

1 9 9 9 LAPORAN TAHUNAN ANNUAL REPORT



Jabatan Alam Sekitar
Department of Environment

Kementerian Sains, Teknologi dan Alam Sekitar
Ministry of Science, Technology and The Environment



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Laporan tahunan / .labatan Alam Sekitar Malaysia.

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LAPORAN TAHUNAN *ANNUAL REPORT* **1999**



Jabatan Alam Sekitar
Department of Environment

Kementerian Sains, Teknologi dan Alam Sekitar
Ministry of Science, Technology and The Environment

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EXCO FLIR	Ahli Mesyuarat Kerajaan Negeri Forward Looking Infrared Radar	EXCO FUR	Executive Council Forward Looking Infrared Radar
FMM	Persekutuan Pekilang-pekilang Malaysia	FMM	Federation of Malaysian Manufacturers
FOMCA	Persekutuan Pertubuhan Pengguna-pengguna Malaysia	FOMCA	Federation of Malaysian Consumers' Associations
FRTAM	Gabungan Persatuan-persatuan Perdagangan Getah Malaysia	FRTAM	Federation of the Rubber Trade Associations of Malaysia
GIS	Sistem Maklumat Geografik	GIS	Geographic Information System
HCFC IKAN	Hidro Klorofluorokarbon Indeks Kualiti Air Negara	HCFC	Hydro Chlorofluorocarbon
INFOTERRA	Sistem Rujukan Antarabangsa untuk Sumber-sumber Maklumat mengenai Alam Sekitar	HSU INFOTERRA	Hartridge Smoke Unit(s) International Referral System for Sources of Environmental Information
INTAN	Institut Tadbiran Awam Negara	INTAN	National Institute of Public Administration
IRPTC	Pendaftaran Antarabangsa bagi Bahan kimia yang Berpotensi Berbahaya	IPCS IRPTC	International Programme on Chemical Safety International Register of Potentially Toxic Chemicals
ISIS	Institut Kajian Strategik dan Antarabangsa Agensi	ISIS	Institute of Strategic and International Studies
JICA	Kerjasama Antarabangsa Jepun	JICA	Japan International Co-operation Agency
KKSM MAC MASAAM	Kilang Kelapa Sawit Mentah Penyaman Udara Kenderaan Peraturan Pemasang-Pernasang dan Pengedar-Pengedar Motosikal dan Skuter Malaysia	MAC MASAAM	Mobile Air Conditioning Motorcycles and Scooter Assemblers Association of Malaysia
MASM	Minggu Alam Sekitar Malaysia	MEW	Malaysia Environment Week
MEXCOE	Majlis Mesyuarat Kerajaan Negeri yang Bertanggungjawab ke atas Alam Sekitar	MEXCOE	Minister and State Executive Councillors Responsible for Environmental Matters
MISIF	Persekutuan Industri Besi dan keluli Malaysia	MF MICCI	Multilateral Fund Malaysian International Chamber of Commerce and Industry
MFIC	Majlis Industri Pelabot Malaysia	MIFC	Malaysian Furniture Industries Council
		MITI	Ministry of International Trade and Industry

MMVAA Persatuan Pemasang
Kenderaan Bermotor Malaysia
MNS Persatuan Pencinta Alam
Malaysia

MOMG Kumpulan Pengilang Oleokimia
Malaysia
MOPGC Majlis Penanam-penanam
Kelapa Sawit Malaysia

MOU Memorandum Persefahaman

MRPC Majlis Pengeluar-pengeluar
Getah Malaysia

MSJCE Jawatankuasa Bersama
Malaysia-Singapura Mengenai
Alam Sekitar

NGO Pertubuhan Bukan Kerajaan

NH³N Amoniakat Nitrogen

OECD Pertubuhan Kerjasama
Ekonomi dan Pembangunan
PDRM Polis Diraja Malaysia

PIC Keenaran Awal Sebelum
Mengeksport

POMA Persatuan Pekilang-pekilang
Minyak Kelapa Sawit Malaysia

PORIM Institut Penyelidikan Minyak
Kelapa Sawit Malaysia

RM Ringgit Malaysia

RRIM Institut Penyelidik Getah
Malaysia

MMVAA Malaysian Motor Vehicle
ASsemblers Association
MNS Malaysian Nature Society

MOA Ministry of Agriculture
MOH Ministry of Health
MOHR Ministry of Human Resources
MOMG Malaysian Oleochemical
Manufacturers Group

MOPGC Malaysian Oil Palm Growers'
Council

MOSTE Ministry of Science,
Technology and the
Environment

MOI Ministry of Transport
MCXJ Memorandum of
Understanding

MRPC Malaysian Rubber Producers'
Council

MSJCE Malaysia-Singapore Joint
Committee on the
Environment

NAQMP National Air Quality Monitoring
Programme

NPP National Focal Point
NGO Non-Governmental
Organisation

NI-PN Ammoniacal Nitrogen
NPOE National Policy on the
Environment

NREB National Resource and
Environment Board

ODS Ozone-Depleting Substance(s)
DECO Organisation for Economic Co-
operation and Development

OEWG Open-Ended Working Group
PIC Prior Informed Consent

PM Particulate Matter
POMA Palm Oil Millers' Association
Palm Oil Millers Association

PORJM Palm Oil Research Institute of
Malaysia

RAC Refrigerant Air Conditioner
RM Ringgit Malaysia

RNR Raw Natural Rubber
-RRJM Rubber Research Institute of
Malaysia

SNIIJA.	Skim Akreditasi Makmal . Malaysia	SMI SOM SS TSP UIA	Small and Medium Industry Senior Officials' Meeting Suspended Solids Total Suspended Particulate Universiti Islam Antarabangsa (International Islamic University)
UIA	Universiti Islam Antarabangsa	UKM	Universiti Kebangsaan Malaysia
UKM	Universiti Kebangsaan Malaysia	ULG UM UNCED	Unleaded Gasoline Universiti Malaya United Nations Conference on Environment and Development
UM	Universiti Malaya	UNEP	United Nations Environment Programme
UNCEO	Persidangan Bangsa-Bangsa Bersatu mengenai Alam Sekitar dan Pembangunan	UNIDO	Pertubuhan Bangsa-Bangsa Bersatu bagi Pembangunan Industri
UNEP	Program Alam Sekitar Bangsa- Bangsa Bersatu	UPM USM UiTM UUM WHO WQJ WWF	Universiti Putra Malaysia Universiti Sains Malaysia Universiti Teknologi Malaysia Universiti Utara Malaysia World Health Organisation Water Quality Index World Wide Fund for Nature
UNIDO	Pertubuhan Bangsa-Bangsa Bersatu bagi Pembangunan Industri		
UPM	Universiti Putra Malaysia		
OSM	Universiti Sains Malaysia		
OTM	Universiti Teknologi Malaysia		
OUM	Universiti Utara Malaysia		
WHO	Pertubuhan Kesihatan Sedunia		
WWF	Dana Pertubuhan Pemeliharaan Alam Sekitar		
Y.A.B	Yang Amat Berhormat		
Y.B.	Yang Berhormat		
ZEE	Zon Ekonomi Eksklusif		

PRAKATA

Laporan Tahunan 1999 Jabatan Alam Sekitar memberi penerangan berkaitan usaha-usaha Jabatan dalam melaksanakan tanggung jawabnya mentadbir Akta Kualiti Alam Sekeliling 1974 untuk mempromosikan dan mengekalkan pengurusan alam sekitar yang baik dalam proses pembangunan sosio-ekonomi. Pelbagai cabaran telah dihadapi dalam melaksanakan tanggungjawab ini dalam beberapa tahun ini dengan tahap kerumitan yang berbeza-beza. Tahun 1999 tidak terkecuali dari cabaran sedemikian.

Kawalan/pencegahan pencemaran dan peningkatan kualiti alam sekitar adalah menjadi fungsi utama JAS sejak penubuhannya pada tahun 1975. Asas kepada tanggungjawab ini ialah mempromosikan pendidikan dan kesedaran alam sekitar serta kefahaman tentang isu alam sekitar di peringkat tempatan, kebangsaan dan antarabangsa. Pengalaman yang lepas telah menunjukkan bahawa keberkesanan langkah-langkah perundangan hanya boleh dikekalkan sekiranya orang ramai digalakkan untuk tampil secara sukarela dengan memberikan sumbangan ke arah mengwujudkan alam sekitar yang bersih, sihat dan selesa untuk didiami. Sehingga kini, JAS telah memulakan dan menggalakkan berbagai aktiviti alam sekitar seluruh negara, terutama bagi menyemai nilai alam sekitar dan kesedaran di kalangan golongan muda dalam masyarakat kita.

Walaupun penyertaan orang ramai dalam pengurusan alam sekitar adalah penting, namun aktiviti penguatkuasaan undang-undang dan pemantauan dan penilaian alam sekitar adalah merupakan elemen-elemen penting dalam keseluruhan usaha. Pelaksanaan aktiviti penguatkuasaan adalah untuk memastikan pematuhan kepada



FOREWORD

The 1999 Annual Report of the Department of Environment provides an account of the efforts expended in executing its mandate to administer the Environmental Quality Act 1974, and in so doing promote and sustain sound environmental governance in the process of economic development. Over

the years, in the performance of this task, various challenges have been encountered, albeit in varying degrees of complexity. 1999 was no

exception.

Pollution control, prevention and enhancement of environmental quality have been the Department of Environment's primary function since its establishment in 1972. Underlying this responsibility is the promotion of environmental education, awareness and the comprehension of the environmental issues at local, national and international levels. Past experience has shown that effectiveness of regulatory measures can only be sustained if the public can also be motivated to voluntarily contribute towards a clean healthy and conducive living environment. Towards this end, DOE had initiated and encouraged a multitude of environmental activities throughout the country, especially to inculcate environmental values and consciousness among the young members of our society.

Notwithstanding public participation in environmental management, law enforcement activities and environmental monitoring and assessment form a part of the overall effort. The former to ensure compliance with regulatory standards and provisions, the latter to gauge the effectiveness of regulatory measures on the state of the environment.

For the coming years, DOE intends to place greater emphasis on self-regulatory measures,

standard dan peruntukan undang-undang, manakala pemantauan dan penilaiah alam sekitar adalah untuk mengukur ke;berkesanan langkah-langkah perundangan dan status alam sekitar.

Bagi tahun-tahun yang mendatang, JAS akan memberi penekanan kepada langkah-langkah secara 'self-regulatory' dan memperkukuhkan lagi aktiviti untuk menyemai kesedaran rhadap alam sekitar serta membantu melatih lebih ramai lagi profesional yang komited terhadap alam sekitar bagi tugasan akan datang. Alam sekitar yang sihat dan bersih hanya boleh dicapai dengan kerjasama qan omitmen oleh semua. Masa depan yang cerah bagi — anak-anak kita dan anak-anak mereka adalah bergantung kepada komitmen dan keikhlasan kita untuk merealisasikan.

Salam Sejahtera

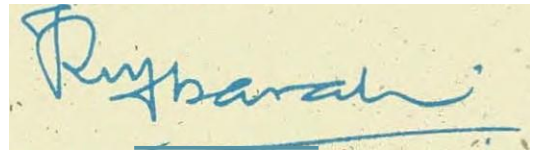


HAJAH ROSNANI IBARAHIM
KETUA PENGARAH KUALITI ALAM SEKELILING
MALAYSIA

11 SEPTEMBER 2000

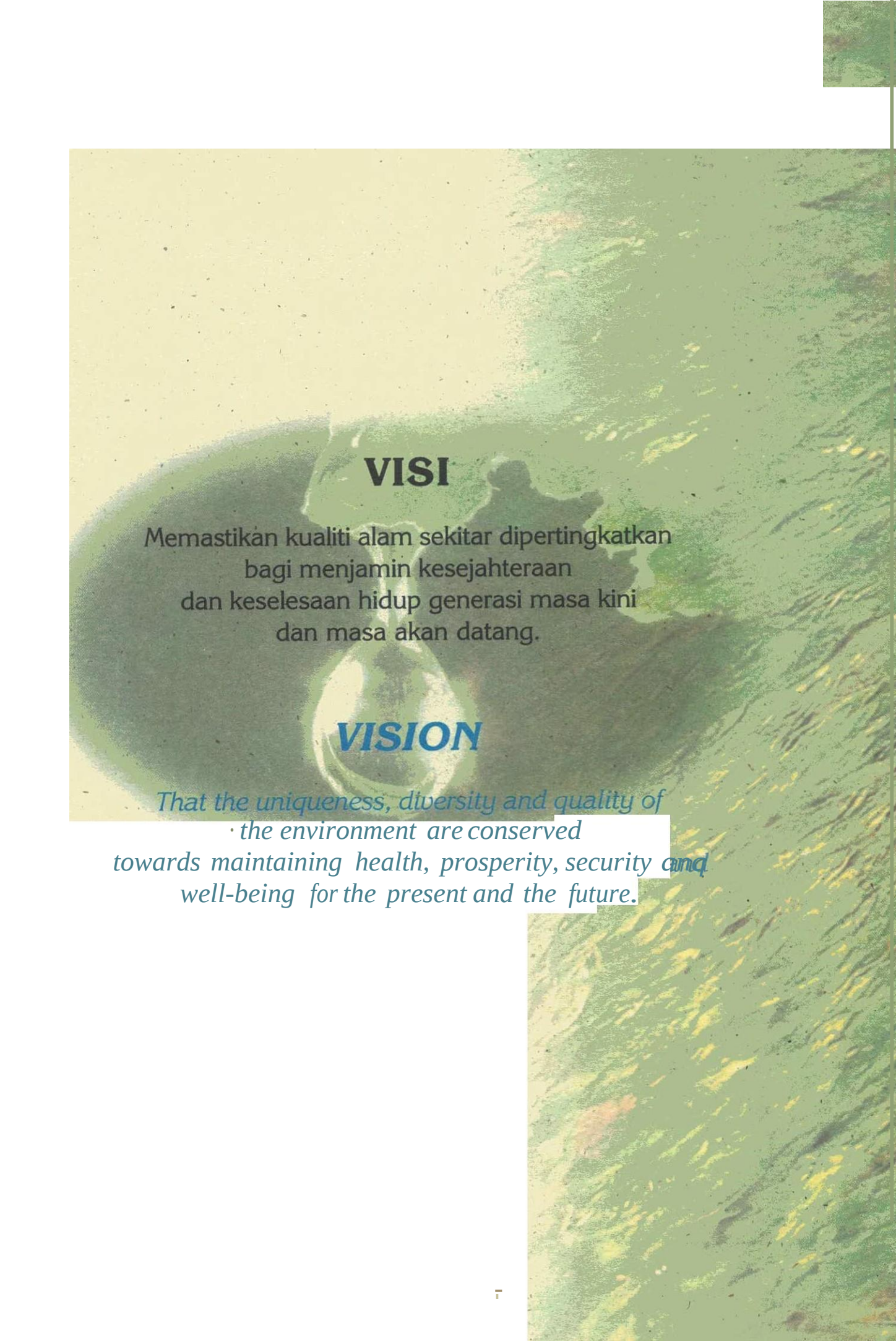
further strengthen activities to inculcate environmental patriotism, and help train more committed em;ironunental professionals for the task ahead. A healthy and clean environment can only be achieved with the commitment and cooperation of all stakeholders. The promise of a bright future for us, our children and their children depends on our commitment and sincerity to make it happen.

