

FIGURES

Figure 1

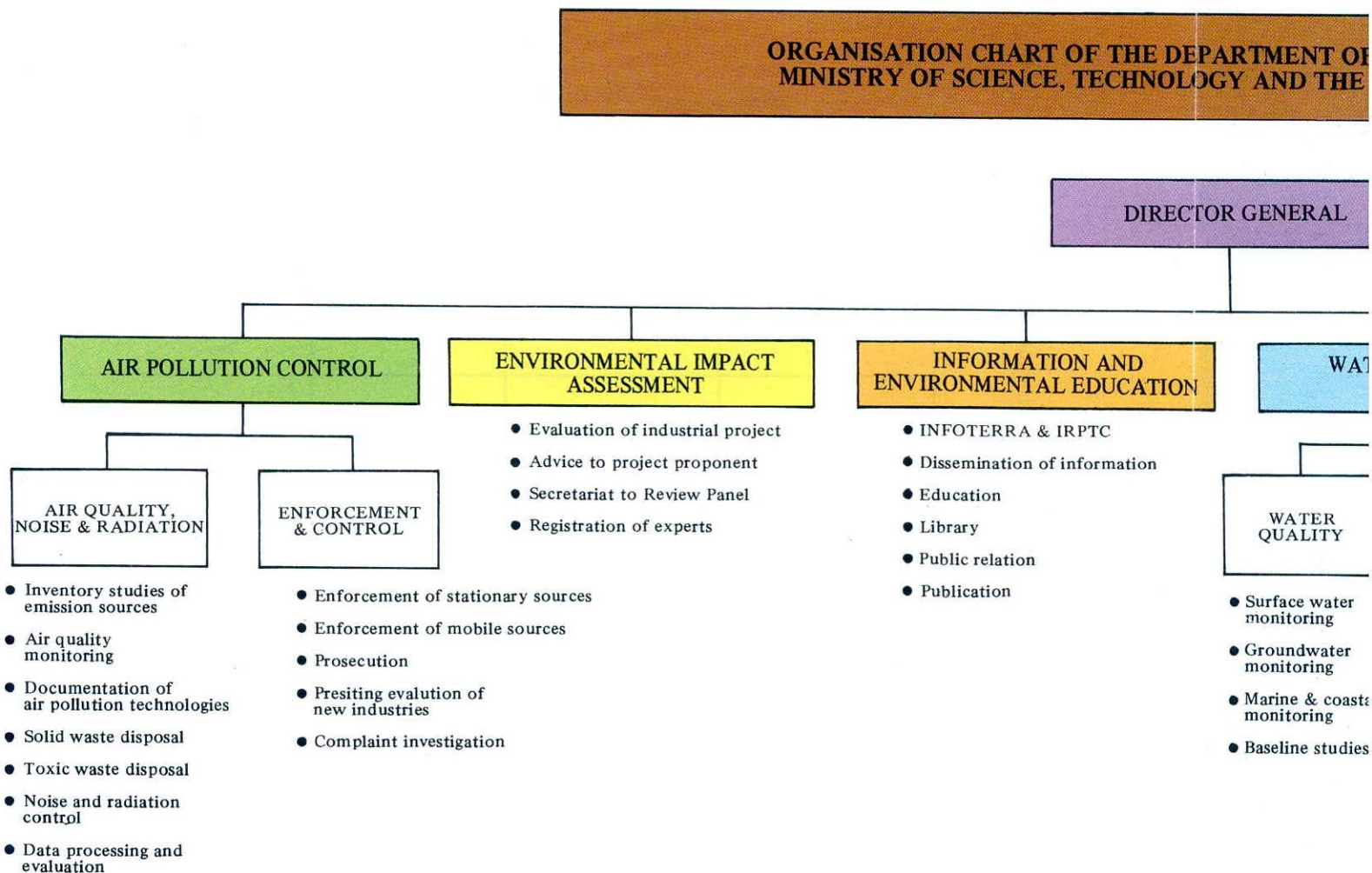
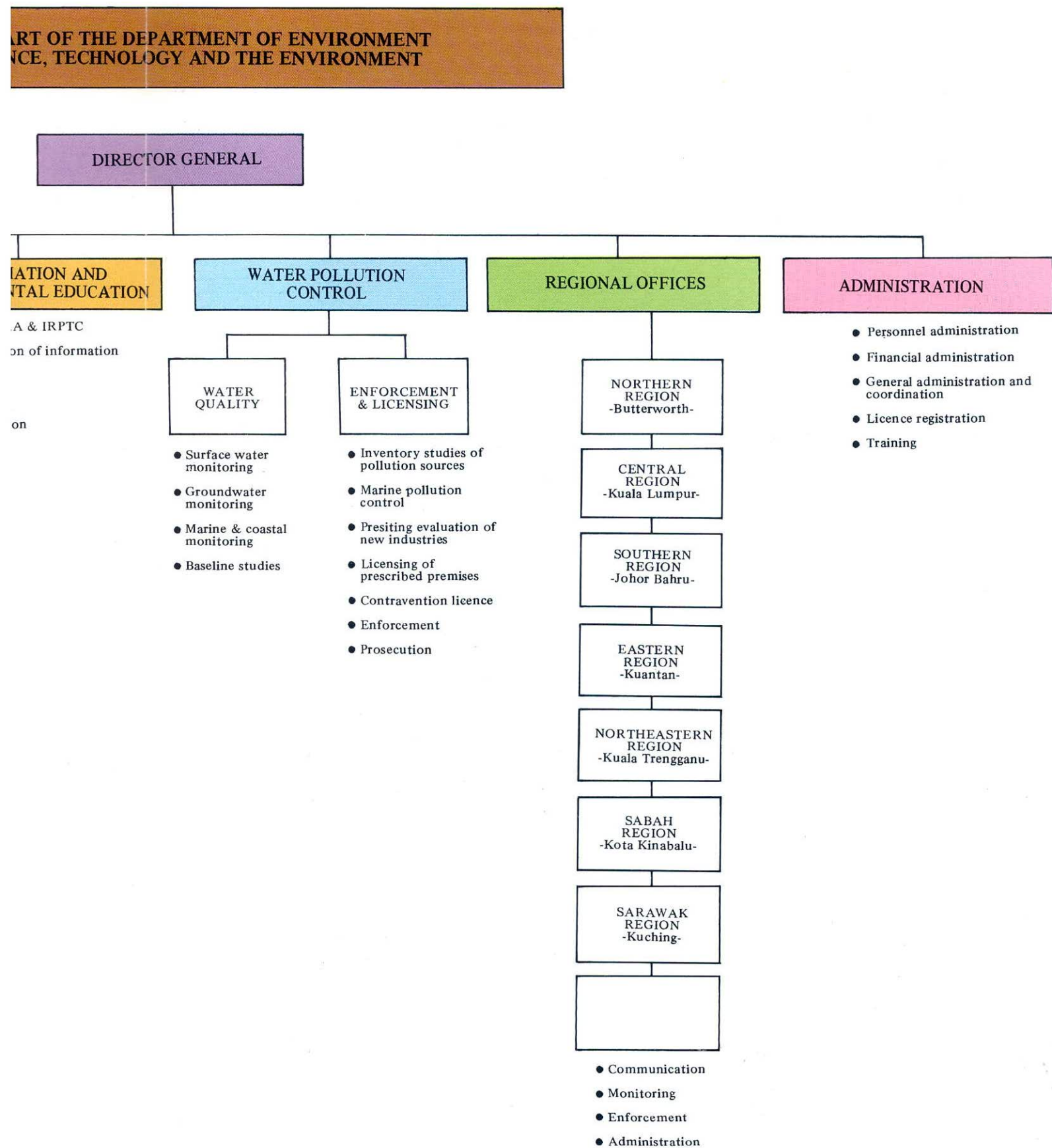


Figure 1



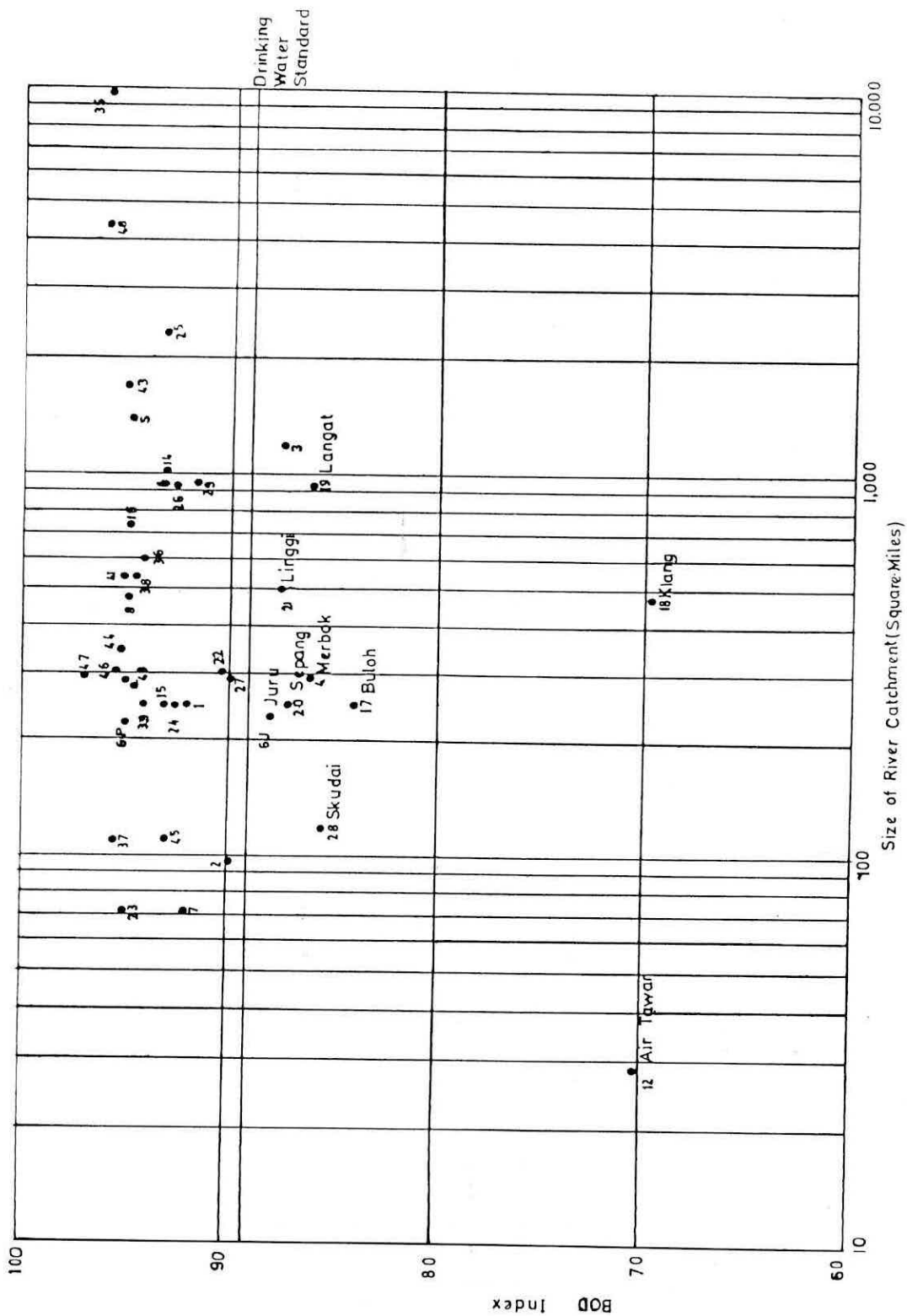


Figure 2: Peninsular Malaysia: River Water Quality Index of Biochemical Oxygen Demand (BOD₅), 1983

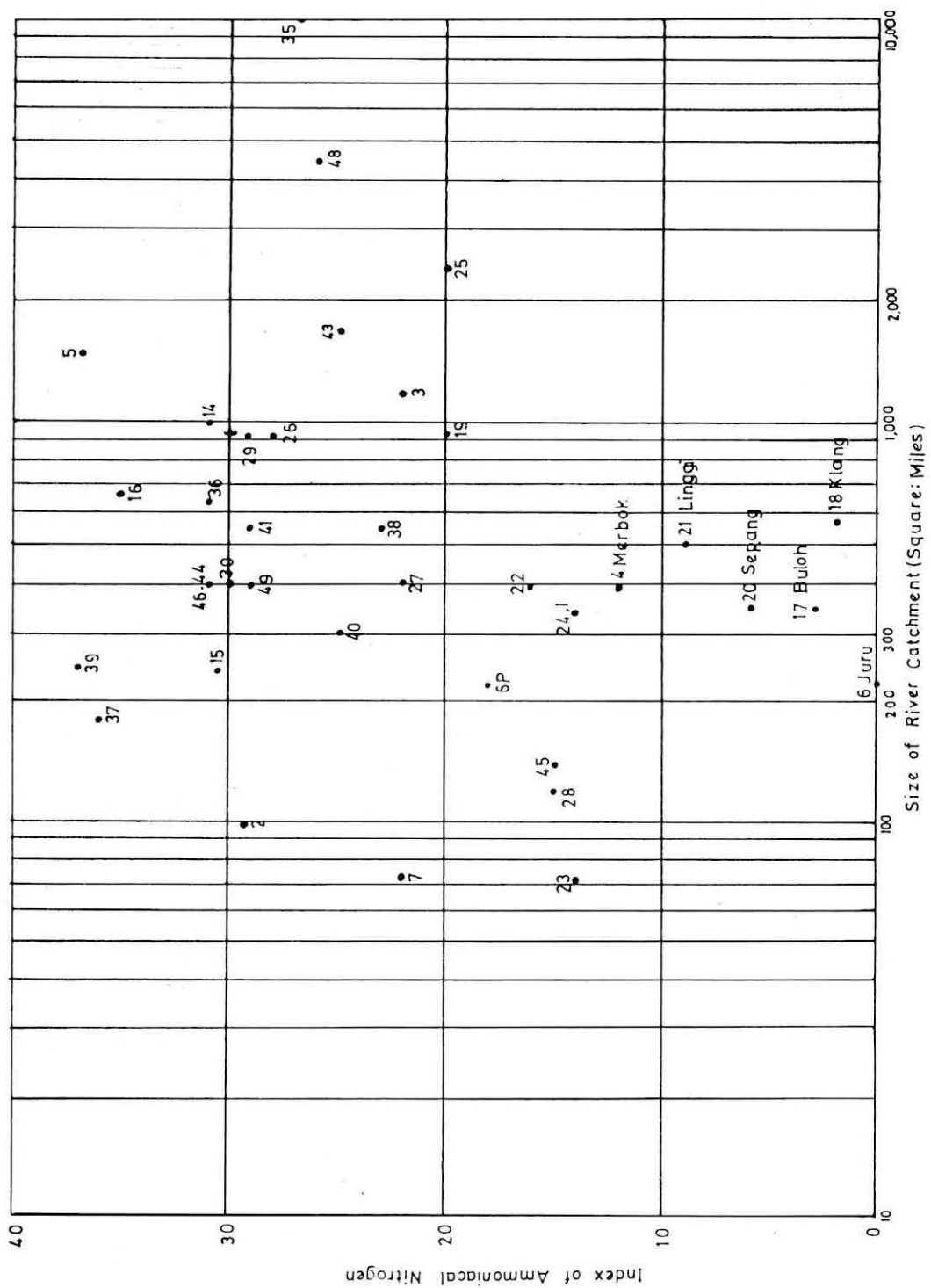


Figure 3: Peninsular Malaysia: River Water Quality Index of Ammoniacal Nitrogen, 1983

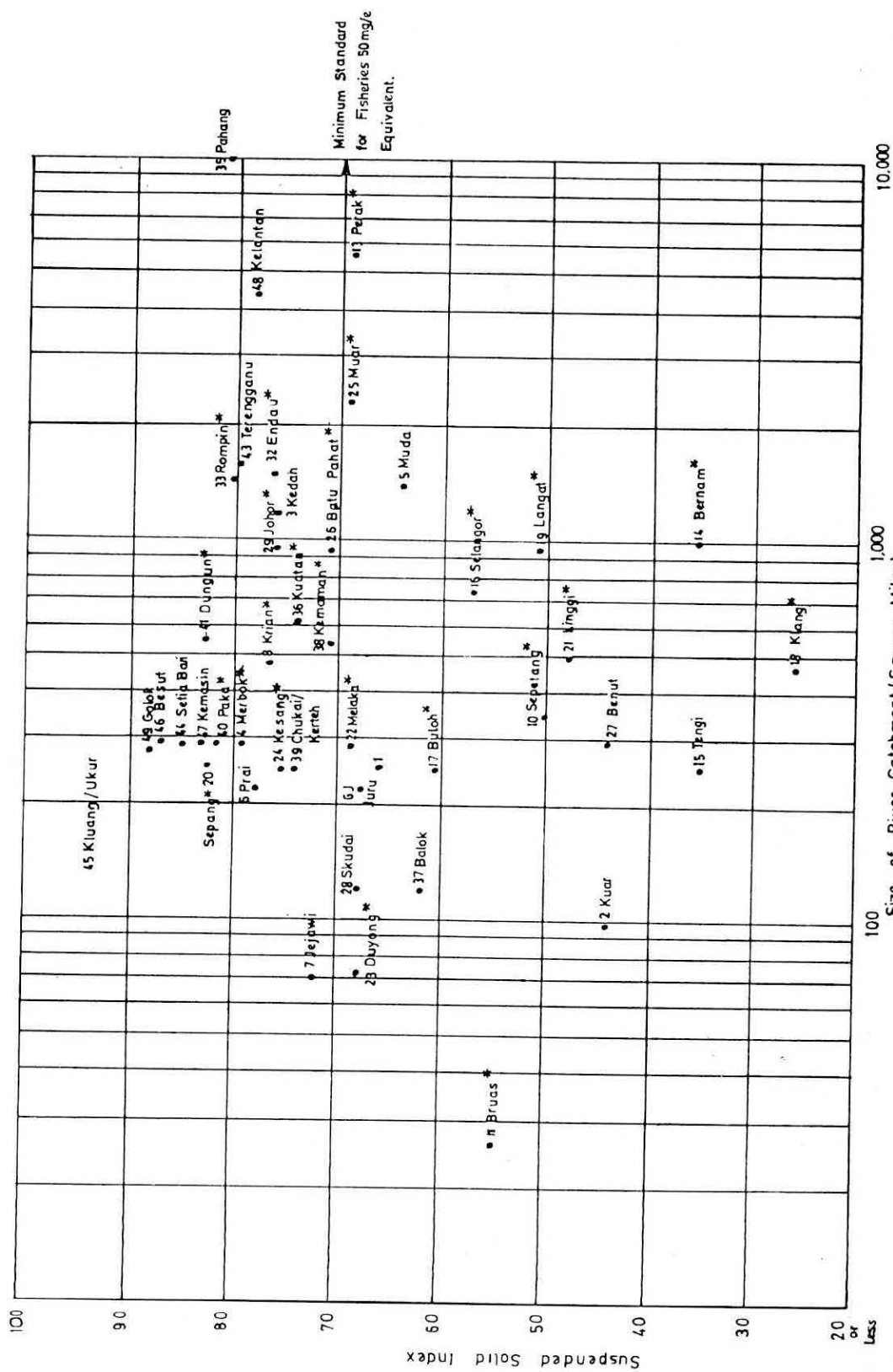


Figure 4: Peninsular Malaysia: River Water Quality Index of Suspended Solids, 1983

