KEMENTERIAN SAINS TEKNOLOGI DAN ALAM SEKITAR
Perpustakaan
Bahagian
Alam Sekitar

Teks Ucapan Oleh Encik S.T.Sundram, J.S.M., Ketua Pengarah Alam Sekitar Malaysia Kepada Persatuan Perubatan Malaysia (Malaysian Medical Association) Cawangan KL/Selangor/ Pahang Pada Hari Ahad, 30hb. Januari, 1983 Jam 4.00 Petang Di Atas Tajuk "Environmental Issues In The Klang Valley"

Yang Di Pertua
Malaysian Medical Association
Cawangan KL/Selangor/Pahang,

Para doktor, tuan-tuan dan puan-puan.

Terlebih dahulu saya ingin merakamkan rasa sukacita saya kerana dapat peluang ini membincangkan dengan para hadirin satu topik yang semasa iaitu 'Isu-Isu Alam Sekitar Di Lembah Kelang'.

As I was saying, I am delighted to share a few thoughts with you this afternoon on a topical subject namely "Environmental Issues In The Klang Valley". The timing is significant in that the 11th anniversary of the declaration of the Federal Territory is about to be observed. And only recently the enlightened Ruler of this State reiterated at an investiture ceremony in Petaling Jaya on 19th January, the need for His Royal Highness's subjects to act positively on environmental concerns.

"Unless the nations act decisively to alter present trends, the world during the rest of the century will grow less able to support human life", so reads the principal finding of "The Global 2000 Report" a comprehensive study prepared for then U.S.President Jimmy Carter and published in August 1980.

What indeed do we understand by the term "Environment". According to an informative article featured in the December 1981 issue of "The Rotarian" magazine, "The Global 2000 Report" gives two principal meanings. "First it signifies the world around us, which is projected to grow more polluted and ugly". An alternative

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meaning has to do with the whole system of natural production following the 1935 interpretation by British Scientist, Arthur G. Tansley of air, land, water, sunlight and the interplay of living things as constituting a vast network of manufacture and life support which he termed as ecosystem. Today the ecosystem tends to be divided for convenience into four main groups: the waters, forests, grazing lands and farmlands.

Turning to the Klang Valley, understandably it continues to be the focus, indeed the hub of industry, commerce, transport, finance and banking, of Government and even of higher education with 4 out of 5 universities still located here. By the same token much like two sides of the same coin, most of these activities are accompanied by pressure on resources, noise, air and water pollution and other stressful situations.

The thrust of no less than eight pieces of Federal Legislations, numbered among which is the Environmental Quality Act, 1974 (which my Agency enforces) plus a range of State Legislation of an environment-related nature is to help ensure that Malaysia, including the Klang Valley, remains a livable place. The Environment Division of the Ministry of Science, Technology and Environment is relatively new in the machinery of Government, yet on any objective assessment must be reckoned as having made its mark on the scene, a force to be reckoned with by the polluters of the Malaysian environment.

In the context of the Klang Valley, for example, a sensible balance has to be struck so that development proceeds apace without destruction. That process incidentally is by no means an easy nor a simple one, more so in a dynamic setting with frequent changes in key variables. Striking a sensible balance thus calls for unremitting vigilance coupled with co-ordinated, imaginative and innovative actions as part of an overall strategy to help maintain the right balance between the seemingly conflicting demands of development and environmental protection/conservation.

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In the final analysis, effective environmental management reduces largely to a matter of attitudes and values, taking a unified view of industry, environment and society. The true value of environment, it should come to be realised, does not lie in its exploitation for short-term gain accruing to sectional vested interests but in its sound management for sustained productivity for generations and generations.

To us in the Klang Valley, in common with the rest of Malaysia, diversification and growth remain important objectives, more so to help generate the resources needed for environmental protection and to make a success of the New Economic Policy which is premised on an ever expanding economy.

That the World Health Organization (WHO) has chosen the theme "Health for all by the year 2000: The Countdown has begun" for the observance of World Health Day 1983 on 7th April is testimony to the need to sensitise the whole world to live up to the pledge by the Member States of the WHO. Not only governments but people too have the right and duty to be active agents of the change of health, whether individual or community section.

Let me enumerate briefly the various environmental problems in the Klang Valley.

1) Discharge of effluents and obnoxious gases

Effluent discharges from industries such as palm oil, rubber, textiles, food processing, electronic and electro-plating industries, wood-based industries result in heavy loads of not only organic but of toxic elements including heavy metals.

2) Piggery Wastes

In the Klang Valley there are several areas of pig farming namely in Sg. Buloh, Kelang, Gombak and Petaling. However, the

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pollution of waterways by piggery wastes are especially serious in the Mukim of Sg. Buloh where there are approximately 99 pig farms with a total standing pig population of 140,000. The waste water from these farms are discharged directly into the Sg. Hampar and Sg. Kedondong which ultimately join the Sg.Buloh. Further downstream there is a JKR Water Intake Point which is affected by these piggery wastes.

The Environment Division, Ministry of Science, Technology and Environment is well aware of this problem and had initiated a task force committee, among whom comprises of representatives from SIRIM, UPM, Veterinary Division to study the problem and to put forth recommendations to overcome the problem and towards this end, SIRIM proposes to set up an experimental treatment system at the State Veterinary Centre in Sg. Buloh to develop suitable and economical treatment technology. In the meantime, the JKR (Bekalan Air) has proposed to shift its Water Intake Point further upstream of Sg. Buloh so as to avoid taking in water polluted by piggery wastes.

3) Motor Vehicle Emissions

Emissions of various types of gaseous pollutants such as carbon monoxide, oxides of nitrogen, unburnt hydrocarbons and smoke and lead emissions considering that lead content in our petrol at 0.84 gms/litre among the highest in the world.

Motor vehicle population in Peninsular Malaysia rose from 729,000 in 1971 to nearly 2.8 million by mid 1982 of which some 25% move in the Klang Valley and grow at a rate of 13% per annum.

The substantial increase in motor vehicles especially in the urban areas aggravates the problem of air pollution with the emission of carbon monoxide, nitrogen oxide and hydrocarbons into the atmosphere which are hazardous to health. Under the Motor Vehicles (Control of

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Smoke and Gas Emissions) Rules 1977, 1,516 vehicles in Peninsular Malaysia were issued with summons for emission of excessive dark smoke and compounded for a total of more than $70,000 in 1981.

4) Huge Quantities Of Particulates

Gaseous pollutants such as sulphur dioxide from power stations and other fuel burning equipment and oxides of nitrogen are emitted.

The climatic and topographic character of an area can also cause high pollutant concentration. The Klang Valley is considered to have a very high pollution potential which is two to three times as high as that of some major US cities because of a combination of the following factors: Kuala Lumpur is nested within a bowl, surrounded by hills, and the heat pollutants are trapped within, thus the ability of the atmosphere to disperse pollutants is adversely affected. In addition, during the day winds from the sea carry pollutants from Port Klang to Klang, Shah Alam, Subang Jaya, Petaling Jaya and Kuala Lumpur, which are all within 40 kilometres of each other, while at night, pollutants from Kuala Lumpur are carried to Klang by inland breezes. Furthermore, the heat island within the city centre presents a health hazard by trapping high concentrations of pollutants.

By the third quarter of 1982, a total of 251 air quality monitoring stations was established by the Environment Division especially in the main industrial areas and town centres. There are 35 suspended particulate monitoring stations, 192 dust deposition gauges to monitor dustfall, one station for sampling sulphur dioxide and 7 stations for monitoring total acidity while 6 stations have been established for estimating sulphur dioxide, along with two carbon monoxide continuous monitors and two ozone continuous monitors, three sulphur dioxide continuous monitors and three oxides of nitrogen continuous monitors.