With Bests Wishes



HAJAH ROSNANI IBARAHIM
DIRECTOR-GENERAL OF ENVIRONMENTAL
QUAUTY MALAYSIA

11 September 2000



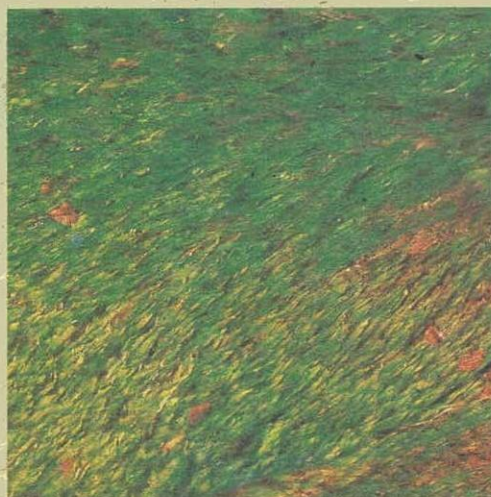
VISI

Memastikan kualiti alam sekitar dipertingkatkan
bagi menjamin kesejahteraan
dan keselesaan hidup generasi masa kini
dan masa akan datang.

VISION

*That the uniqueness, diversity and quality of
the environment are conserved
towards maintaining health, prosperity, security and
well-being for the present and the future.*

Bab 1



Chapter 1



MESYUARAT ANTARA MENTERI SAINS, TEKNOLOGI DAN ALAM SEKITAR DENGAN MENTERI-MER(TERI DAN AHLI MESYUARAT KERAJAAN NEGERIYANG BERTANGGUNGJAWAB KE ATAS HAL EHWJL ALAM SEKITAR (MEXCOE)

MEETING BETWEEN MINISTER OF SCIENCE, TECHNOLOGY AND THE ENVIRONMENT WITH STATE MINISTERS AND EXECUTIVE COUNCILLORS RESPONSIBLE FOR ENVIRONMENTAL MATTERS (MEXCOE)

Mesyyuarat K17 antara Menteri Sains, Teknologi dan Alam Sekitar dengan Menteri-Menteri dan Ahli-Ahli Mesyyuarat Kerajaan Yang bertanggungjawab ke atas Hal Ehwal Alam Sekitar (MEXCOE) telah diadakan pada 21 Oktober 1999, di Langkawi, Kedah Darul Aman. Mesyyuarat telah dipengerusi oleh Y.B. Datuk Law Hieng Ding.

The 17th Meeting between the Minister of Science, Technology and the Environment with State Ministers and Executive Councillors responsible for Environmental Matters (MEXCOE) was held on 21 October 1999 in Langkawi, Kedah Darul Aman. The meeting was chaired by Y.B. Datuk Law Hieng Ding.

Semasa ucapan aluan, ahli MEXCOE menyatakan pandangan mengenai pemuliharaan alam sekitar adalah tanggungjawab semua dan langkah jangka pendek seperti aktiviti penguatkuasaan dan langkah jangka panjang melalui program kesedaran dan penidikan alam sekitar hendaklah dipertingkatkan.

In their opening remarks MEXCOE members expressed the view that environmental protection was the responsibility of all stakeholders and that both short-term measures such as enforcement activities and long-term measures through environmental awareness and educational programme, had to be intensified.

MEXCOE juga mengambil maklukkan garis panduan penyediaan 'Oil Spill Contingency Plan for Tier 1', kejayaan latihan dan dua kursus pembersihan tumpahan minyak. Mesyyuarat juga membincangkan draf garis panduan bagi penyediaan pelan tindakan bagi pembersihan pantai selepas tumpahan minyak dan cara pelupusan buangan minyak.

MEXCOE took note of the completion of guidelines for the preparation of Oil Spill Contingency Plan for Tier 1, the successful completion of a table-top exercise and two training courses on oil spill beach clean-up. The Meeting also discussed the draft guidelines for the preparation of action plans for beach clean up after an oil spill incident and the disposal of its oily waste.

MEXCOE mencadangkan lebih banyak kajian yang mendalam hendaklah dijalankan akan kemungkinan gunasemula buangan kayu, jerami dan sekam padi sebagai bahan pengeluaran. Ini adalah disebabkan masalah pelupusan bahan buangan tersebut.

MEXCOE recommended that there be more in-depth studies to look into the possibility of recycling wood waste, rice stalks and husk into valuable commercial products. In view of the problem still associated with the disposal of such materials.

Cadangan juga diberi bagi membersihkan sungai tersemar. MEXCOE menyokong pada prinsipnya dan mengarahkan JAS berbincang dengan lain-lain agensi di peringkat

A proposal for cleaning-up polluted rivers was tabled. MEXCOE supported the proposal in principle and directed DOE to consult other agencies at Federal, State and

Persekutuan, Negeri dan Tempatan mengenai cara dan pelaksanaan projek tersebut.

Ahli-ahli MEXCOE bagi 1999:

1. Y.B. Datuk Law Hieng Ding Menteri Sains, Teknologi dan Alam Sekitar (Pengerusi)
2. V.d., Dato' Abu Bakar Daud Ilmbalan Menteri Sains, Teknologi dan Alam Sekitar
3. Y.B Datuk Abdul Rashid bin Abdullah Pengerusi Jawatankuasa Pertanian, Perikanan dan Alam Sekitar, Pulau Pinang
4. Y.B Dato' Beh Heng Seong Pengerusi Jawatankuasa Pengangkutan, Alam Sekitar dan Hal Ehwal Kaum Cina, Kedah
5. Y.B Dato' Bahari b. Tan Sri Yahya Pengerusi Kemudahan Asas, Perumahan dan Alam Sekitar, Pahang
6. Y.B Datuk Chong Kah Kiat Menteri Pembangunan Pejancongan, Alam Sekitar, Sains dan Teknologi, Sabah
7. Y.B Dato' Yazid bin Mat Pengerusi Jawatankuasa Tanah, Perhutanan dan Alam Sekitar, Perlis
8. Y.B Dato' Ch'ng Toh Eng Pengerusi Jawatankuasa Sains, Teknologi dan Alam Sekitar, Perpaduan dan Pembangunan Masyarakat, Selangor
9. Y.B Dr. Chua Soilek Pengerusi Jawatankuasa Alam Sekitar dan Hal Ehwal Pengguha, Johor
10. Y.B Dato' Amar James Wong Menteri Alam Sekitar dan Kesihatan Awam, Sarawak

Local levels on the method and implementation of the project.

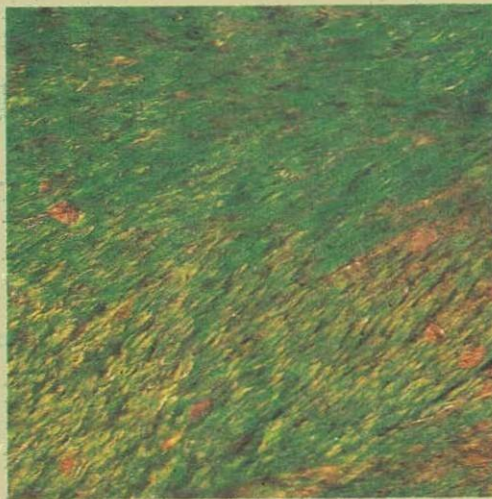
MEXCOE members for 1999:

1. YB Datuk Law Hieng Ding Minister of Science, Technology and the Environment (Chairman)
2. YB Dato' Abu Bakar Daud Deputy Minister of Science, Technology and the Environment
3. YB Datuk Abdul Rashid bin Abdullah Chairman of Agriculture, Forestry and Environment Committee, Pulau Pinang
4. YB. Dato' Beh Heng Seong Chairman of Transport, Environment and Chinese Affairs Committee, Kedah
5. Y.B. Dato' Bahari b. Tan Sri Yahya. Chairman of Public Facility, Housing and Environment Committee, Pahang
6. Y.B. Datuk Chong Kah Kiat Minister of Tourism Development, Environment, Science and Technology, Sabah
7. Y.B. Dato' Yazid bin Mat Chairman of Land, Forestry and Environment Committee, Perlis
8. Y.B Dato' Ch'ng Toh Eng Chairman of Science, Technology and Environment, Unity and Community Development Committee, Selangor
9. Y.B Dr. Chua Soilek Chairman of Environment and Consumer Affairs Committee, Johor
10. YB Dato' Amar James Wong Minister of Environment and Public Health, Sarawak

- | | | | |
|---|---|---|---|
| 11. Y.B Dato' Lee Chee Leong | Pengerusi Jawatankua'sa Kesihatan, Sains, Teknologi dan Alam Sekitar, Perak | 11. Y.B Dato' Lee Chee Leong | Chairman of Health, Science, Technology and Environment Committee. Perak |
| 12. Y.B'Datuk Poh Ah Tiam | Pengerusi Jawatankuasa Pelancongan, Kebudayaan dan Alam Sekitar, Melaka | 12. Y.B Datuk Poh MTiam | Chairman of Tourism Development, Culture and Environment Committee. Melaka |
| 13. Y.B Encik Wong Fong Meng | Pengerusi Jawatankuasa Alam Sekitar, Kesihatan dan Hal Ehwal Pengguna, Terengganu | 13. Y.B Encik Wong Foon Meng | Chairman of Environment, Health and Consumer Affairs Committee, Terengganu |
| 14. Y.B Dato' Dr. Yeow Chai Thiam | Pengerusi Jawatankuasa Bertindak Perumahan dan Kerajaan Tempatan, Alam Sekitar Sains dan Teknologi, Negeri Sembilan | 14. Y.B Dato' Dr. Yeow Chai Thiam | Chairman of Housing and Local Government, Environment, Science and Technology Committee Negeri Sembilan |
| 15. Y. Bhg. Dato' Azman b. Abd. Rashid | Jabatan Pembangunan Persekutuan, Kelantan | 15. Y Bhg. Dato Azman b. Abd Rashid | Department of Federal Development, Kelantan |
| 19. Y.Bhg. Tan Sri Datuk Kamaruzzaman bin Shariff | Datuk Bandar, Dewan Bandaraya, Kuala Lumpur | Y.Bhg. Tan Sri Datuk Kamaruzzaman bin Shariff | Mayor, Dewan Bandaraya, Kuala Lumpur |



Bab 2



Chapter 2

MAJLIS KUALITI ALAM SEKELILING

Majlis aliti Alam l:?(eke)iling bertanggungjawab menasihatkan Menteri mengenai perkara-perkara berhubung dengan Akta Kualiti Alam Sekeliling, 1974 dan apa-apa perkara yang dirujukkan k padanya oleh Menteri. Majlis ipi juga memberi nasihat mengenc;si polisi kepada Jabatan Alam Sekitar (JAS) dalam merangka polisi dan strategi terhadap pengurusan alarri sekitar secara holistik.

Pada tahun 1999, Majlis telah mengadakan 3 kali mesyuarat pada 4 pril,.3 Ogos dan 12 November dan telah membincangkan isu-isu termasuk:

- Forll)at Baru Laporan Kualiti Alam Sekeliling (EQR)
- Usaha Serantau Untuk Menangani Masalah Jerebu
- Deraf Perintah Kualiti Alam Sekeliling (Aktiviti Yang Ditetapkan) (Pembakaran Terbuka) 1999 dan Undang-Undang Yang Berkaitan Bagi Kawalan Pembakaran Terbuka
- Penguatkuasaan Yang Lebih Tegas Terhadap Mencegah Pembakaran Terbuka
- Pindaan Ke atas Peraturan-Peraturan Kualiti Alam Sekeliling (Kurnbahan Dan Eftluen-Eftluen Perindustrian) 1979
- Deraf Peraturan-Peraturan Kualiti Alam Sekeliling (Meter Asap Yang Ditetapkan) 1999

Kertas kerja lain yang dibentangkan kepada Majlis adalah:

- "Industry Ecology: Concept, Application and Research Direction For Malaysia" (oleh Prof. Muhamad Awang, Dr. Mohd Nasir Hassan dan Dr. Zulina Zakaria)
- "Challenges in Life cycle Assessment and Recycling Development on Industry" (oleh Prof. Muhamad Awang, Dr. Mohd Nasir Hassan dan Dr. Zulina Zakaria)

ENVIRONMENTAL QUALITY COUNCIL

The Environmental Quality Council (eQC) serves as ari advisoty body to the Minister & Science, Technology and the Environment on matters pertaining to the Environmental Quality Act 1974 and also on any environmental matter referred to it by the Minister. The Cour)cil also provides policy guidance to the Department of Ervironment (DOE) in the formulation of policies and strategies towards a more holistic {lpproach . in environmental management.

In 1999 the Counpil met thrice on April 4, August 3 and November 12 and deliberated on various pertinent matters which mcluded:

- *New For:mat for 'Environmental Quality Reporting*
- *Rf!gional Effort to Combat the Haze. Problem*
Draft Environmentlf.tl Quality {Prescribed Activities}(Open Burning) Order 1999 and related legislation::; fo.r Control' of Open Burning
- *Strictr Enforcement to Prt>vent Of1J)r1 Burning*
- *Amendments to the Envi ronmental Quality (Sewage andJIndustrial Efflu ts) Regulations 1979*
- *Draft Enqironmental Quality (Prescribed Smoke MeteRegulations 1999.*

Other papers presented to the Coun(?j)(were:

- *Industrial Ecology: Concept, Application and Research Direction For Malaysia (authored by Prot: Muhammad Awang, D1: Mohd Nasir Hassan and Dr. Zulina: Zakaria)*
- *Challenges in L:(e Cycle Assessment and Recycling Development on Industry (authored by Prof. Muhamad Awang, Dr. Mohd Nasir Hassan and Dr. Zulina Zakaria)*

Ahli-ahli Majlis Kualiti Alam Sekeliling 1999:

Pengerusi: Y.Bhg. Prof. Dato' Dr. Sham Mohd. Sani

Ahli

: Y.Bhg. Dato' Cheah Kong Wai
Ketua Setiausaha
Kementerian Sains, Teknologi
dan Alam Sekitar

Y.Bhg. Tan Sri Datuk Asmat
Kamaludin
Ketua Setiausaha Kementerian
Perdagangan Antarabangsa dan
Industri (MITI) Atau wakil yang
dilantik

Y.Bhg. Dato' Pahamin A. Rajab-
Ketua Setiausaha
Kementerian Perdagangan dan
Hal Ehwal Pengguna
Atau wakil yang dilantik

Y.Bhg. Dato' Anwar Ma'aruf
Ketua Setiausaha
Kementerian Pertanian
Atau wakil yang dilantik

Y.Bhg. Dato' Zainol Abidin
Abd. Rashid
Ketua Setiausaha
Kementerian Sumber Manusia
Atau wakil yang dilantik

Y.Bhg. Datuk Othman Mohd.
Rijal
(sehingga Jun)
Y.Bhg. Dato' Zaharah Shaari
Ketua Setiausaha
Kementerian Pengangkutan
Atau wakil yang dilantik

Y.Bhg. Datuk Ismail Adam
Ketua Setiausaha
Kementerian Kesihatan
Atau wakil yang dilantik

1999 EQC members:

Chairman: Y.Bhg. Prof. Dato' Dr. Sham Mohd. Sani

Members : Y.Bhg. Dato' Cheah Kong Wai
Secretary-General
Ministry of Science, Technology
and the Environment
Or his authorized representative

Y.Bhg. Tan Sri Datuk Asmat
Kamaludin
Secretary-General
Ministry of International Trade
and Industry
Or his authorized representative

Y.Bhg. Dato' Pahamin A. Rajab
Secretary-General
Ministry of Domestic Trade &
Consumer Affairs
Or his authorized representative