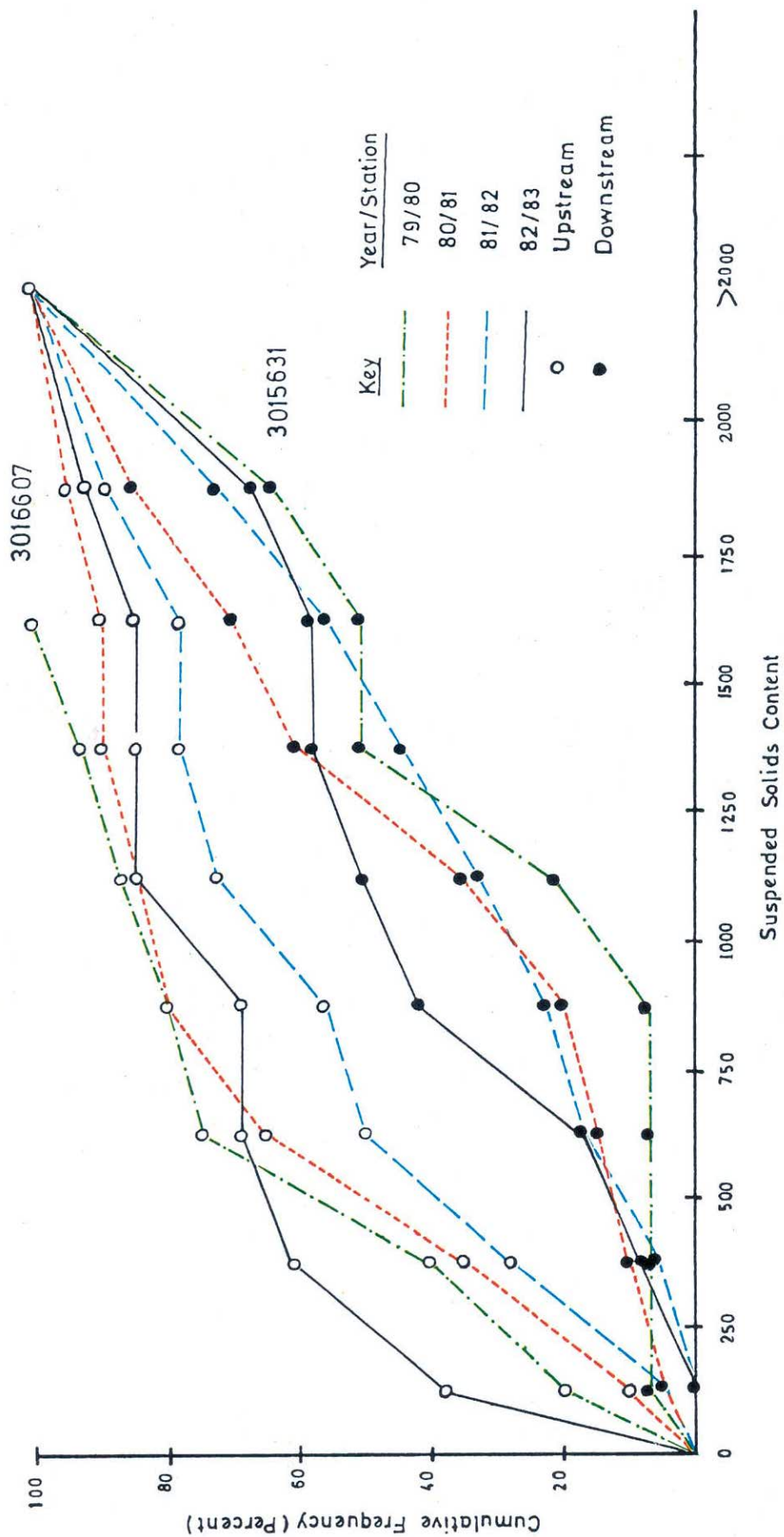


Figure 5: Klang River: The Changes in Water Quality Affected by Mining 1979–1983

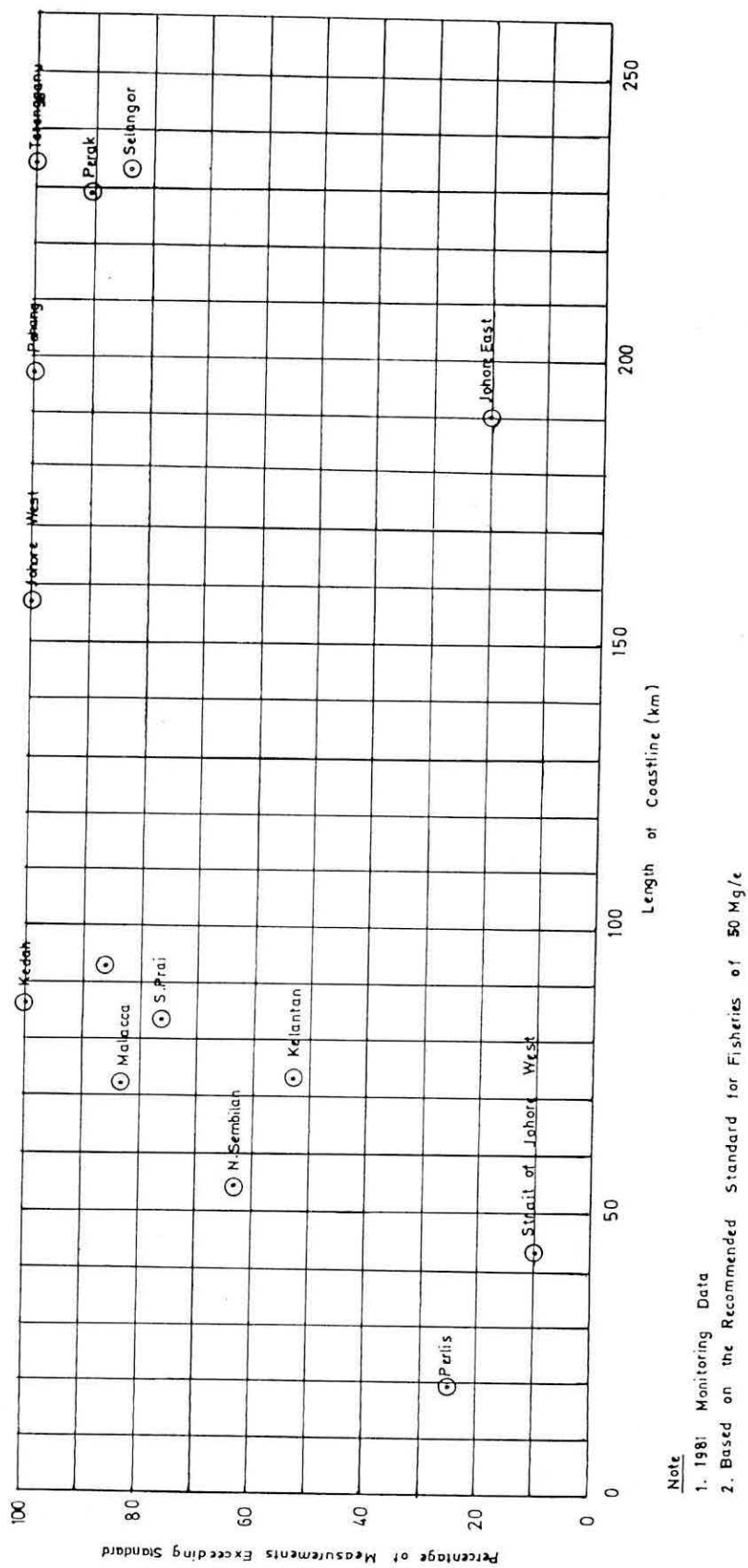
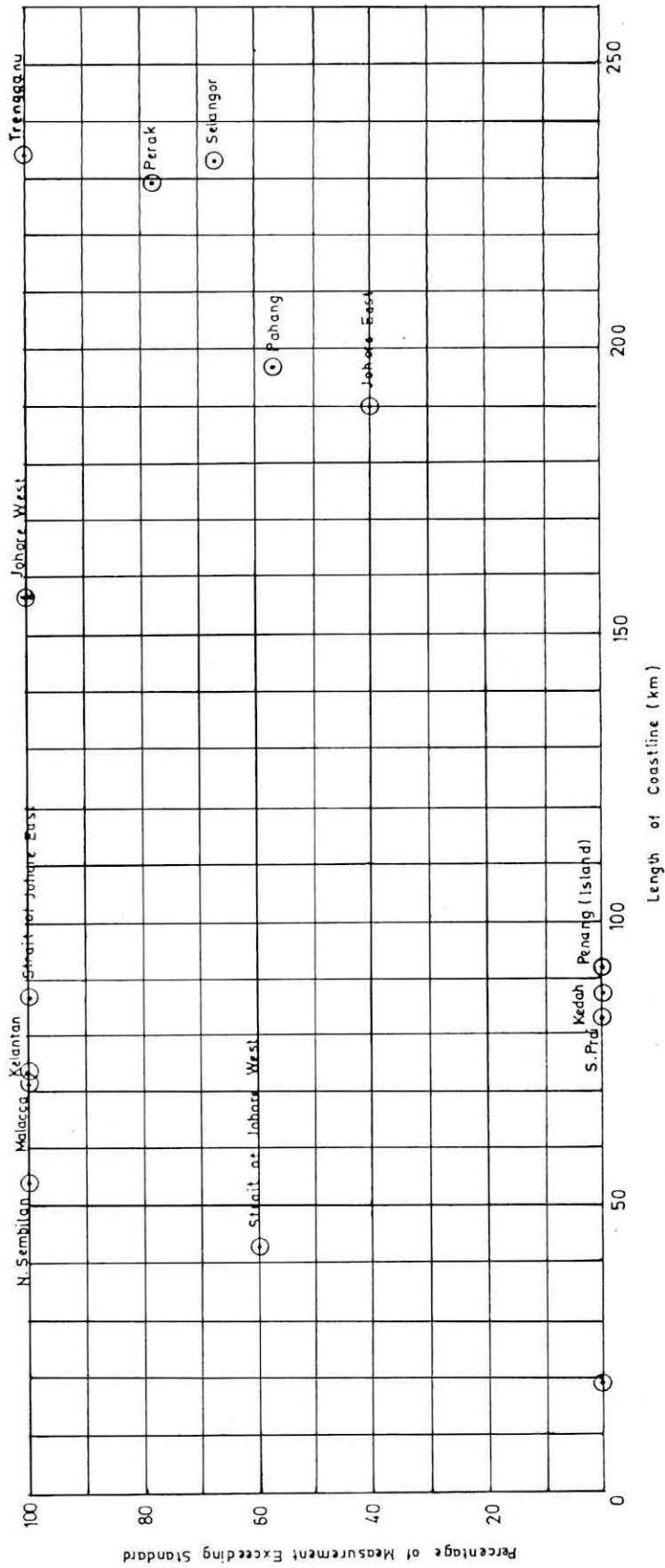
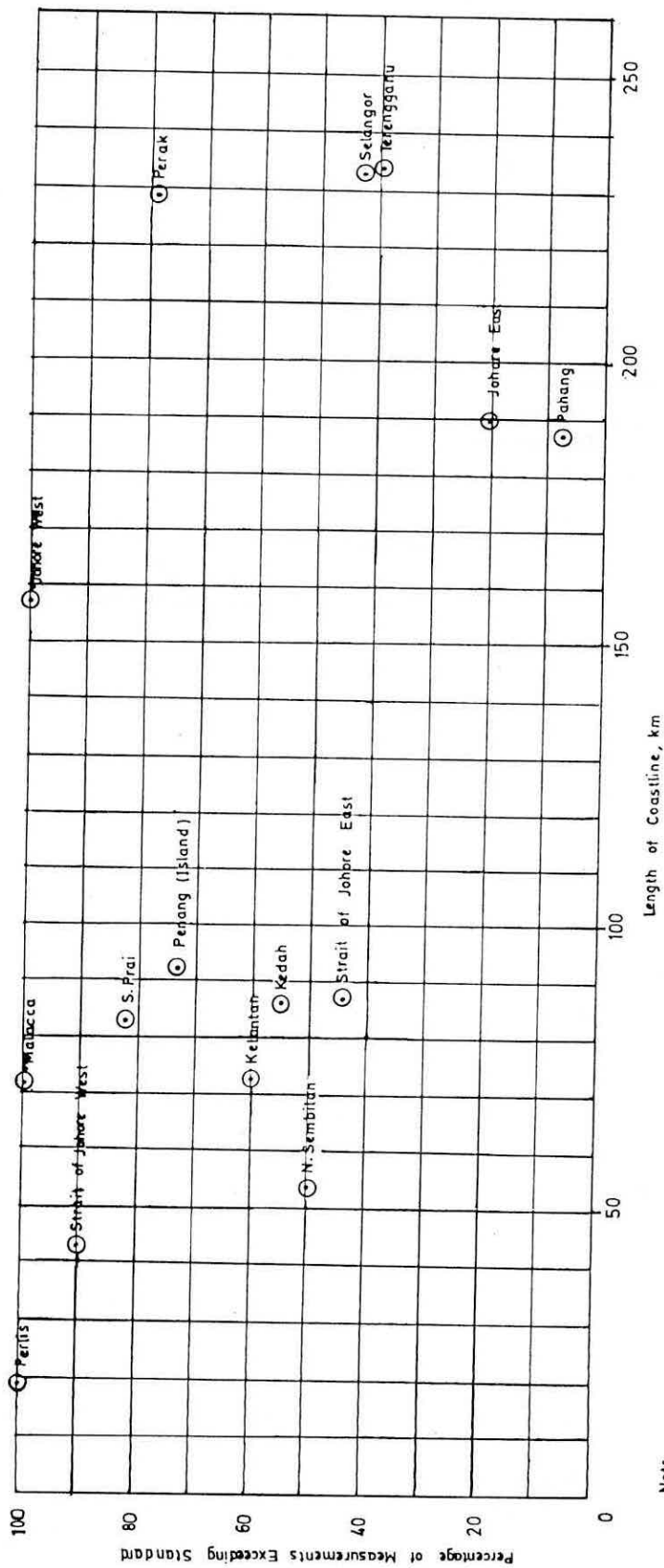


Figure 6: Peninsular Malaysia: Incidence of Marine Pollution by Total Suspended Solids, 1982



Note
 1. 1981 Monitoring Data
 2. Based on the Recommended Standard for Fisheries of 0 Mg/e

Figure 7: Peninsular Malaysia: Incidence of Oil Pollution, 1982



Note

1. Monitoring Data
2. Based on the Recommended Standard of European Economic Community (EEC) of 100 MPN/Me

Figure 8: Peninsular Malaysia: Incidence of Faecal Coliform Contamination, 1982

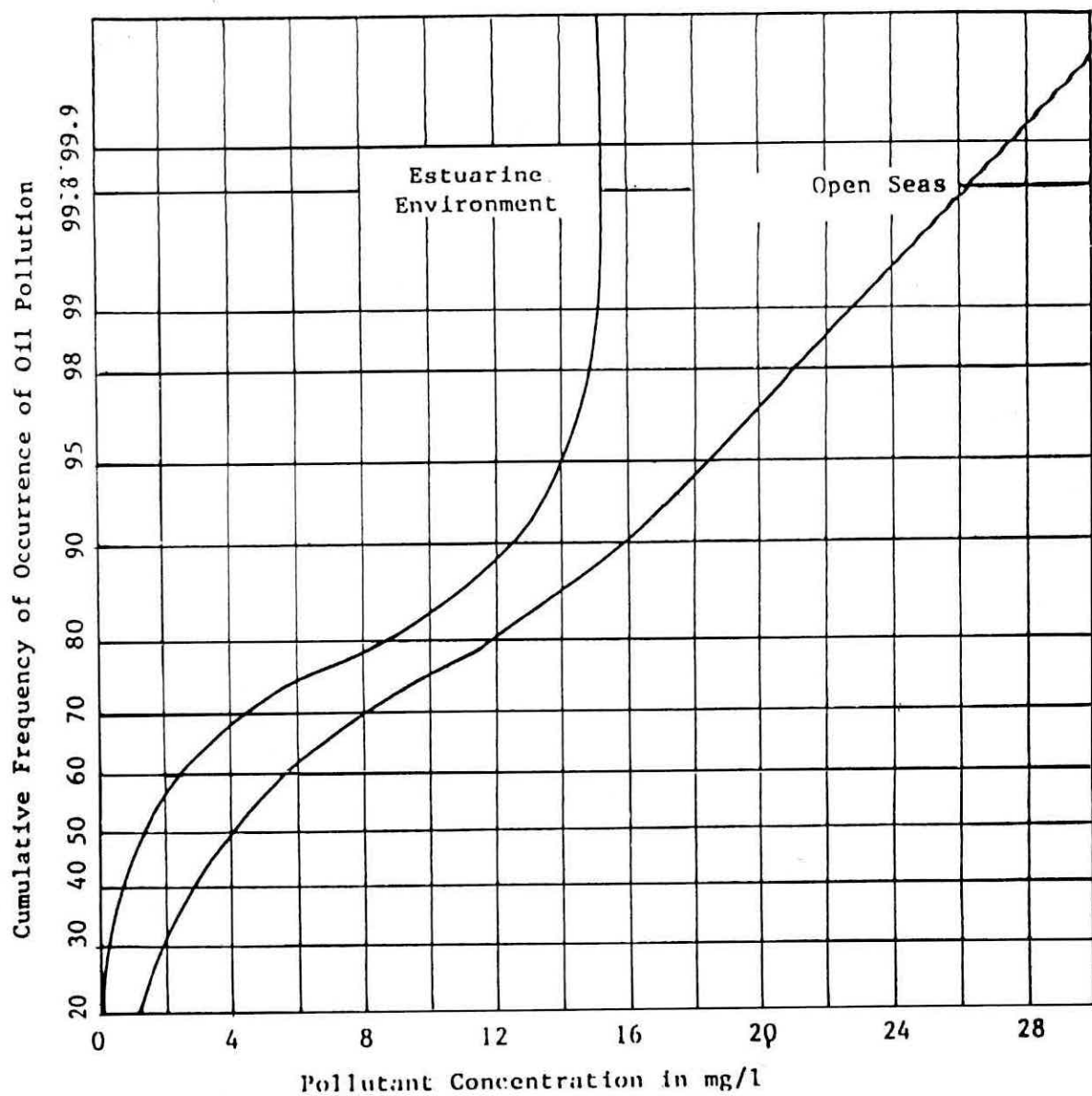


Figure 9: Distribution Characteristics of Oil Pollution in the Estuarine Environment and in the Open Coastal Waters, 1979–1982

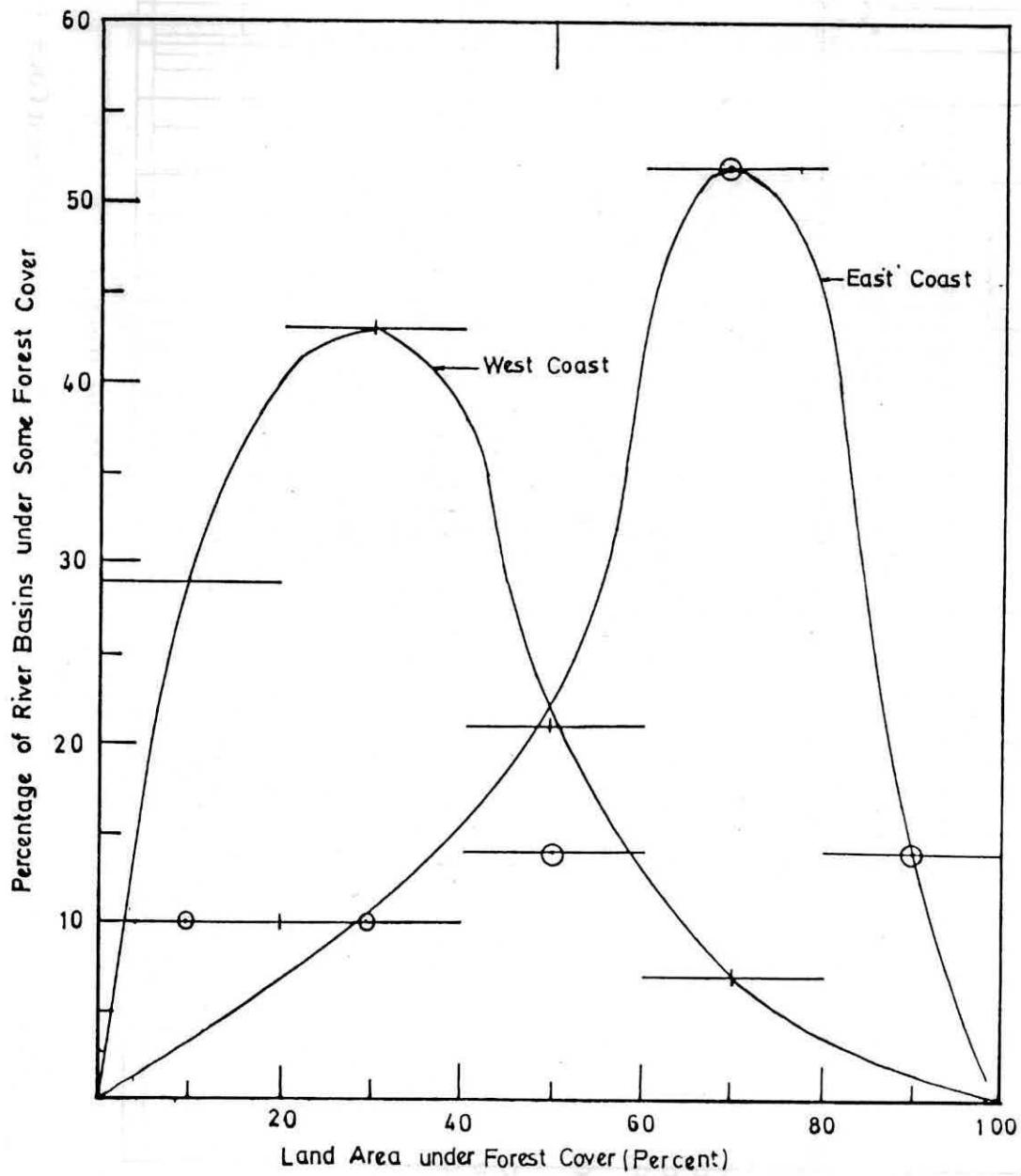


Figure 10: Peninsular Malaysia: Characteristics of River Basins under Forest Cover in the East and West Coasts.