The monitoring results of the Environment Division in 1981 showed that the mean annual suspended particulate (TSP) levels in a typical residential area i.e. Damansara Utama was 97 ug/$m^{3.50}$. On the

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other hand, the mean annual TSP levels over the Petaling Jaya industrial areas was 196 ug/m^3. Compared with the proposed Malaysian environmental quality standard for a 24-hour goal of 100 ug/m^3 for an industrial area and of 50 ug/m^3 for a non-industrial area, the reading for both Damansara Utama and Petaling Jaya therefore exceeded the proposed goals.

The monitoring results, however, showed that sulphur dioxide (SO_2) levels in industrial areas were tolerable. Measurements conducted in six industrial areas throughout the country recorded SO_2 levels of less than 100 ug/m^3 while one or two stations near major fuel combustion sources registered levels ranging from 100 ug/m^3 to 170 ug/m^3. For a specific residential area, namely Damansara Utama, the sulphur dioxide level was well below 5 ug/m^3. All these measurements are below the SO_2 goal for ambient air envisaged in the proposed Malaysian environmental quality standard of 200 ug/m^3 for an industrial zone and 125 ug/m^3 for a non-industrial zone.

Pollution caused by quarry dust remains a major problem in Malaysia. Dust monitoring conducted at the Ampang Quarry area recorded dust loads of 200 mg/m^2/day and 800 mg/m^2/day.

5) Siltation

In the light of intensive housing development and urbanization including building of highways, an example being the KL/Karak Highway non-compliance with laws and guidelines results in heavy siltation and accurrence of flash floods.

Also worthy of mention is logging activities in the watershed regions such as in Ampang.

Solid Wastes

Considerable quantities of solid wastes in the form of residues from processing operations as well as sludges from waste treatment plants are generated which in the past has been indiscriminately mixed with refuse and disposed or at various dumping sites.

In the Klang Valley alone, studies have shown that total industrial wastes generated from those sources is some 20 times greater than any other comparable area in Malaysia.

Noise

Noise from a variety of industrial sources especially those from wood-based plants continued to be of serious concern. Haphazard location, the lack of control measures and out-of-date machinery contributed to this state of affairs. A National Noise Control Committee is actively involved in studies of noise from industrial, traffic, community and airport sources and appropriate regulations for noise control are being developed. Meanwhile, zoning techniques are being applied and noise control specifications imposed on equipment and industrial buildings.

Since the Klang Valley is highly urbanised, it is susceptable to noise problems arising from heavy vehicular traffic, from industrial operations and construction activities, noise from civil aviation sources as well as community noise.

Traffic Congestion

Ad hoc, piecemeal and haphazard development in the past has resulted in traffic congestion problems.

Tackling these problems calls for co-ordinated and effective actions, not just among the authorities, but with active involvement of the public to help bring about a sound environment and key professional bodies such as yours and community-based organisations can play a useful role.

Thank you.

BAHAGIAN ALAM SEKITAR,
KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR.

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WELCOME ADDRESS BY ENCIK NIK MOHD. AMIN, SECRETARY GENERAL, MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT AT THE ASEAN-EEC SEMINAR ON WATER RESOURCE MANAGEMENT - PROBLEMS AND PERSPECT ON 1 AUGUST 1983 AT THE FEDERAL HOTEL, KUALA LUMPUR

On behalf of the Ministry of Science, Technology and Environment, I have great pleasure in welcoming you all to this Seminar on Water Resource Management organised by my Ministry in co-operation with the Public Works Department, Drainage and Irrigation Department and the Economic Planning Unit of the Prime Minister's Department and fully sponsored by EEC. The presence of the Honourable Minister of Science, Technology and Environment to officiate at this Seminar this morning amidst his extremely busy schedule, particularly when Parliament is in Session, is indeed a source of encouragement and reflects his interest and concern over the whole spectrum of protection, development and management of water resources. I have great pleasure in welcoming participants from the ASEAN, our Resource Person from EEC, Mr. J.R. Simpson, and all other distinguished persons in our midst today.

Adequacy of water resources both in quantitative and qualitative terms is important to developed and developing countries in at least three aspects. Firstly as water is essential to life (next in importance only to oxygen); secondly as a primary raw material of modern organised human settlements, industry and agriculture; thirdly as an important segment of our environment covering some two-thirds of the global surface. The demand for good quality water which has increased in the past few years will continue at an accelerating rate because of accelerating agriculture development, industrialisation, urbanization and per capita income. It is therefore imperative that our limited water resources have to be protected, developed and managed with a view to optimising the availability of freshwater.

It has been truly heartening to see the ready and willing response to our call for participation in this Seminar by persons from the ASEAN member countries who are involved either directly or indirectly concerned with water resources planning, development and management. It is our fervent hope that this enthusiasm to the commitment to protect and preserve our water resources will be sustained in the years ahead

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and greater co-operation among ASEAN member countries in this important field will be forthcoming.

We are most grateful to Commission for European Economic Communities (EEC) for fully sponsoring this Seminar and their interest in the welfare of the ASEAN region and to Mr. James Simpson for bringing the experiences of the EEC in Water Resource Management to our doorsteps here. I would also like to express our sincere gratitude and appreciation to the International Convention Secretariat of the Prime Minister's Department for so ably handling the Seminar arrangements. Our thanks are also due to the Klang Valley Planning Secretariat, Drainage & Irrigation Department, Kuala Lumpur City Hall and the Selangor Water Supply Department for arranging the technical field visit and for the briefing. Our thanks are also due to all those who have agreed to present papers contribute to the discussions and those who chair the various sessions. Finally to the Organising Committee for their hard work and untiring efforts in successfully organising this Seminar.

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CHAIRMAN'S SPEECH AT THE SALAM EFFLUENT TREATMENT PLANT OPENING ON FRIDAY, 6TH MAY, 1983

Yang Berhormat Datuk Amar Stephen Yong, Menteri Sains, Teknologi dan Alam Sekitar.

Yang Berbahagia Tan Sri-Tan Sri, Datuk-Datuk,

Honoured Guests, Professor-Professor, Ladies and Gentlemen.

On behalf of Ajinomoto (Malaysia) Berhad, I must extend our sincere appreciation to YB Datuk Amar, for having agreed to officiate at this morning's function although I understand he is on his way to Sarawak as soon as this ceremony is over.

Our thanks also go to all of you honoured guests for your presence today.

Ladies and Gentlemen, Monosodium Glutamate (MSG), or better known to you as AJI-NO-MOTO, is produced here, as elsewhere, through a fermentation process. The raw material used here is tapioca starch. The by-product of this fermentation of raw material into Monosodium Glutamate are bacterial body cells, other amino acids and the unutilised part of the raw material. These are the main source of pollutant in our effluent. However, this effluent is a very rich organic material, which with further processing, could be turned into a useful product - an organic fertiliser.

Ladies and Gentlemen, the building which will be declared open soon, is our new effluent treatment plant. This is where we, using high technology, can reduce the Biochemical Oxygen Demand (BOD) to the strict parameters set by the Environmental Quality Act of 1974.

Let me briefly outline how we treat our waste here. Basically, our raw effluent can be classified into 3:

1. The most concentrated pollutant laden effluent comes from the absorbed ion exchange resin tower.
2. The ~~medium~~ medium concentrated effluent coming from the back-washed ion exchange resin tower liquor.
3. The low concentrated effluent mainly water, used in the washing of equipment, tanks and machineries that finally goes into our drains.