Y.Bhg. Dato' Anwar Ma'aruf
Secretary-General
Ministry of Agriculture
Or his authorized representative

Y.Bhg. Dato' Zainol Abidin Abd.
Rashid
Secretary-General
Ministry of Human Resources
Or his authorized representative

Y.Bhg. Datuk Othman Mohd.
Rijal
(until June 1999)
Y.Bhg. Dato' Zaharah Shaari
Secretary-General
Ministry of Transport
Or his authorized representative

Y.Bhg. Datuk Ismail Adam
Secretary-General
Ministry of Health
Or his authorized representative

Puan Monica Chia Mui Foong
Setiusaha Tetap
Kementerian Pelancongan dan
Pembangunan Alam Sekitar,
Sabah

*Ms:Monica Chia Mui Fang
Permanent Secreta1y
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bin Haji Abdul Latif
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Permanent Secretary
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Alam Sekita. PETRONAS

*Tuan Syed Abdullah bin Aljuned
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Y.Bhg. Dato' Mohd. Yusof bin
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Manufacturers*

Endk Lee Sum Teck
'Malaysian Rubber Products
Manufacturers' Association'

*Mr. Lee Sum Teck
Malaysian Rt.ubber Products
Ma}u{acturer. Association*

Prof. Madya Dr. Muhamad bin
Awang
Universiti Putra Malaysia

*Professor Madya Dr. Muhamad
bin.Awang
Universiti Pulra Malaysia*

Y.Bhg. Dato' Dr. Salleh bin Mohd.
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Bab 3



chapter 3

STRUKTUR ORGANISASI

Jabatan Alam Sekitar diterajui oleh Ketua Pengarah yang dilantik di bawah Seksyen 3(1) Akta Kualiti Alam Sekeliling 1974. Jabatan ini terdiri daripada 3 Sahagian Teknikal di Ibu Pejabat Kuala Lumpur iaitu Kawalan, Penilaian dan Perancangan Pembangunan dan dua (2) Sahagian Sokongan iaitu Pentadbiran dan Kewangan dan Teknologi Maklumat. Terdapat 13 buah Pejabat Negeri yang terletak di Johor Bahru (Johor), Alor Setar (Kedah/Perlis), Kota Bharu (Kelantan), Kuala Lumpur (Wilayah Persekutuan), Bandar Melaka Bersejarah (Melaka), Seremban (Negeri Sembilan), Kuantan (Pahang), Butterworth (Pulau Pinang), Kota Kinabalu (Sabah), Kuching (Sarawak), Kuala Terengganu (Terengganu), 2 buah Pejabat Cawangan di Pulau Langkawi dan Temerloh dan Pusat Khidmat Nasihat Alam Sekitar di Ibu Pejabat Lembaga Kemajuan Perindustrian Malaysia (MIDA) (Rajah 3.0).

SOMBER MANUSIA

Jumlah kakitangan JAS sehingga 31 Disember 1999 ialah 587 orang terdiri daripada 123 orang pegawai dalam kumpulan pengurusan dan profesional dan 464 orang kakitangan dalam kumpulan sokongan. (Rajah 3.1).

KEWANGAN

Jumlah peruntukan yang diterima oleh JAS bagi tahun 1999 adalah sebanyak RM57,199,100.00, iaitu penambahan sebanyak RM9,266,984.00 (20.24%) berbanding tahun sebelumnya. Daripada jumlah ini, sejumlah RM42,774,400.00 (14.8%) adalah perbelanjaan mengurus dan RM14,724,700.00 (25.2%) untuk perbelanjaan pembangunan (Rajah 3.2 dan Rajah 3.3).

Pada tahun 1999, hasil yang dikutip sejumlah RM5,027,354.54 (Rajah 3.4).

ORGANISATION STRUCTURE

The Department of Environment is headed by a Director General who is appointed by virtue of Section 3(1) of the Environmental Quality Act, 1974. The department has three Technical Divisions at its Head Office in Kuala Lumpur - i.e. Control, Assessment and Development Planning as well as two Support Divisions i.e. Administration and Finance and Information Technology. There are 13 State Offices, located at Johor Bahru (Johor), Alor Setar (Kedah/Perlis), Kota Bharu (Kelantan), Kuala Lumpur (Federal Territory), Bandar Bersejarah Melaka (Melaka), Seremban (Negeri Sembilan), Kuantan (Pahang), Butterworth (Pulau Pinang), Kota Kinabalu (Sabah), Kuching (Sarawak), Kuala Terengganu (Terengganu), 2 Branch Office in Pulau Langkawi and Temerloh and an Environment Advisory Desk at the Malaysian Industrial Development Authority (MIDA) Office. (Figure 3.0).

HUMAN RESOURCES

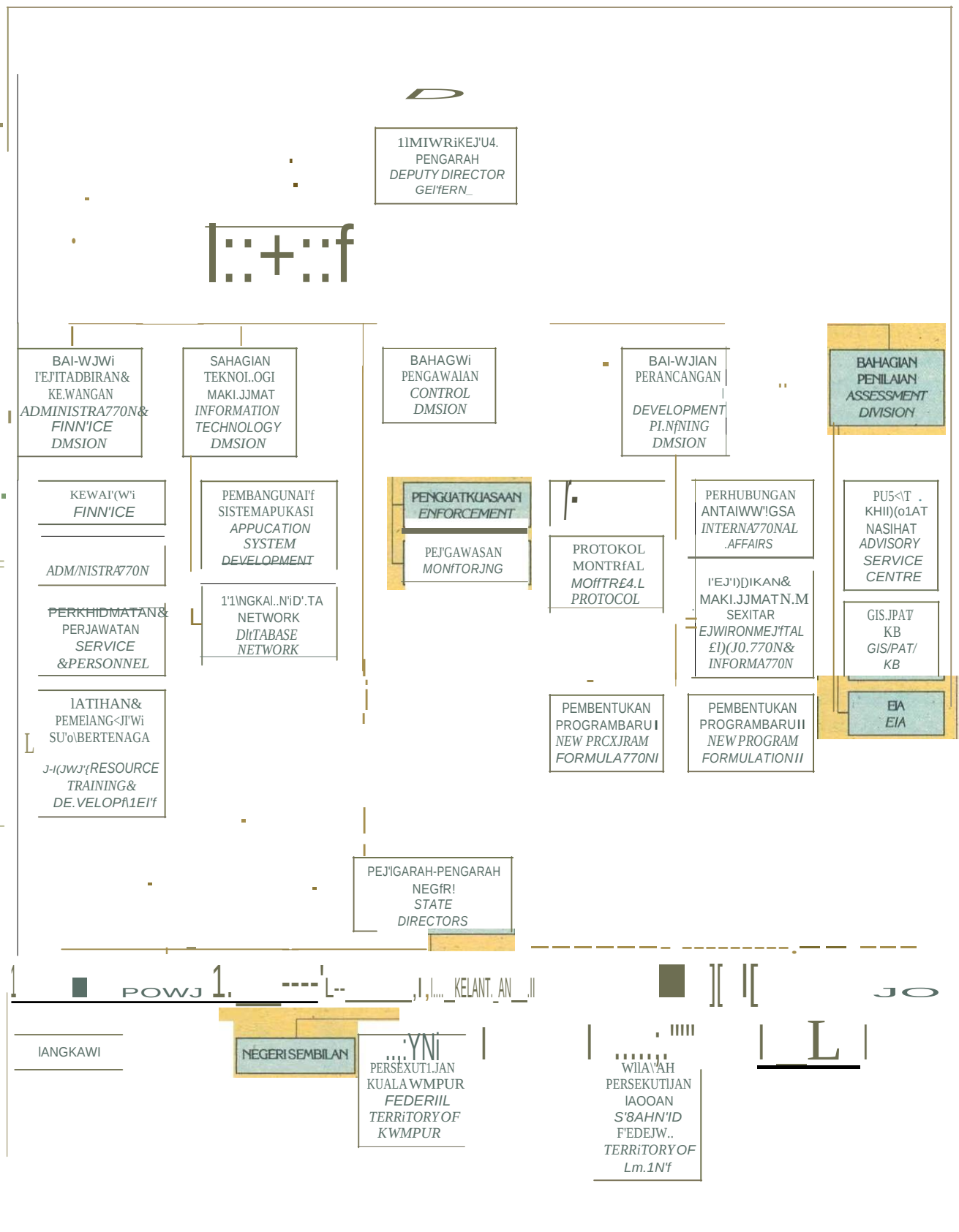
As of 31 December 1999, DOE had 587 staff which consisted of 123 Officers in the Management and Professional Group, and 464 staff in the Supporting Group. (Figure 3.1).

FINANCE

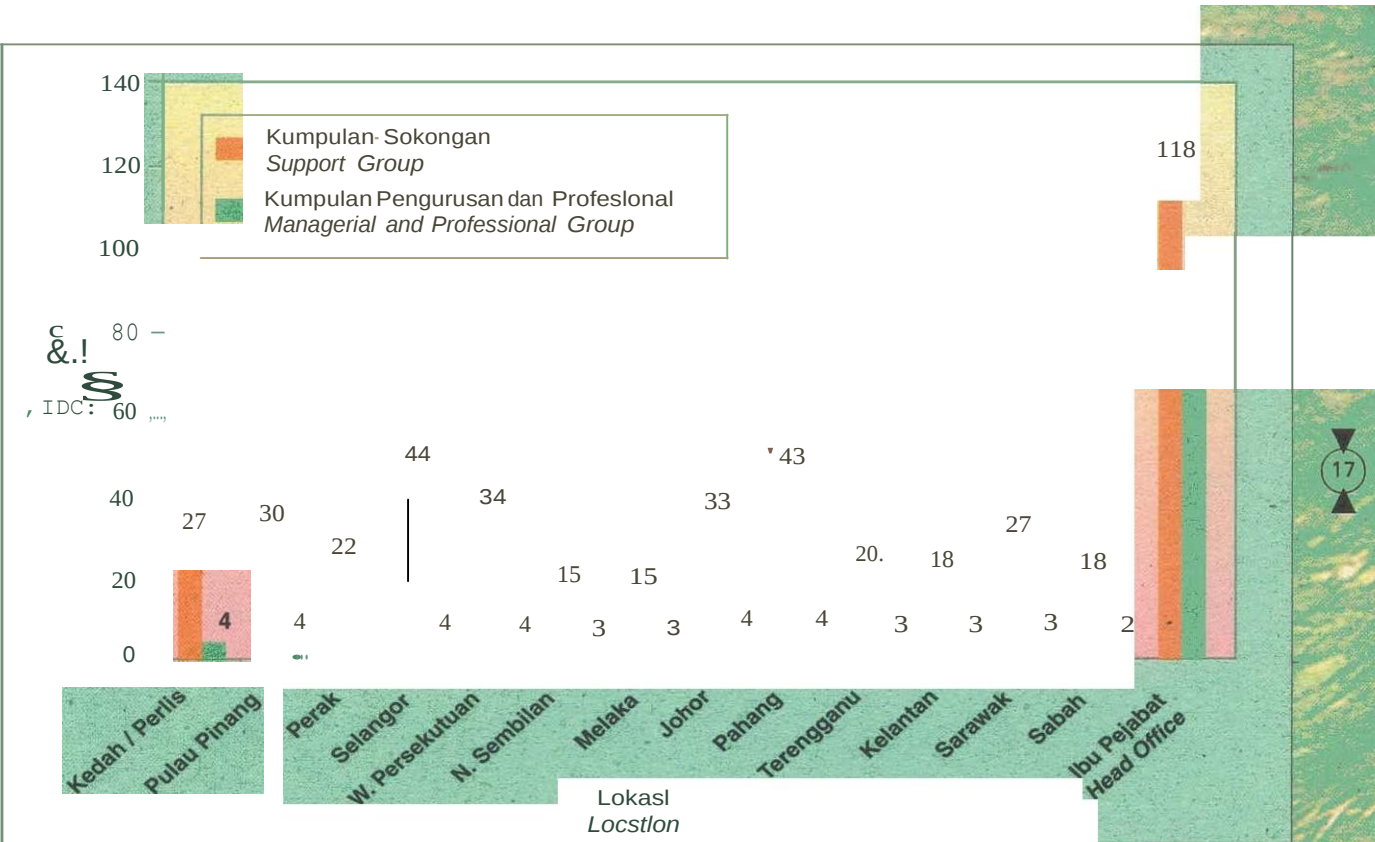
The total budget allocation for DOE for the year 1999 was RM57,199,100.00, an increase of RM9,266,984.00 (20.24%) over the previous year. From this amount, a sum of RM42,774,400.00 (74.8%) was allocated for operational expenditure while RM14,724,700.00 (25.2%) was set aside for development projects (Figure 3.2 and Figure 3.3).

Revenue

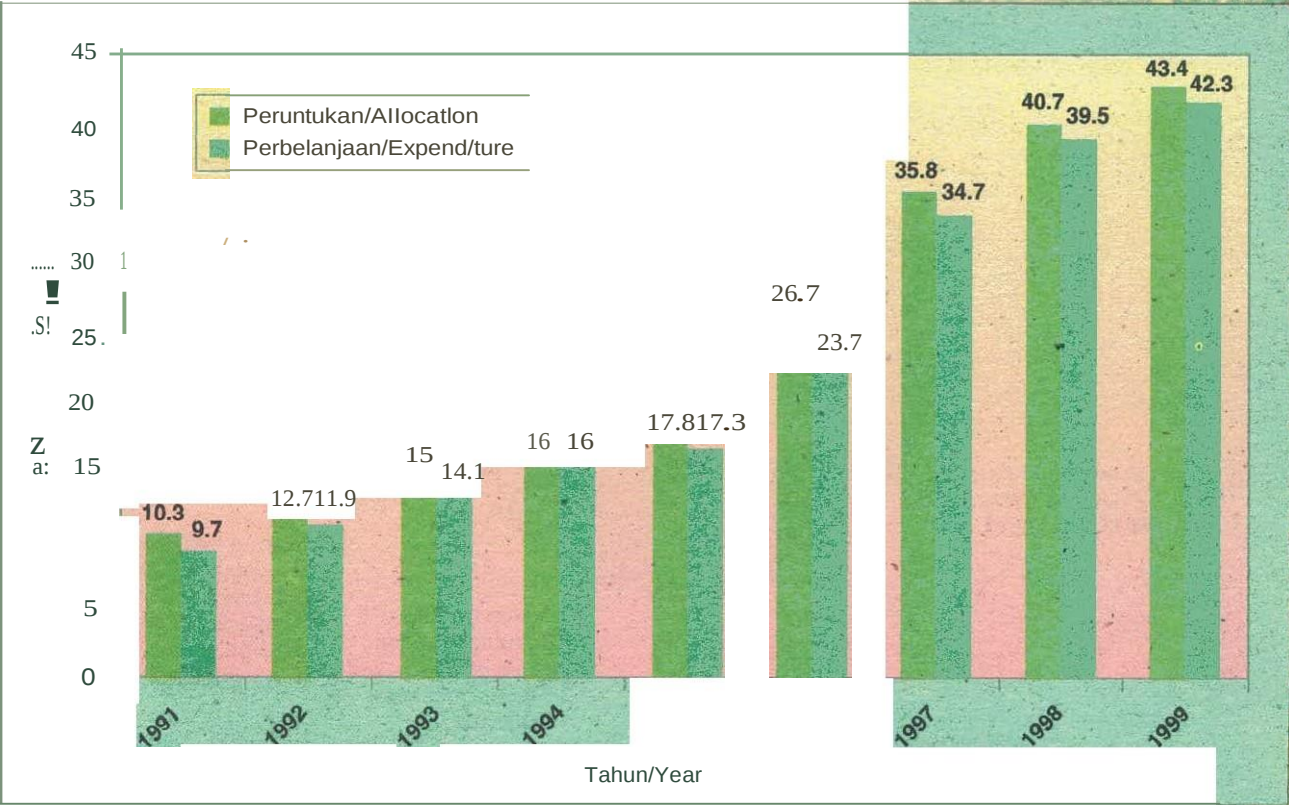
The total revenue collected in 1999 amounted to RM5,027,354.54. (Figure 3.4).