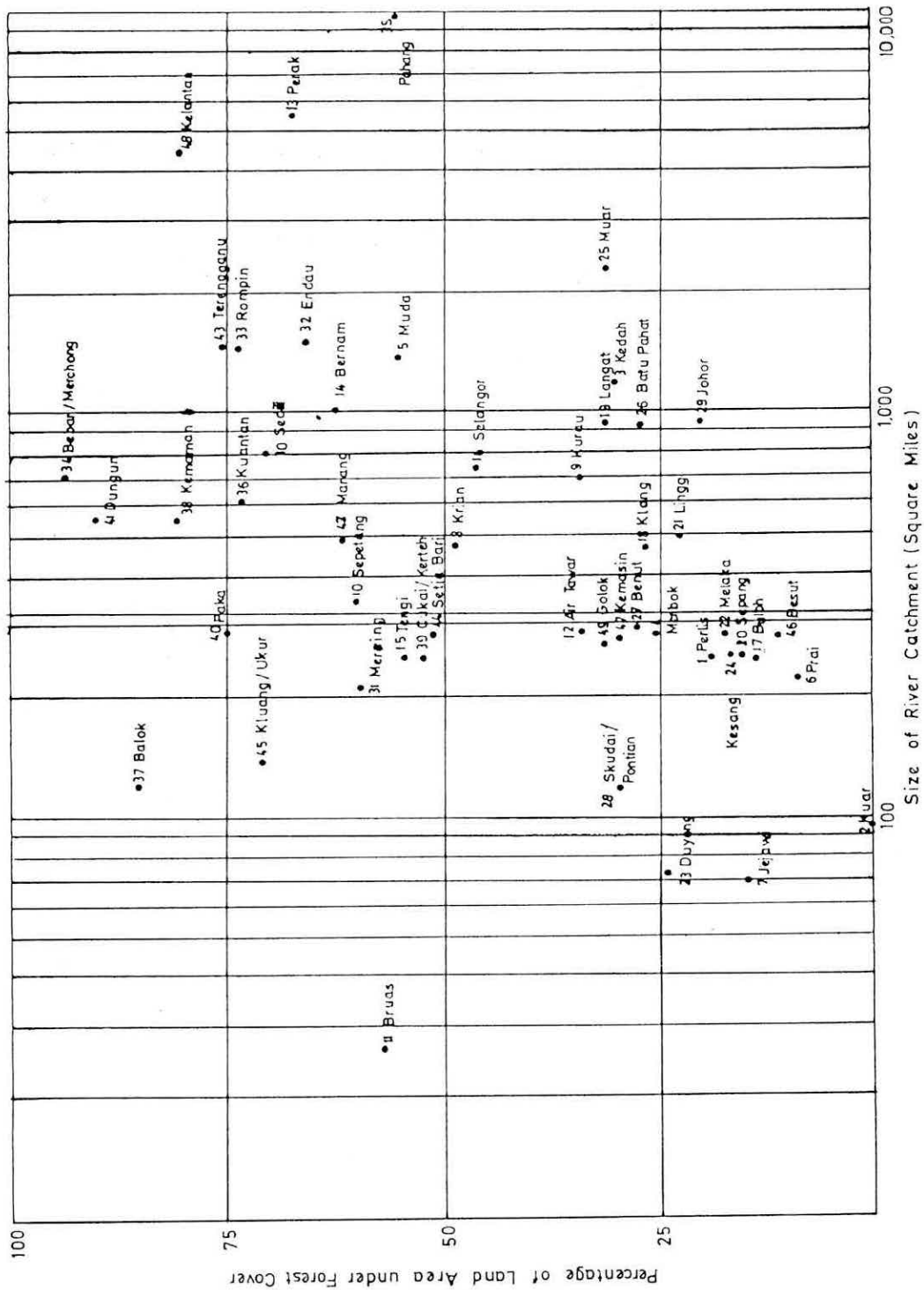


Figure 11: Peninsular Malaysia: Land Areas within River Catchments under Forest Cover, 1974/5

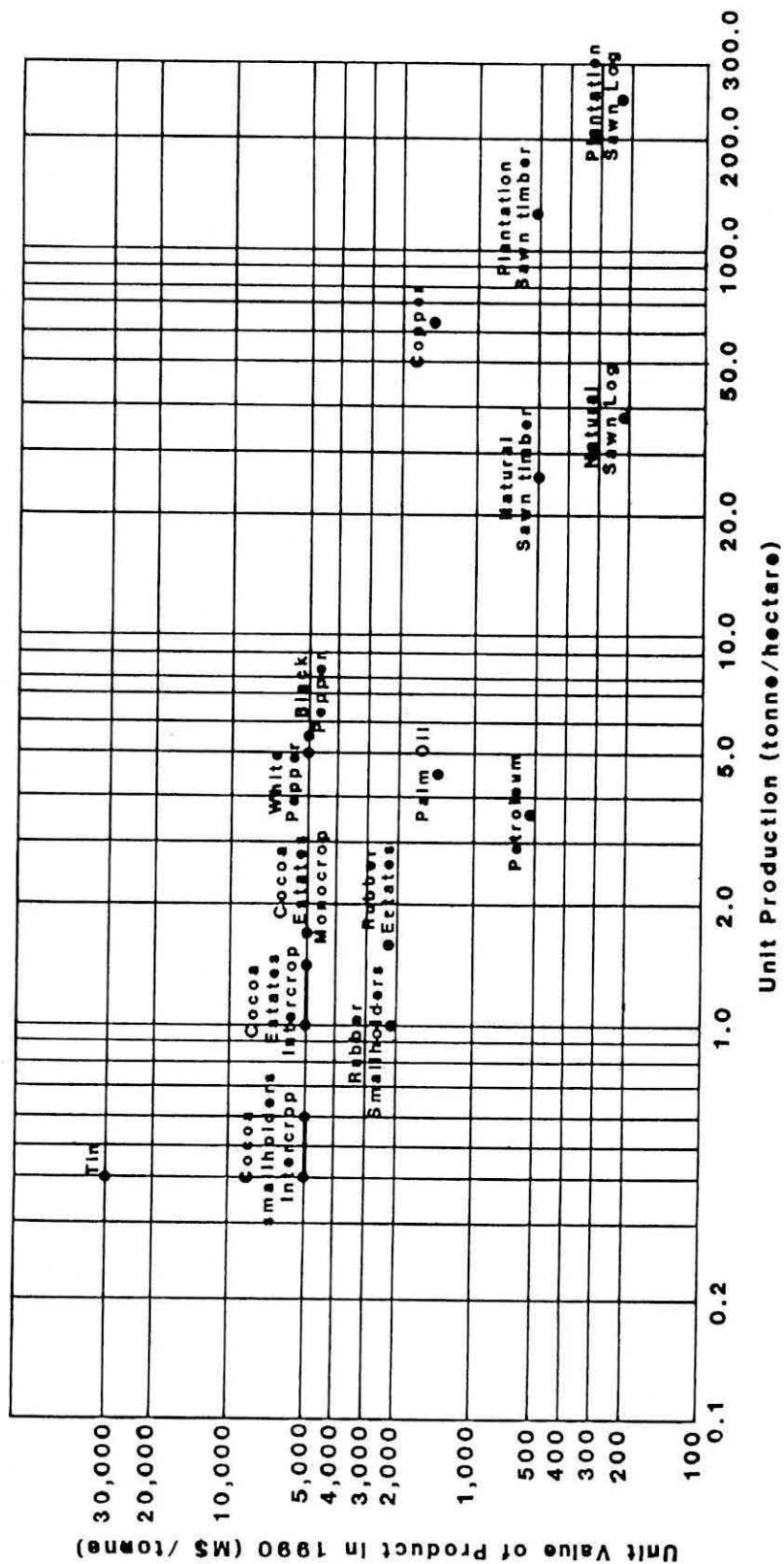


Figure 12: Malaysia: Comparative Value of Different Land Uses

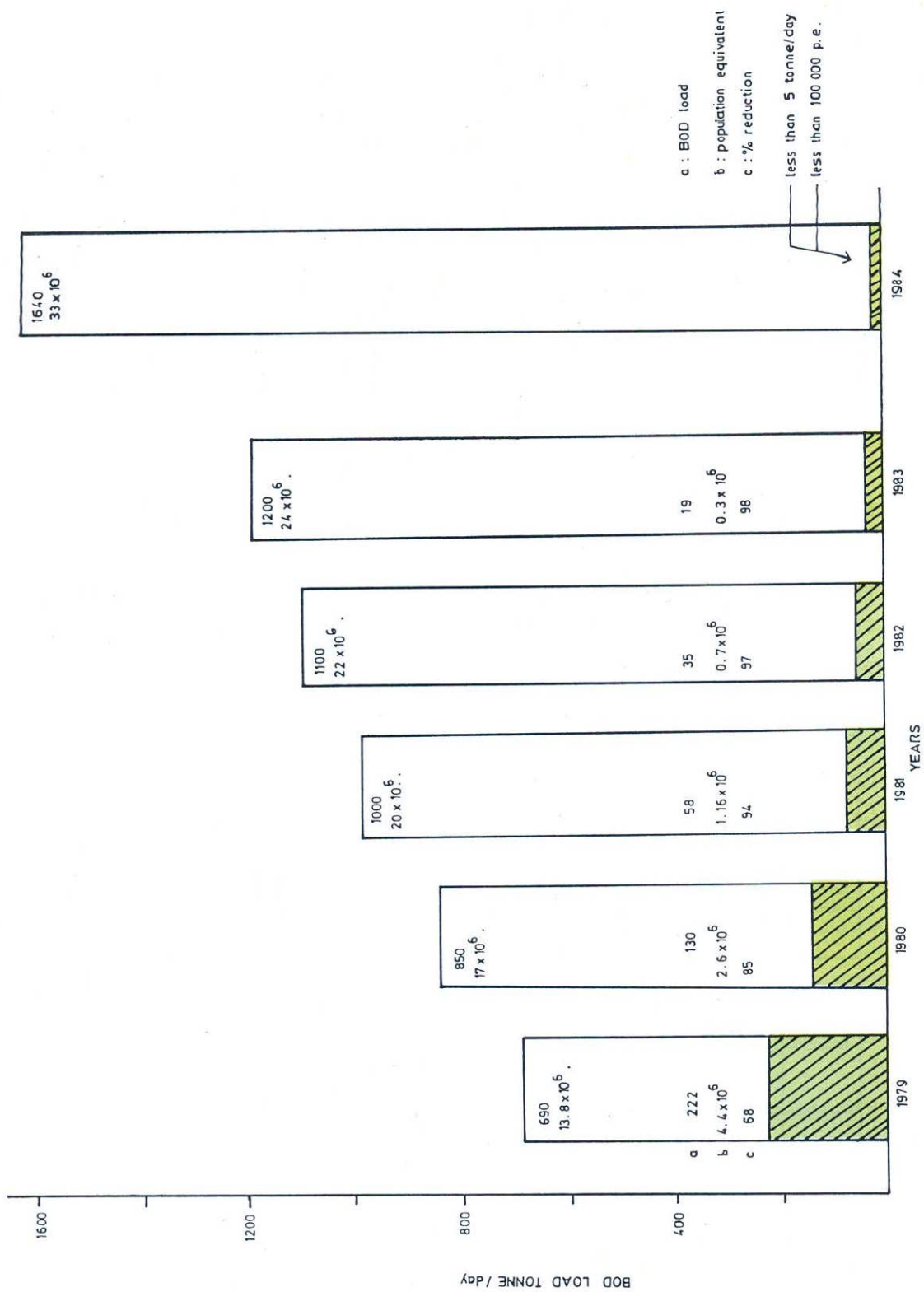


Figure 13: BOD Load Reduction in the Crude Palm Oil Industry

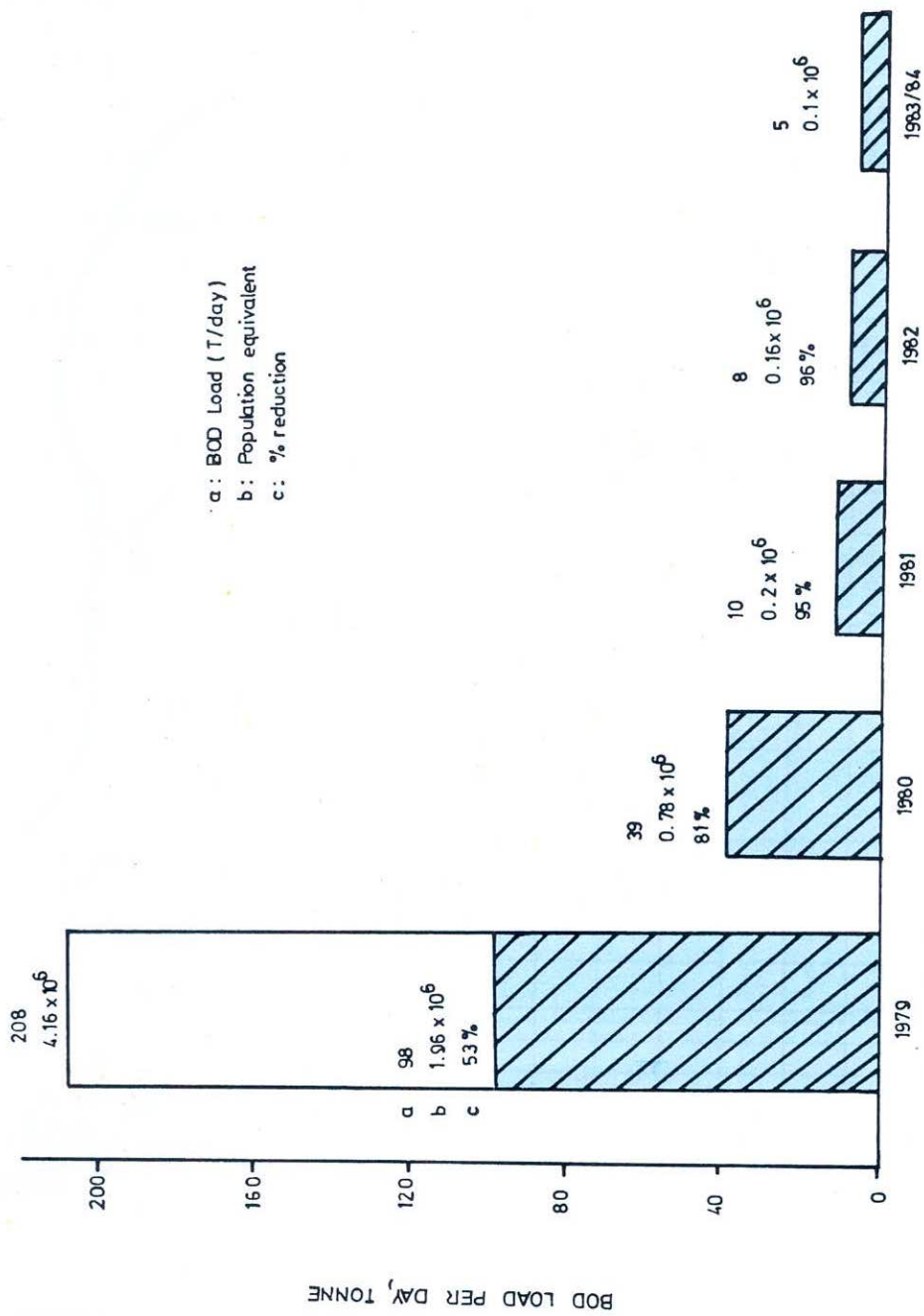


Figure 14: B.O.D Load Reduction in the Raw Natural Rubber Industry

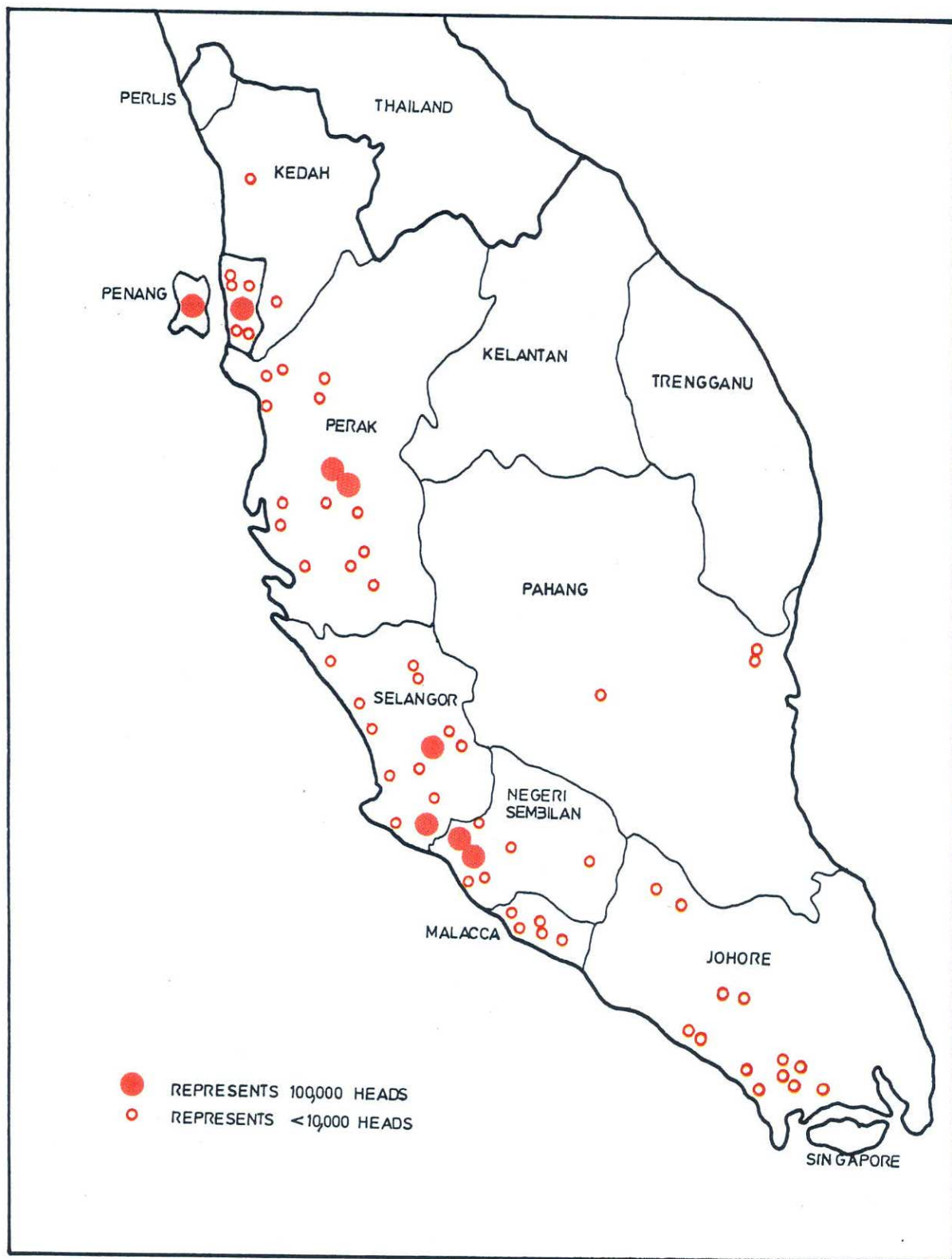


Figure 15: Distribution of Pigs In Peninsular Malaysia In 1980

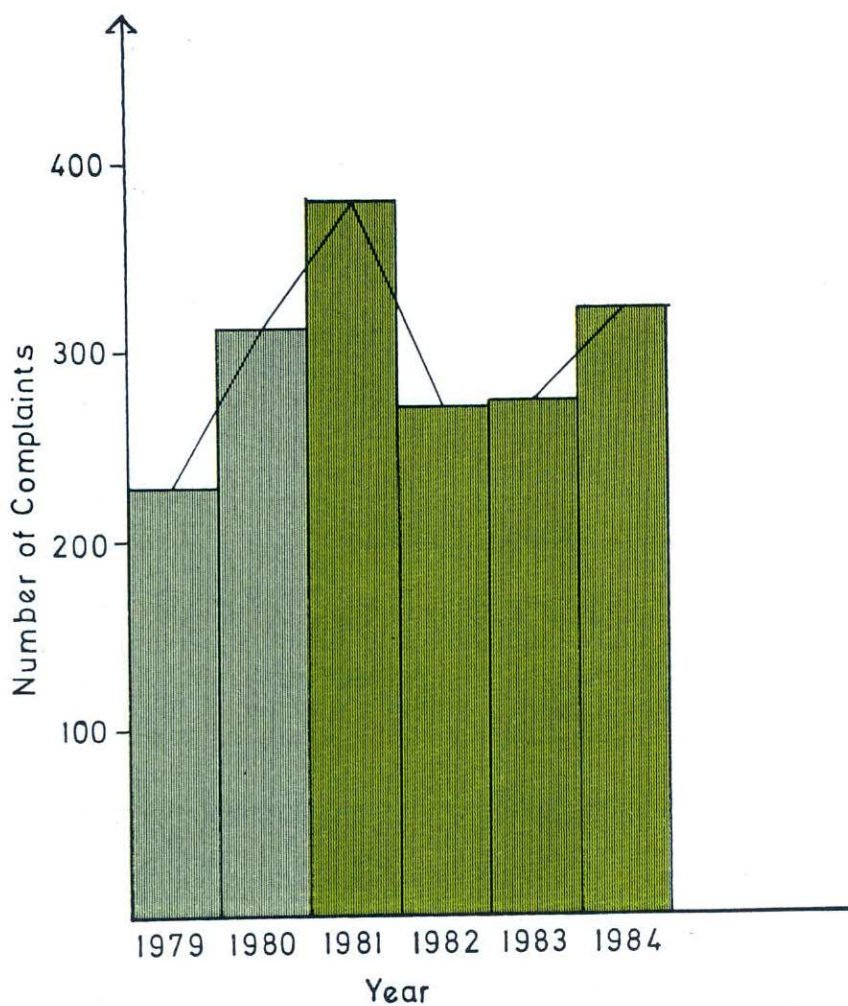


Figure 17: Malaysia: Trend in the Total Number of Complaints Received by the Department of Environment, 1979–1984

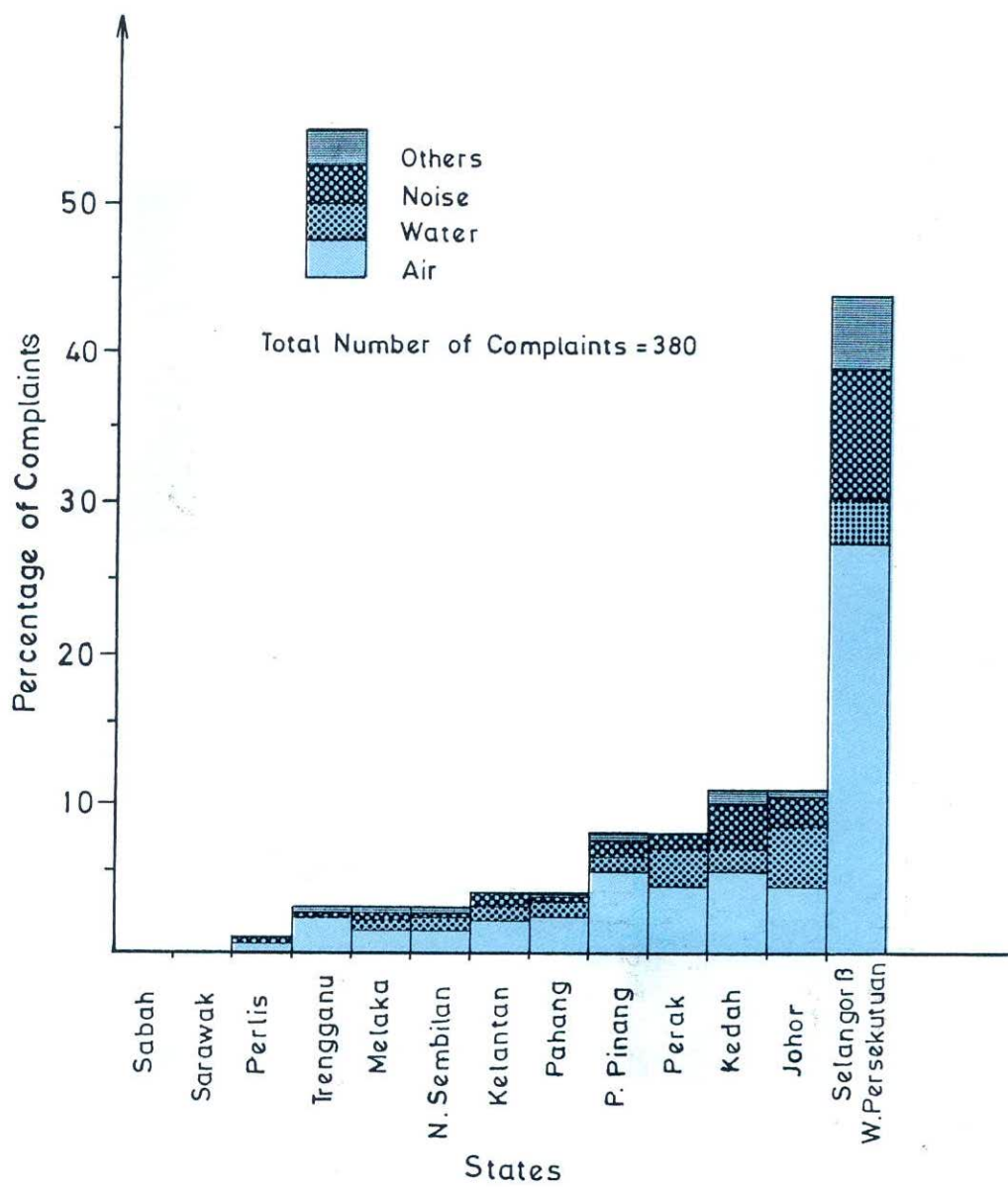


Figure 18a: Malaysia: Nature of Pollution Complaints Received by the Department of Environment, 1981