The first type of effluent contains 88% BOD. However, this is the effluent that contains useful organic materials. By alienating the raw materials for fertiliser, 41% of the BOD load is reduced.

The second and third effluent is treated in the Activated Sludge Treatment tank where 36% of BOD load is reduced into Carbon Dioxide gas. Excess sludge is produced as a by-product. Together with Heavy Liquor, it is then dewatered into the Hydopress belt filter. The filter cake derived from this belt is blended with other raw material such as Potash and Phosphate,

and dried in our solar house. This became our organic fertiliser. The treated liquor from the activated sludge treatment is clean enough to be discharged into our main drains. Its BOD is now 50 ppm, the parameter limits of effluent set out by the Environmental Quality Act, 1974.

Ladies and Gentlemen, Ajinomoto today has served Malaysia for 21 years. We are in every sense of the word, proudly committed to this country, its people and its laws. We are happy to have invested some ~~$3.6m~~ $5m to build this effluent treatment plant, not only in support of the Malaysian government's emphasis on technological development, but as our moral and social responsibility towards the clean environment of this country. We believe this ultra modern and high technology plant is the first of its kind in Malaysia, and dare we say, in the ASEAN region. With this plant could come the need for more manpower and more technology transfer to Malaysians. Needless to say, through the utilisation of this plant, we have not only managed to keep the environment clean, but diversified our operations as well. Already a major producer of AJI-NO-MOTO in Malaysia, we hope in the near future to be also recognised as a name associated with a high quality complete organic fertiliser, a product so much in demand by the agricultural sector of this country.

Finally, thank you YB Datuk Amar for officiating at this ceremony. Thank you also goes to all of you who are here today, especially those from the Ministry of Science, other government departments, and quasi organisations, friends and associates who have, in one way or the other, helped to make this project a success.

Terima kasih.

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Mesyuarat Majlis Kualiti Alam Sekeliling
Bil: Mesyuarat Ke Duapuluh Empat
Kertas Bil:
Tarikh: 19hb. Julai, 1983.

SIXTH MEETING OF THE ASEAN EXPERTS GROUP ON THE ENVIRONMENT HELD IN YOGJAKARTA FROM 22-24 MARCH 1983

INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) since its inception in 1967 has constantly worked together towards the achievement of peace, progress and prospertiy of the member countries. It is expected that the ASEAN region, being endowed with potential natural resources, will become one of the most important economies of the world during the eighties.

The ASEAN countries are determined to pursue a development pattern which results in significant and sustained improvement in the standard of living of their people. In order to ensure sustained development, countries in the region have taken cognizance of environmental issues.

As early as 1977, United Nations Environment Programme (UNEP) had worked for the establishment of an ASEAN Sub-Regional Environment Programme (ASEP) as the collective answer to the environmental concern of the ASEAN countries. A regional advisory team was commissioned by UNEP as the first step to draft ASEP and to identify collaborative activities for the five countries.

An Experts Group on Environment consisting of representatives from the ASEAN countries has been established under the ASEAN Committee on Science Technology as a forum for dealihg with the environmental aspects of the region. Since its first meeting in 1978, the ASEAN Experts Group on the Environment has met five times to ensure that collaborative activities answer the needs of ASEAN and support the national environment programme of individual member countries. In each ASEAN country there is now a Ministry in charge of the environment.

In May 1981, the ASEAN Ministries in charge of the Environment met in Manila for the first time and adopted the Manila Declaration of the Environment and Committed themselves to the protection of the ASEAN environment. This has meant not only the safeguarding of the

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environment and natural resources, but also the need to make them available for sustained economic development.

The Manila meeting, the first ministerial meeting on the ASEAN Environment, endorsed the first phase of ASEP and its eight goals which include the following :-

(i) Implementation of the Action Plan for the development and protection of the marine environment and the coastal areas of the ASEAN Seas.

(ii) Preparation of tested Environmental Impact Assessment (EIA) guidelines for specific developmental activities, based on case studies in ASEAN countries, such as for water resources development projects; and actual employment of these guidelines in the integration of the environmental dimension in development planning and project evaluation.

(iii) Implementation of a regional instrument in regulating international trade in endangered species of flora and fauna.

(iv) Development and promotion of a regional network of selected protected areas of significance for the conservation of nature, including proper management of these reserves to ensure the conservation of wild flora and fauna of the region.

(v) Fully established regional capability in pollution control technology particularly for those industries which are of significance to ASEAN region such as agro-industry and mining industry.

(vi) Establishment of adequate urban air and water quality monitoring systems in major urban areas of the region to serve as a significant measure in alleviating urban environmental pollution.

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(vii) Development of a network of institutes offering coordinated programmes on environmental training and education, including research on environmental subjects.

(viii) Establishment of an information dissemination network among ASEAN governments, non-governmental organization and the public at large in order to increase the awareness and broaden the knowledge of the ASEAN people on environment.

The past four and a half years have reconformed the exemplary spirit of co-operation among ASEAN countries on environment. During this period, action plans have been formulated for the priority areas of Marine Environment, Nature Conservation and Environmental Education whereas extensive programmes have been established under the priority areas of environmental management including Environmental Impact Assessment, Industry and Environment, and Environmental Information and Data.

The first phase of ASEAN has been successfully completed and the stage has been set for intensified sub-regional co-operation in the environmental field.

ASEAN has now embarked on its second phase of the Environment Programme - ASEP II, which is designed to be action-oriented with emphasis on solving immediate needs of the region. The ultimate objective of ASEP II is to strengthen regional collaboration in environmental management aimed at regional self-reliance.

The Sixth Meeting of the ASEAN Experts Group On the Environment

The Sixth meeting was held in Yogyakarta, Indonesia from 22-24 March 1983. The meeting was attended by delegates from Indonesia, Malaysia, the Philippines, Singapore and Thailand. Observers from Australia, the United Nations Environment Programme (UNEP) and United States Agency for International Development (USAID).

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The meeting had before it a 9 point agenda as follows:-

1. Opening Ceremony
2. Election of Chairman and Vice-Chairman
3. Adoption of Agenda
4. Business Arrangements
5. Report by Interim Coordinator
6. Programme Matters :
   - i. Review of the Present Status of ASEP I
   - ii. Nature Conservation :
     - a) ASEAN Heritage Parks and Reserves
     - b) ASEAN Agreement on the Conservation of Nature and Natural Resources
     - c) Wildlife Research and Development
       - (i) Establishment of ASEAN Wildlife Society
       - (ii) Regional Project on Wildlife Resources Development and Utilization for Rural People in Southeast Asia
       - (iii) Urban Park Development and Greenery
       - (iv) ASEAN Workshop for Park Managers
       - (v) Wildlife Research and Management Centre
     - d) Training in the Recovery of Tropical Forest following disturbance in ASEAN
     - e) ASEAN Nature Conservation Information Centre
   - iii. f) Industry and Environment Urban Air Quality Monitoring and Management
   - iv. Environmental Education and Training :
     - a) Draft Action Plan on Environmental Education and Training for ASEAN Countries, June 1983 - June 1986
     - b) Regionalization of the School of Environmental Conservation Management, Ciawi, Indonesia
     - c) Environmental Education and Training (The Indonesian Experience)
   - v. Environmental Impact Assessment:
     - a) Environmental Impact Study on Transmigration
     - b) Environmental Impact Study on Industrial Project in Aceh region
     - c) General Guidelines on the Development and Management of Coastal Areas
     - d) The Island Ecosystem Development Approach
     - e) Environmental Impact Study of Coal Fired Power Stations and Coal Based Industries

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vi. ASEAN Environment Programme (ASEP) II

7. Other Matters

8. Date and Venue of Next Meeting

9. Consideration and Adoption of the Report and Joint Press Release

The highlight of the meeting is summarised as follows :-

I. The meeting reviewed the status of the first phase of the ASEAN Sub-Regional Environment, Programme (ASEP I).

Under ASEP 1, emphasis was gien to the formulation of action plans identifying those common activities which would benefit ASEAN. At the same time, series of technical meetings on specific priority areas were organized providing opportunity for ASEAN environmentalists to discuss technical and policy issues on environment and to get acquainted with each other's national activities. The The full participation of national and regional experts in such meetings had ensured that collaborative activities formulated are conducive to the need of ASEAN and are supportive to national environment programmes.