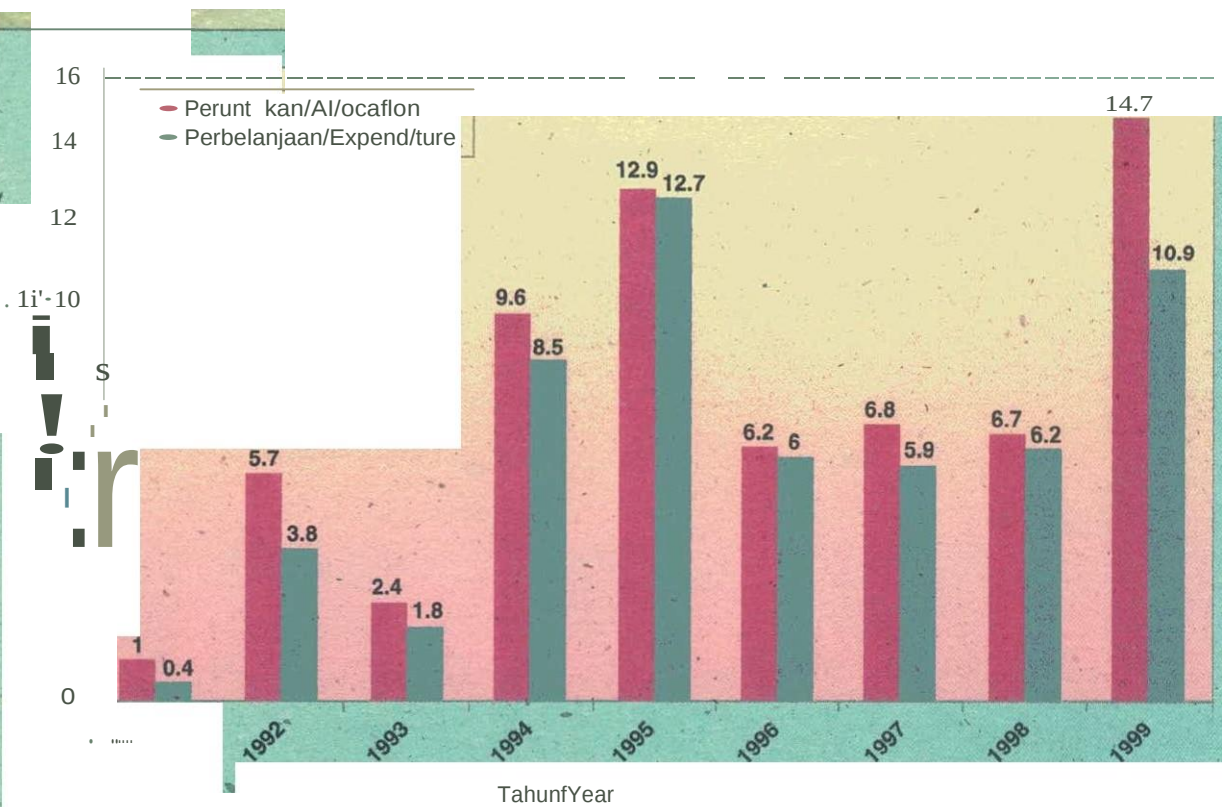
Rajah 3.0 Jabatan Alam Sekitar : Struktur Organisasi 1999
Figure 3.0 Department of Environment : Organisation Structure 1999



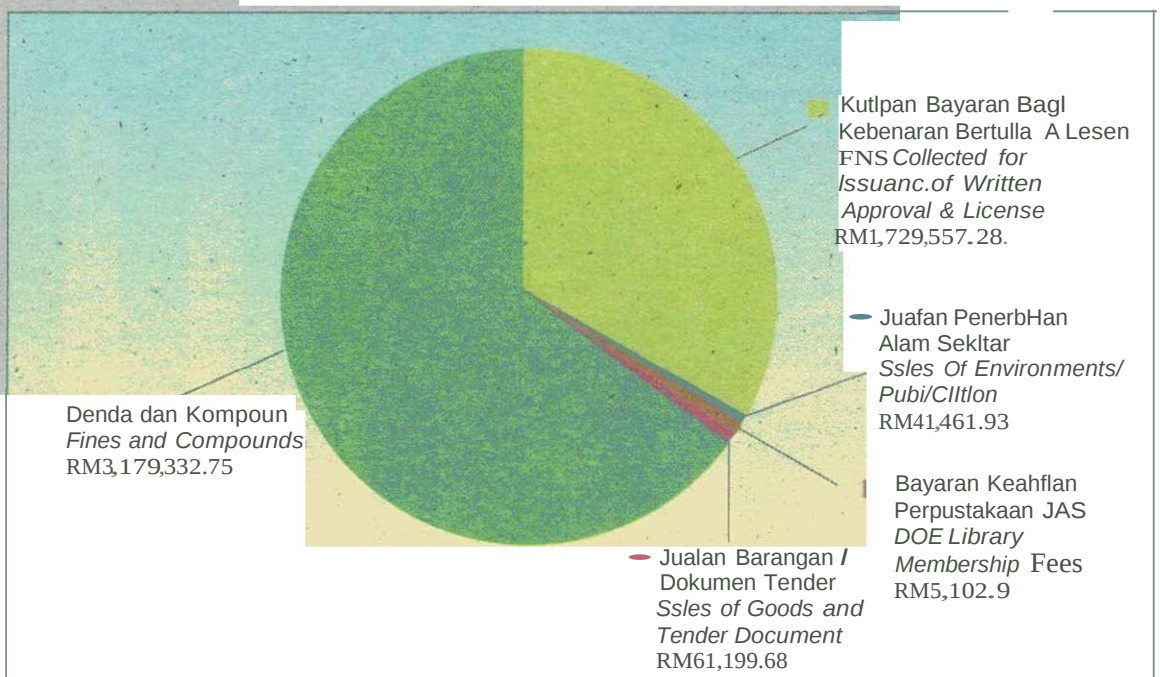
Rajah 3.1Jabaian Alam Sekitar:Taburan Kedudukan Kakitangan, 1999
Figure 3.1 Department of Environment: Distribution of Personnel, 1999



Rajah 1.Z JabatanAiam Sekital':Peruntukan dan Perbelanjaan (Mengurus), 1991-1999
Figure 3.2. Department of Environment : Allocation and Operational Expenditure, 1991-1999



Rajah 3.3 Jabatan Alam Sekitar: Peruntukan dan Perbelanjaan Pembangunan, 1991-1999
 Figure 3.3 Department of Environment: Allocation and Expenditure for Development Projects, 1991-1999



Rajah 3.4 Jabatan Alam Sekitar : Hasil Bagi 1999
 Figure 3.4 Department of Environment: 1999 Revenue

Bab 4



Chapter

PENILAIAN KESAN KEPADA ALAM SEKELILING & INPUT ALAM SEKITAR KEPADA PERANCANGAN PEMBANGUNAN

Objektif utama program ini adalah seperti berikut:

- (a) Melaksanakan strategi yang mengambil kira faktor-faktor alam sekitar dalam perancangan dan pembangunan projek seperti yang diperuntukkan dalam seksyen 34A Akta Kualiti Alam Sekeliling 1974, Pindaan 1985 dan Pindaan 1996 bagi aktiviti-aktiviti yang ditetapkan di bawah Perintah Kualiti Alam Sekeliling (Aktiviti-Aktiviti Yang Ditetapkan) (Penilaian Kesan Kepada Alam Sekeliling) 1987.
- (b) Memastikan dimensi alam sekitar diambil kira dalam perancangan dan pembangunan projek-projek bagi pelan induk, rancangan struktur/rancangan tempatan bagi seksyen 34A Akta Kualiti Alam Sekeliling 1974 dan pelan-pelan pembangunan yang lain melalui proses penilaian awal tapak.

Pemprosesan Laporan EIA

Bilangan laporan yang diterima pada tahun 1999 berkurangan jika dibandingkan dengan tahun lalu (Rajah 4.0, 4.1, 4.2, 4.3 dan 4.4). Sejumlah 136 laporan EIA dan 6 laporan penilaian risiko diterima. Dari 136 laporan yang diterima, 128 laporan mengikuti prosedur awal dan 8 mengikuti prosedur terperinci. Pada tahun 1999, Jabatan Alam Sekitar telah mengeluarkan surat pekeliling kepada organisasi yang berkaitan bagi keperluan penyediaan laporan EIA terperinci bagi pembangunan projek dan aktiviti seperti berikut:

- Kilang besi dan keluli
- Kilang kertas dan pulpa
- Kilang simen
- Janakuasa menggunakan bahan api arang batu

ENVIRONMENTAL IMPACT ASSESSMENT & (INPUT TO PLANNING)

The main objectives of these programmes

are:

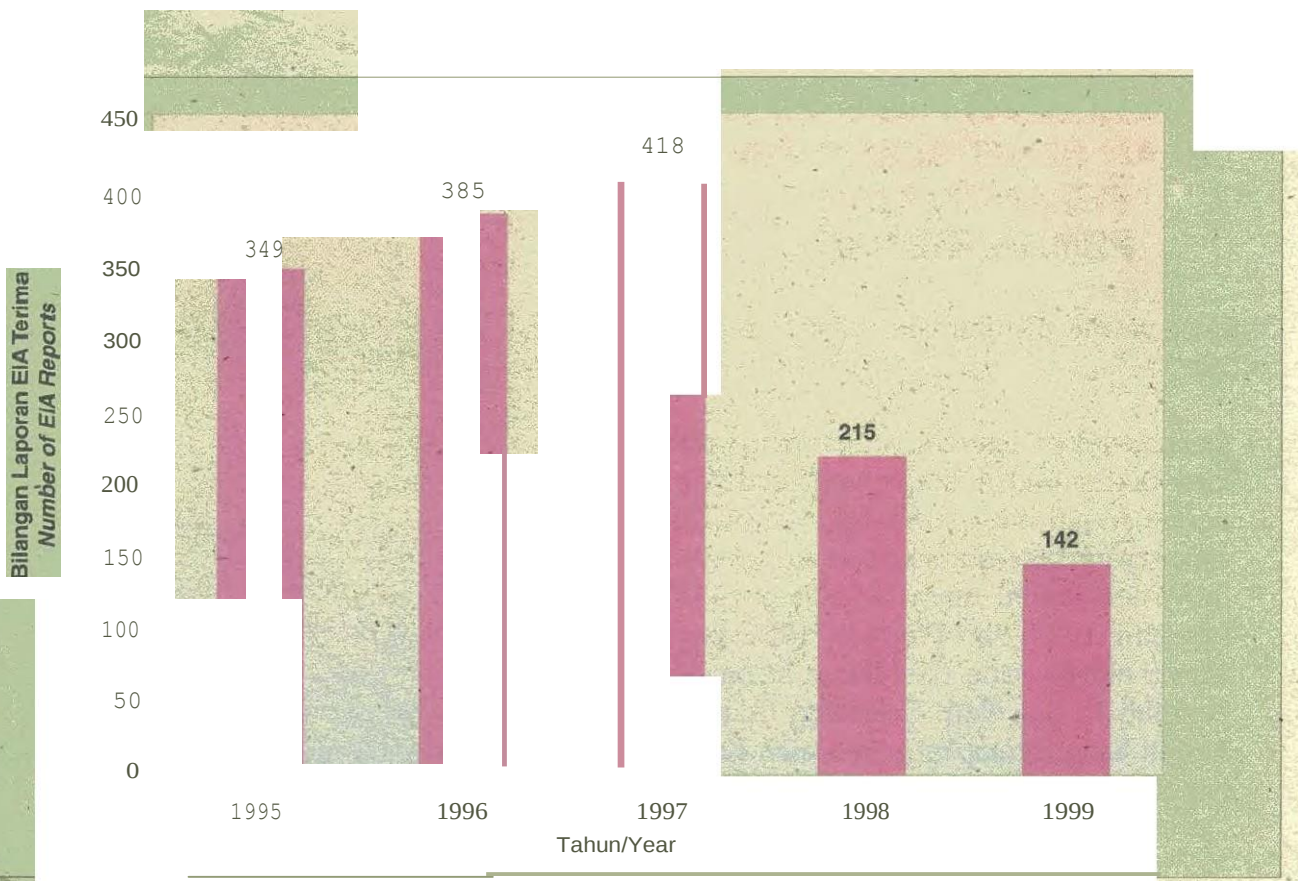
- (a) To implement the strategy of incorporating environmental factors in project planning and development in line with the requirements of Section 4A of the Environmental Quality Act, 1974, (Amendments 1985 and 1996), for activities prescribed under the Environmental Quality Act (Prescribed Activities) (Environmental Impact Assessment) Order 1987.

- (b) To ensure the incorporation of the environmental dimension in project planning and development for master plans, structure/local plans and for activities not subjected to Section 34A of Environmental Quality Act 1974, and other development plans through the pre-siting evaluation process.