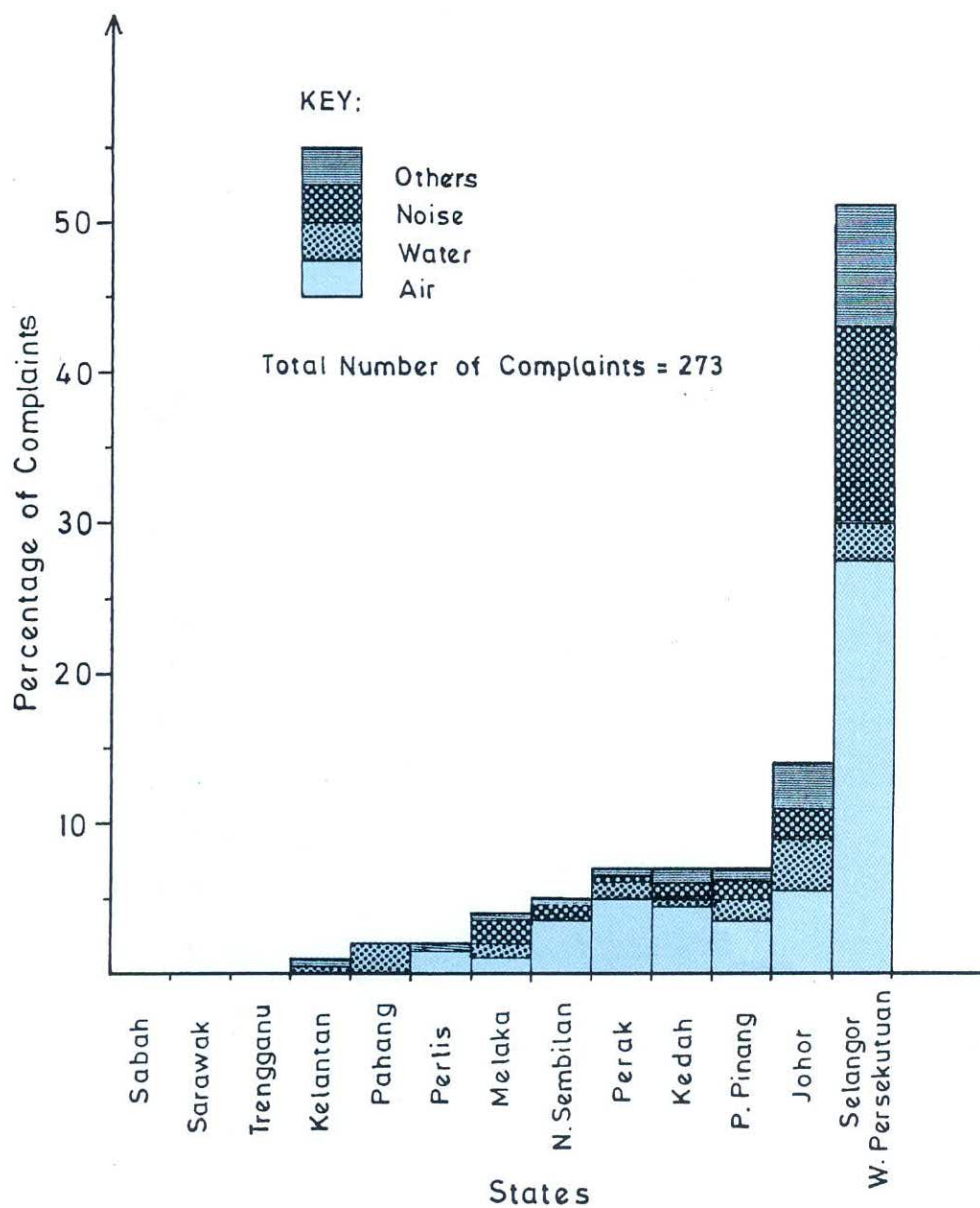


Figure 18b: Malaysia: Nature of Pollution Complaints Received by the Department of Environment, 1982

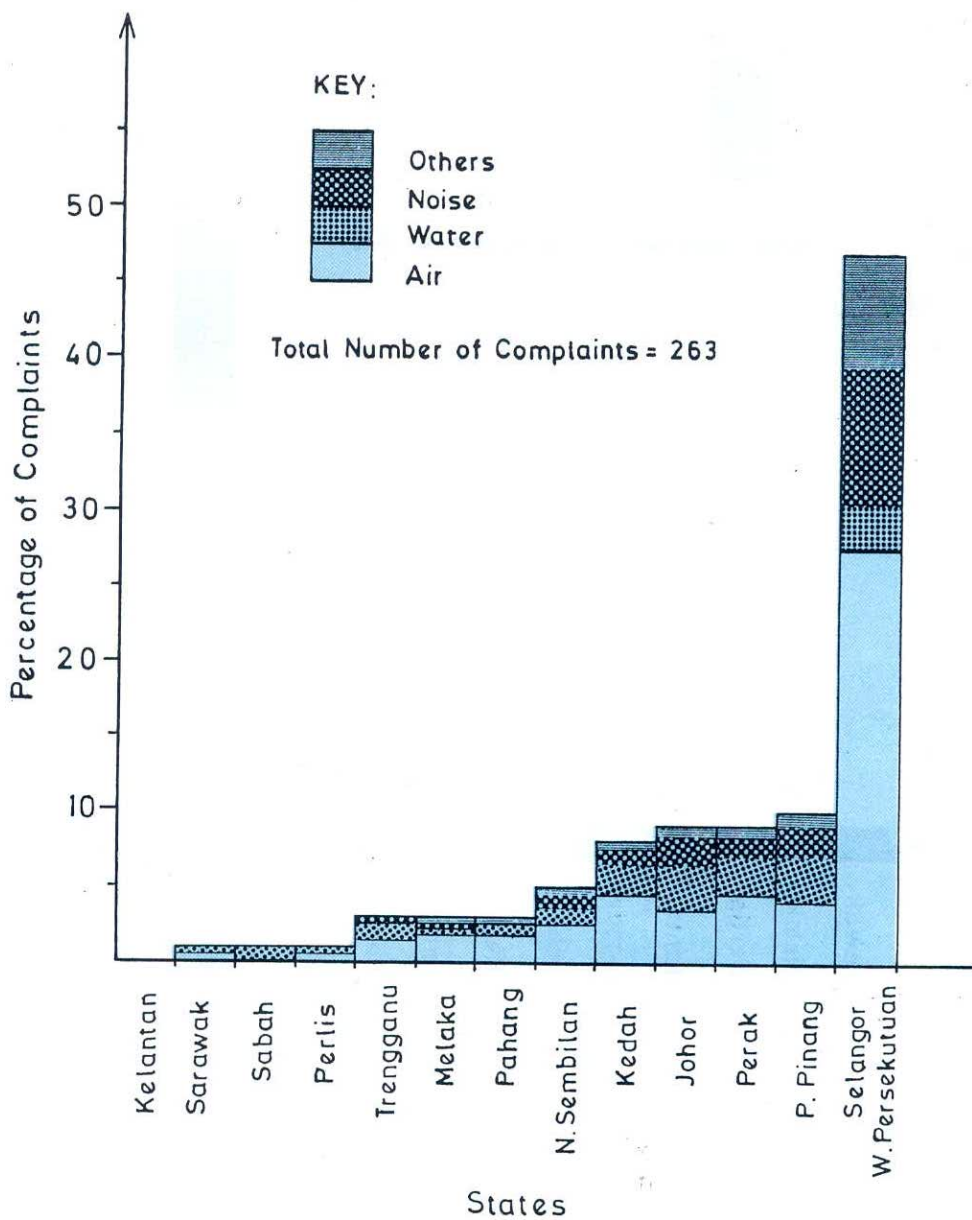


Figure 18c: Malaysia: Nature of Pollution Complaints Received by the Department of Environment, 1983

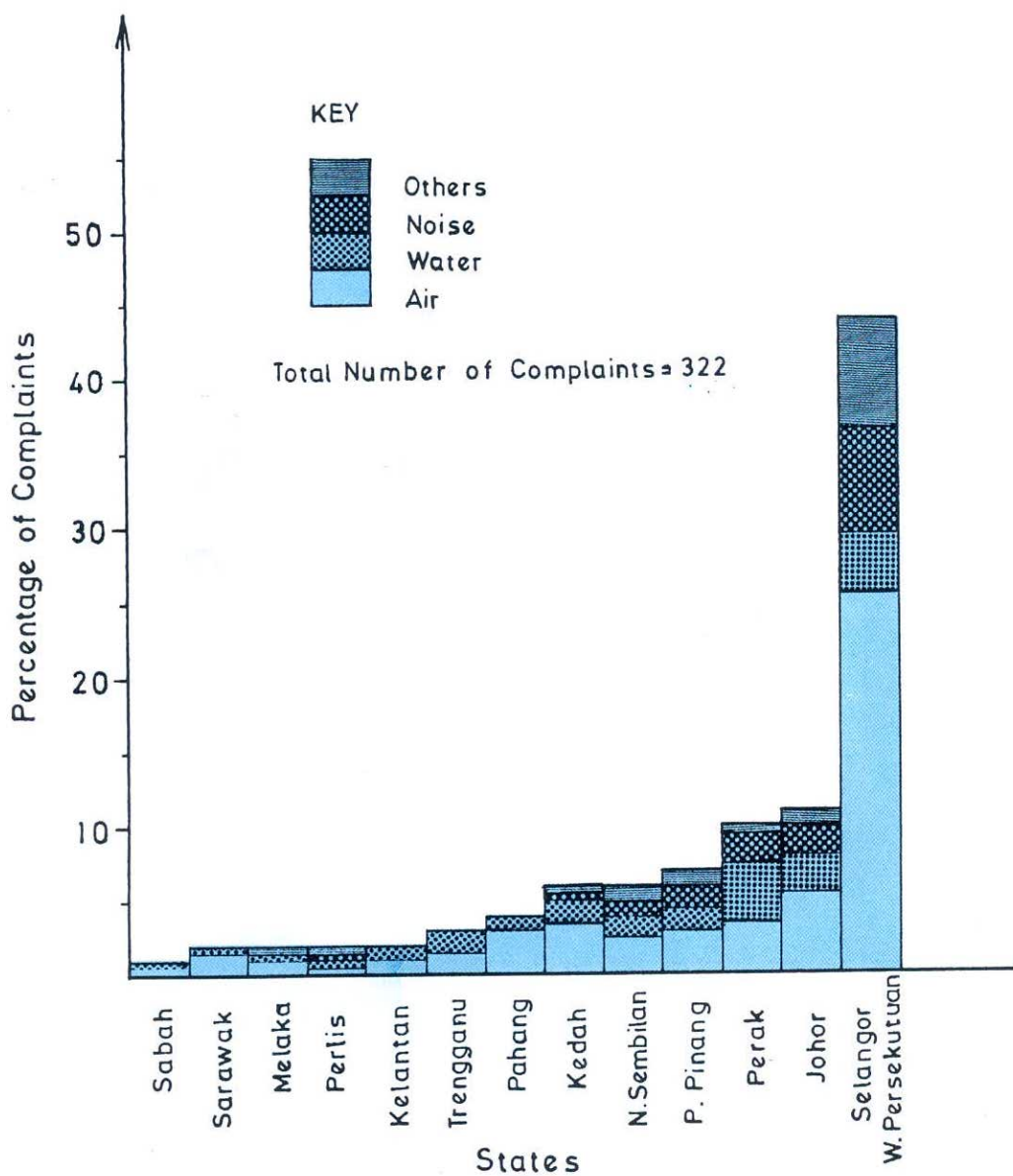


Figure 18d: Malaysia: Nature of Pollution Complaints Received by the Department of Environment, 1984

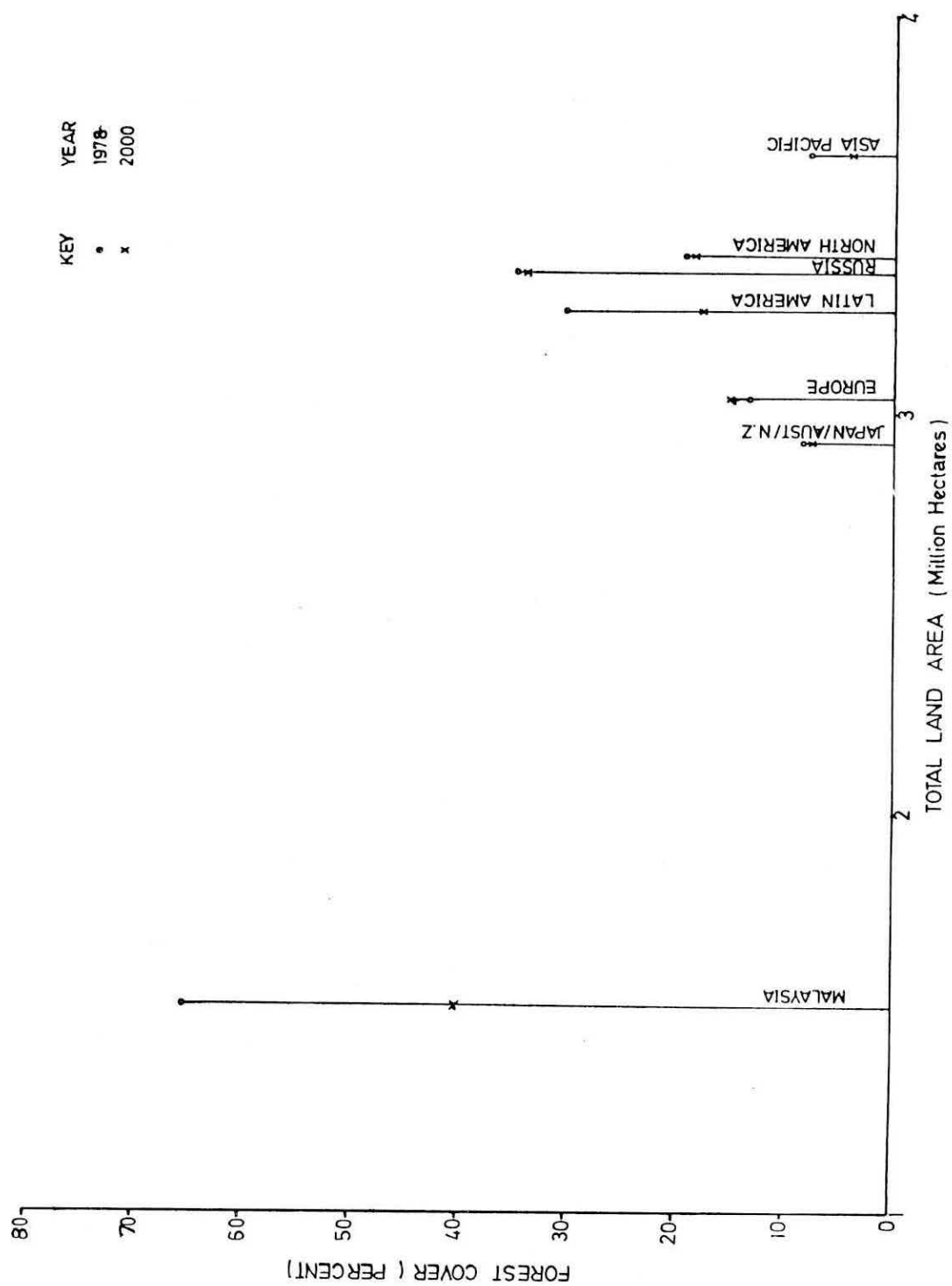


Figure 19: Forest cover by world's region and in Malaysia, 1978–2000

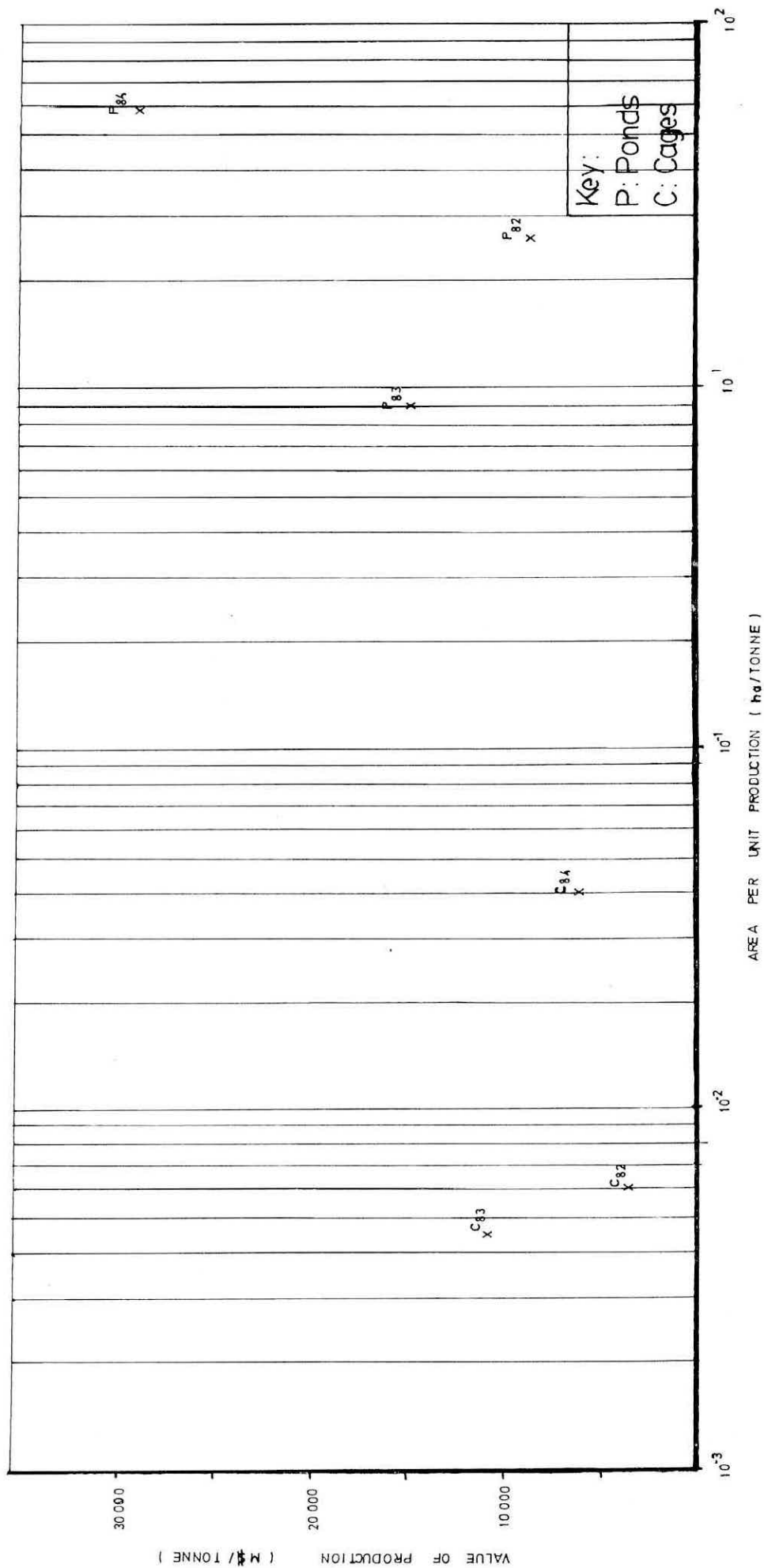


Figure 20: Peninsular Malaysia: Aquaculture Production in Ponds and Cages in the Brackish/Marine Environment, 1982–1984