The definitive nature, reaching for the eight established goals, had led the execution of ASEP I in a coherent manner. Technical assessments on environmental situation and existing institutional capabilities were undertaken. As an outstanding example, ASEAN felt the compelling need to establish a co-operative programme on marine environment on a continuing basis. Thus the East Asian Seas Trust Fund was established in co-operation with UNEP, with direct financial contributions from ASEAN countries. In the priority area of Nature Conservation and Terrestrial Ecosystems, the establishment of ASEAN Heritage Parks and Reserves is becoming a reality. Concurrently, the benefit of EIA practices in ASEAN was analysed in-depth and regional collaboration on air and water quality monitoring and management and pollution control technology was carried out.

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II. a) The draft on ASEAN Heritage Parks and Reserves was adopted as an ASEAN Publication and the member countries Conference list of ASEAN Heritage Parks and Reserves. This is a new category of protected areas recently conceived for a select group of national parks and nature reserves that have outstanding wilderness and other values. These include the Kerinci-Seblat group of reserves, the Leuser National Park and the Lorentz Nature Reserve in Indonesia; the Kinabalu National Park, the Mulu National Park and the Taman Negara in Malaysia; the Mt. Apo and the Iglit-Baco national parks in the Philippines; and the Khao Yai National Park and Kor Tarutao Marine Park in Thailand.

b) ASEAN Agreement on Conservation of Nature and National Resources was adopted. This will be submitted to the Committee on Science and Technology for final endorsement at its Ninth Meeting in September 1983 and subsequently to the appropriate ASEAN bodies for the signing of the Agreement.

III. It was decided that project proposals be prepared on the recommendations from the ASEAN-UNEP Workshop on Air Quality Monitoring and Management held in Singapore (10 - 13 NOV. 1982) for submission to COST for consideration under ASEAN-EEC Co-operative Programme.

IV. The meeting considered the Draft Action Plan on Environmental Education and Training prepared by UNESCO and identified priority areas for inclusion in ASEP II.

V. The meeting recommended that an ASEAN Workshop on Environmental Impact Assessment be convened to consider the environmental impact on coastal areas and island ecosystem development.

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VI. The meeting adopted the second phase of the ASEAN Sub-Regional Programme (ASEP II) with the following new goals :-

- Implementation of demonstration projects on environmentally-sound development to varify the established environmental concepts and guidelines on environmental management and to serve as pilot projects in integrating the environmental dimension in development activities at the field level.

- Development of tested methodologies in integrating environmental aspects of development plans and project evaluation. These methodologies should be applicable to the regional situation and based on the experience of the ASEAN region.

- Enhancement of regional capability in environmental legislation through the development of a regional network of institutions, including institutions of higher learning, offering joint research programmes as well as education and training in environmental law, leading towards manpower development and instructional material development.

The meeting recommended that :-

(i) Project proposals that have been adopted at the Sixth meeting as well as other new proposals be included in ASEP II.

(ii) The Interim Co-ordinator will seek UNEP assistance to incorporate all the proposed changes into a final document for ASEP II.

(iii) Thailand submit informally the amended ASEP II to the Executive Director of UNEP before the UNEP Governing Council Meeting in Nairobi in May 1983.

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VII. The next meeting of the ASEAN Experts group on Environment will be held in Malaysia in February/ March 1984.

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TAKLIMAT OLEH KETUA PENGARAH ALAM SEKITAR, BAHAGIAN ALAM SEKITAR, KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR, MALAYSIA KEPADA Y.A.B. DATUK KETUA MENTERI SABAH DAN AHLI-AHLI JAWATANKUASA TINDAKAN NEGERI SABAH
PADA 4HB. SEPTEMBER, 1982

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INTRODUCTION

The task of environmental management is both vast and complex that to accomplish it effectively, the responsibility must be shared. This is all the more necessary in the Malaysian context as Malaysia has a three-tier system of Government - Federal Government, State Government and the Local Authorities with each level having legislative and administrative competence in specific fields. This implies taking into account division of responsibilities among the three levels of Governments in our approach to solving environmental problems, through effective co-ordination and willing co-operation so that available resources of manpower and funds are deployed to good purpose, avoiding both duplication of efforts and resources being spread too thinly to be effective.

In the past, there has been a tendency to equate the development goal with the narrowly conceived objective of economic growth as measured by the rise in gross national product. It is usually recognised today that high rates of economic growth necessary and essential as they are, do not by themselves guarantee the easing of urgent social and human problems. Indeed in many countries high growth rates have been accompanied by increasing unemployment, rising disparities in incomes both between groups and between regions and the deterioration of social and cultural values.

Obviously a developing country like Malaysia must give priority to economic programmes to meet the basic material needs of the population. Equally obvious is the fact that it cannot afford to let pollution spoil the gains made through development, or allow its resource regenerative capacity to be sapped and destroyed by environmental mismanagement. Thus a sensible balance is needed.

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To this end, it is important that environmental concerns are integrated into development planning and regarded as part and parcel of the overall framework of economic and social planning. Environmental concern should come to be regarded as yet another dimension of the process of development, not viewed separately or as an afterthought.

In summary, the current environmental problems facing Malaysia can be broadly categorised into two groups:-

- Those arising as a result of development of Malaysia's land and other natural resources both renewable and non-renewable.

- Those arising from the discharge of undesirable wastes products or effluents into the environment as a result of industrialisation and human settlement.

ENVIRONMENTAL LEGISLATION

Environmental consciousness in Malaysia can be said to date from as far back as the 1920s when various Water Enactments and the Enactments in three East Coast States of Peninsular Malaysia establishing what has since become the National Park were passed. Currently there are about 26 environmental-related legislations in force in Malaysia as shown in Appendix I. These pieces of legislation, while not necessarily devoted entirely to environmental matters, contain provisions or references that have to do with environmental control.

For example, the National Land Code 1965 divides land use into three categories:-

i) agriculture
ii) building
iii) industry

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The National Land Code, therefore, enables proper land use planning taking environmental factors into consideration as well as control of siltation.

The land Conservation Act 1960 helps to control soil erosion and siltation.

The Waters Enactment, 1920 prohibits the disruption of any river so as to interfere with the flow of water as well as restricts the discharge of specific substances detrimental to the beneficial uses of the river.

Similarly, the Factories & Machinery Act, 1967 deals with occupational safety and health in the working environment, the Mining Act controls discharges from mining activities into water courses, the Forest Enactment (1934) and Rules (1935) provide for the establishment of forest reserves as well as control logging.

However, none of the above legislation has been or is capable of being applied towards the specific task of dealing with environmental problems in a comprehensive manner. In view of this, the Environmental Quality Act, 1974 was enacted as a substantive piece of legislation complementing existing ones.