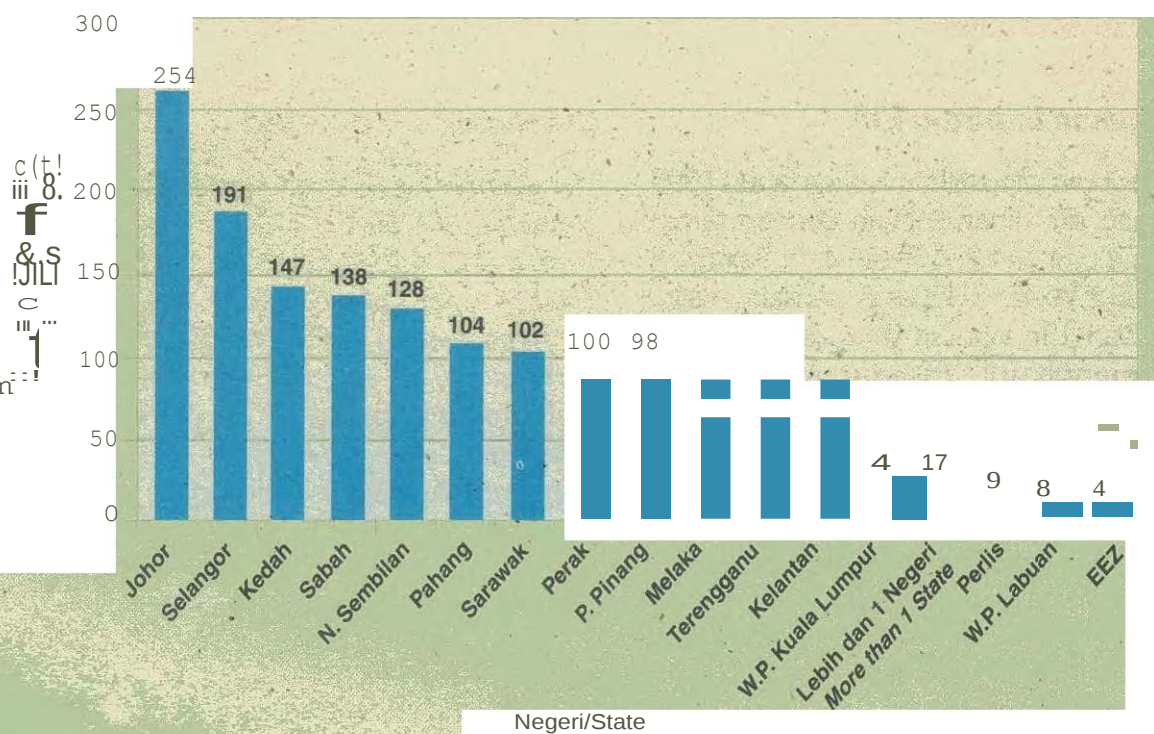
EIA Reports Processed

The number of reports received in 1999 was considerably less than the previous years (Figure 4.0, 4.1, 4.2, 4.3 and 4.4). A total of 136 EIA reports and 6 Risk Assessment reports were received in 1999. Out of the 136 reports received, 128 reports went through the preliminary stage, while 8 were subjected to detailed reviews. In 1999, the Department of Environment issued circulars to all relevant organizations to reiterate the requirement of detailed EIA reports for the development of the following projects and activities:

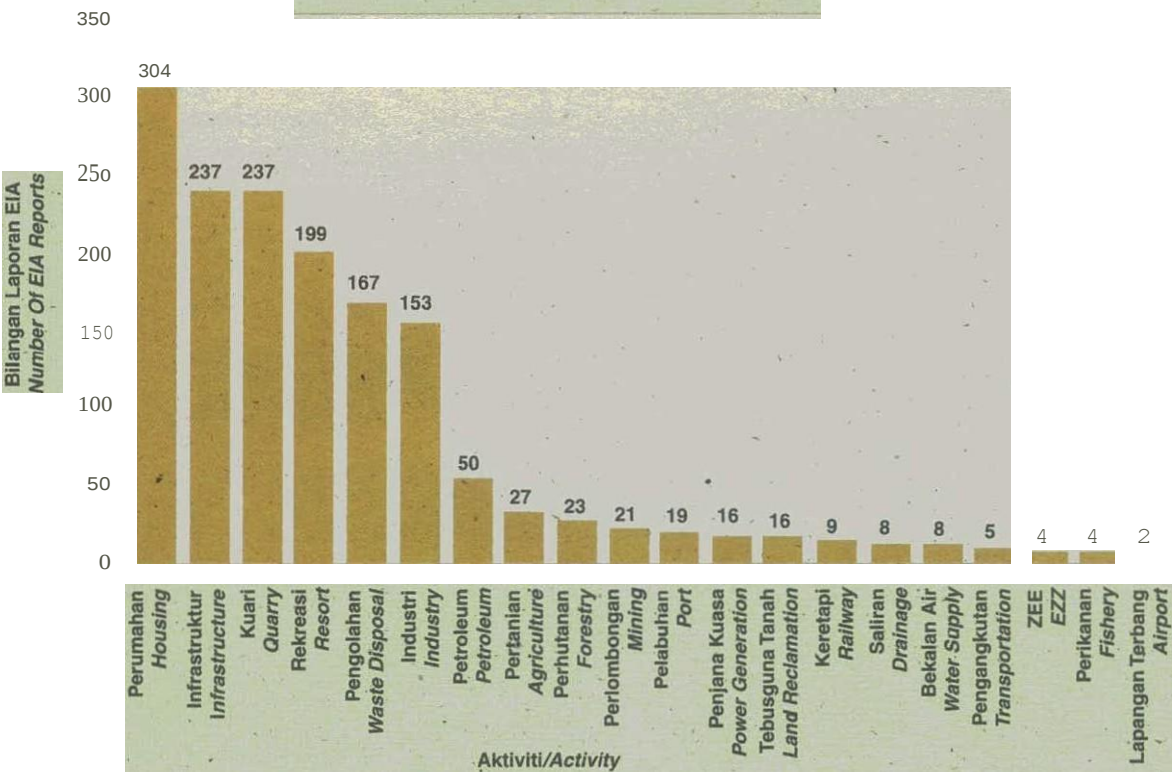
- Iron and Steel mill
- Pulp and Paper Mill
- Cement Manufacturing
- Coal-fired Power station



Rajah 4.0 Jabatan Alam Sekitar : Bilangan Laporan EIA Yang Diterima, 1995- 1999
Figure 4.0 Department of Environment : Number of EIA Reports Received, 1995-1999



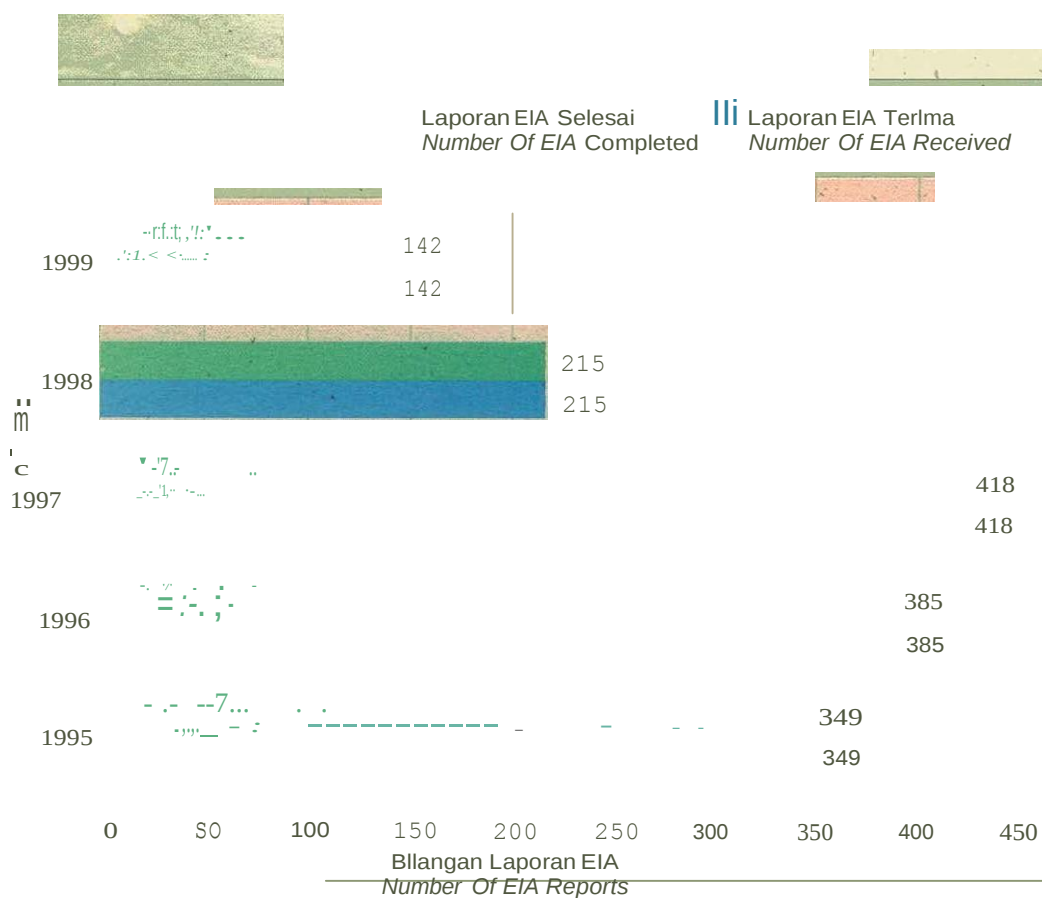
Rajah 4.1 Jabatan Alam Sekitar : Bilangan Laporan EIA Yang Diterima Mengikut Negeri, 1995-1999
Figure 4.1 Department of Environment : Distribution Of EIA Reports By State, 1995-1999



Rajah 4.2 Jabatan Alam Sekitar : Bilangan Laporan EIA Yang Diterima Mengikut Aktiviti, 1995-1999
Figure 4.2 Department Of Environment ; Number Of EIA Reports By Prescribed Activities, 1995-1999



Rajah 4.3 Jabatan Alam Sekitar : Bilangan Dan Jenis Laporan EIA Diterima, 1995-1999
Figure 4.3 Department Of Environment : Type Of EIA Reports Submitted, 1995-1999



Rajah 4.4 Jabatan Alam Sekitar : Bilangan Laporan EIA Yang Diterima Dan Selesai Diproses Mengikut Tahun, 1995-1999

Figure 4.4 Department Of Environment: Number Of EIA Reports Received And Processed By Year, 1995-1999

- Pembinaan empangan (bekalan air dary jana kuasa)
- Penambakan panfai
- Pembinaan loji penunuan (buangan terjadual dan sisa pepejal)
- Tapak pelupusan sampah
- Pembangunan tanah di r:nana 50% atau lebih kawasan mempunyai cerun melebihi 25 darjah (kecuali kuari)
- Pembalakan meliputi kawasan seluas 500 hektar atau lebih.
- Dam construction (water supply and power generation),
- Coastal Reclamation
- Incineration Plant (Toxic and Hazardous Waste and Mun[cipal Sofid-Waste)
- Municipal Solid Waste Landfill
- Land development activities where 50% or more of the area with slopes greater than 25 degrees (except quarries)
- Logging covering an area of 500 hectares or more.

EIA -Awal

Pada tahun 1999 bilangan laporan terbanyak adalah untuk aktiviti yang berkaitan dengan pulihguna bahan buangan terjadual. Sebanyak 22 laporan diterima untuk aktiviti ini. Laporan-laporan lain yang diterima adalah untuk infrastruktur 18 laporan, pembangunan bercampur termasuk perumahan 18 laporan, rekreasi 16 laporan dan kuari 15 laporan.

Preliminary EIA.

In 1999, a total of 22 reports were received for activities related to toxic and hazardous waste recovery, followed by 18 reports for infrastructure development, 18 reports for mixed development including housing, 16 reports for recreation activities and 15 reports for quarrying.

EIA Terperinci

Sebanyak 8 laporan diterima pada 1999 seperti berikut:

- Pembinaan empangan untuk bekalan air
- Pulihguna kertas terpakai
- Pulihguna bateri terpakai
- Pembinaan penunuan buangan terjadual
- Pembinaan stesen pemindahan sisa pepejal
- Kilang penapis alumina
- Pembangunan bercampur yang melibatkan penambakan pantai
- Janakuasa menggunakan bahan api arang batu.

Sehingga akhir tahun sebanyak 3 laporan terperinci diluluskan, 2 laporan ditolak dan 3 laporan masih dalam proses kerana maklumat tidak lengkap.

Selain dari laporan EIA terperinci, tujuh bidang rujukan untuk laporan EIA terperinci juga disegiakan untuk aktiviti-aktiviti berikut:

- Industri Petrokimia
- Pembinaan empangan untuk janakuasa
- Pembangunan bercampur yang melibatkan penambakan paritai
- Pembinaan pelabuhan yang melibatkan penambakan pantai
- Pembinaan depoh produk petroleum yang melibatkan penambakan pantai
- Pembangunan rekreasi yang melibatkan penambakan pantai
- Kilang besi dan keluli

Lawatan Penguatkuasaan Projek-projek EIA

Pada tahun 1999, sebanyak 444 lawatan penguatkuasaan telah dijalankan bagi mengenal pasti status projek-projek EIA dan juga iahap pematuhan. Dari lawatan-lawatan tersebut, 48 notis dikeluarkan dan 5 kes didakwa di mahkamah kerana tidak mematuhi syarat-syarat kelulusan.

Pendaftaran Juruperunding EIA

33 permohonan individu dan 5 permohonan firma diterima untuk pendaftaran. Dari permohonan-permohonan tersebut, 20

Detailed EIA

A total of 8 projects were subject to detailed EIA in 1999. These were for:

- Construction of dam for water supply
- Recycling paper
- Recycling lead acid batteries
- Construction of on-site toxic and hazardous waste incinerator
- Municipal solid waste transfer station
- Alumina refinery
- Mixed development involving coastal reclamation
- Coal-Fired Power Station

At the end of the year, 3 detailed reports were approved, 2 were rejected and 3 pending due to insufficient information.

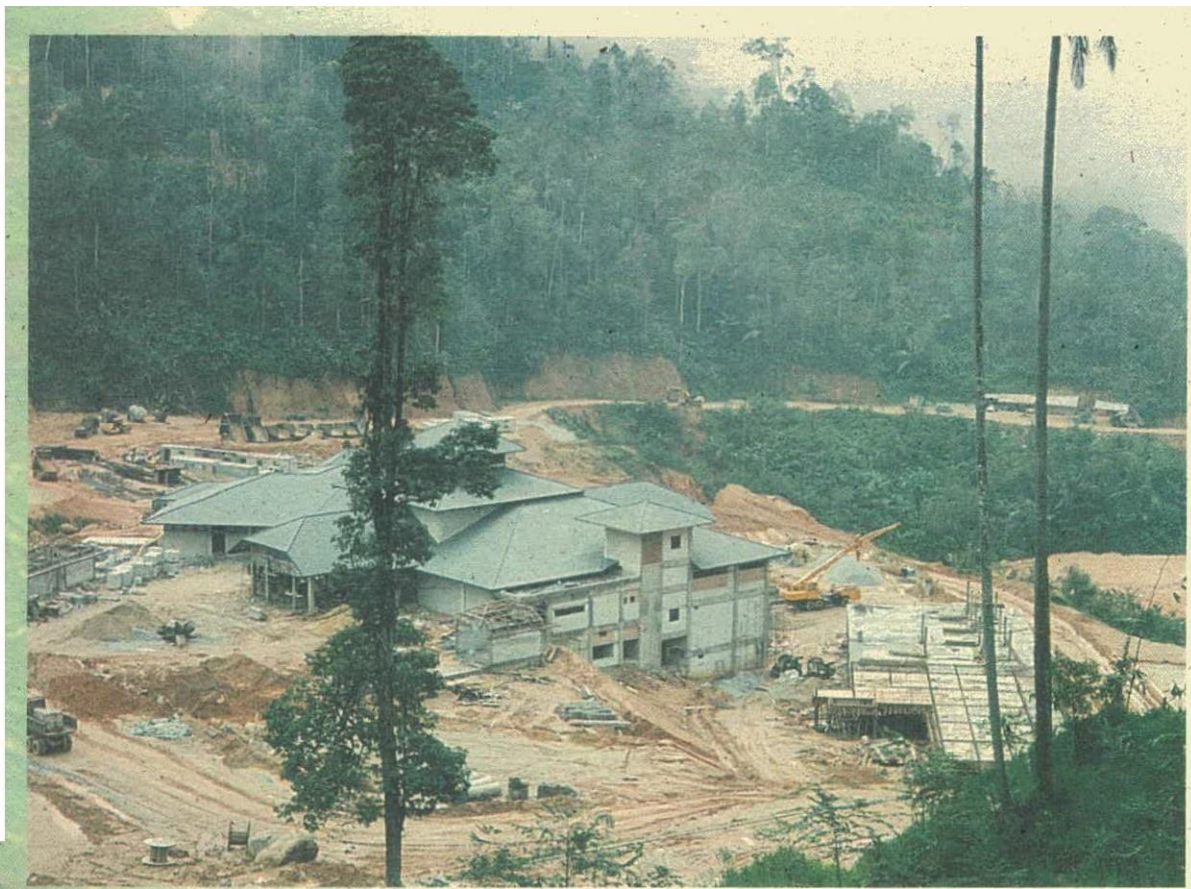
Other than the detailed EIA reports, seven Terms of Reference (TOR) were prepared for prescribed activities subject to detailed EIA.