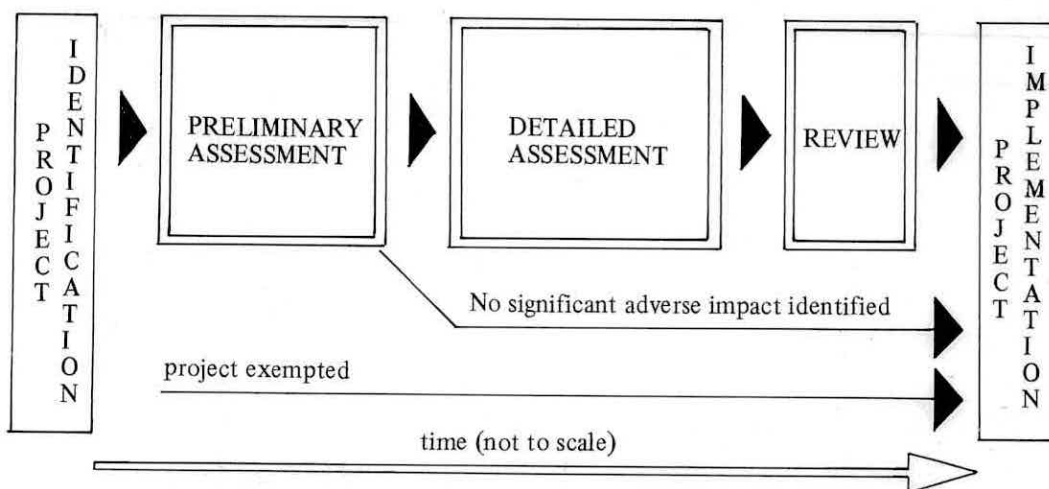


FIGURE 21: THE ENVIRONMENTAL IMPACT ASSESSMENT PROCEDURE

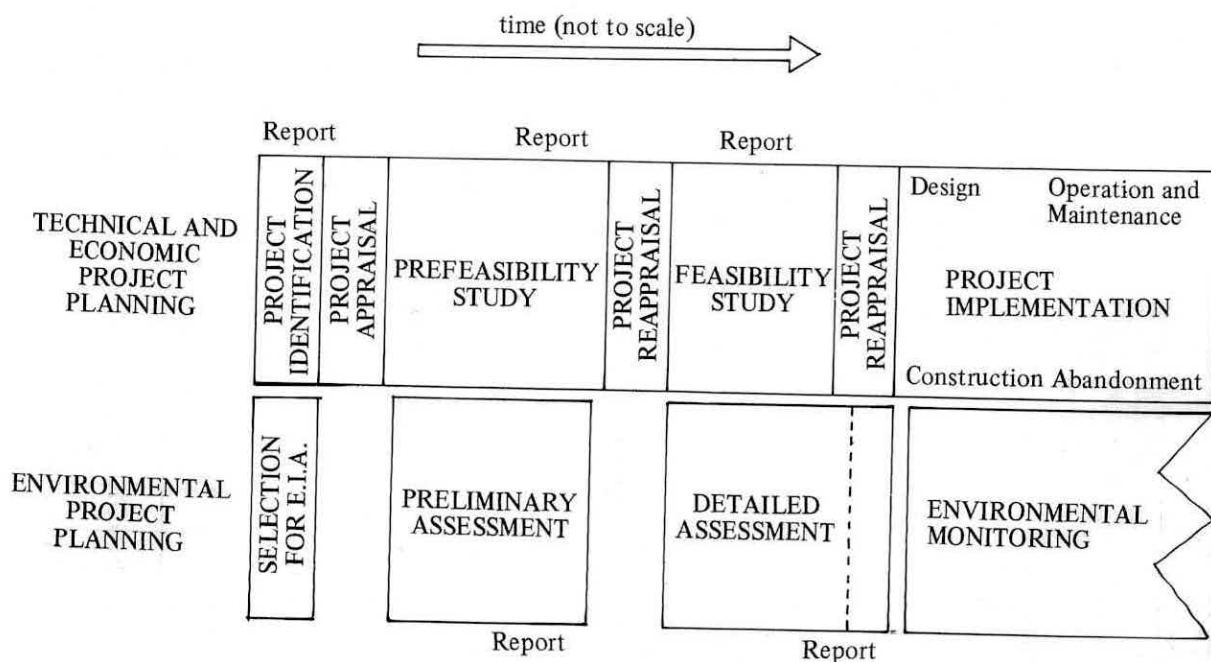


FIGURE 22: THE INTERGRATED PROJECT PLANNING CONCEPT

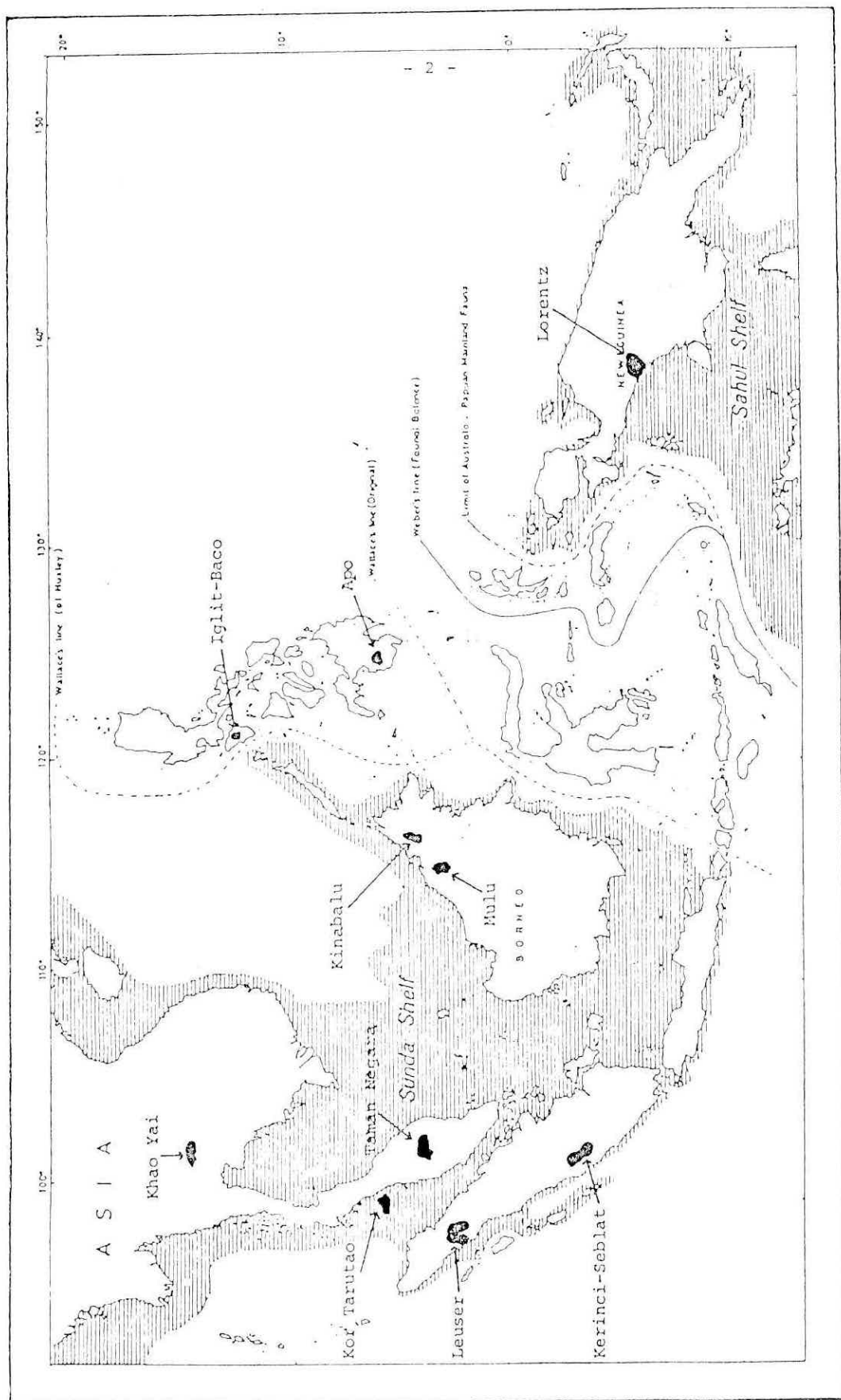


FIGURE 23: LOCATION OF ASEAN HERITAGE PARKS AND RESERVES

Source: ASEAN Heritage Parks and Reserves, 1983
The ASEAN Experts group on the Environment and UNEP

TABLES

TABLE I
Peninsular Malaysia : Air Quality By Land-Use and Level
Of Compliance (Per Cent) 1981–1983

Parameter	Type of Land-Use	Location	Year		
			1981	1982	1983
1. Particulate Matters ¹ (PM)	Residential	Damansara Utama	33	23	—
		Ipoh Garden	—	—	22
	Commercial	Kuala Lumpur			
		Pudu	0	13	1
		Hawthornden	—	7	8
		Bangsar	0	39	31
		Kuching	0	33	35
	Industrial	Shah Alam			
		ITM	49		—
		SIRIM	22	39	
		Majlis Perbandaran PJ	16	21	
		Petaling Jaya	4	19	24
		Ulu Kelang	3	31	33
		Meru		53	50
		Melaka			
		Air Keroh	—	35	50
		Kuantan	—	—	3

2. Sulphur Dioxide ² (SO ₂)	Commercial	Johor Bahru	99	97	90
		Georgetown	0	5	0
	Industrial	Petaling Jaya	61	—	—
		Prai	33	29	55
		Ipoh	100	100	100
		Johor Bahru	61	83	75
3. Lead ³ (Pb)	Residential	Damansara Utama	—	100	—
	Commercial	Kuala Lumpur			
		Pudu		25	
		Hawthornden		75	
		Bangsar		58	
		Georgetown		58	
	Industrial	Petaling Jaya		92	
		Ulu Kelang		100	
		Prai		92	

Note:

1. The percentage of compliance is based on the proposed Malaysian Ambient Air Quality Standard of 75 µg/m³ (24-hour average)
2. The adopted standard for Sulphur Dioxide, in terms of total acidity, is 50 µg/m³ (24-hour average)
3. The adopted standard for Pb is 1.5 µg/m³ (24-hour average)

TABLE 2
Peninsular Malaysia: River Water Quality and Pollution, 1979-1983
(Per Cent)

Index	Clean Rivers	River Water Quality			Net Rate of Change	River Pollution			Polluted Rivers
		Improving	Not Changing	Deteriorating		Improving	Not Changing	Deteriorating	
1. Biochemical Oxygen Demand ¹ (BOD)	86	48	1	37	+5.5	2	0	2	14
2. Ammoniacal Nitrogen ² (NH ₃ - N)	89	28	2	59	-4.0	0	7	4	11
3. Suspended Solids ³ (SS)	52	50	2	0	+8.5	17	9	22	48

Note: Based on water quality standards for fisheries:

- 1 5mg/l
- 2 1mg/l
- 3 50mg/l

TABLE 3

**Peninsular Malaysia: The Extent of River Pollution Largely Attributed
to Mining, 1983 (Number of Rivers)**

River Quality	River Basins¹ with Mining	River Basins without Mining	Total
CLEAN	12	12	24
POLLUTED	12	8	20

Note:

1. No data on water quality available for Sedili and Mersing Rivers; 4.8 per cent of the land area in the Mersing Basin has been opened up mining; and 0.09 per cent of the land area in the Sedili River Basins.

TABLE 4

Peninsular Malaysia: Coastal Water Quality and Marine Pollution,
1978 — 1982 (Per Cent of Places Monitored)

Parameter	Clean Water	Coastal Water Quality			Net Rate of Change of Quality in Quality	Coastal Pollution			Polluted Waters
		Improving	Not Changing	Deteriorating		Improving	Not Changing	Deteriorating	
1. Suspended Solids	23	11	1	12	+8.7	50	1	27	77
2. Oil	40	19	21	0	+8.4	24	4	33	60
3. E. Coli	39	18	4	17	-33.4	15	1	46	61
4. Mercury	85	40	41	5	+0.0	2	1	12	15
5. Cadmium	68	14	45	9	+1.0	14	1	17	32
6. Copper	56	30	13	12	+0.2	15	6	24	44
7. Lead	63	24	18	20	+6.8	18	2	17	38

TABLE 5

Characteristics of River Basins under Forest Cover in the
East and West Coast of Peninsular Malaysia

Class (Percentage of Forest Cover)	West Coast		East Coast	
	Number	Percent	Number	Percent
0 – 20	8	29	2	10
21 – 40	12	43	2	10
41 – 60	6	21	3	14
61 – 80	2	7	11	52
81 – 100	0	0	3	14
TOTAL	28	100	21	100

TABLE 6

Peninsular Malaysia: Municipal Practices in Waste Disposal, 1977 and 1984
(Per Cent of Municipalities)

Year Practice	1977	1984
Sound Practice		
1. Controlled Tipping	16.9	19.4
2. Incineration	2.4	4.2
Unacceptable Practice		
3. Haphazard Dumping (along roadsides or onto unutilized lands)	24.7	25.7
4. River or Coastal Dumping	0.6	2.7
5. Open Burning	55.4	48.0
TOTAL	100.0	100.0

TABLE 7

Peninsular Malaysia: Municipal Practices in Waste Disposal, 1977 and 1984
(Per Cent of Wastes in Unit Quantity)

Year Practice	1977	1984
Sound Practice		
1. Controlled Tipping	44.5	84.6
2. Incineration	0.6	0.1
Unacceptable Practice		
3. Haphazard Dumping (along roadsides or onto unutilized lands)	30.6	4.5
4. River or Coastal Dumping	0.2	0.8
5. Open Burning	24.1	10.0
TOTAL	100.0	100.0

TABLE 8

EMISSION STANDARDS FOR AIR IMPURITIES

Source: Environmental Quality (Clean Air) Regulations 1978

PU(A) 280 Pgs. 745-747

Substance Emitted	Source of Emission	Standards
1. Solid particles concentration in the heating of metals		Standard A: 0.3 gm/Nm ³ Standard B: 0.25 gm/Nm ³ Standard C: 0.2 gm/Nm ³
2. Solid particles concentration in other operations		Standard A: 0.6 gm/Nm ³ Standard B: 0.5 gm/Nm ³ Standard C: 0.4 gm/Nm ³
3. Metals and metallic compounds		Std. A Std. B Std. C gm/Nm ³ gm/Nm ³ gm/Nm ³
Mercury		0.02 0.01 0.01
Cadmium		0.025 0.015 0.015
Lead		0.04 0.025 0.025
Antimony		0.04 0.025 0.025
Arsenic		0.04 0.025 0.025
Zinc		0.15 0.1 0.1
Copper		0.15 0.1 0.1
4. (a) Acid Gases	Manufacture of sulphuric acid	1. Equivalent of: Standard A: 7.5 Standard B: 6.0 Standard C: 3.5 gramme of sulphur trioxide/ Nm ³ of effluent gas. 2. Effluent gas free from persistent mist
(b) Sulphuric acid mist or sulphur trioxide or both	Any source other than combustion process and plant for manufacture of sulphuric acid as in (a) above	1. Equivalent of: Standard A: 0.3 Standard B: 0.25 Standard C: 0.2 gramme of sulphur trioxide/ Nm ³ of effluent gas. 2. Effluent gas free from persistent mist.
(c) Chlorine gas	Any source	Standard A: 0.3 Standard B: 0.25 Standard C: 0.2 gramme of hydrogen chloride/ Nm ³
(d) Hydrogen chloride	Any source	Standard A: 0.6 Standard B: 0.5 Standard C: 0.4 gramme of hydrogen chloride/ Nm ³
(e) Fluorine, hydro-fluoric acid, or inorganic fluorine compound	Manufacture of aluminium from alumina	Equivalent of: Standard C: 0.02 gramme of hydrofluoric acid/ Nm ³ of effluent gas

Substance Emitted	Source of Emission	Standards																		
(f) Fluorine, hydrofluoric acid or inorganic fluorine compound	Any source other than manufacture of aluminium from alumina as in (e) above	Equivalent of: Standard A: 0.15 Standard B: 0.125 Standard C: 0.100 gramme of hydrofluoric acid/ Nm ³ of effluent gas																		
(g) Hydrogen sulphide	Any source	Standard A: 6.25 Standard B: 5.00 Standard C: 5.00 parts per million volume for volume																		
(h) Oxides of nitrogen	Manufacture of nitric acid	Equivalent of: Standard A: 4.60 Standard B: 4.60 Standard C: 1.7 and effluent gas substantially colourless gm. of sulphur trioxide/Nm ³																		
(i) Oxides of nitrogen	Any source other than Combustion processes and manufacture of nitric	Equivalent of: Standard A: 3.0 Standard B: 2.5 Standard C: 2.0 gramme of sulphur trioxide/ Nm ³																		
5. Dust and solid particles	ASPHALT CONCRETE PLANT Stationary plant Mobile plant PORTLAND CEMENT PLANT Kiln Clinker, cooler finish grinding and others	<table> <tr> <th>Std. A</th><th>Std. B</th><th>Std. C</th></tr> <tr> <th>gm/Nm³</th><th>gm/Nm³</th><th>gm/Nm³</th></tr> <tr> <td>0.5</td><td>0.4</td><td>0.3</td></tr> <tr> <td>0.7</td><td>0.7</td><td>0.4</td></tr> <tr> <td>0.4</td><td>0.2</td><td>0.2</td></tr> <tr> <td>0.4</td><td>0.2</td><td>0.1</td></tr> </table>	Std. A	Std. B	Std. C	gm/Nm ³	gm/Nm ³	gm/Nm ³	0.5	0.4	0.3	0.7	0.7	0.4	0.4	0.2	0.2	0.4	0.2	0.1
Std. A	Std. B	Std. C																		
gm/Nm ³	gm/Nm ³	gm/Nm ³																		
0.5	0.4	0.3																		
0.7	0.7	0.4																		
0.4	0.2	0.2																		
0.4	0.2	0.1																		
6. Asbestos and Free silica		0.4 0.2 0.12																		

TABLE 9

**Number of Factories Taken To Court And Compounded Under Clean Air
Regulations, 1981 – 1984**

Year	Number of Factories		Amount collected (M\$)	
	Taken To Court	Compounded	Fine	Compound
1981	1	38	4000.00	12250.00
1982	8	175	14000.00	14000.00
1983	29	135	44300.00	44300.00
1984	65	87	84150.00	84150.00
Total	103	435	146450.00	154900.00

TABLE 10

**Malaysia: The Breakdown of Summons Issued to Motor Vehicles for Emitting
Dark Smoke
1981 – 1984**

Year	Number of				Percentage of Compliance	Amount Collected (M\$)
	Campaign	Vehicles Stopped	Vehicles Tested	Vehicles Issued with Summons		
1981	104	5769	2046	1516	26	32895
1982	84	7563	1843	1406	18	87609
1983	144	12084	2897	3509	21	65406
1984	135	13591	3305	2620	19	106930
Total	467	39007	10101	8051	—	292840

TABLE 11
PALM OIL MILL WASTEWATER STANDARDS

PARAMETER	STANDARD A 1.7.78	STANDARD B 1.7.79	STANDARD C 1.7.80	STANDARD D 1.7.81	STANDARD E 1.7.82	STANDARD F 1.7.84
BIOCHEMICAL OXYGEN DEMAND (BOD), 3-DAY, 30°: MG/L	5,000	2,000	1,000	500	250	100
CHEMICAL OXYGEN DEMAND (COD), MG/L	10,000	4,000	2,000	1,000	—	—
TOTAL SOLIDS: MG/L	4,000	2,500	2,000	1,500	—	—
SUSPENDED SOLIDS: MG/L	1,200	800	600	400	400	400
OIL & GREASE: MG/L	150	100	75	50	50	50
AMMONIACAL-NITROGEN: MG/L	25	15	15	10	150*	100*
ORGANIC-NITROGEN: MG/L	200	100	75	50	—	—
TOTAL NITROGEN: MG/L	—	—	—	—	300*	200*
PH	5.0-9.0	5.0-9.0	5.0-9.0	5.0-9.0	5.0-9.0	5.0-9.0
TEMPERATURE, °C						

* VALUE OF FILTERED SAMPLE

TABLE 12
Response Of The Palm Oil Industry To The
'Polluter-Pays-Principle'

Range of Fees \$	Percentage of Mills*				
	1978	1979	1980	1981	1982
	(5,000)	(2,000)	(1,000)	(500)	(250)
0 — 1,000	19	63	73	68	75
1,001 — 10,000	35	37	24	31	25
10,001 — 50,000	24	—	3	1	—
50,001 — 100,000	15	—	—	—	—
100,001 or more	7	—	—	—	—
	100	100	100	100	100

* Based on original 130 mills

() BOD Standard applicable

NOTE: Estimated Fees Payable

<u>Mill Capacity</u>	<u>BOD 5,000 mg/l</u>	<u>Raw Effluent</u>
1) 10 — 20 T/HR	\$ 2,500	\$100,000
2) 30 — 40 T/HR	\$ 5,000	\$300,000
3) 50 — 60 T/HR	\$10,000	\$600,000

TABLE 13

**Palm Oil Industry: Pollution Control Performance
1981–1984**

Year	General Pollution Load (tonnes/day)	Pollution Load After Treatment (tonnes/day)	Population Equivalent of Treated Effluent (million)	Performance (Per Cent)
1981	1000	58	1.2	94
1982	1100	35	0.7	97
1983	1200	19	0.4	98
1984	1640	4	0.1	99

Source: Department of Environment, 1984

TABLE 14

**Number Of Palm Oil Mills Taken To Court,
1981 – 1984**

Year	Number of Factory
1981	7
1982	8
1983	5
1984	7
Total	27

TABLE 15a
LATEX CONCENTRATE WASTEWATER STANDARDS

Parameters	1st Generation Standards Effective on 1.4.1980	2nd Generation Standards Effective on 1.4.1981	3rd Generation Standards Effective on 1.4.1982	Standards Effective From 1.4.1983 and thereafter
pH	6 - 9	6 - 9	6 - 9	6 - 9
BOD ppm (3-DAY at 30°C)	450	300	200	100(50*)
COD ppm	1,500	1,000	500	300
TOTAL SOLID; ppm	2,500	2,000	1,000	
SUSPENDED SOLIDS; ppm	1,000	800	250	150(100*)
TOTAL NITROGEN; ppm	450	350	350	300
AMMONIACAL NITROGEN;	350	300	300	300

* This additional limit is the arithmetic mean value determined on the basis of a minimum of four samples taken at least once a week for four weeks consecutively.

TABLE 15b
SMR BLOCK RUBBER WASTEWATER STANDARDS

Parameter	1st generation standards effective on 1.4.1978	2nd generation standards effective on 1.4.1979	3rd generation standards effective on 1.4.1980	Standards effective from 1.4.1981 and thereafter
pH	6.0 - 8.0	6.0 - 8.0	6.0 - 8.0	6 - 9
BOD ppm (3-day at 30°C)	500	300	200	100(50*)
COD ppm	1,000	750	500	250
Total solids; ppm	1,000	1,000	1,000	-
Suspended solids; ppm	250	250	250	150(100*)
Total nitrogen; ppm	100	100	100	60+
Ammoniacal nitrogen; ppm	800	70	70	40+

* This additional limit is the arithmetic mean value determined on the basis of a minimum of four samples taken at least once a week for four weeks consecutively.

+ Value of filtered sample.

TABLE 16
Rubber Industry: Pollution Control Performance
1981 – 1984

Year	General Pollution Load (tonnes/day)	Pollution Load After Treatment (tonnes/day)	Population Equivalent of Treated Effluent (million)	Performance (Per Cent)
1981	208	11	0.2	95
1982	208	11	0.2	95
1983	208	11	0.1	95
1984	208	11	0.1	95

Source: Department of Environment, 1984

TABLE 17
Number of Rubber Factories Taken To Court,
1981 – 1984

Year	Number of Factory
1981	5
1982	4
1983	1
1984	0
Total	10

TABLE 18
STANDARDS FOR SEWAGE AND INDUSTRIAL EFFLUENTS

PARAMETER	UNIT	Standard	
		A *	B
(1)	(2)	(3)	(4)
(i) Temperature	°C	40	40
(ii) pH Value	—	6.0–9.0	5.5–9.0
(iii) BOD ₅ at 20°C	mg/l	20	50
(iv) COD	mg/l	50	100
(v) Suspended Solids	mg/l	50	100
(vi) Mercury	mg/l	0.005	0.05
(vii) Cadmium	mg/l	0.01	0.02
(viii) Chromium Hexavalent	mg/l	0.05	0.05
(ix) Arsenic	mg/l	0.05	0.10
(x) Cyanide	mg/l	0.05	0.10
(xi) Lead	mg/l	0.10	0.5
(xii) Chromium, Trivalent	mg/l	0.20	1.0
(xiii) Copper	mg/l	0.20	1.0
(xiv) Manganese	mg/l	0.20	1.0
(xv) Nickel	mg/l	0.20	1.0
(xvi) Tin	mg/l	0.20	1.0
(xvii) Zinc	mg/l	1.0	1.0
(xviii) Boron	mg/l	1.0	4.0
(xix) Iron (Fe)	mg/l	1.0	5.0
(xx) Phenol	mg/l	0.001	1.0
(xxi) Free Chlorine	mg/l	1.0	2.0
(xxii) Sulphide	mg/l	0.50	0.50
(xxiii) Oil and Grease	mg/l	Not detectable	10.0

A* — Discharge upstream of water supply sources.