STRATEGY FOR ENVIRONMENTAL MANAGEMENT

The Environmental Quality Act, 1974 and the various Regulations under it are directed principally towards the second group of environmental problems, namely, industrial pollution in the form of discharges and emissions and sewage from domestic sources which damage our common property resources, namely, land, air and water. However, they represent by no means the complete answer in tackling the broad environmental issues of the first group emanating from the development of land and natural resources which are considered to present equally serious problems as compared to the second group. Nevertheless, these Regulations constitute positive step towards the control pf pollution from point sources.

The first group of problems can only be overcome through proper environmental planning and through measures taken right from the initial planning stage of a project or development.

Although the task of protecting the environment has been set in motion by the Environment Division of the Ministry of Science, Technology and Environment, it is not possible for it to be involved directly in the technical procedures and control mechanisms for coping with various environment-related matters (such as use of pesticides, solid waste disposal, control of mining discharges) and it would mean unnecessary encroachment into departmental jurisdiction of other agencies. It is, therefore, only logical for the implementing agencies themselves to incorporate environmental safeguards in the course of the implementation of their various programme of activities.

The Environment Division, therefore, has adopted a two-pronged strategy for the protection and enhancement of the quality of the environment encompassing both statutory and non-statutory means.

The choice of these control measures and their application would depend significantly on the areas to be controlled. The statutory control is adopted in areas which are expressly within the competence of the Environmental Quality Act, 1974 or more precisely in those matters which are specified in the Federal or Concurrent Lists. The non-statutory control, on the other hand, is applied in areas where the existing responsibilities are shared by various government agencies and in those areas which are within the competence of the State Governments. It will be noted that matters such as land, agriculture, forestry, mining, soil erosion, solid waste disposal, drainage and irrigation etc. which are fundamentally important in environmental management are categorically under the State and Concurrent Lists, and it is in these areas that the non-statutory control must be directed with great care to avoid unnecessary administrative conflicts and duplication of efforts.

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The statutory means are being effectively instituted through the various Regulations in accordance with the Environmental Quality Act, 1974. They are, among others:-

(i) Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations, 1977 - P.U.(A) 342/1977.

(ii) Environmental Quality (Clean Air) Regulations, 1978 - P.U.(A) 280/1978.

(iii) Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Regulations, 1978 - P.U.(A) 338/1978.

(iv) Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979 - P.U.(A) 12/1979.

(v) Motor Vehicles (Control of Smoke and Gas Emission) Rules 1977 - P.U.(A) 414/1977.

While the first four are made under the Environmental Quality Act, 1974 and hence applicable to the whole of Malaysia, the last mentioned, having been made under the Road Transport Ordinance 1968, is applicable to Peninsular Malaysia only. Under these Regulations, the approach to control consists of the establishment of standards for the reduction of pollutants, enforced by both the legal and administrative methods including the levying of pollution charges. The rationale for the levying of pollution charges is to prod and bring home to industry the need to move in the direction of pollution control.

The non-statutory control would be in the form of guidelines intended to help the Government Agencies and State Governments to incorporate environmental considerations into their development plans. The Environment Division has already developed the following guidelines:-

(a) the control and prevention of erosion and siltation;

(b) the siting and zoning of industries;

(c) environmental impact assessment; and

(d) the selection and management of sites for the disposal of solid and hazardous wastes.

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Basically, the problems of soil erosion and siltation result from the use of land. Therefore, this problem can only be overcome by employing suitable control in line with the provisions of the National Land Code 1965 and Land Conservation Act 1960 and to practise preventive measures especially at the planning stage of a project whether for agriculture, mining, housing, road construction or logging. The guidelines supplement the existing legislations for soil conservation. As matters pertaining to land use fall within the province of the State Authority, it is appropriate that control measures to prevent soil erosion be carried out by appropriate agencies within the legal framework of existing institutions.

The usefulness of zoning is self-evident. Without it, pollution problems can grow to unmanageable proportions. However, in order that zoning for various activities may be effective, the guidelines must be comprehensive and adhered to strictly, and requires co-ordination between Federal and State Authorities. As control over land use and siting of industries and housing rests with the State Governments and Local Authorities, these guidelines would help these agencies to integrate environmental considerations into development planning.

Under the proposed environmental impact assessment procedure, a number of scheduled projects with potential for significant impact would be required to have an assessment submitted to the Approving Authorities. Initiators of the project will be required to submit the various environmental and pollution impacts which can be foreseen and quantified so that steps may be taken in advance to plan and control their environmental consequences.

The objectives of the guidelines for the selection of sites for the disposal of solid and hazardous wastes and their management is to meet the need for the selection of environmentally acceptable landfill sites and for their proper development and management on sound engineering principles so as to bring about improvements in disposal practices at relatively low cost as well as to reclaim land for useful future use.

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Similarly, all the other environment-related legislation could be resorted to effectively through existing Federal and State institutions for the protection and enhancement of the quality of the environment with the help of appropriate guidelines developed from time to time by the Division of Environment as a means of non-statutory control.

In order to help State Governments to effectively carry out this task of environmental protection and management, the Division of Environment has established Regional Offices in Seberang Prai, Kuala Lumpur, Kuantan, Jonor Bharu, Kuching and Kota Kinabalu.

CO-OPERATION IN THE CONTROL OF POLLUTION ARISING AS A RESULT OF DISCHARGE OF SEWAGE AND INDUSTRIAL EFFLUENTS (PALM OIL AND RUBBER INDUSTRIES EXCLUDED) INTO WATERCOURSES AND EMISSION INTO THE ATMOSPHERE

The Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 and the Environmental Quality (Clean Air) Regulations are directed principally towards the control of environmental pollution arising from the discharge of sewage and industrial effluents (other than palm oil and rubber industries) and emissions which damage our common or shared resources, namely land, air and water. These Regulations are administered by the Environment Division as the enforcement authority.

As matters pertaining to land use such as housing development, sewerage, siting of industrial estates, location of industries and approval of industrial applications are fundamentally important in environmental management, fall explicitly under the jurisdiction of the State Governments either directly or through authorities subordinate to them such as Municipalities and other local authorities, have a definite role in ensuring the effective implementation of the Sewage and Industrial Effluents Regulations and the Clean Air Regulations.

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The Environmental Quality (Sewage & Industrial Effluents) Regulations 1979 - P.U.(A) 12/79

These Regulations came into force on 1st January 1979 for industries that commenced operation on or after 1st January 1979 and on 1st January 1981 for industries that came into existence after 1st January 1979. Similarly the Regulations apply to discharge of effluent from municipal sewage treatment plants. The rationale for somewhat more relaxed approach to existing industries is that they were established before the coming into force of the relevant Regulations and time had to be given for the design and implementation of effluent treatment systems, where in some cases, the needed equipment having to be imported from developed countries.

The approach to pollution control under these Regulations involves both preventive measures through proper environmental planning as well as the imposition of acceptable conditions of discharge by way of effluent standards which the factories are required to meet prior to discharging their effluents into watercourses.

Section 4 of the Regulations requires that application should be made to the Director-General of Environmental Quality for permission to commence construction of any factory on any land and for carrying out any work in any premises which will result in an effluent discharge.

In approving such application, the Environment Division will carry out a presiting evaluation of the site to assess the suitability of the site on environmental grounds and ensure that all measures for the control of pollution, such as the treatment of the effluent, have been incorporated into the plans. Proper siting is of considerable importance as it helps in the choice of effective control measures and reduces the cost of implementing such measures.