- Petrochemical industry
- Construction of dam for power generation
- Mixed development involving coastal reclamation
- Port construction
- Construction of petroleum product depot involving coastal reclamation
- Recreational development
- Iron and steel mill

Enforcement Inspection of EIA Projects

In 1999, a total of 444 enforcement inspections were carried out to monitor the implementation status of EIA projects as well as compliance. From these inspections, 48 notices were issued and 5 cases taken to court for non-compliance of EIA conditions.

33 individual applications and 5 applications from firms were received for registration, but only 20 individuals and 4 firms were registered. Since the registration scheme was introduced in 1991, a total of 246



Lawatan Penguatkuasaan ke projek EIA yang telah diluluskan
Enforcement visit to an EIA approved project



Lawatan sambU Belajar ke Tapak Pelupusan Sisa Pepejal di Air Hitam,.Puchong
Study visit to Air Hltam. P_uchong Sanitary Landfill

individu dan 4 firma diluluskan untuk pendaftaran. Semenjak skim pendaftaran ini diperkenalkan pada tahun 1991 sehingga 1999, sebanyak 246 jurupunding individu dan 70 firma Perunding EIA telah didaftarkan.

Audit Alam Sekitar

Lanjutan dari pindaan kepada Akta Kualiti Alam Sekeliling 1974 pada tahun 1996, kerja-kerja awalan telah dijalankan untuk melaksanakan audit alam sekitar. Deraf Garis Panduan Audit Alam Sekitar yang mengandungi garis panduan pelaksanaan dan Pendaftaran juru audit alam sekitar telah disediakan. Deraf Garis Panduan ini telah dibentangkan di bengkel yang disertai oleh jurupunding; wakil pertubuhan bukan kerajaan, agensi-agensi kerajaan dan pertubuhan sektor industri. Pandangan-pandangan semasa bengkel akan diambil kira dalam memuktamadkan garis panduan ini. Pada peringkat awal pelaksanaan audit alam sekitar akan dijalankan secara pentadbiran sebelum peraturan-peraturan digubal dan dijalankan dilaksakan pada tahun 2000.

Input Alam Sekitar Kepada Perancangan Pembangunan

Input alam sekitar dikemukakan kepada pelan pembangunan dan kajian dasar yang dijalankan oleh agensi lain dan juga Jabatan Alam Sekitar :

- "Klang Valley Perspective Plan study"
- "Klang valley AGIS Development study"
- "Island monitoring study"
- "Study on the use of biological indicators"
- "Sungai Terengganu River Basin Management Plan"
- "River Classification Project"
- "The study on Integrated Urban Drainage Improvement for Melaka and Sungai Petani"
- "Master Plan Study on Flood Mitigation and River Management for the Muar River Basin"
- "Flood Mitigation Study for Sungai Muda"
- "Kelantan River Flood Mitigation Plan"

individual consultants and 70 EIA consultancy firms had been registered between 1991 - 1999.

Environmental Auditing

Pursuant to the 1996 amendment of the Environmental Quality Act, 1974, initial work on the implementation of environmental auditing was carried out. A draft Handbook of Environmental Auditing Guidelines including guidelines for implementation and registration scheme for environmental auditors was prepared. These guidelines were discussed at a workshop attended by consultants, non governmental organizations, government agencies and industry sector association; and the views expressed had been taken into consideration in the final draft. Pending finalization of specific regulations, environmental auditing will be implemented administratively in the year 2000.

Environmental Input to Development Planning

Environmental inputs were provided for the following development planning policies and studies prepared by other agencies as well as by the Department of Environment:

- Klang Valley Perspective Plan Study
- Klang Valley AGIS Development Study
- Island Monitoring Study
- Study on the use of Biological Indicators
- Sungai Terengganu River Basin Management Plan
- River Classification Project
- The Study on Integrated Urban Drainage Improvement for Melaka and Sungai Petani
- Master Plan Study on Flood Mitigation and River Management for the Muar Hill Basin
- Flood Mitigation Study for Sungai Muda
- Kelantan River Flood Mitigation Plan
- Preparation of Manual on Urban Stormwater Management
- Guidelines for the Development of Hi-tech Township

- "Preparation of the Manual on Urban Stormwater Management"
- "Guidelines for the Development of Hi-tech Township"
- "National Coastal Zone Policy"
- "Cost-Benefit Monitoring and Evaluation of the National Coastal Erosion Control Project"

Sistem Maklumat Geografik (GIS)

"Peta tema disediakan bagi projek-projek EIA, stesen-stesen pengawasan kualiti air dan udara, takat pengambilan air mentah di Negeri Sarawak, Perak dan Wilayah Persekutuan Kuala Lumpur. Kemaskini data berdigit juga dijalankan bagi Negeri Perak; Pulau Pinang, Melaka dan Negeri Sembilan. Selain dari pelbagai bangunan pangkalan data berdigit, input seperti peta juga disediakan bagi menyokong aktiviti-aktiviti Jabatan. Ini termasuk peta daerah Port Dickson dan Sepang untuk tujuan pengawasan air bawah tanah semasa kejadian virus Nipah. Peta untuk mengenalpasti sempadan negeri-negeri dan Zon Ekonomi Eksklusif juga disediakan.

Penilaian Awal Tapak Projek

Pada tahun 1999, sebanyak 5957 permohonan diterima untuk penilaian awal tapak bagi menentukan kesesuaian tapak projek-projek yang tidak tertakluk kepada Perintah Kualiti Alam Sekeliling (Aktiviti-Aktiviti Yang Ditetapkan) (Penilaian Kesan Kepada Alam Sekitar) 1987. Permohonan-permohonan ini dirujuk oleh Pihak Berkuasa Tempatan dan juga Pejabat Tanah. Input teknikal dikemukakan supaya keperluan alam sekitar diambil kira dalam membuat keputusan. (Rajah 4.4, 4.5 dan 4.6)

Kebenaran dan Kelulusan Bertulis

Pembinaan loji-pengolahan effluent, pemasangan alat kawalan pencemaran udara dan alat pembakaran bahan api perlu mendapat kebenaran bertulis daripada Ketua Pengarah Kualiti Alam Sekeliling terlebih dahulu seperti yang diperuntukan di bawah Akta Kualiti Alam Sekeliling 1974 dan Peraturan-Peraturan di bawahnya.

- National Coastal Zone Policy
- Cost-Benefit Monitoring and Evaluation of the National Coastal Erosion Control Project

Geographical Information System (GIS)

Thematic maps were prepared for EIA projects, air and water quality monitoring stations and water intake points for the States of Sarawak, Perak and the Federal Territory of Kuala Lumpur. Updating of digital database was carried out for Perak, Pulau Pinang, Melaka and Negeri Sembilan. Apart from development of digital database, inputs in the form of maps were produced to support the activities of the Department. These included maps for the Districts of Port Dickson and Sepang for the purpose of ground water monitoring in areas affected by the Nipah virus, and maps identifying the State boundaries and the Exclusive Economic Zone.

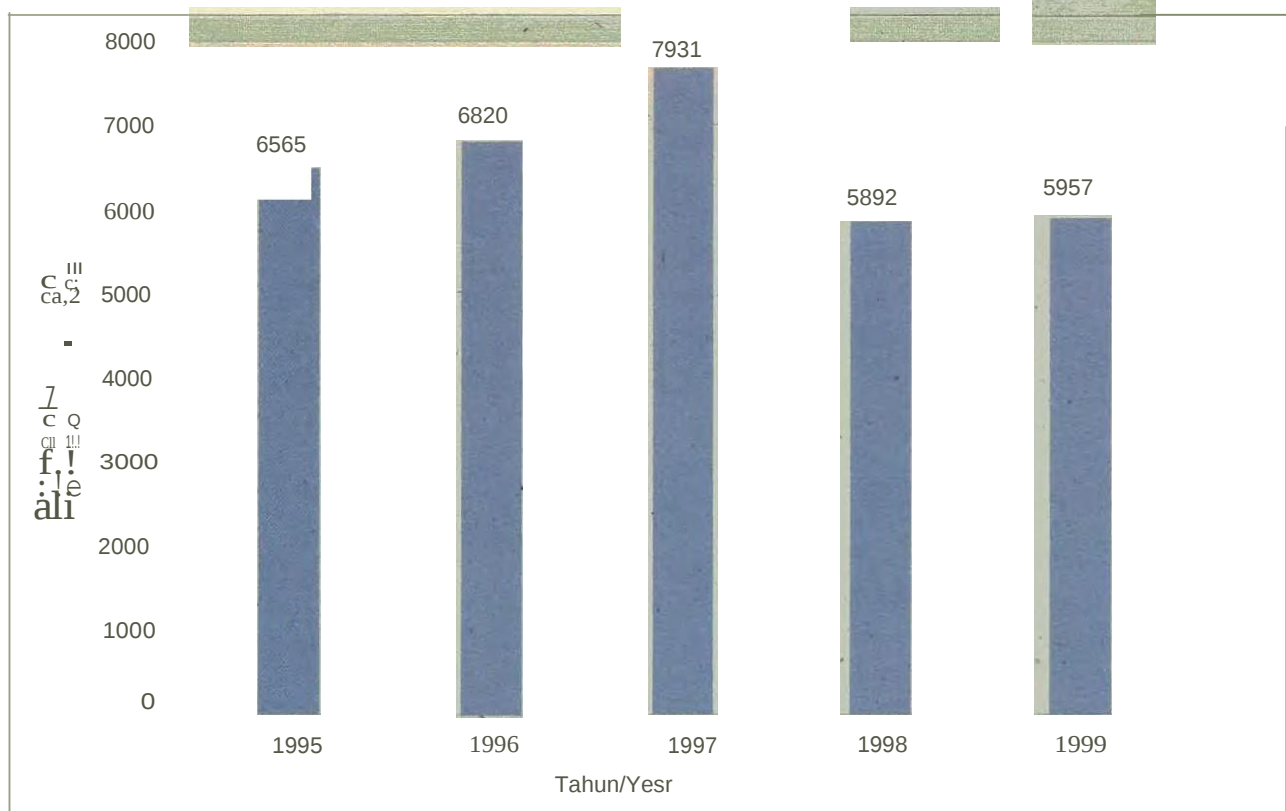
Project Pre-Siting Evaluation

In 1999, a total of 5957 applications were received for pre-siting evaluation to determine site suitability of development projects that were not subjected to the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987. These applications were referred mainly by other approving authorities such as the Local Authorities and Land Offices. Technical environmental inputs were given to these authorities to facilitate the decision making process. (Figure 4.4, 4.5 and 4.6)

Written permissions and approvals

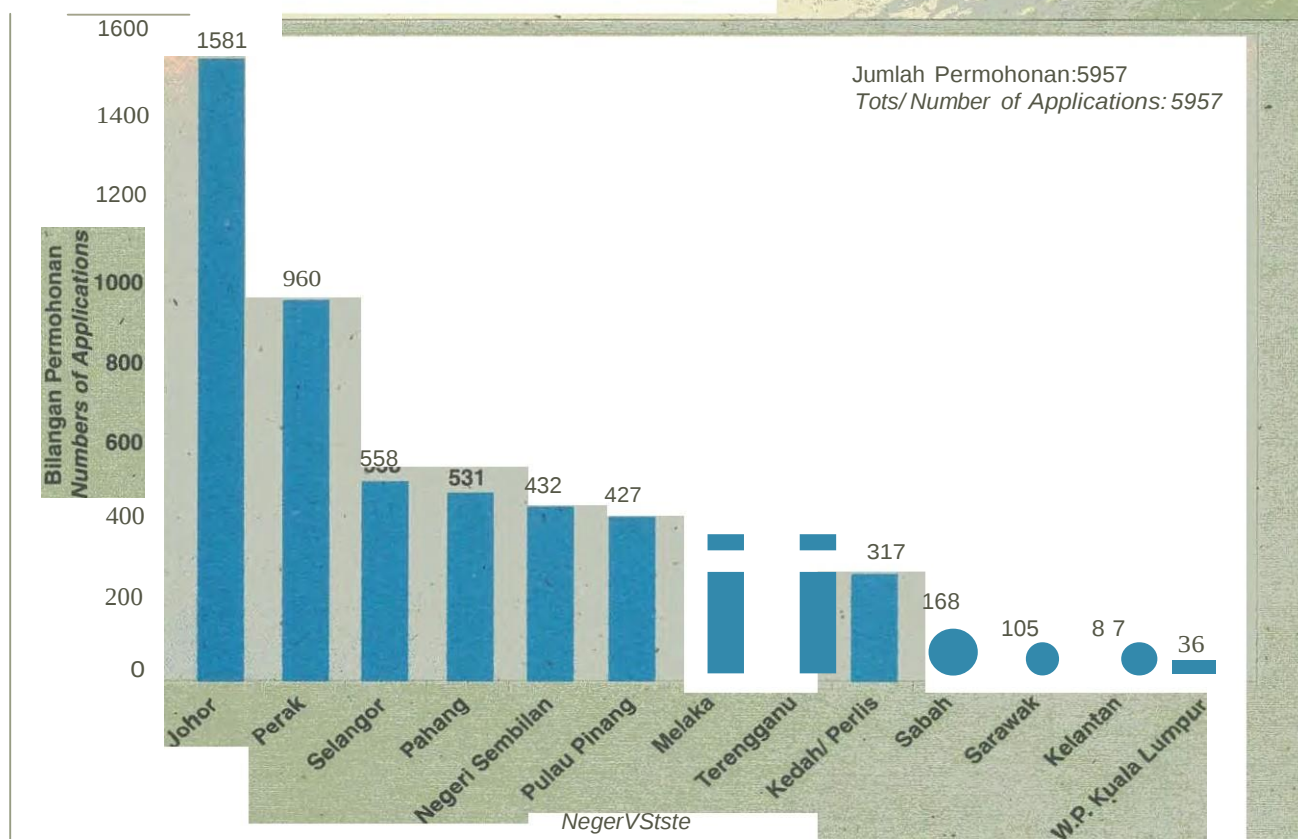
The construction of wastewater treatment plants, installation of air pollution control and fuel burning equipment require prior written permission from the Director General of Environmental Quality as stipulated under the Environmental Quality Act 1974 and Regulations made thereunder.