TABLE 19
Number Of Factories Other Than Palm Oil And Rubber
Taken to Court, 1981–1984

Year	Number of Factories
1981	24
1982	19
1983	12
1984	13
Total	68

TABLE 20
Characteristics Of Raw Wastewater From
Pig-Pens

Parameters	Analysis Results
BOD (3 days, 30°C), mg/l	1,900 to 21,600
COD mg/l	4,800 to 39,000
Total solids, mg/l	3,690 to 22,300
Suspended solids, mg/l	636 to 15,000
Ammoniacal Nitrogen, mg/l	75 to 950
Total Nitrogen, mg/l	370 to 2,000
Organic-N (excluding NH ₃)mg/l	140 to 1,370
Phosphate, mg/l	160 to 1,600

TABLE 21
Noise at the Boundary of Schools, 1981

Percentage of Schools	Town (No. of Samples)	Equivalent Level		
		K. Lumpur (46)	Penang (43)	Ipoh (17)
10%		71 dBA	76 dBA	76 dBA
50%		62 dBA	69 dBA	71 dBA
90%		52 dBA	52 dBA	59 dBA

TABLE 22
Noise at the Boundary of Residential in Malaysia, 1982

Percentage of Residential	Equivalent Level
10	74 dBA
50	66 dBA
90	58 dBA

TABLE 23
Noise at the Boundary of Industries in Malaysia, 1982

Percentage of Industries	Equivalent Level
10	73 dBA
50	64 dBA
90	56 dBA

TABLE 24
Traffic Noise at Urban Centres (Leq)

Town/City	No. of Stations	Average Noise Level Day (7am – 7pm) dBA	Average Noise Level Night (After 7pm) dBA
Alor Setar	8	72.2	72.4
Penang	50	69.4	—
Ipoh	28	71.7	68.7
Johor Bahru	43	68.9	—
Kelang	10	75.0	71.1
Petaling Jaya	11	70.9	68.0
Kuala Lumpur	38	73.0	71.9

TABLE 25
Aircraft Noise Study

Noise Contour	Theoretical WECPNL	Calculated WECPNL .	
		Subang	Bayan Lepas
1st.	90	76.8–90.2	77.3 – 86.2
2nd.	85	67.9 – 81.4	68.6 – 75.1
3rd.	80	68.9 – 79.1	72.0 – 73.2
4th.	75	64.8 – 74.6	67.3 – 70.1
5th.	70	62.7 – 71.5	67.7 – 70.1

TABLE 26
Air Pollution Complaints Received According
To The Nature of Complaints, 1981 – 1984

Nature of Complaints	Number of Complaints				
	1981	1982	1983	1984	Total
Particulates	154	91	98	101	444
Smoke/Fumes	62	50	37	61	210
Noise	87	83	51	52	273
Gas	14	5	5	6	30
Odour	51	50	55	59	215
Others	68	70	46	39	223
Total	436	349	292	318	1395

TABLE 27
Air Pollution Complaints Received According
To The Type of Industries, 1981–1984

Types Of Industries	Number of Complaints				
	1981	1982	1983	1984	Total
Wood-based Industries	51	35	28	44	158
Rubber Factories	24	6	10	12	52
Metallurgical Works	15	14	7	23	59
Chemical Industries	12	17	17	25	71
Feedmill and Fishmeal Factories	6	3	8	16	33
Rice Mills	34	10	13	10	67
Concrete and Cement Works	13	6	3	4	26
Quarries	11	7	11	8	37
Engineering Workshops	15	16	22	13	66
Others	159	109	103	129	500
Total	340	223	222	284	1069

TABLE 28
Water Pollution Complaints Received
According To The Sources of Pollution,
1981 – 1984

Sources of Complaints	Number of Complaints				
	1981	1982	1983	1984	Total
Palm Oil Mill	22	11	8	10	51
Rubber Factory	10	7	10	7	34
Other Industrial Effluents	18	11	13	13	55
Sewage	2	3	3	5	13
Mining and Siltation	9	6	4	11	30
Livestock	6	6	4	7	23
Solid Waste	6	2	2	4	14
Others	2	7	6	14	29
Total	75	53	50	71	249

TABLE 29
Parameters According To Water Use

	Domestic	Domestic Water Supply	Fisheries and Aquaculture	Recreation	Agriculture	Livestock
I PHYSICAL						
1. Colour		X	—	X	—	
2. Floatable		—	X	—X	X	
3. Odour		X	—X	X	X	
4. Temperature		—	X	X	X	
5. Turbidity		X	X	X	X	
6. Taste		X	—X (freshwater)	—	—	
7. Salinity		—	X (brackish water)	X	X	
II MICROBIOLOGICAL						
1. Coliforms Organisms		X	X	X	X	
2. Fecal Coliform		X	X	X	X	
3. Plankton		X	X	—	—	
4. Viruses		X	X	—X	—	
III INORGANIC CHEMICALS						
1. Alkalinity		—	X	—X	—X	
2. Ammonia		X	X	—X	—X	
3. Aluminium			X		X	
4. Arsenic		X	X	X	X	
5. Barium		X	X	—	—	
6. Bicarbonates		—	X	—	—X	
7. Boron		X	X	—	X	
8. Cadmium		X	X	—	X	
9. Calcium			X		X	
10. Chloride		X	X	—	X	
11. Chlorine (Free)		—	X	—	—	
12. Chromium Hexavalent		X	X	—	—	
13. Elect. Conductivity		—	X	—	X	
14. Copper		X	X	—	X	
15. Dissolved Oxygen		X	X	—	X	
16. Fluoride		X	X	—	—	
17. Hardness		X	X	—	—	
18. Iron		X	X	—	X	
19. Lead		X	X	—	X	
20. Manganese		X	X	—	X	
21. Magnesium		—	X	—	X	
22. Mercury		X	X	—	X	
23. Nitrate/Nitrites		X	X	—	X	
24. Nitrogen Kjeldahl (as N)		—	X	—	X	
25. Nickel		—	X	—	—	
26. pH		X	X	X	X	
27. Phosphorus		X	X		X	
28. Potassium			X		X	
29. Selenium		X	X	—	—	
30. Silver		X	X	—	—	
31. Silica, Reactive			X		X	
32. Sodium Absorption Ratio (SAR)		—	—	—	X	
33. Sulfate		X	X	—	X	
34. Sulfide		X	X	X	X	
35. Total Dissolved Solid		X	X	—	X	
36. Uranyl Ion		X	X	—	—	
37. Zinc		X	X	—	X	

IV ORGANIC CHEMICALS				
1.	Carbon Chloroform Extract (CCE)	X	X	—
2.	Cyanide	X	X	X
3.	Methylene Blue Active Substances	X	X	X
4.	Oil and Grease	X	X	X
5.	ABS (Detergent)	X	X	X
6.	Carbon Dioxide Dissolved	—	X	—
7.	Organic Nitrogen	—	—	—
V PESTICIDES				
1.	Aldrin	X	X	X
2.	Chlordane	X	X	X
3.	D.D.T.	X	X	X
4.	Dieldrin	X	X	X
5.	Endrin	X	X	X
6.	Heptachlor Epoxide	X	X	X
7.	Lindane	X	X	X
8.	Methoxychlor	X	X	X
9.	Organic Phosphates (+ Carbonates)	X	X	X
10.	Toxaphene	X	X	X
VI HERBICIDES				
1.	2,4-D plus 2,4,5, — T plus 2,4,5 TP	X	X	X
2.	Phenols	X	X	X
VII RADIOACTIVITY				
1.	Cross Beta	X	X	X
2.	Radium 226	X	X	X
3.	Starontium-90	X	X	X
VIII OTHERS				
1.	BOD	X	X	X
2.	COD	X	X	X

TABLE 30

**Number of Applications For The Establishment of
New Factories, 1981–1984**

Year	Number of Applications
1981	294
1982	454
1983	494
1984	551
Total	1793

TABLE 31

Malaysia: System of Existing Terrestrial Parks and Reserves, 1984

Park/Reserve	State	Area (Hectare)
Peninsular Malaysia		776,393
1. Taman Negara	Pahang, Kelantan and Terengganu	434,351
2. Cameron Highlands	Pahang	176,000
3. Endau Rompin	Pahang and Johor	87,464
4. Krau Game	Pahang	53,095
5. Tioman	Pahang	7,160
6. Bukit Kota Wildlife Reserve	Selangor	4,800
7. Sungai Dusun	Selangor	4,330
8. Fraser's Hill	Pahang	2,979
9. Templer Park	Selangor	2,450
10. Sungkai Game	Perak	2,428
11. Pahang Tua	Pahang	1,336
Sabah		103,196
Sarawak		74,670
Total		954,259

Source: PERHILITAN, 1984

TABLE 32
 Peninsular Malaysia: The Virtual Disappearance of Important
 Species of Fish, 1979-1983
 (Metric tonnes)

Year	Siput/Kepah (Clams & Scallops)	Shrumbu/Lemak (White Fish)	Terubuk (Longtail Shad)
1979	1,186.0	0.0	25.0
1980	2,121.0	0.0	1.0
1981	357.6	5.0	12.3
1982	7,352.7	0.3	14.8
1983	5,829.9	0.4	31.4

Source: Malaysia, Annual Fisheries Statistics

TABLE 33
Peninsular Malaysia: Aquaculture in Ponds and Cages in the
Brackish and Marine Environment, 1982-1984

Year	Ponds				Cages			
	Number	Hectarage	Production (tonne)	Value ('000\$)	Number	Hectarage	Production (tonne)	Value ('000\$)
1982	287	412	326	2,923	2,499	2.66	413	1,576
1983	304	398.3	414	6,145	3,064	2.48	546	6,294
1984*	388	387.3	64	1,841	4,606	4.33	102.8	630.62

* Estimated

(Source: Department of Fisheries)

TABLE 34
Malaysia: Water Supply and Demand, 1981, 1985 and 1990
(Million Gallons Per Day)

State	Supply			Demand		
	1981	1985	1990	1981	1985	1990
Selangor	187.9	342.9	462.9	171.0	241.4	385.2
Perak	97.0	153.5	153.5	75.6	102.0	151.2
Johore	(46.6)	136.8	(136.8)	57.7	87.6	142.5
Kedah	(31.4)	113.4	113.4	40.1	63.1	103.5
Penang	64.0	85.0	115.0	62.0	75.3	99.9
Pahang	25.2	(30.8)	89.9	28.0	44.1	67.1
Melaka	(17.4)	33.4	53.4	19.6	30.9	50.7
Terengganu	(8.7)	57.6	57.6	7.3	15.7	44.8
N. Sembilan	26.0	43.2	43.2	22.8	28.8	38.5
Kelantan	(12.9)	25.8	(35.8)	13.1	22.8	38.5
Perlis	(3.3)	5.3	5.3	1.6	2.6	4.2
Sabah	29.4	54.7	N.A.	26.3	41.4	N.A.
Sarawak	N.A.	74.5	N.A.	26.0	48.0	N.A.

(Source: Drainage and Irrigation Department)

Note:

() Deficit

TABLE 35
Malaysia: Domestic Energy Generation by Source, 1981 - 1984
(Barrels Per Day Oil Equivalent)

Year Source	1981	1982	1983	1984
Oil	169,980	180,900	190,910	186,680
Hydro	8,910	7,660	9,360	17,400
Natural Gas	2,000	2,620	8,080	14,030
Coal	1,980	1,870	4,980	8,070
TOTAL	182,870	193,050	213,330	226,180

TABLE 36
Summary Description
Environmental Impact Assessment Procedure

- 1 AIM To assess the overall impact on the environment of development projects by the public and private sectors.
-
2. PRELIMINARY ASSESSMENT
Objectives: For selected projects:-
 - To examine and select from the project options available.
 - To identify and incorporate into the project plan appropriate abatement and mitigating measures.
 - To identify the significant residual environmental impacts.Description: — Standard guidelines issued by the Review Panel.
 - Is initiated at an early stage of project planning.
 - Resources required are a small proportion of those committed to the prefeasibility study.
 - Some form of public participation is required.
 - Environmental data collection may be necessary.
 - A report is required.
-
3. DETAILED ASSESSMENT
Objectives: For projects with potentially significant residual environment impact.
 - To describe the significant residual environmental impacts predicted from the project plan.
 - To specify mitigating and abatement in the final project plan.
 - To identify the costs and benefits of the project to the community.Description: — Standard guidelines and specific terms of reference for each project are issued.
 - Continues through the course of the detailed study of the project.
 - Resources required are a small proportion of those committed to the feasibility study.
 - Some form of public participation may be required.
 - The assessment method is selected according to the nature of the project.
 - Environmental data collection is required.
 - A report is required.
-
4. REVIEW
Objectives: For projects subjected to Detailed Assessment.
 - To critically review the Detailed Assessment report.
 - To evaluate development and environmental costs and benefits in the final project plan.
 - To formulate supported recommendations to the project approving authority on the implementation of the project.Description: — The review is conducted by an independent Review Panel appointed by and responsible directly to the Minister responsible for the environment.
 - Comment is invited from concerned environment-related agencies and from the public.
 - Recommendations are forwarded to the approving authority except when the project initiator elects to revise or abandon his project.
 - A maximum period of two months is allowed for review.

TABLE 37
NUMBER OF PROJECTS SUBJECT TO INFORMAL ENVIRONMENTAL
IMPACT ASSESSMENT 1981–1984

Project Type	1981	1982	1983	1984	Total
Water Resources					
Hydroelectric Power	1	2	1	3	8
Petroleum & Gas					
Oil refinery					
Power plant		2			
Fertilizer		2			
Gas processing plant		1			
Methanol plant		1			8
Other Major Industries					
Iron and steel	1				
Pulp and/or paper	2	1			
Cement Plant			1		5
Other Infrastructure					
Tourist complex	1				
Coastal reclamation				1	8

TABLE 38
NUMBER OF PLANS/STUDIES SUBJECT TO
ENVIRONMENTAL IMPACT ASSESSMENT 1981–1984

Plan/Study	1981	1982	1983	1984	Total
Water resource management			1	1	2
Regional Development	1			1	2
Urban Development		3		6	9
Tourism Master Plans				1	1
Sewerage Development	2		2	1	5
Forestry Development				1	1
					20

APPENDICES

ENVIRONMENT-RELATED LEGISLATIONS

1. National Land Code 1965
2. Local Government Act 1976
3. Town and Country Planning Act 1976
4. Municipal and Town Boards (Amendment) Act 1975
5. City of Kuala Lumpur (Planning) Act 1973
6. Housing Developers (Central and Licensing) Act 1966
7. Streets, Drainage and Building Act 1974
8. Forest Enactments 1934
9. Mining Enactments 1929
10. The Waters Enactment 1920
11. Drainage Works Ordinance 1954
12. Fisheries Act 1963
13. Petroleum Development Act 1974
14. Land Conservation Act 1960
15. The National Parks Act 1980
16. Protection of Wild Life Act 1972
17. Malaria Eradication Act 1971
18. Destruction of Disease Bearing Insects Act 1975
19. Factories and Machinery Act 1967
20. The Road Traffic Ordinance 1958
21. Pesticides Act 1974
22. Radioactive Substances Act 1968
23. Poisons Ordinance 1951
24. Explosive Drugs Ordinance 1952
25. Dangerous Drugs Ordinance 1952
26. Sale of Food and Drug Ordinance 1952
27. Medicine (Advertisement & Sale) Ordinance 1956
28. Trade Description Act 1972
29. Antiquities Act 1976
30. Environmental Quality Act 1974
31. Continental Shelf Act 1966
32. The Merchant Shipping Ordinance 1952
33. Federation Port Rules 1953
34. The Aboriginal Peoples Act 1954

**ENVIRONMENT-RELATED SEMINARS
1981–1984**

Course/Seminar/Workshop/Visit/Meeting	Place	Date
1981		
1. Groundwater 81 An International Conference and Exhibition on Soil Investigation and Groundwater for Developing Nations/Conference Programme, Speakers and Papers. (Convenor: National Water Well Association of Australia).	Kuala Lumpur	June 8–13 1981
2. National Conference on the Development of Resource-Based Industries. (Organised by Faculty Economic and Agribusiness, UPM and the Malaysian Agriculture Economics Association (PETA)).	Serdang	August 10–12 1981
3. National Training Seminar on Solid Waste Management. [Organised by Division of Local Government, Ministry of Housing and Local Government, Ministry of Health, Division of Environment, Ministry of Science, Technology and Environment, University of Agriculture Malaysia and World Health Organisation (PEPAS)].	Serdang	Oct. 19–23 1981
4. National Workshop on Biogas Technology, (Organised by Malaysian Working Group on Food Waste Materials, SIRIM, University of Malaya).	Kuala Lumpur	March 23–24 1981
5. Regional Conference on Environmental Education in ASEAN Universities and its Transfer. (Sponsored by UNESCO and RIHED and Jointly Organised by Division of Environment, Ministry of Science, Technology and Environment Malaysia and University of Agriculture Malaysia.	Serdang	August 18–21 1981
6. Regional Workshop on Finance and Economic Aspects of National Water Supply and Sanitation Planning. [Organised by World Health Organisation (PEPAS)].	Serdang	Nov 2–13 1981
7. Regional Workshop on Industrial Environmental Impact Assessment and Siting of Industry. [Organised by World Health Organisation (WHO) and United Nation Environmental Program (PEPAS)].	Serdang	Jan 26–30 1981
8. Seminar on the Applications of Nuclear Techniques in Agriculture and the Environment. (Organised by Ministry of Agriculture and Environment, Ministry of Agriculture and University of Agriculture Malaysia).	Serdang	June 8–11 1981
9. Seminar on Environment and Development in the 80's. (Organised by Division of Environment, Ministry of Science, Technology and Environment).	Kuching Sarawak	June 9–10 1981

10. Towards Consumer Solidarity Seminar, (Organised by Federation of Malaysia Consumers Association).	Kuala Lumpur	Jan 11, 1981
11. UNESCO Regional Symposium — Workshop on Biotechnology in the Utilisation of Renewable Resources. [Sponsored by UNESCO, Organised by University of Agriculture Malaysia and Rubber Research Institute of Malaysia (RRIM)].	Serdang	May 4—14, 1981
12. Urban Transport Seminar. (Organised by Ministry of Transport, Malaysia).	Kuala Lumpur	Oct. 13—17 1981
13. Workshop on Hydrological Impacts of Forestry Practices and Reafforestation (Organised by UNESCO, Faculty of Forestry, University of Agriculture, Malaysia).	Serdang	Nov 2—6 1981
14. Workshop on Rubber and Palm Oil Factory Effluent Testing. (Organised by the Division of Environment Sub-Committee On Effluent Testing).	Kluang, Johor	Nov 18—21 1981
15. Fourth Annual Seminar: The status and conservation of shallow — water coastal ecosystems in Malaysia. (Sponsored by ESSO Production Malaysia Incorporated Worldlife Fund Malaysia and Malaysian Oxygen Berhad).	Penang	March 7 1981
1982		
1. EPSM Seminar: The Malaysian Environment 10 years after Stockholm. [Organised by Environmental Protection Society Malaysia (EPSM)].	Petaling Jaya	Jan 9—10 1982
2. First ASEAN Workshop on Fermentation Technology: Applied to the Utilisation of Food Waste Materials. [Organised by the Malaysian Working Group On Food Waste Materials, The Ministry of Science, Technology and the Environment and Standards and Industrial Research Institute of Malaysia (SIRIM)].	Kuala Lumpur	Feb 22—24 1982
3. Pig Wastewater Treatment Workshop	Singapore	Mei 17—19 1982
4. Ministry of Science, Technology and Environment Briefing. (Organised by Institute of Management).	Kuala Lumpur	Sept. 13, 1982
5. National Food Campaign: Report, Seminar and Exhibition. (Organised by Ministry of Health Malaysia).	Kuala Lumpur	Sept 23—28, 1982
6. National Symposium: Engineering Towards Progressive Agriculture. (Sponsored by University of Agriculture Malaysia and Malaysian Society of Agriculture Engineers).	Serdang	Sept. 22—23, 1982
7. PORIM Regional Workshop on Palm Oil Mill Technology and Effluent Treatment. [Organised by Palm Oil Research Institute of Malaysia (PORIM)].	Kuala Lumpur	August 17—18 1982
8. Regional Seminar on Industrial Hazardous Waste Control. (Organised by WHO/WPRO/PEPAS and University of Agriculture Malaysia).	Serdang	Oct 4—8, 1982