Therefore, as approving authorities for industrial applications, the State Governments and other authorities subordinate to them have an important role in ensuring that all such applications are referred to the Environment Division in good time.

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This is all the more important since there is still a lack of technical know-how and skilled personnel to operate sophisticated treatment systems. In this respect it is advisable for Municipalities and other Local Authorities to adopt a policy of admitting the industrial wastes into public sewers for treatment of the wastes along with sewage at the Municipal treatment plants. In this way very effective control can be exercised on pollution from industries. Industry in turn can be charged the appropriate fee for the treatment of their effluents at Municipal treatment plants.

Another area where the State Governments have an important role is in the control of sewage discharges from housing estates and commercial establishments. The present practice of permitting septic tanks as a control measure should be discarded in view of its ineffectiveness, as the effluent from septic tanks will not be able to meet the standards stipulated in the Sewage and Industrial Effluents Regulations.

In accordance with Paragraph 4(4) of the First Schedule of the Sewage & Industrial Effluents Regulations, sewage discharges from any housing or commercial development, both with more than 30 units should meet the discharge standards stipulated in the Regulations. Therefore, it is necessary to ensure that all housing and commercial developments or both with more than 30 units should be provided with a centralised sewage treatment system, the discharge from which should be capable of meeting the standards stipulated in the Regulations. This would not only help abate pollution from sewage but also would expedite the provision of modern sanitation.

Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations 1979
Regulations, 1977; and
Environmental Quality (Prescribed Premises) (Raw Natural Rubber)
Regulations, 1978

The State Authorities as a rule does not require conversion of land use from agriculture to industries in the case of palm oil mills and rubber factories on the premise that it is ancillary to the operation of the palm oil or rubber estates.

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Although the Environment Division, through licensing procedure, enforces appropriate conditions to safeguard the environment there is scope for closer co-operation between the State Governments and the Division of Environment by exchange of information on a regular basis.

On the matter of siting of palm oil mills and rubber factories, since these involve appropriate siting taking environmental factors into account as well as licensing, it is necessary for all such applications for the establishment of new palm oil mills or rubber factories to be forwarded to the Environment Division for approval in good time.

The Environmental Quality (Clean Air) Regulations, 1978 P.U.(A) 280

The object of the Environmental Quality (Clean Air) Regulations, 1978 made under the Environmental Quality Act, 1974 and enforced on 1st October, 1978 is to control and abate air pollution by means of the following measures:-

(a) Control the location of new industrial facilities (which are potentially polluting) with respect to residential areas;

(b) Control the burning of wastes, particularly open-burning;

(c) Control the emission of dark smoke from chimney stacks;

(d) Control the installation of fuel-burning equipment;

(e) Control the emission of air impurities.

In order to achieve the above objectives, full co-operation from Local Authorities is required.

Under the Clean Air Regulations, any new industrial undertaking within a residential area or housing estate or within 1000 meters of the nearest dwelling in a housing area requires prior written approval from the Director-General of Environmental Quality. It is a good practice, therefore, for Local Authorities to refer all such applications for comments/approval by the Environment Division. Likewise, for any proposed housing development within 1000 meters of an industrial area, Local Authorities are welcome to seek Environment Division's comments before approval is granted.

In general, it is a good practice for Local Authorities to refer all applications for new industries to the Environment Division for approval/comments in the interests of action to ensure that pollution abatement measures are incorporated into the planning and design of the industrial enterprises and avoid problems at a later stage.

When planning for industrial development, State Governments and Local Authorities should provide for the zoning of light, medium and heavy industries and for the provision of suitable buffer zones between industrial zones and residential areas. For this purpose, State Governments are advised to use 'The Guidelines for the Siting and Zoning of Industries' prepared by Environment Division. Also, the State Governments are advised not to condone the setting up of industries outside the designated industrial estate unless they are resource-based industries. In addition, steps should be taken to resite some of the existing polluting industries which are situated adjacent to densely papulated areas. However, before a final decision is made, the State Governments are encouraged to seek Environment Divirion's comments.

It is also a good practice for State Governments and Local Authorities to examine the compatibility of new projects e.g. townships, tourist development projects etc. vis-a-vis the existing industrial establishments/development in any given area to forestall environmental problems.

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Control of Existing Industries.

To achieve best results vis-a-vis existing industries, it is best that Local Authority enforcement officers familiarise themselves with pollution control requirements under the Clean Air Regulations. In the course of their duties, if they notice or observe any act contravening the requirements under the Regulations, e.g. installation of polluting facilities within 1000 meters of residential area without prior written approval from the Director-General of Environmental Quality, emission of dark smoke or excessive smoke or offensive odour; open-burning of combustible materials; installation of fuel burning equipment such as boilers, furnaces, incinerators without prior written approval of the Director-General of Environmental Quality; they should report the violation to the Division of Environment Headquarters or its Office in Sabah for action. Such assistance is very much needed and appreciated for the successful implementation of the Clean Air Regulations.

In addition, it is advisable for Local Authorities to refer all proposals to resite or to renew the licence of any industry to Environment Division so that appropriate conditions relating to provision of the polluting control measures can be recommended for adoption.

CONCLUSION

From the foregoing it is evident that the State Government of Sabah, in view of having legislative and administrative competence in specific fields, has a definite responsibility and a distinct role to play in the enhancement and protection of the quality of the environment through proper environmental planning as well as through the application of appropriate environment-related legislations.

DIVISION OF ENVIRONMENT,
MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT,
MALAYSIA,
KUALA LUMPUR.

/sh.

Undang-Undang Yang Berkaitan Dengan Pemeliharaan dan Pengawalan Alam Sekitar

A. Undang-Undang Persekutuan

1. Local Government Act 1976
2. Streets, Drainage and Building Act 1974
3. Fisheries Act 1963 (Revised - 1978)
4. Land Conservation Act 1960
5. National Parks Act 1980
6. Protection of Wildlife Act 1972
7. Antiquities Act 1976
8. Environmental Quality Act 1974

B. Undang-Undang Negeri

1. Waters Enactment Cap 146 - FMS
2. Waters Enactment Amendment No. 11/1973
2. Irrigation Areas Ordinance FMS No.31/1953
3. Fauna Conservation Ordinance No. 11 of 1963 Sabah
4. Waters Enactment No.66 - Johore
   Amendment - En. 14/71
5. Waters Enact No. 129 - Kedah En. 17/71
6. Waters Enactment En.2/1357 - Trengganu
7. Taman Negara Enactment - Pahang En.2/1939
8. Taman Negara Enactment - Kelantan No.14 of 1938
9. Taman Negara Enactment - Trengganu No. 6 of 1358
10. Forest Enactment - Cap 153 - FMS
11. Forest Enactment - Trengganu - Cap 63/1937
12. Forest Enactment - Kelantan - 4/1939
13. Forest Enactment - Johore - No.58
14. Forest Enactment - Kedah En.5/1357
15. Forest Enactment - Perlis - En.3/1370
16. Forest Enactment - Sabah - En.2/1968
17. Forest Enactment - Sarawak
    Cap 126, Reprint 1972
18. Forest Enactment Straits Settlements Cap 147

PERPUSTAKAAN
JABATAN ALAM SEKITAR

Teks Ucapan Ketua Pengarah Alam Sekitar, Kementerian Sains, Teknologi dan Alam Sekitar (Encik S.T.Sundram) Kepada Kelab Rotary Ipoh Pada Hari Khamis, 10hb.Sept., 1981 Jam 1.00 Petang Di Kelab Ipoh Di Atas Tajuk "Masalah-Masalah Pencemaran Yang Mendesak"

Yang Di Pertua Kelab Rotary Ipoh,
Tetamu-tetamu dan rakan-rakan ahli-ahli Rotary.