The Department received 603 applications for the construction of wastewater treatment plants and 510 applications for the installation



Rajah 4.5 Jabatan Alam Sekitar :Permohonan Bagi Penilaian Awal Tapak Untuk Pembangunan Projek-Projek Mengikut Tahun, 1995-1999

Figure 4.5 Department of Environment : Number of Applications for Pre-Siting Evaluation of Development Projects by Year, 1995-1999



Rajah 4.6 Jabatan Alam Sekitar:Permohonan Bagi Penilaian Awal Tapak Untuk Pembangunan Projek-Projek Mengikut Negeri 1999

Figure 4.6 Department of Environment : Application for Pre-Siting Evaluation of Development Projects by State, 1999

Jabatan Alam Sekitar telah menerima sebanyak 603 permohonan untuk pembinaan loji pengolahan effluen dan 510 permohonan pemasangan alat kawalan pencemaran udara. (Rajah 4.7 dan 4.8)

Selain dari alat kawalan pencemaran, sebanyak 1444 permohonan juga diterima oleh Jabatan untuk pemasangan alat pembakaran bahan api yang kebanyakan adalah dandang dan jan kuasa. (Rajah 4.9)

POSAT KHIDMAT NASIHAT MIDA

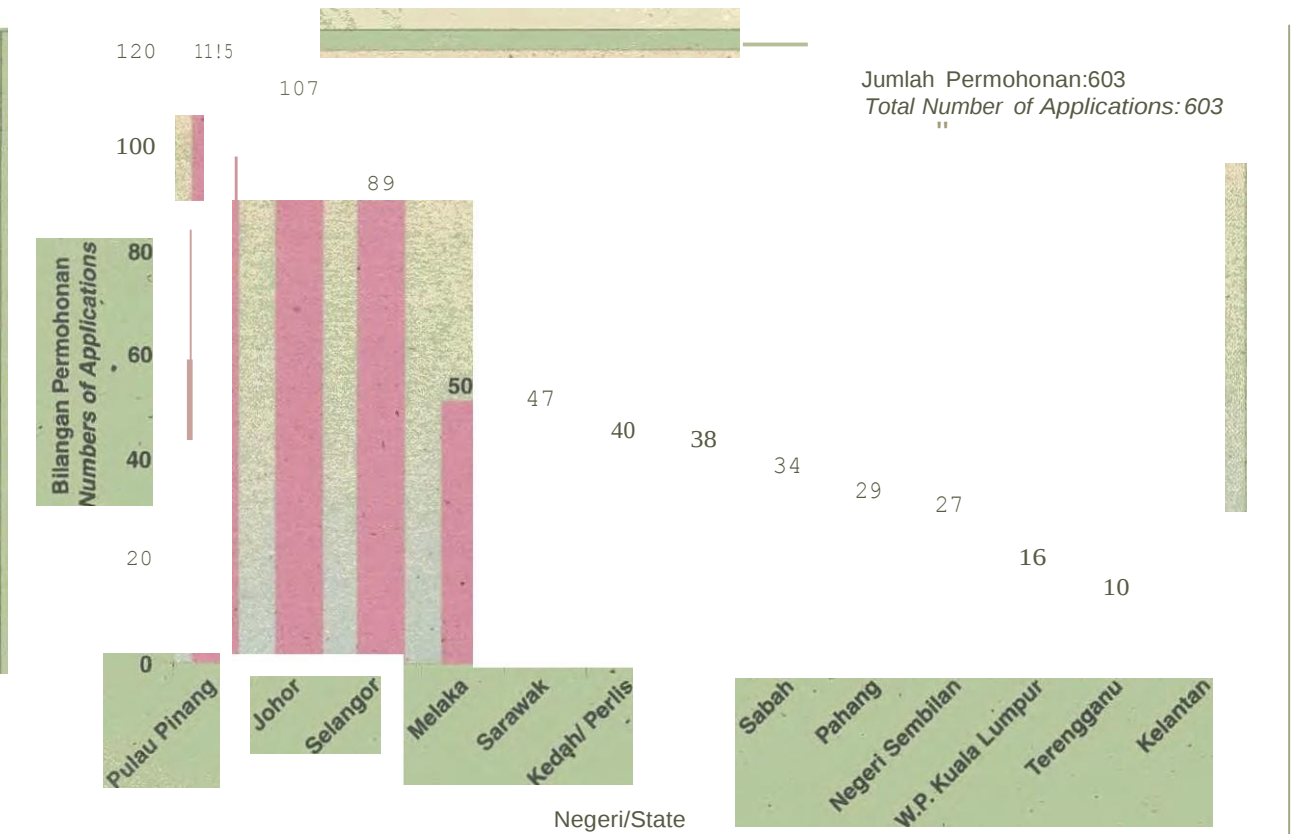
Pusat Khidmat Nasihat JAS di MIDA adalah untuk memberi penerangan dan maklumat serta nasihat kepada bakal pelabur dari dalam dan luar negara mengenai keperluan alam sekitar dalam pembangunan projek industri. Pada tahun 1999, sejumlah 173 pertanyaan diterima. Kebanyakan pertanyaan adalah tentang Perintah EIA dan standard-standard pelepasan yang ditetapkan.

of air pollution control equipment. (Figure 4.7 and 4.8).

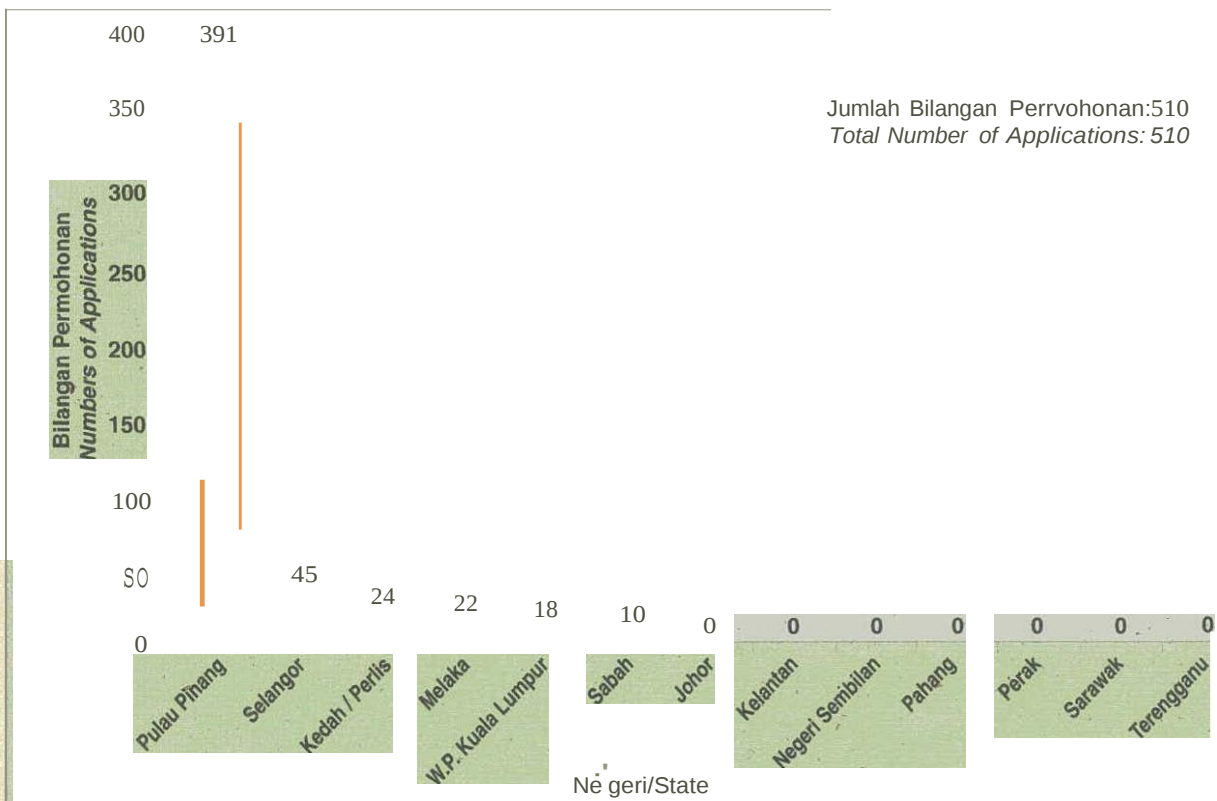
Other than pollution control equipment, the Department also received 1444 applications (or written approval) for the installation of fuel burning equipment such as boilers and generator sets. (Figure 4.9).

DOE ADVISORY SERVICES CENTRE AT MIDA

The DOE Advisory Services Center at MIDA provides advice and information to potential local and foreign investors on the environmental requirements for setting up industrial plants in Malaysia. In 1999 a total of 173 enquiries were received which included requirements of the EIA Order and its procedure and environmental standards.

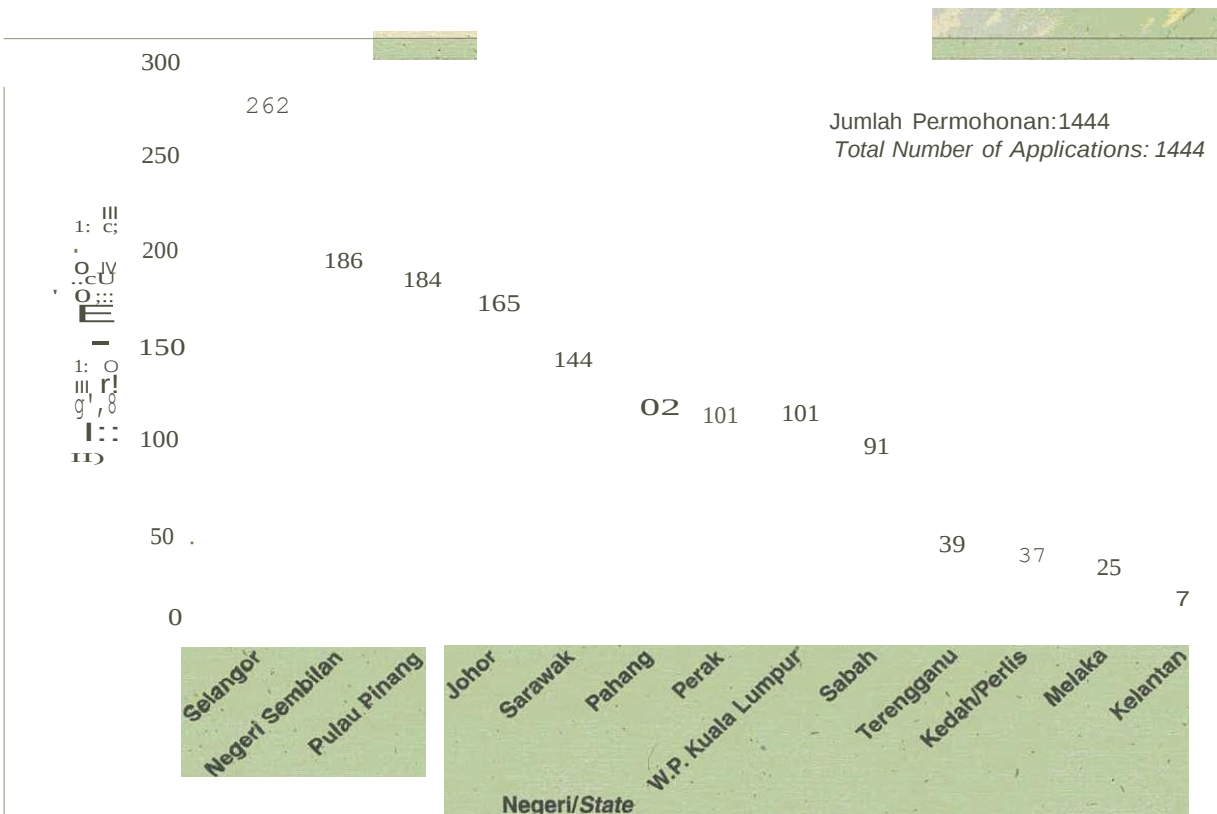


Rajah 4.7 Jabatan Alam Sekitar : Permohonan Bagi Kebenaran Bertulis Untuk Pembinaan Kemudahan Pengolahan Emuven Mengikut Negeri, 1999
Figure 4.7 Department of Environment - Application for the Construction of Wastewater Treatment Plants by State, 1999



Rajah 4.8 Jabatan Alam Sekitar: Permohonan Bagi Pemasangan Alat Kawalan Pencemaran Udara Mengikut Negeri, 1999

Figure 4.8 Department of Environment : Applications for Installation of Air Pollution Control Equipment by State, 1999



Rajah 4.9 Jabatan Alam Sekitar: Permohonan Bagi Pemasangan peralatan Pembakaran Bahan api, Mengikut Negeri 1999

Figure 4.9 Department of Environment: Applications for the Installation of Fuel Burning Equipment by State, 1999

Penyelidikan dan Pembangunan Alam Sekitar

Pengenalan

Penyelidikan dan pembangunan memainkan peranan yang penting dalam pengurusan alam sekitar bagi tujuan menyelaraskan pembangunan strategi baru dan arah tujuan pengurusan alam sekitar. -

Pada tahun 1999, dua projek utama telah dilaksanakan oleh Jabatan Alam Sekitar adalah:

- Projek Mengkelaskan Sungai-Sungai (yang bermula dari tahun 1998)
- Pembangunan Pelan Pengurusan Alam Sekitar Lembangan Sungai Terengganu (yang bermula dari tahun 1998)

Sungai-sungai yang terlibat di bawah projek pengelasan sungai ialah Sg. Ibai, Sg. Kedah, Sg. Kesang, Sg. Kuantan, Sg. Langat, Sg. Padas, Sg. Pinang dan Sg. Serting. Di bawah projek ini sungai-sungai dikelaskan mengikut standard interim kualiti air dan juga berdasarkan kepentingan kegunaan air dan status semasa kualiti air. Laporan juga mengandungi cadangan bagi pelaksanaan dan telah diedarkan ke organisasi yang berkaitan, terutamanya Pihak Berkuasa Perancang Negeri. Sejumlah 1,017,171.00 telah dibelanjakan bagi projek tersebut.

Projek Pembangunan Pelan Pengurusan Alam Sekitar Lembangan Sungai bagi Sungai Terengganu yang telah bermula dalam tahun 1998 dijangka siap sepenuhnya pada suku tahun pertama tahun 2000. Pelan ini adalah bagi mengenal pasti masalah Sungai Terengganu dan membuat cadangan bagi langkah-langkah bagi kegunaan air sungai secara mapan berdasarkan kepentingan kegunaan lembangan sungai.

Environmental Research and Development

Introduction

Research and development play an important role in environmental management, the principal purpose being to facilitate the development of new strategies and direction for environmental management.

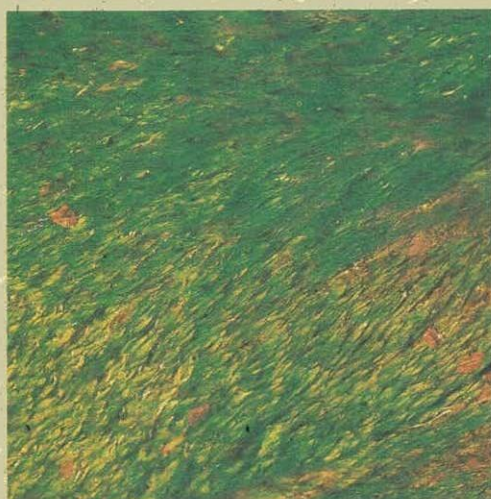
Two research and development projects implemented by the Department of Environment in 1999 were:

- River Classification (started since 1998)
- Development of River Basin Environmental Management Plan for Sungai Terengganu (started since 1998).

The river classification project was conducted on Sg. Ibai, Sg. Kedah, Sg. Kesang, Sg. Kuantan, Sg. Langat, Sg. Padas, Sg. Penang and Sg. Serting. Under the project the rivers were classified according to the interim water quality standards and on the basis of their beneficial uses and status of the water quality. The report which included recommendations for implementation had been distributed to all relevant organisations, in particular the State Planning Authorities. A total sum of RM1,017,171 was expended for the entire project.

The project on Development of River Basin Management Plan for Sungai Terengganu which started in 1998 is expected to be completed by the first quarter of 2000. The Plan was to identify pollution problems of Sungai Terengganu and to recommend measures to ensure sustainable use of the river.