9. Regional Seminar on Technology Utilisation of Management of Agricultural Wastes. (Organised by FEISEAP, University of Agriculture Malaysia).	Serdang	Sept. 15–18, 1982
10. Regional Seminar on Water Technology Towards Rural Development. (Organised by University of Agriculture Malaysia, UNESCO and FEISEAP).	Serdang	Jan 19–22 1982
11. Regional Symposium on the Environment of Development Projects. (Organised by Ministry of Science, Technology and Environment and the United Nations Asian and Pacific Development Centre with Assistance from United Nations Environment Programme).	Kuala Lumpur	Jan 11–15 1982
12. Seminar on Energy Management in the Eighties. (Organised by ESSO, Federation of Malaysian Manufacturers).	Kuala Lumpur	March 5 1982
13. Seminar of Pollution Control and Environmental Management. [Organised by Division of Environment, Ministry of Science, Technology and Environment and Malaysian Association of Productivity (MAP)].	Ipoh, Perak	Sept 22–23 1982
14. 3rd. ASEAN-American Conference on Environmental Protection. (Organised by University of Agriculture Malaysia).	Serdang	August 23–25 1982
15. Village Handpump Technology Seminar. [Organised by IDRC (International Development Research Centre)].	Kuala Lumpur	August 16–19 1982
16. Workshop on Ecology Basis for Rational Resource Utilisation in the Humid Tropics of South East Asia. (Organised by UNESCO-MAB Programme, UNEP, Faculty of Forestry, University of Agriculture Malaysia).	Serdang	Jan 18–24 1982
17. Workshop of the 2nd. Rubber and Palm Oil Effluent Testing. (Sponsored by Malaysian Rubber Producers' Council, the Malaysian Oil Palm Growers' Council and Segar Alatan Sains (M) Sdn. Bhd.).	Kuala Lumpur	Nov 29–30 1982
1983		
1. ASEAN-EEC Seminar on Water Resource Management: Problems and prospects. (Organised by Ministry of Science, Technology and Environment, Economic Planning Unit, Prime Minister's Department, Public Works Department, Drainage and Irrigation Department. Sponsored by EEC (Commission of the European Economic Communities)).	Kuala Lumpur	August 1–5 1983
2. Dangerous Goods Seminar. [Organised by Kelang Port Authority and International Maritime Organisation (IMO)].	Kuala Lumpur	Nov 21–24 1983
3. Energy Technology Seminar. (Organised by Japan External Trade Organisation).	Kuala Lumpur	Oct 16–21 1983
4. Environmental Management Workshop (Organised by Malaysian Institute of Management).	Fraser's Hill	Nov 13–18 1983

5. National Science Forum (University of Agriculture Malaysia, National Council For Scientific Research and Development).	Serdang	May 10, 1983
6. International Symposium on the Future of Tropical Rainforests in South East Asia. [Organised by IUCN (International Union for the Conservation of Nature) Commission on Ecology].	Kuala Lumpur	1983
7. International Symposium on Technology, Culture and Development. (Organised by University of Malaya).	Kuala Lumpur	Dec 12–14 1983
8. Kuala Lumpur Ecoville Seminar on Urbanization and Ecodevelopment: Kuala Lumpur Case Study. (Organised by University of Malaya, Inst. Adv. Studies).	Kuala Lumpur	Nov 21–23 1983
9. Malaysia Iron & Steel Industry Towards the year 2000. [Organised by the Malaysian Iron & Steel Industry Federation (MISIF)].	Kuala Lumpur	Nov 18–19 1983
10. Meeting of the Working Group on Priorities for Health-Related Environmental Problems. [Organised by World Health Organisation (WHO)].	Serdang	Oct 25–28 1983
11. National Seminar on Forestry, National Park and Town Park Recreation. (Organisation by Faculty of Forestry, University of Agriculture Malaysia).	Serdang	Sept. 25–28 1983
12. National Seminar on INFOTERRA (Organised by Department of Environment).	Kuala Lumpur	Feb 16–17 1983
13. National Symposium on Engineering Towards Progressive Agriculture. (Organised by University of Agriculture Malaysia and Malaysian Society of Agricultural Engineers).	Serdang	Sept 22–23 1983
14. National Workshop on Environmental Impact, Assessment. (Organised by PEPAS, Department of Environment and University of Agriculture Malaysia).	Serdang	Nov 21–25 1983
15. PETRONAS Seminar in Oil Spill Prevention and Control. (Organised by PETRONAS).	Kuala Lumpur	Oct 18–20 1983
16. Regional Seminar on Development of Techniques for Analysis of Tropical Cities on an Ecosystem Basis (Organised by Universiti Kebangsaan Malaysia).	Bangi	Nov 24–26 1983
17. Seminar on the Control and Use of Chemicals in Malaysia. (Organised by University Sains Malaysia (USM) and Chemistry Institute of Malaysia).	Penang	Dec 5, 1983
18. Seminar on Energy Technology. (Organised by Japan External Trade Organisation).	Kuala Lumpur	1983
19. Seminar on Environmental Pollution Control and Management. (Organised by Department of Environment and Johore Productivity Association).	Johor Bahru	Nov 8–9 1983

20. Workshop/Seminar '83 on Environmental Issues in the Federal Territory. (Department of Environment and Ministry of Federal Territory).	Kuala Lumpur	June 9, 1983
1984		
1. Asian Chemical Conference on Priorities In Chemistry In Development of Asia. (Organised by Chemistry Institute of Malaysia In Collaboration with Federation of Asian Chemical Societies Costed, with the support of UNESCO, The Commonwealth Foundation, ICI (Malaysia) Pte. Ltd., PETRONAS, Dunlop Malaysia Industries Ltd., Rubber Growers Association (Malaysia) Ltd., Revertex Malaysia Pte. Ltd., Highland and Lowland Ltd., Harrisons Malaysia Plantations Ltd. and Sime Darby Ltd.)	Kuala Lumpur	March 26—31 1984
2. Malacca Exercise 1984 — A Simulation Exercise to Combat Oil Spill in the Straits of Malacca. (Organised by Department of Environment).	Malacca	Oct 29—Nov 3 1984
3. National Seminar On Management and Utilisation of Industrial Wastes. (University of Agriculture Malaysia, Department of Environment, Ministry of Science, Technology and Environment, UNESCO).	Serdang	Sept. 13—14 1984
4. National Transport Workshop. (Organised by School of Transportation Studies, Institute Technology Mara and The Chartered Institute of Transport (Malaysia Section) and Sponsored by Kontena National Sdn. Bhd.)	Kuala Lumpur	March 5, 1984
5. Regional Seminar on Remote Sensing Applications for Land Resources Management [Organised jointly by UN-ESCAP Regional Remote Sensing Programme (UNDP-RAS 81/034) and Malaysian Agriculture Research and Development Institute (MARDI)].	Kuala Lumpur	Nov 19—22 1984
6. Regional Seminar — Workshop on Biotechnology in Industrial Development University of Agriculture Malaysia (Faculty of Food Science and Technology), UNESCO.	Serdang	1984
7. Second ASEAN Workshop on Biogas Technology. (Jointly Organised by ASEAN Working Group on Food Waste Materials and ASEAN Working Group on Food Technology Research and Development).	Kuala Terengganu	Oct 8—13 1984
8. Seventh Meeting of the ASEAN Experts Group on the Environment	Genting Highlands	April 2—4 1984
9. Seminar on the Evaluation of the Use of Anionic Detergents in Malaysia. (Organised by Engineering and Environmental Consultants Sdn. Bhd. and SEATEC International Bangkok).	Kuala Lumpur	Sept 17, 1984
10. Seminar on Noise Pollution: A need for Control. (Organised by Quality Resources Development and Management Sdn. Bhd.)	Kuala Lumpur	July, 10—11 1984

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|---|------------------|----------------------|
| 11. Seminar on Trends In Technology Development.
(Organised by Malaysian Scientific Association). | Kuala Lumpur | May 5, 1984 |
| 12. Symposium on Water and Waste Water Treatment.
(Organised by Foundation Do L'eau, France). | Kuala Lumpur | May, 8—9
1984 |
| 13. 2nd ASEAN Workshop on Biogas
Technology/Applied to the Management and
Utilisation of Food Waste Materials. (Jointly
Organised by ASEAN Working Group on Food
Waste Materials and ASEAN Committee on Science
and Technology). | Kuala Terengganu | Oct. 8—13
1984 |
| 14. WHO Region Workshop on Environmental Health
Planning. [Organised by World Health Organisation
(PEPAS)]. | Serdang | Nov 26—Dec 1
1984 |

**LIST OF COURSES, SEMINARS AND WORKSHOPS
ATTENDED BY STAFF OF THE DEPARTMENT OF ENVIRONMENT
1981–1984**

Name and Post	Course/Seminar/Workshop	Place	Date
1981			
Mr. S. T. Sundram, JSM. (Director-General of Environment)	(1) Technical Workshop For Development of Environmental Statistics. (2) Inter-Governmental Meeting On ASEAN Environment Ministers Conference. (3) Ninth Session of UNEP Governing Council. (4) WHO/UNEP Consultation On Health Related Monitoring Component of GEMS. (5) Inter-Governmental Meeting On East Asian Seas Action Plan.	Bangkok Thailand Manila Philippines Nairobi Kenya Geneva Switzerland Bangkok Thailand	10–16 February 28–30 April 13–26 May 9–13 November 9–12 December
Mr. A. Maheswaran, KMN. Director (Water Pollution Control)	(1) Fifth Meeting of Scientific Advisory Committee on International Register of Potentially Toxic Chemicals (IRPTC). (2) Fourth Meeting Of ASEAN Experts Group On Environment. (3) Second Meeting Between Malaysia and Indonesia On Archipelago. (4) Third UN Conference On The Marine Laws, Session 10, Part 2. (5) Inter-Governmental Meeting On The East Asian Seas Action Plan.	Geneva Switzerland Singapore Jakarta Indonesia Geneva Switzerland Bangkok Thailand	16–20 February 7–10 April 29 June – 3 July 29 July – 3 Sept. 9–11 December
Ir. Goh Kiam Seng, KMN Director (Air Pollution Control)	(1) International Conference On Energy and Environment. (2) 4th Inter-Governmental Expert Group Meeting on Cost Benefit Analysis of Environment Protection Measures.	Manila Philippines Istanbul Turkey	5–9 January 4–6 November
Mr. Godwin Singam (Principal Assistant Director)	(1) International Conference On Hydrology and the Scientific Bases for National Management of Water Resources (IHP).	Paris France	18–27 August

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Peter Ho Yuen Chuen (Principal Assistant Director)	(1) ASEAN-UNEP Regional Workshop on EIA for Water Resources Development Project Bangkok, Thailand.	Bangkok Thailand	2—15 Feb.
Miss Norhayati Bt. Mustapha (Environmental Control Officer)	(1) Workshop on Legal Approaches to Social Problem of Low Income Groups. (2) Rubber Processing Machinery and Maintenance (3) Regional Conference On Environmental Education in ASEAN Universities and Its Transfer. (4) Seminar on Effluent Cross-Check.	USM Penang RRI Kuala Lumpur UPM Serdang, Selangor Kluang, Johore	6 June 17—22 August 18—21 August 17—21 November
Mr. Wong Foon Meng (Environmental Control Officer)	(1) UNEP/UNIDO Workshop on the Environmental Aspects of Alomina Production.	Paris France	20—25 January
Mr. Lee Heng Keng (Environmental Control Officer)	(1) Course on Stack Sampling (2) Course on Air Monitoring.	USA USA	12—16 October 19—23 October
Mr. Hashim b. Daud (Environmental Control Officer)	(1) Course on Law and Court Procedure. (2) Regional Conference on Environmental Education in ASEAN Universities and Its Transfer. (3) National Training On Oil Spill.	Kuala Kubu Baru, Selangor UPM Serdang, Selangor Port Dickson, N. Sembilan	20 Jan. — 5 Feb. 17—22 August 13—19 December
Mr. Shamsuddin b. Hj. Abdul Latif (Environmental Control Officer)	(1) Training Seminar On Air Quality Management (2) Seminar on Industrial Water Pollution Control.	UPM Serdang, Selangor UPM Serdang, Selangor	1981 1981
Mr. Patrick Tan Hock Chuan (Environmental Control Officer)	(1) 16th Session of the Inter-Governmental Maritime Consultative Organization (IMCO).	London	30 Nov. — 4 Dec.
Mr. Abdul Aziz b. Abdul Rasol (Environmental Control Officer)	(1) Seminar on Air Pollution Association.	USA	1981
Mr. Rusli b. Che Husin (Environmental Control Officer)	(1) National Training Seminar on Solid Wastes Management.	UPM Serdang, Selangor	19—23 October
Mr. Zainal b. Mohd. Nasir (Environmental Control Officer)	(1) National Conference on the Development of Resource — base Industries.	UPM Serdang, Selangor	10—12 August
Mr. Ismail b. Mohd. Nor (Environmental Control Officer)	(1) Conference and Exhibition on Ground Water and Soil Studies.	Kuala Lumpur	8—12 January

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Mohd. Sayuti b. Sepeai (Environmental Control Officer)	(1) Seminar on the Use of Radioisotopes Technique in the Industry.	Kuala Lumpur	November
Y.M. Tengku Bakry Shah b. Tengku Johan (Environmental Control Officer)	(1) ASEAN/UNEP Study Tour on Technical Workshop on Water Quality Monitoring and Management.	Singapore	14–19 December
Mr. Abu Hassan b. Mohd. Isa (Environmental Control Officer)	(1) Seminar on Occupational and Environmental Noise Measurement and Control.	Kuala Lumpur	2–3 April
Mrs. Rahmah bt. Mohd. Tahir (Environmental Control Officer)	(1) Workshop on Rubber and Oil Palm Effluent. (2) Workshop on New Curriculum for Primary School.	Kluang, Johore Kuala Lumpur	November December
Mrs. Choong Mei Chun (Environmental Control Officer)	(1) Seminar on Palm Oil Effluent By-Product Utilisation.	Kuala Lumpur	1981
Mrs. Kalsom bt. Abd. Ghani (Environmental Control Officer)	(1) 'SAS' Computer System Course. (2) IBM 5280 Distributed Data Computer System Course.	Kuala Lumpur Petaling Jaya	September September
Mr. Abd. Rahman Awang (Environmental Control Officer)	(1) National Seminar on Solid Wastes Management	UPM Serdang, Selangor	23–28 October
Mrs. Habsah bt. Ismail (Asst. Environmental Control Officer)	(1) Training Course on CO and Ozone for HORIBA Instrument.	Kuala Lumpur	July
Mr. Radzuan @ Mohd. Radzuan bin Yusof (Asst. Environmental Control Officer)	(1) Training Seminar on Spill, Prevention and Reaction of Oil.	Port Dickson, N. Sembilan	18–24 December
1982 Mr. S. T. Sundram, JSM. (Director-General of Environment)	(1) 47th Conference of the IMCO Conventions. (2) 5th Meeting of ASEAN Experts Group on Environment/Co-ordinating Body on the Seas of South East Asia (COBSEA). (3) Regional Consultative Meeting with Governments prior to UNEP Session of Special Character (SSC) and Governing Council (GC) (4) UNEP Session of Special Character.	London Bangkok, Thailand Bangkok, Thailand Nairobi, Kenya	22–26 February 31 March – 3–4 April 5–6 April 10–18 May

Name and Post	Course/Seminar/Workshop	Place	Date
	(5) Tenth Session of UNEP Governing Council.	Nairobi, Kenya	20 Mei — 31 June
	(6) The Revolving Fund Committee Meeting.	Jakarta, Indonesia	5—7 August
	(7) Meeting on Fifth Joint Bureaux UNEP Governing Council and the Commission on Human Settlements.	Nairobi, Kenya	2—3 December
	(8) Inter-Sessional Informal Consultations with Governments.	Nairobi, Kenya	December
Mr. A. Maheswaran, KMN. Director (Water Pollution Control)	(1) Training Seminar for Economic Evaluation of Environmental Quality Effects of Development.	Quezon City, Philippines	18—19 January
	(2) Fifth Meeting of ASEAN Experts Group on Environment/COBSEA.	Bangkok, Thailand	30 March — 3—4 April
Mr. Godwin Singam (Principal Assistant Director)	(1) UNEP Regional Training Workshop on Environmental Management in Pulp and Industry.	Manila, Philippines	1—5 March
	(2) Piggery Wastewater Treatment Workshop.	Singapore	17—19 Mei
Miss Hasmah Harun (Environmental Control Officer)	(1) Regional Course on Environment and Development with Special Emphasis on Marine Environment.	Kuala Lumpur	12—24 April
	(2) Training Course in General Information Work.	London	6—16 December
Mr. Soo Ah Kan (Environmental Control Officer)	(1) UNEP Regional Training Workshop on Environmental Management in Pulp and Industry.	Manila, Philippines	1—5 March
Mr. Noor Alshurdin b. Md. Salleh (Environmental Control Officer)	(1) First International Conference on Industrial Pollution and Control.	Singapore	14—17 December
Ms. Norhayati Bt. Mustapha (Environmental Control Officer)	(1) Seminar on Water Technology Towards Rural Development.	UPM Serdang, Selangor	19—22 January

Name and Post	Course/Seminar/Workshop	Place	Date
	(2) Seminar on Planting Technology. (3) Course on Parks and Recreation. (4) Course on Law and Court Procedure.	Shah Alam, Selangor Kuala Lumpur Kuala Lumpur	4–5 February 16th June 25 Oct. – 13 Nov.
Mr. Abdul Aziz b. Abdul Rasol (Environmental Control Officer)	(1) Course on Noise Pollution Control.	Denmark	1 Oct. – 16 Nov.
Mr. Lee Heng Keng (Environmental Control Officer)	(1) Utilisation of LPG as an Automotive Fuel. (2) Acoustics, Noise Problems and their Measurement. (3) Pollution Control and Environmental Management. (4) Technical Forum on Subway Construction.	Kuala Lumpur Kuala Lumpur Ipoh, Perak Kuala Lumpur	10–17 February 7–8 September 22–23 September 9–10 December
Mr. Wong Foon Meng (Environmental Control Officer)	(1) Regional Seminar on Environmental Impact Assessment and Management in Developing Countries.	Bangkok, Thailand	14–20 November
Mr. Shamsudin b. Hj. Abdul Latif (Environmental Control Officer)	(1) Seminar on Environmentally Sound Management of River Basins.	Russia	Sept. – Oct.
Y.M. Tengku Bakry Shah b. Tengku Johan (Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Miss Hor Yin Heng (Environmental Control Officer)	(1) ASEAN/UNEP Study and Technical Workshop on Urban Air Quality Monitoring and Management. (2) Demonstration and Explanation of CMA functions under Operation System UM/SP.	Singapore Kuala Lumpur	10–13 December 2 Sept.
Mr. Abu Hassan b. Mohd. Isa (Environmental Control Officer)	(1) First Acoustics Conference of West Pacific Region (2) Seminar on Acoustics, Noise Problems and their Measurement.	Singapore Kuala Lumpur	1–3 September 7–9 September
Mr. Ab. Rahman Awang (Environmental Control Officer)	(1) Seminar on Latest Development on Wastes Disposal and Heat Recovery. (2) Following Operations for Treatment of Household Refuse for Recycling and Production of Compost and Solid Fuel. (3) Seminar on Pollution Control and Environmental Management.	Kuala Lumpur Kuala Lumpur Ipoh, Perak	3 March April 22–25 September

Name and Post	Course/Seminar/Workshop	Place	Date
	(4) Regional Seminar on Industrial and Hazardous Waste Control.	UPM Serdang, Selangor	4–8 October
Mr. Choy Chee Keong (Environmental Control Officer)	(1) Seminar on Technology, Utilisation and Management of Agriculture Waste. (2) Seminar on Health. (3) First International Conference on Industrial Pollution Control.	UPM Serdang, Selangor Pahang Singapore	15–17 September 19 Nov. 15–17 December
Mr. Ismail b. Mohd. Nor (Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mrs. Kalsom bt. Abd. Ghani (Environmental Control Officer)	(1) 'SCRIPT' Computer Course.	Kuala Lumpur	9–11 November
Mr. Zainal b. Abdullah (Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mrs. Halimah Bt. Hassan (Environmental Control Officer)	(1) Regional Seminar on Environmental Impact Assessment and Management in Developing Countries. (2) Technical Forum on Subway Construction.	Bangkok, Thailand Kuala Lumpur	14–20 November 9–10 December
Mr. Zainal b. Mohd. Nasir (Environmental Control Officer)	(1) Cost-Benefit Analysis Using Test Model for EIA.	Kuala Lumpur	1–5 January
Mr. Mohamad b. Jaafar (Environmental Control Officer)	(1) Cost-Benefit Analysis Using Test Model for EIA.	Kuala Lumpur	1–5 January
Mr. Mohd. Izzudin b. Abd. Ghani (Environmental Control Officer)	(1) Seminar on Acoustics, Noise Problems and Their Measurement. (2) Seminar on Pollution Control and Environmental Management.	Kuala Lumpur Ipoh, Perak	7–8 September 22–23 September
Mr. Ragunathan s/o Sivalingam (Environmental Control Officer)	(1) Mechatronic Consolidation System. (2) Palm Oil Mill Technology Conference. (3) Symposium on Ozone for Drinking Water and Wastewater.	Kuala Lumpur Kuala Lumpur Kuala Lumpur	5 April 18 August 2 December
Mrs. Rahmah bt. Mohd. Tahir (Environmental Control Officer)	(1) Workshop on Rubber and Palm Oil Effluent.	Kuala Lumpur	November
Mr. Ahmad Hamizan b. Hassan (Environmental Control Officer)	(1) National Training Seminar on Development and Management of Sewerage System.	Kuala Lumpur	13–17 December
Mr. Rohaizad Shafii (Environmental Control Officer)	(1) National Training Seminar on Development and Management of Sewerage System.	Kuala Lumpur	13–17 December

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Zulkifli b. Abd. Rahman (Environmental Control Officer)	(1) National Training Seminar on Development and Management of Sewerage System.	Kuala Lumpur	13–17 December
Miss Sittie Razillah bt. Hassan (Environmental Control Officer)	(1) Briefing on Examination Management.	INTAN, Kuala Lumpur	20–22 October
Mrs. Wan Ramlah bt. Wan Ibrahim (Environmental Control Officer)	(1) Experts Group Meeting on Industrial Pollution Control and Costs.	Bangkok	15–19 June
Mr. Robert Lim Hock Kee (Sr. Asst. Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mr. Ng Aik Tong (Sr Asst. Environmental Control Officer)	(1) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6–10 December
	(2) Training Course on Stack Sampling.	Kuala Lumpur	23–25 November
Mr. Dasarathan Murugesan Rao (Sr Asst. Environmental Control Officer)	(1) Regional Workshop on Environmental Education Communication through Broadcasting.	Kuala Lumpur	12–24 April
Mr. Saari Che' Lah (Sr Asst. Environmental Control Officer)	(1) National Training Course on Air Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
	(2) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6–10 December
Mr. Muhammad Rashid b. Wan Chik (Asst. Environmental Control Officer)	(1) Seminar on Oil Spill.	Singapore	16–21 April
	(2) Training Course on Stack Sampling.	Kuala Lumpur	23–25 April
Mr. Arumugam s/o Thiromalai (Asst. Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
	(2) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6–10 December
Mr. Jimat Bolhassan (Asst. Environmental Control Officer)	(1) Second Environmental Management Seminar.	Penang	21–22 September
	(2) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mr. Yaacob b. Kadar Mydin (Asst. Environmental Control Officer)	(1) Second Environmental Management Seminar.	Penang	21–22 September
Mr. Zainudin b. Abd. Aziz (Asst. Environmental Control Officer)	(1) Course on Water Quality Monitoring and Data Management.	UPM Serdang, Selangor	23 Oct. – 7 Nov.
Mr. Zainal Abidin b. Ali (Asst. Environmental Control Officer)	(1) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6–10 December