Terlebih dahulu saya ingin merakamkan penghargaan saya kerana dapat peluang ini untuk membincang sedikit sebanyak mengenai satu topik yang begitu mendesak iaitu "Masalah-masalah pencemaran yang mendesak".

As I was saying, I appreciate very much this opportunity to share some thoughts with you on a subject of such topical concern namely, on "Some pressing environmental problems".

Environmental problems of one sort or another seldom fail to grab the headlines in our newspapers, all the more so since numbered among our environmentalists are those who seem to set to provide living proof of the definition of a pessimist as one whose environment has almost limitless capacity to take on the shape of his or her woes. And unfortunately for us this breed doesn't show signs of qualifying for listing in IUCN's red data book of endangered species.

On a more serious note, our pressing environmental problems are largely the result of human activities on planet Earth whether economic activities or in various spare time activities. Indeed to us in Malaysia, these in some ways reflect the accelerated tempo of development including the building of infrastructure facilities and development of resource-based industries featured in the Fourth Malaysia Plan 1981 - 1985.

What then should be our rational response? I submit surely not to freeze development, nor even to put the brakes on development. On the contrary, development and growth are vital to the success of our national development efforts, including the New Economic Policy whose rationale is set in the context of a constantly expanding economy.

The rational approach to environmental problems is to opt for sound environmental management. Environmental management is indeed

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of absorbing interest, an essential ingredient of our quality of life which our Government, through a mix of policies, programmes and projects, spanning successive five-year plans is committed to uphold and, in the process, underpin national unity.

In the context of the socio-economic objectives we have set for ourselves, it is perhaps now timely to examine the imperatives of environmental management, the strategies adopted hitherto and to devise improved ways and means of achieving it with the support of all concerned, given the pressures for accelerated socio-economic development and modernization.

In this connection, may I respectfully invite attention to the stirring call made recently - with a great deal of sensitivity to the environment incidentally - by His Royal Highness the Sultan of Perak on the occasion of the official opening of the new Taiping Town Council building. What the enlightened Ruler of this State stated on the occasion is worthy of being translated into effective meaningful and co-ordinated action by all concerned to clean up and keep the environment spick and span at all times.

Let me also invite attention to an enlightening article "The Wooing of Earth" featured in the May 1981 issue of "The Rotarian" magazine excerpted from a book bearing the same title by the internationally-famed microbiologist Prof. Rene Dubos. In that article, among other things, he states:

> "Human interventions into nature have often been destructive. Many of them, however, have revealed potentialities of the earth that would have remained unexpressed in the state of wilderness. We can improve on nature to the extent that we can identify these unexpressed potentialities and can make them come to life by modifying environments, thus increasing the diversity of the earth and making it a more desirable place for human life."

In this sense, our pressing environmental problems can challenge our ingenuity and abilities and present us with opportunities enriching the diversity of the earth as well as the resources to sustain ourselves

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and succeeding generations. Indeed pleasing artificial environments can indeed be built from degraded sites such as mined-out areas and wastes.

In this connection, service and community-based clubs like Rotary Clubs can play a pivotal role in helping to bring about heightened environmental awareness and to inculcate in our people the basic skills and values to help overcome the simpler environmental problems like littering and unhealthy living, in short, to take pride in their environment. Now that we are just past the mid-point both in terms of the 20-year perspective plan and in attainment of New Economic Policy targets, both environmental management and resource management assume critical importance in shaping the quality of life in the years ahead.

In the final analysis, development itself can be allowed to degenerate if for all the array of imposing projects - hydro-electric dams, airports, superhighways and the like - our roads are clogged with congested traffic giving out lead, carbon monoxide and other harmful emissions and pollution robs us of amenities like clear rivers teeming with fish and other aquatic life and clean unspoilt beaches and lush greenery and instead the concrete jungle puts pond to our trees and open spaces, nature parks, reserves and sanctuaries.. It is, therefore, in the fitness of things that the nation responds resolutely to the recent call by Y.A.B. Perdana Menteri, Datuk Seri Dr. Mahathir bin Mohamad that we do care for the environment, including through the planting of suitable species of trees.

In bringing about increased environmental awareness, the mass media which to its credit has shown admirable sensitivity in reporting on environmental issues, consumer associations and citizens groups, the professional bodies, the universities and other institutions of higher learning and service clubs, all have a role to play. Rotary International has brought out a special pamphlet No. 609 "Our Polluted Planet - What Can Your Club Do?" - To guide Rotary Clubs in carrying out environment-related projects.

In a manner of speaking, the environment can be likened to the fair sex. Just as it is said "not to take women seriously is to ask for trouble" not to take the environment seriously is to ask for disaster, degradation

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and worse. Our environmental problems are simply nature's way of kicking back at us for the thoughtless and shabby treatment accorded in the past. It is time, therefore, to apply the lessons learnt in a systematic manner to forestall future environmental and ecological disasters.

Let me turn to deal with some of the more pressing environmental probelms in Malaysia:

1) Soil Erosion and Siltation

Soil erosion and siltation problems are indeed widespread. Particularly so in Perak, where this problem is accentuated by silt washed down from mining overflows.

With the opening up of land for large-scale land development schemes, agricultural projects, housing schemes and the building of highways and other infrastructure facilities coupled with deforestation and logging, soil erosion and siltation assume significance. Since land-use is a State matter under the Federal Constitution, effective action requires the involvement of the State Governments.

To this end, the Ministry of Science, Technology and Environment, through the Environment Division, has prepared draft Guidelines on Siltation and Erosion which has been referred to all the State Governments for comments with a view to tabling for consideration and adoption by the National Land Council.

Significant environmental problems through siltation and erosion are already with us, examples being the Klang River, the Kinta River and the Gombak River as well as the towns of Kuala Kubu Baru, Serendah and Bentong. The frequent floods are one aspect of this problem.

2) Water

Water, the most basic resource of all, is already causing concern in several areas of the country. The ongoing National Water Resources Study carried out with the help of the Government of Japan through the Japanese International Co-operation Agency will help bring these into sharper focus and enable timely remedial action.

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It is noteworthy that at one time the discharge from palm oil mills and rubber factories, between them, accounted for one million tons of B.O.D. load daily into our rivers, which is equivalent to domestic sewage from a human population of ten million.

The systematic enforcement of the standards laid down in the palm oil effluent and rubber effluent regulations and increasingly of enforcement activity under the Sewage and Industrial Effluent Regulations has by and large had the effect of curbing and containing water pollution.

An aspect that needs to be underscored in relation to environmental sanitation is the considerable progress that Malaysia has yet to make in the fields of sewage disposal facilities and safe public water supplies. Even with the proposed extension of sewered areas in metropolitan areas like Kuala Lumpur and Penang, it is estimated that by 1980 no more than 14% of the urban population will be having the benefit of facilities connected to community water-borne sewerage systems. As for water supply services, to date 90.7% of the urban population and 47.2% of the rural population have access to piped treated water supplies, with the remainder having to draw water from various inadequate sources, including wells, canals and rivers. Here a fair start has been made under the Fourth Malaysia Plan but much more remains to be done.

That we are now reaching out in a bid to tap underground water resources is a pointer to how we are close to the limits in respect of surface water.

Another aspect bearing on water quality that needs to be highlighted is the effect of pesticide runoffs adversely affecting water quality.