Bab 5



Chapter 5

PENGAWASANDAN PENGUATKUASAAN

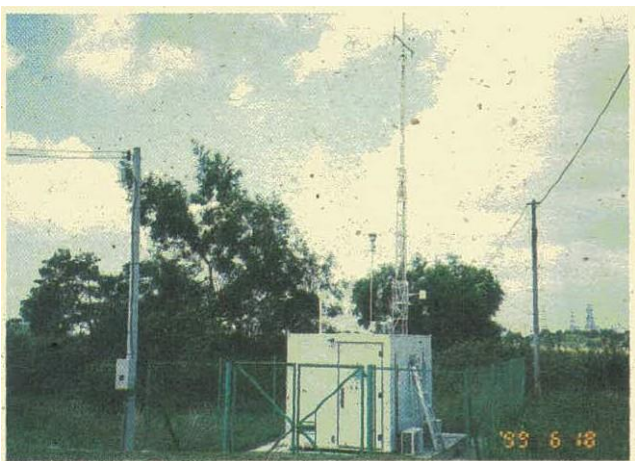
PENGAWASAN KOALITI ALAM SEKITAR

Fungsi utama Jabatan Alam Sekitar adalah memantau status kualiti alam sekitar negara dari segi kualiti udara, sungai, air tanah, marin dan pencemaran bising mengesan sebarang perubahan kepada kualiti alam sekitar yang boleh memberi kesan kepada kesihatan manusia dan alam sekeliling. Fungsi utama ini adalah juga menyokong keseluruhan pengurusan alam sekitar negara ini.

PENGAWASAN KUALITI UDARA

Pada tahun 1999, sebanyak 5 buah stesen kualiti udara automatik telah dipasang. Ini adalah merupakan tambahan kepada 39 buah stesen sedia ada menjadikan keseluruhan stesen yang dipasang berjumlah 44 kesemuanya di seluruh negara (Peta 5.0 dan 5.1). Stesen-stesen ini memantau secara berterusan pencemar-pencemar yang dihasilkan oleh kenderaan bermotor, industri, pembakaran terbuka dan lain-lain. Jabatan dalam perancangan menubuhkan 50 buah pengawasan kualiti udara. Rebangsaah menjelang tahun 2000.

Selain dari itu, dalam tahun 1999 Jabatan ini telah menjalankan Audit Jaminan Mutu.



Stesen Pengawasan Kualiti Udara
Air Monitoring Station

MONITORING AND ENFORCEMENT

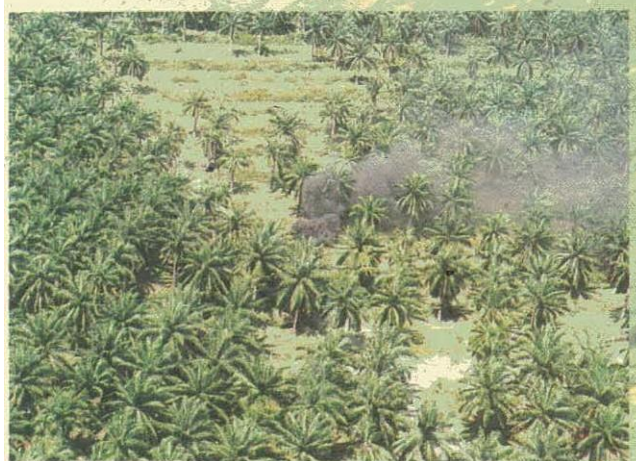
ENVIRONMENTAL QUALITY MONITORING

One of the primary function of the Department of Environment is to monitor the air, river, ground water, marine water quality and noise pollution so as to be able to detect any significant change in environmental quality which may cause harm to human health and the environment. This important function is also to support the development of environmental management strategies in the country.

AIR QUALITY MONITORING PROGRAMME

In 1999, 5 new Continuous Air Quality Monitoring (CAQM) stations were set up in addition to the existing 39. These 44 CAQM stations are located strategically throughout the country (Map 5.0 and 5.1) to monitor continuously the presence of air pollutants from the air emitted from sources such as motor vehicles, industries, open burning, etc. The Department is working towards establishing 50 CAQM stations in the country by the year 2000.

The Department also conducted a Quality Assurance Audit on all CAQM stations to



Pengawasan Melalui Udara
Airborne Surveillance



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LAUT SULU
SULUSEA

cAaM
Station

Kota Kinabahi



PULAU LABUAN

SABAH

Tawau

LAUT SULAWESI
SULAWESI SEA

LAUT CHINA SELATAN
SOUTH CHINA SEA

BRUNEI

Limbang

Miri



Bintulu

Sibu

SARAWAK

Sarikei

Kola Samarahan

Kapit

Kuching

Sri Aman

Peta 5.1 Malaysia Timur: Lokasi Stesen-Stesen CAQM, 1999

Map 5.1 East Malaysia: Locations of CAQM Stations, 1999



(Quality Assurance Audit) ke atas semua stesen kualiti" udara automatik bagi menjamin kualiti data yang dijanakan. Program audit e atas sistem dan alatan stesen pengawasan kualiti udara .automatik ini juga dilaksanakan dengan bantuan pihak USEPA di bawah program USAEP dan didapati program pengawasan kualiti udara yang dijalankan telah mengikut standard antarabangsa yang ditetapkan.

Jabatan Alam Sekitar dengan kerjasama pihak 'CSIRO', 'Atmospheric Research Institute of Australia', dan Jabatan Perkhidmatan Kajiucaca Malaysia dalam rrlenjalankan Kajian Jerebu di .Malaysia. Kajian ini ialah projek **kerjaa** yang dijalankan untuk meningkatkan pengetahuan dan mengenalpasti kandungan kimia dan kandungan-kandungan lain di dalam habuk terampai (aerosol haze) eli gua buah tempat di Lembah Kelang, iaidi Petaling Jaya dan Gombak. Kajian ini telah dibiayai oleh Kerajaan Australia melalui AusAID, iaitu se uah agensi bantuan kewangan Kerajaan ustralia di luar negara dengan sumbangan daripada Kerajaan Malaysia. Kajian ini telah dimulakan pada bulan Disember 1998 dan dijangka tamat dalam mpoh 2 tahun.

BONYiBISING

Program pengawasan bunyi blsing pada tahun 199 telah plemberi penumpuan kepada pengawasan b gi mendapatkan penilafan secara am terhadap tahap pendedahan paras J<ebisingan yang dialarni ole! beberapa kawasan sensitif terpilih seperti kawasan sekolah <ian hospital. Pengawasan te ah dijalankan di beberapa premises di Kuala Lumpur, Selangor dan Negeri Sembilan. Data-data pengawasan yang diperolehi telah dibandingkan dengan had-had tahap penerimaan yang disyorkan oleh Pertubuhan Kesihatan Sedunia (WHO).

Di samping itu juga, .Jabatan telah menjalankan satu kajian dengan kerjasama jururunding luar ke atas kesan bunyi bising dan gegaran dari operasi Stesen Janakttasa .disebabkan oleh aduan orang ramaL

ensure quality data were generated from those stations. In addition, system and instrumentation audit programmes were carried out with assistance from USEI?A and it was found that the monitoring programme implemented was in accordance with international standards.

The Department of Environment also collaborated with CSIRO, Atmospheric Research Institute of Australia and the Malaysian Meteorologiai.l Services to f:onductJ a study on the Malaysian haze phenomena. The Malaysian Haze Study is a cooperative research project to improve understanding of the haze phenomenon through inve5tigations of the chemical composition and other properties of aerosol haZe at two sites in the Klang Valley, namely Petaling Jaya and Gomhak. The study was supported financially by the Australian Government through the Australian Overseas Aid Agency (AusAID) with in kind contribution from the Malaysian Government. It was commisioned in December 1998 and would be completed within 2 years.

NOISE MONITORIJYG PROGRAMME

f'l.oise monitoring carried out in 1999 was concentrated on assessing noise levels exposure to sensitive noise receivers at premises such as schools and hospitals. Monitoring was conducted at several premises in Kuala Lumpur, Selangor and Negeri Semh'ilan. Data obtained from the monitoring were then assessed against the values recommended by the World Health Organization (WHO)

Apart fro'm that, arising from a public complaint the Department with the assistance of an independent consultant commissioned a detailed study on noise and vibration from an open cycle power plant.



PROGRAM PEMANTAUAN KUALITI AIR SUNGAI

Pada tahun 1999, sampel air dari 902 buah stesen pemantauan kualiti air di 120 buah lembangan sungai telah diambil dan dianalisa. (Jadual 5.0)

JAS juga telah menubuhkan 10 buah stesen pemantauan automatik untuk mengesan perubahan secara terus menerus kepada kualiti air sungai di Sg. Perai, Sg. Perak, Sg. Selangor, Sg. Kelang, Sg. Linggi, Sg. Melaka, Sg. Skudai, Sg. Kuantan, Sg. Terengganu dan Sg. Sarawak (Jadual 5.1).

Sampel air yang diambil dari 902 buah stesen dianalisa bagi parameter-parameter berikut:

- Keperluan Oksigen Biokimia (BOD)
- Keperluan Oksigen Kimia (COD)
- Ammoniacal Nitrogen (NH_3N)
- pH
- Oksigen Terlarut (DO)
- Pepejal Terampai (SS).

Pemantauan Biologi dan Indikator Biologi

Program pemantauan Biologi dan Indikator Biologi telah dimulakan pada tahun 1999. Pemantauan biologi penggunaan organisma akuatik seperti bakteria, rumpai, ikan dan mikro-invertebrata termasuk siput sebagai indikatornya menilai status kualiti air. Selain daripada komponen biotik, parameter-parameter fizik dan kimia juga dianalisis. Enam lembangan sungai telah dipilih bagi program ini iaitu Sg. Sarawak (Negeri Sarawak), Sg. Linggi (Negeri Sembilan), Sg. Liwagu (Negeri Sabah), Sg. Sedili Besar (Negeri Johor), Sg. Pahang (Negeri Pahang) dan Sg. Kedah (Negeri Kedah). Pemantauan biologi akan dikembangkan ke sungai-sungai yang lain pada masa hadapan.

Pemantauan Kualiti Air Sungai di Kawasan Wabak Japanese encephalitis (JE)

Program pemantauan mula dilaksanakan pada bulan April 1999 bagi tujuan mengesan perubahan kepada kualiti air sungai dari

RIVER WATER QUALITY MONITORING PROGRAMME

In 1999, water samples from 902 stations located within 120 river basins in Malaysia were collected and analysed. (Table 5.0)

In addition, 10 automatic monitoring stations were installed to detect river quality changes on a continuous basis at Sg. Perai, Sg. Petak, Sg. Selangor, Sg. Klang, Sg. Linggi, Sg. Melaka, Sg. Skudai, Sg. Kuantan, Sg. Terengganu and Sg. Sarawak (Table 5.1).

The water samples taken from 902 stations were analysed for the following parameters.

- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- Ammoniacal Nitrogen (NH_3N)
- pH
- Dissolved Oxygen
- Suspended Solids (SS).

Biological and Bioindicator Monitoring Programme

A Biological and Bioindicator monitoring programme was initiated in 1999 involving specific aquatic organisms such as bacteria, algae, fish and macro-invertebrates including snails as indicators to reflect the water quality status. Apart from the biotic component, physical and chemical parameters were also analysed. Six rivers were selected for the programme which included Sg. Sarawak (Sarawak), Sg. Linggi (Negeri Sembilan), Sg. Liwagu (Sabah), Sg. Sedili Besar (Johor), Sg. Pahang (Pahang) and Sg. Kedah (Kedah). The programme would be expanded to cover other major rivers in the near future.

River Monitoring in the vicinity of areas affected by the Japanese Encephalitis (J.E) outbreak

The programme was started in April 1999 to detect change, if any, in river water quality as a result of the disposal of pig carcasses in JE affected areas in Negeri Sembilan, Kelantan and



Jadual 5.0. Jabatan Alam Sekitar : Senarai Lembangan Sungai Yang Dipantau, 1999
Table 5.0. Department of Environment : List of the River Catchment Monitored in 1999

NEGERI 'STATf	WILAYAH KUALITI AIR WATFR QUA/ITI RFGIO!o	LE 8ANGAN SUNGAI/ RIVFR C!ITCifMf.!''ff	BILANGAN STESEN NUM/JEK Of STAf10''f
PERLIS	01	PERLIS	10
KEDAH	01PL 03 04	MELAKA KEDAH MERBOK	3 6 10
KEDAH/PULAU PINANG	05 06P	MUDA PI:RAI	8 22
PULAU PINANG	06J 06PP 07	JURU PINANG JEJAWI	8 7 5
PULAU PINANG!PERAK	08	KERIAN	10
PERAK	09 10 10T 11 12 tiw 13	KURAU SEPETANG TEMERLOH 8RUAS RAJA HITAM WANG/DERALIK PERAK	5 10 2 4 4 6 53
PERAK/SELANGOR	14	8ERNAM	10
SELANGOR	15 16 17 19 20	TENGI SELANGOR 8ULOH LANGAT SEPANG	2 9 5 22 3
SELANGORIW. PERSEKUTUAN	18	KLANG	24
NEGERI SEMBILAN	20J 21	LUKUT LINGGI	1 15
MELAKA	22 23 24	MELAKA DUYONG KESANG	11 3 8
JOHOR	25 26 27A 278 28 28A 288 28C 28D 28E 28F "28G 29 298 30A 308 30C 31A 318 32	MUAR BATU PAH.IT AIR 8ALOI 8ENUT SEGGET PONTIAN 8ESAR PONTIAN KECIL SKUDAI TEBRAU KEMPAS DANGA RAM8AH JOHOR PASIR GUDANG SEDILI 8ESAR SEDILI KECIL PALOI MERSING J LUANG ENDAU	43 23 3 7 5 5 2 8 5 2 2 2 44 5 13 5 2 1 2 29
PAHANG	32/33 32AE 33 34 35 358 35CH	PONTIAN ANAK ENDAU ROMPIN BEBAR SERTING BERA 8ERTAM	3 2 18 8 7 5 10



NEGERI STATE	WILAYAH KUALITI AIR WATER QUALITY REGION	LEMBANGAN SUNGAI RIVER CATCHMENT	BILANGAN STESEN NUMBER OF STATION
	35L 35M 35P 36 37 37A	LEPAR MENTIGA PAHANG KUANTAN BALOK/FONGGOK CHERATING	10 2 51 11 5 1
TERENGGANU	38 39C 39K 40 41 421 42L 42M 43 44 46	KEMAMAN CHUKAI KERTIH L'AKA DUNGUN IBAI LANDAS MARANG TERENGGANU SETRU BESUT	10 5 1 10 4 3 2 5 9 3 4
KELANTAN	47K 47S 48 49	KEMASIN SEMERAK KELANTAN GOLOK	1 2 38 4
SARAWAK	50 51 SIBS 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	KAVAN SARAWAK SAMARAHAN SADONG LUPAR SARIBAS KERIAN RAJANG OYA MUKAH BALINGIAN T'AU KEMENA SIMILAJAU SUAI NIAH SIBUTI MIRILUTONG BARAM LIMBANG TRUSAN LAWAS	4 15 2 6 7 2 3 18 3 4 2 1 3 1 5 6 4 4 5 1 2
SABAH	71 72 73 75 76 77 78 79 80 83 84 85 86 87 89 88 90 91 93 94 95	MENGALONG PADAS MEMBAKUT PAPAR MOYOG DAMIT/TUARAN KADAMAIAN BINGKONGAN BENGKOKA SUGUT LABUK KAYA KINABATANGAN SEGAMA TINGKAYU SILABUKAN KALUMPANG TAWAU UMAS-UMAS BRATITIAN KALABAKAN	3 7 1 2 11 6 3 3 1 6 8 1 4 1 1 2 5 5 1 1 2
JUMLAH/ TOTM	120		902