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Radzuan @ Mohd. Radzuan b. Yusoff (Asst. Environmental Control Officer)	(1) Seminar on Marine and Stationary Diesel Engine.	Kuala Lumpur	18 Jan.
Mr. Mohammad Hashim b. Abd. Malik (Asst. Environmental Control Officer)	(1) Training Course on Stack Sampling.	Kuala Lumpur	23–25 November
Mr. Mohd. Isa Hashim (Asst. Environmental Control Officer)	(1) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6–10 December
Mr. Mohd. Akbal b. Mohd. Yunus (Asst. Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mrs. Zaimah bt. Ghazali (Asst. Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mr. Mohd. Sanusi b. Sulaiman (Asst. Environmental Control Officer)	(1) National Training Course On Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mr. Abd. Malek b. Ahmad (Asst. Environmental Control Officer)	(1) Environmental Engineering (Water Pollution Control) Course.	Japan	16 Sept. – 30 Oct.
Mr. Sanip b. Hassan (Asst. Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring.	UPM Serdang, Selangor	25 Oct. – 6 Nov.
Mr. Said b. Awang (Asst. Environmental Control Officer)	(1) Training Course on Stack Sampling.	Kuala Lumpur	23 – 25 November
Mrs. Siti Rahmah bt. Yaacob (Asst. Environmental Control Officer)	(1) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6–10 December
Mr. Abd. Wahab b. Ali (Asst. Environmental Control Officer)	(1) National Training Course on Water Quality Monitoring. (2) Training Course on the Use of Air Quality Monitoring Equipment.	UPM Serdang, Selangor Kuala Lumpur	25 Oct. – 6 Nov. 6–10 December
Mr. Aziz Abd. Razak (Technician)	(1) Course for Technicians. (2) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur Kuala Lumpur	24–26 June 6–10 December
Mr. Muniandy s/o Yellai (Technician)	(1) Course for Technicians. (2) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur Kuala Lumpur	24–26 June 6–10 December

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Murshid b. Masi (Technician)	(1) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6—10 December
Mr. Masetor b. Mat Lehan (Technician)	(1) Training Course on the Use of Air Quality Monitoring Equipment.	Kuala Lumpur	6—10 December
Miss Tiawa bt. Kassim (Technician)	(1) Typing Course	Sabah	20 Sept.
Miss Sharifah Jailani (Clerk)	(1) Basic Course on Clerical Work.	Johore Bahru, Johore	12—25 March
Miss Rusni Shahizan Zainudin (Clerk)	(1) Training Project on Finance	Kuantan, Pahang	2—4 August
Miss Khalilah bt. Hashim (Clerk)	(1) Basic Course on Clerical Work.	Penang	15—29 May
1983 Mr. S. T. Sundram, JSM. (Director-General of Environment)	(1) Eighth Meeting of the ASEAN Committee on Science and Technology. (2) Second Meeting of the Co-ordinating Body on the Seas of East Asia (COBSEA). (3) Second Meeting of the Revolving Fund Committee (4) Eleventh Session of UNEP Governing Council. (5) Ninth Meeting of ASEAN Committee on Science and Technology.	Singapore Yogyakarta, Indonesia Jakarta, Indonesia Nairobi, Kenya Phuket, Thailand	21—25 February 25—26 March 30—31 March 11—24 May 5—9 September
Mr. A. Maheswaran, KMN. Director (Water Pollution Control)	(1) Fifteenth Pacific Science Conference. (2) Sixth Meeting of ASEAN Experts Group on Environment. (3) Second Meeting of the Co-ordinating Body on the Seas of East Asia (COBSEA). (4) Second Meeting of the Revolving Fund Committee. (5) Oil Pollution Response Exercise. Honolulu, Hawaii (6) Oil Pollution Response Exercise. Moscow, USSR Basic Principles of Definition of Toxicological and Safety Data for Chemical Substance in International Trade.	Dunedin, New Zealand Yogyakarta, Indonesia Yogyakarta, Indonesia Yogyakarta, Indonesia	7—9 February 22—24 March 25—26 March 30—31 March 16—22 May 5—9 December
Ir. Goh Kiam Seng, KMN. Director (Air Pollution Control)	(1) Course on Quality Control Circuit (Q.C.C.) 11/83.	Kuala Lumpur	28 Nov. — 10 Dec.

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Ghazali b. Mohd. Noor, ASK., PJK. (Director of Administration)	(1) Course on Training Project on Work manual Procedure and Desk File.	Kuala Lumpur	14–16 November
	(2) Course on Quality Control Circuit (Q.C.C.) 11/83	Kuala Lumpur	28 Nov. – 10 Dec.
	(3) Training Course on Work Procedure Manual and Desk File.	Kuala Lumpur	12–14 December
Ir. Tan Meng Leng (Principal Assistant Director)	(1) Seminar on Management of Dangerous Trade in Malaysia	Kuala Lumpur	21–24 November
Mr. Godwin Singam (Principal Assistant Director)	(1) Course on Law and Court Procedure.	Kuala Lumpur	16–26 May
	(2) Course on Marine Environment Protection.	Okinawa, Japan	29 Sept. – 15 Dec.
Mr. Peter Ho Yueh Chuen (Principal Assistant Director)	(1) Seminar on Scientific Aspects of Traditional Management of Coastal Environment.	Indonesia	5–9 December
	(2) Meeting on Testing of Water Quality Project.	Singapore	7–9 December
Mrs. Hajjah Rosnani bt. Ibarahim (Acting Sr. Environmental Control Officer)	(1) Symposium on Consumer and the Environment.	UKM Bangi, Selangor	8 Jan.
	(2) Training Course on Work Manual Procedure and Desk File.	Kuala Lumpur	14–16 November
Mr. Soo Ah Kan (Environmental Control Officer)	(1) Course on Working on Environmental Impact Assessment in Developing Countries.	Guangzhou, China	7–26 March
	(2) Training Course on Work Manual Procedure and Desk File.	Kuala Lumpur	12–14 December
Mr. Patrick Tan Hock Chuan (Acting Sr. Environmental Control Officer)	(1) East Asian Seas Programme on Data and Information System.	Jakarta, Indonesia	17–19 March
Miss Hasmah Harun (Acting Sr. Environmental Control Officer)	(1) Course on Law and Court Procedure.	Kuala Kubu Bahru, Selangor	23 May – 11 June
Mr. Lee Choong Min (Environmental Control Officer)	(1) ASEAN-US Coal Training Programme.	Argonne, U.S.A.	31 Jan. – 25 March
Mr. Mohd. Ishak b. Thani (Environmental Control Officer)	(1) ASEAN-US Coal Training Programme.	Argonne, U.S.A.	31 Jan. – 25 March
Mr. Wong Foon Meng (Environmental Control Officer)	(1) Environmental Management Workshop.	Fraser's Hill, Pahang	18–22 November
	(2) Symposium on Consumer and the Environment.	UKM Bangi, Selangor	8 Jan.
Mr. Shamsuddin b. Hj. Abd. Latif (Environmental Control Officer)	(1) Course on Law and Court Procedure.	Kuala Kubu Bahru, Selangor	8 August – 3 Sept.

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Lee Heng Keng (Environmental Control Officer)	(1) Course on Law and Court Procedure.	Kuala Kubu Bahru, Selangor	23 May – 11 June
Miss Rahani Husin (Environmental Control Officer)	(1) Course on Safety in Chemical Laboratories.	UPM Serdang, Selangor	8–13 August
Miss Hor Yin Heng (Environmental Control Officer)	(1) Environmental Management Workshop. (2) Basic Course on Computer (3) Course on Planning Arrangement for Management.	Frasers' Hill, Pahang Kuala Lumpur Kuala Lumpur	18–22 November 1–10 January 1–7 March
Mr. Abd. Rahman Awang (Environmental Control Officer)	(1) International Training Course in Preventive Toxicology.	USSR	11 April – 10 May
Mr. Zainal b. Abdullah (Environmental Control Officer)	(1) Ninth Seminar of the Biochemistry Association.	UPM Serdang, Selangor	13–14 September
Mr. Mohamad b. Jaafar (Environmental Control Officer)	(1) International Symposium on the Future of Tropical Rainforest in South East Asia.	Kuala Lumpur	1–2 Sept.
Mr. Rusli Che Husin (Environmental Control Officer)	(1) Course on Health and Environmental Management at Local Council. (2) International Symposium on Solid Waste Management in Developing Countries.	Kuala Lumpur Republic of Germany	18–30 July 26 Sept. – 7 Oct.
Mr. Abd. Rahim Shahid (Environmental Control Officer)	(1) Course on Administration of Infrastructure Development.	Kuala Lumpur	25 April – 26 May
Miss Sittee Razillah (Environmental Control Officer)	(1) Course on Training Methodology (International).	Kuala Lumpur	14 March – 30 April
Mr. Noor Alshurdin (Environmental Control Officer)	(1) Basic Course on Computer. (2) First International Conference on Industrial Pollution and Control.	Kuala Lumpur Singapore	1–10 January 10–14 October
Mr. Choy Chee Keong (Environmental Control Officer)	(1) First International Conference on Industrial Pollution and Control. (2) Workshop on Zinc Coating	Singapore Shah Alam, Selangor	10–14 October 10 Jan.
Mrs. Kalsom bt. Abd. Ghani (Environmental Control Officer)	(1) Workshop on Zinc Coating.	Shah Alam, Selangor.	10 Jan.
Mrs. Halimah Hassan (Environmental Control Officer)	(1) INFOTERRA Training Course. (2) INFOTERRA National Seminar.	Nairobi, Kenya Kuala Lumpur	23–25 August 16–17 February

Name and Post	Course/Seminar/Workshop	Place	Date
	(3) National Seminar on Forest, National Park and Park for Recreation.	UPM Serdang, Selangor	26–28 September
Mr. Charanpal Singh s/o Karpal Singh	(1) Basic Course on Assessment of Water Resource.	UTM, Kuala Lumpur	6–22 June
Mr. Ismail b. Mohd. Noor (Environmental Control Officer)	(1) Workshop on the Use and Implementation of the National Language in Geoscience.	Kuala Lumpur	23 April
Mrs. Aminah bt. Ali (Asst. Environmental Control Officer)	(1) East Asian Seas Programmes on Data and Information Exchange.	Jakarta, Indonesia	17–19 March
Miss Zamrudah bt. Yeop (Asst. Environmental Control Officer)	(1) Basic Course on Assessment of Water Resources.	UTM, Kuala Lumpur	6–11 June
Mrs. Rahani bt. Lazim [Asst. Director (Administration) 1].	(1) Workshop on Recreation in the Federal Territory.	Kuala Lumpur	21 June
Mr. Salehudin b. Mohd. Nor (Chief Clerk)	(1) Training for Senior Clerks.	Kuala Lumpur	7–22 February
Mrs. Ramlah bt. Abd. Ghani (Clerk)	(1) Course on finance for Clerks.	Kuala Lumpur	10–22 October
1984			
Mr. S. T. Sundram, JSM, (Director-General of Environment)	(1) Conference on Environment and Development: The Future for Consulting Firms in Asia.	Singapore	14–17 February
	(2) Third Meeting of the Revolving Fund Committee.	Bali, Indonesia	11–12 April
Mr. A. Maheswaran, KMN, Director (Water Pollution Control)	(1) Course on Quality Control Circuit 1/84.	Kuala Lumpur	16–28 January
	(2) Thirteenth Tripartite Experts Group Meeting on the Safety of Navigation in the Straits of Malacca and Singapore.	Singapore	12–13 January
	(3) Fourteenth Tripartite Experts Group Meeting on the Safety of Navigation in the Straits of Malacca and Singapore.	Denpasar, Bali, Indonesia	9–10 April
	(4) Regional Technical Workshop on the Protection of the Marine Environment and Related Ecosystems.	Bangkok	20–28 February
	(5) 11th Meeting of the ASEAN Committee on Science and Technology.	Chiengmai, Thailand	5–9 November
	(6) Exercise Malacca '84	Kuala Lumpur/ Johore Bahru	29 Oct. – 3 Nov.

Name and Post	Course/Seminar/Workshop	Place	Date
Ir. Goh Kiam Seng, KMN Director (Air Pollution Control)	(1) Experts Group Meeting on Integration of Environment into Development Institution and Legislative Aspects.	Tokyo	5–11 June
	(2) Ad Hoc Working Group of Experts on Hazardous Wastes 2nd Session.	Geneva	3–7 December
	(3) Regional Workshop on Environmental Health Planning.	UPM Serdang, Selangor	26 Nov. – 1 Dec.
	(4) Exercise Malacca '84	Kuala Lumpur/Johore Bahru	29 Oct. – 3 Nov.
Mr. Ghazali b. Mohd. Noor, ASK, PJK (Director of Administration)	(1) Seminar on MAS and National Economy.	Kuala Lumpur	25 July
	(2) Exercise Malacca '84.	Kuala Lumpur/Johore Bharu	29 Oct. – 3 Nov.
Ir. Tan Meng Leng (Principal Assistant Director)	(1) Oceanic Seminar.	Kuala Lumpur	15 Oct.
	(2) Course on Law and Court Procedure.	Kuala Lumpur	13–15 August
	(3) Intergovernmental Meeting on the Integration of Environment into Development Institution and Legislative Aspects.	Bangkok, Thailand	26–30 November
	(4) Exercise Malacca '84.	Kuala Lumpur/Johore Bharu	29 Oct. – 3 Nov.
Dr. Abu Bakar bin Jaafar (Principal Assistant Director)	(1) International Conference on Liability and Compensation for Damage In Connection with the Carriage of Certain Substances by Sea.	London	30 April – 25 May
	(2) International Maritime Organisation Conference.	London	28 April – 25 May
	(3) RIHED Workshop.	Singapore	12–14 April
	(4) Symposium on Environmental Education In ASEAN Countries.	Bogor, Indonesia	27–30 August
	(5) Exercise Malacca '84.	Kuala Lumpur/Johore Bharu	29 Oct. – 3 Nov.
Mr. Godwin Singam (Principal Assistant Director)	(1) International Conference on Effects of Oil Spill in the Persian Gulf.	Taheran	20–27 May
	(2) Exercise Malacca '84.	Kuala Lumpur/Johore Bharu.	29 Oct. – 3 Nov.
Mr. Ho Yueh Chuen (Acting Principal Assistant Director)	(1) Oceanic Seminar.	Kuala Lumpur	15 Oct.
	(2) Exercise Malacca '84.	Kuala Lumpur/Johore Bharu	29 Oct. – 3 Nov.
Mrs. Hajjah Rosnani bt. Ibarahim (Acting Principal Assistant Director)	(1) Symposium on Operating European Hazardous (Chemical) Waste Management Facilities and Training and Education Course in Hazardous Waste Management.	Denmark	11–14 September

Name and Post	Course/Seminar/Workshop	Place	Date
	(2) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Mr. Patric Tan Hock Chuan (Acting Senior Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu.	29 Oct. — 3 Nov.
Mr. Soo Ah Kan (Acting Senior Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Miss Norhayati bt. Mustapha (Acting Senior Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Mr. Abdul Aziz b. Abdul Rasol (Acting Senior Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Miss Hasmah bt. Harun (Acting Senior Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu.	29 Oct. — 3 Nov.
Mr. Hashim b. Daud (Environmental Control Officer)	(1) Workshop on Establishment of Sub-Regional Centre for Shipping Pollution Counter- measures on Scene Co- ordinators. (2) Exercise Malacca '84.	Davao, Philippines Kuala Lumpur/ Johor Bharu	3—5 April 29 Oct.) 3 Nov.
Mr. Wong Foon Meng (Environmental Control Officer)	(1) Oceanic Seminar. (2) Exercise Malacca '84. (3) International Course on Water Resources Enginee- ring.	Kuala Lumpur Kuala Lumpur/ Johore Bharu Belgrade, Yugoslavia	15 Oct. 29 Oct. — 3 Nov. 18 June — 14 Sept.
Mr. Lee Choong Min (Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Mr. Shamsuddin b. Hj. Abd. Latif (Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Mr. Mohd. Ishak Thani (Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu	29 Oct. — 3 Nov.
Mr. Abu Hassan b. Mohd. Isa (Environmental Control Officer)	(1) Intensive Course on English Language 1/84 for Government Officers. (2) MIM Environmental Work- shop II.	Kuala Lumpur Malacca	6 Feb. — 28 April 2—7 December
Miss Rahani bt. Hussin (Environmental Control Officer)	(1) Workshop on Management of Laboratory Safety.	Kuala Lumpur	1 Dec.
Mr. Noor Alshuridin b. Md. Salleh (Environmental Control Officer)	(1) National Workshop on Remote Sensing for Envi- ronmental Management.	Serdang, Selangor	29 Oct. — 17 Nov.

Name and Post	Course/Seminar/Workshop	Place	Date
	(2) Seminar on Remote Sensing Applications for Land Resources Management. (3) Training Workshop on Environmental Planning. (4) Oceanic Seminar.	Kuala Lumpur Canberra, Australia Kuala Lumpur	19–21 November 6–13 May 15 Oct.
Mr. Tengku Bakry Shah b. Tengku Johan (Environmental Control Officer)	(1) Seminar on Remote Sensing Applications for Land Resources Management. (2) Oceanic Seminar.	Kuala Lumpur Kuala Lumpur	19–21 November 15 Oct.
Mr. Choy Chee Keong (Environmental Control Officer)	(1) Seminar on Industrial Refuse Disposal in Small and Medium sized industries.	Bangkok	3–14 Dec.
Mrs. Kalsom bt. Abd. Ghani (Environmental Control Officer)	(1) Seminar on Industrial Refuse Disposal in Small and Medium sized industries.	Bangkok	3–14 Dec.
Mrs. Halimah bt. Hassan (Environmental Control Officer)	(1) Course on Management of National Register of Potentially Toxic Chemical. (2) Seminar on the Management and Utilisation of Industrial Wastes. (3) Workshop on Management of International Seminar.	Geneva UPM Serdang Kuala Lumpur.	29 Oct. – 15 Nov. 13–14 Sept. 1–16 Oct.
Mr. Rusli b. Che Husin (Environmental Control Officer)	(1) MIM Environmental Workshop II.	Malacca	2–7 Dec.
Mrs. Choong Mei Chun (Environmental Control Officer)	(1) MIM Environmental Workshop II.	Malacca	2–7 Dec.
Mr. Abdul Rahim b. Md. Shahid (Environmental Control Officer)	(1) Oceanic Seminar.	Kuala Lumpur	15 Oct.
Mr. Zulkifli b. Abdul Rahman (Environmental Control Officer)	(1) Seminar on Water Quality Management.	Bandung, Indonesia	7–17 May
Mr. Charanpal Singh a/l Karpal Singh (Environmental Control Officer)	(1) Second ASEAN Workshop on Biogas Technology.	Kuala Terengganu	8–13 Oct.
Mr. Ahmad Kamarulnajib b. Che Ibrahim (Environmental Control Officer)	(1) Seminar on Water Recycling Technology for Public Water Supplies and Industrial Usage. (2) Application of Cultured Bacteria in the Biodegradation of Waste Effluent.	UPM Serdang, Selangor Subang Jaya, Selangor	26–29 Nov. 3 Oct.
Mr. Omar b. Mohamad Zain (Environmental Control Officer)	(1) Course on Protection of Marine Environment.	Japan	13 Sept. – 9 Nov.

Name and Post	Course/Seminar/Workshop	Place	Date
Mr. Mohamad Sayuti b. Sapeai (Environmental Control Officer)	(1) Seminar on Radiation Protection Safety.	Kuala Lumpur	29–30 Dec.
Mrs. Pauziah Hanum bt. Ab. Ghani (Environmental Control Officer)	(1) Seminar on Water Recycling Technology for Public Water Supplies and Industrial Usage.	UPM Serdang, Selangor	26–29 Nov.
Mr. Mohd. Shaari bin Gusti (Senior Executive Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johor Bharu	29 Oct. – 3 Nov.
Mr. Saari b. Che' Lah (Senior Assistant Environmental Control Officer)	(1) Exercise Malacca '84.	Kuala Lumpur/ Johore Bharu.	29 Oct. – 3 Nov.
Mrs. Zaimah bt. Ghazali (Acting Senior Asst. Environmental Control Officer)	(1) Course on Environmental Engineering.	Japan	27 Sept. – 11 Nov.
Mr. Shukri b. Ahmad Marzuki (Asst. Environmental Control Officer)	(1) Oceanic Seminar.	Kuala Lumpur	15 Oct.
Mr. Nor Razzaman b. Hamzah (Asst. Environmental Control Officer)	(1) Course/Seminar on National Drinking Water Quality	Kota Bharu, Kelantan	27–31 Oct.
Mrs. Rokiah bt. Bakrun (Clerk)	(1) Basic Clerical Training Project.	Kuala Lumpur	17 March
Mrs. Chan Lai Sheong (Stenographer)	(1) Micro Computer (Word Processor) Usage Training	Petaling Jaya	10 March
Mrs. Siti Asiah bt. Yahaya (Stenographer)	(1) Stenographer Training Project.	Kuala Lumpur	5 March
	(2) Micro Computer (Word Processor) Usage Training.	Petaling Jaya	10 March
Ms. Rabiah bt. Abd. Hamid (Typist)	(1) Micro Computer (Word Processor) Usage Training.	Petaling Jaya	10 March

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- Department of Fisheries
- Department of Forestry
- Department of Geological Survey
- Department of Marine
- Department of Meteorological Services
- Department of Public Works
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- Socio Economic Research Unit, Prime Minister's Department
- Standard and Industrial Research Institute of Malaysia
- Fisheries Development Authority
- National Electricity Board
- Palm Oil Research Institute of Malaysia
- PETRONAS
- Tourist Development Corporation
- University of Agriculture Malaysia
- University of Malaya
- National University of Malaysia
- University of Technology Malaysia
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