PTM) telah mengendalikan seminar ini pada 9 Julai 2004. Seminar ini disertai oleh seramai 60 peserta dari industri kelapa sawit. Tumpuan seminar ialah program yang dilaksanakan oleh PTM iaitu 'Renewable Energy'.

Seminar on Energy Efficiency for Industries

Seminar yang diadakan pada 10 Ogos 2004 ini disertai 48 peserta yang terdiri daripada sektor industri dan pegawai-pegawai Jabatan Alam Sekitar. Seminar ini dikendalikan bersama dengan pihak Pusat Tenaga Malaysia (PTM) dan meliputi aspek penjimatan dan kecekapan tenaga.

Seminar on Cleaner Production Technology Database

Seramai 24 pegawai-pegawai Jabatan Alam Sekitar telah menyertai seminar ini pada 11 Ogos, 2004 untuk membincangkan perisian Sistem Pemilihan Air Sisa Industri (SPLASI) yang dibangunkan bersama Universiti Kebangsaan Malaysia (UKM). Kandungan perisian ini terdiri daripada modul maklumat asas premis dan data pepejal terampai seperti BOD dan COD yang dianalisa untuk pemilihan cara merawat kumbahan buangan industri yang bersesuaian.

Seminar on Wastewater Treatment Plant – Case Studies in Pulp and Paper Plant

Seminar yang diadakan pada 7 Oktober 2004 ini menumpukan kepada perkongsian pengalaman dalam teknologi rawatan kumbahan effluent daripada kilang kertas dan pulpa. Seramai 65 peserta yang terdiri dari syarikat-syarikat kilang kertas dan pegawai dari Jabatan Alam Sekitar telah membincangkan tiga kajian kes.

Forum Alam Sekitar Sempena Sambutan Minggu Alam Sekitar

Sempena dengan sambutan Minggu Alam Sekitar, satu Forum bertemakan 'Alam Sekitar Milik Kita Amanah Bersama' telah diadakan pada 7 Oktober 2004. Forum yang dipengerusikan oleh Dato' Dr. Abu Bakar Jaafar ini melibatkan ahli panel yang

it equipped them with the ability to identify problems and provide solutions.

Seminar on Renewable Energy for Palm Oil Industries

EiMAS in collaboration with the Energy Centre Malaysia (PTM) organized the above seminar on 9 July 2004 which was attended by 60 participants, mainly from the palm oil industries. The seminar focused on PTM's programme particularly on Renewable Energy.

Seminar on Energy Efficiency for Industries

This seminar held on 10 August 2004 had 48 participants drawn from both the industrial sector and DOE. This seminar was organized in collaboration with Energy Centre Malaysia (PTM) and covered topics such as energy conservation and efficiency.

Seminar on Cleaner Production Technology Database

24 participants from DOE, attended this seminar on 11 August 2004 to discuss the software, "Sistem Pemilihan Air Sisa Industri" (SPLASI) developed in collaboration with Universiti Kebangsaan Malaysia (UKM). The software consists of modules containing basic premise information and data on suspended solids such as BOD and COD which will be analysed to select a suitable method of industrial waste treatment.

Seminar on Wastewater Treatment Plant – Case Studies of Pulp and Paper Plants

This seminar which was held on 7 October 2004 focused on a sharing of experiences on technology related to treatment of effluent discharged from pulp and paper plants. The 65 participants, mainly from pulp and paper plants and officers from DOE discussed three case studies.

Environment Forum in Conjunction with Environment Week

In conjunction with Environment Week, a forum with the theme of "Alam Sekitar Milik Kita Amanah Bersama" was organized on 7 October 2004 which



terdiri daripada Prof. Dato' Dr. Abdul Latiff Mohamad, Prof. Dr. Ibrahim Komoo dan Dato' Kok Wee Kiat. Isu-isu yang dibincangkan antaranya menyentuh mengenai sikap, peranan, tanggungjawab dan masyarakat terhadap pemuliharaan alam sekitar. Forum ini disertai oleh seramai 110 orang yang terdiri daripada agensi kerajaan, NGO dan pihak industri.

Bengkel Pemberitaan Alam Sekitar 2004

Bengkel ini telah diadakan pada 22 – 24 Disember 2004 di Kuala Lumpur selama dua hari. Ianya telah disertai oleh pihak media massa, Pihak Bukan Kerajaan (NGO), sektor swasta, pihak Berkuasa Kerajaan Tempatan, pelajar-pelajar universiti dan kolej serta pegawai Jabatan Alam Sekitar. Bengkel ini telah menarik minat lebih daripada 127 orang peserta. Objektif utama bengkel tersebut ialah mendedahkan para peserta untuk menghasilkan penulisan berita alam sekitar yang tepat dan jitu dalam media massa.

was chaired by Dato' Dr. Abu Bakar Jaafar with the forum panel members being Prof. Dato' Dr Abdul latiff Mohamad, Prof. Dr Ibrahim Komoo and Dato' Kok Wee Kiat. The forum discussed issues relating to attitudes, roles and responsibilities of society towards environmental conservation. The forum was attended by 110 participants from government agencies, NGOs and the industrial sector.

Workshop on Environmental Journalism 2004

This two-day workshop, held from 22-24 December 2004 at Kuala Lumpur was attended by representative from the mass media, Non-Government Organisations (NGOs), private sector, Local Authorities, university undergraduates as well as DOE officers. The workshop attracted more than 127 participants. The primary objectives was to expose participants to better environmental reporting in the media by all stakeholders.

Jadual 9.1: Senarai Aktiviti Promosi dan Kesedaran Tahun 2004
Table 9.1: List of Promotion and Awareness Activities for Year 2004

No.	Aktiviti / Activity	Tarikh / Date
1.	Seminar on Good Manufacturing Practices	22 Mei 2004
2.	Workshop on CP Implementation Status in State DOEs	17 Jun 2004
3.	Workshop on CP Pro Application	18 Jun 2004
4.	Seminar on Cleaner Production Audit	8 Julai 2004
5.	Seminar on Renewable Energy for Palm Oil Industries	9 Julai 2004
6.	Seminar on Energy Efficiency for Industries	10 Ogos 2004
7.	Seminar on Cleaner Production Technology Database	11 Ogos 2004
8.	Seminar on Wastewater Treatment Plant – Case Studies of Pulp and Paper Plants	7 Oktober 2004
9.	Environment Forum in Conjunction with Environment Week	7 Oktober 2004
10.	Workshop on Environmental Journalism 2004	22-24 Disember 2004





Gambarfoto 9.1 JAS: Aktiviti Meningkatkan Kesedaran Kepentingan Teknologi Pengeluaran Bersih
Photo 9.1 DOE : Activity to Raise Awareness on Cleaner Production Technology



Gambarfoto 9.2 JAS: Seminar Mengenai 'Cleaner Production Audit' 2004
Photo 9.2 DOE: Seminar on Cleaner Production Audit 2004



Gambarfoto 9.3 EiMAS: Perasmian Bengkel Pemberitaan Alam Sekitar 2004
Photograph 9.3 EiMAS : Opening Ceremony of the Workshop on Environmental Journalism 2004



Gambarfoto 9.4 EiMAS: Ahli Panel Perbincangan Bengkel Pemberitaan Alam Sekitar 2004
Photograph 9.4 EiMAS: Discussion Panel Members for the Workshop on Environmental Journalism 2004