Marine Pollution

Marine pollution is also a factor of increasing importance although information available does not permit us to determine the quantum accurately. All the same a set of regulations to deal with marine pollution are in course of preparation.

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Deforestation

Malaysia, comprising a land area of some 83.7 million acres, ranks among the few developing countries with, still a significant proportion of the total land area under tropical rainforest reputed to be among the oldest and most complex ecosystem in the world. Presently, the total land area under forests is estimated to 57.7 million acres or approximately 58.4% of total land area. The area permanently devoted to forestry (Permanent Forest Estate - PFE) is about 28.7 million acres. Forestry, by its nature a long-term industry, calls for farsighted planning and commitment to goals. The rate of reforestation by silvicultural treatment and enrichment planting, relative to the rate of forest harvesting has been slow. In Peninsular Malaysia, for example, only 10% of the harvested areas has been silviculturally located. This indeed is a far cry from the minimum area required for a sustained yield from the Permanent Forest Estate of about 185,250 acres annually. Further, the loss of regenerated forests to agricultural development has also reduced the total acreage of reforested land available.

Air Pollution

Air pollution can be said to be approaching critical levels in the larger urban centres of Kuala Lumpur, Petaling Jaya and Shah Alam (Selangor), Mak Mandin and Prai (Penang) and Johor Bahru, and beginning to be noticeable in towns like Ipoh, the most serious pollutants being sulphur dioxide, oxides of nitrogen and carbon monoxide. Air pollution problems are accentuated by the rapid rate of increase in our motor vehicle population - 2.2 million vehicles in Peninsular Malaysia at the latest count having trebled in just over a decade - with some 30% of these vehicles moving about in the Klang Valley alone (1970 figure was 669,000 vehicles). In addition, there are the power stations, industries burning fuel oil, sawmills, iron foundries, engineering works and brickworks, among others contributing to the pollution load.

To sum up, development can proceed in harmony with the environment but a number of timely steps must be taken:

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1) Effective enforcement of the Environmental Quality Act, 1974 and Regulations thereunder as well as other environment-related legislations with full public co-operation particularly in the form of feedback through complaints and suggestions. To facilitate, a network of 6 regional offices have been established through Malaysia;

2) The application of an Environment Impact Assessment Procedure for suitable projects, an example being the Trengganu Crude Oil Terminal (TCOT) in respect of which a panel deliberated on only yesterday (9th September). The findings can be useful in site selection, where the resulting adverse environmental impacts and the associated costs of control measures will be minimised and the hoped-for benefits maximised;

3) Environmental education both with the formal school system and without through the mass media and non-formal education. In this respect, the new 3-R syllabus for primary schools which in the second stage also focusses on man and his environment is a step in the right direction;

4) A systematic approach towards a national land-use policy which takes environmental factors into account.

Again, in the words of the Brandt Commission whose report was published in February 1980,

> "..... It is clear to us that the growth and development of the world economy must in the future be less destructive to the natural resources and the environment ....."

and it goes on to add,

> "..... All nations have to co-operate more urgently in international management of the atmosphere and other global commons, and in the prevention of irreversible ecological damage."

As I told Kuala Lumpur Rotarians at their Weekly Lunch Meeting on 26th December, 1979, anticipatory planning is certainly a sensible, less expensive and less time-consuming strategy for coping with environmental problems as compared to the problem-responsive approach under which one reacts to problems after environmental damage has resulted.

Thank you.

PERPUSTAKAAN
SEKITAR

Embargo:- Tidak boleh disiarkan atau diterbitkan sebelum jam 10.00 pagi pada 13hb Julai, 1978.

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Ucapan Encik Mohd. Hashim bin Sam Abdul Latiff, Ketua Setiausaha, Kementerian Sains, Teknologi dan Alam Sekitar, semasa Pembukaan Resmi Seminar Kebangsaan Dasar-Dasar dan Strategi-Strategi Negara mengenai Sains dan Teknologi untuk Pembangunan, di Hotel Hilton Kuala Lumpur pada 13hb Julai, 1978 jam 9.30 pagi

Yang Berbahagia Tan Sri Abdullah bin Mohd. Salleh,
Ketua Setiausaha Negara,

Yang Berbahagia Tan Sri-Tan Sri, Datuk-Datuk,
Tuan-Tuan dan Puan-Puan sekalian.

Terlebih dahulu saya bagi pihak Jawatankuasa Pengelola Seminar Kebangsaan ini dan juga bagi pihak Kementerian Sains, Teknologi dan Alam Sekitar mengucapkan ribuan terima kasih kepada Yang Berbahagia Tan Sri Abdullah kerana sudi melapangkan diri untuk hadzir bersama-sama kita semua dan kemudian meresmikan Seminar kita pada hari ini. Perlantikan Ketua Setiausaha Negara sebagai Pengerusi Majlis Penyelidikan dan Kemajuan Sains Negara adalah satu tindakan Kerajaan yang wajar kerana perlantikan itu adalah tepat pada tempatnya. Perlantikan tersebut telah menunjukkan banyak bukti-bukti yang mendatangkan faedah-faedah yang besar kepada perkembangan sains dan teknologi dalam negara ini. Ia juga telah menjelmakan dan memperkukuhkan lagi hubungan yang rapat di antara institusi-institusi penyelidikan dan juga badan-badan iktisas.

Seminar Kebangsaan pada hari ini yang akan membincangkan dasar-dasar dan strategi-strategi negara mengenai sains dan teknologi untuk pembangunan adalah yang terakhir dalam satu siri mengandungi 5 seminar merangkap bengkel-kerja kebangsaan mengenai sains dan teknologi untuk pembangunan yang dikelolakan di bawah anjuran Kementerian Sains, Teknologi dan Alam Sekitar sebagai penyediaan untuk "Persidangan Bangsa-Bangsa Bersatu mengenai Sains dan Teknologi". Pertubuhan Bangsa-Bangsa Bersatu akan mengadakan Persidangan mengenai Sains dan Teknologi untuk Pembangunan pada bulan Ogos 1979. Persidangan tersebut akan membincangkan samada tindakan-tindakan yang telah diambil setakat

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ini untuk mengurangkan jurang perbezaan antara negara-negara maju dengan negara-negara sedang membangun itu telah tercapai atau tidak, dan juga untuk mengambil langkah-langkah baru supaya jurang di antara kedua-dua gulongan tersebut dapat dikurangkan lagi. Persidangan tersebut akan memberi peluang kepada negara-negara ahli khususnya negara-negara sedang membangun, melalui kerjasama antarabangsa, untuk mendapatkan faedah-faedah maksima daripada sains dan teknologi, dan untuk mengatasi apa-apa kesan yang tidak diingini yang mungkin terdapat di dalamnya. Ia akan juga menarik perhatian ahli-ahli sains, ahli-ahli teknologi, perancang-perancang, pembuat-pembuat keputusan dan pentadbir-pentadbir terhadap faedah-faedah potensi mengenai sains dan teknologi. Di antara tujuan-tujuan asas Persidangan tersebut ialah pencantuman sains dan teknologi dengan pembangunan sosio-ekonomi dan memperkuatkan lagi ketahanan negara-negara membangun.

Oleh kerana ramai di antara kita pada hari ini adalah terdiri dari pemerhati-pemerhati dari negara-negara asing, dan juga perwakilan-perwakilan dari ajensi-ajensi antarabangsa, izinkan saya melanjutkan ucapan saya dalam Bahasa Inggeris.

As I was saying, we are honoured to have you, Tan Sri, with us in this gathering today and later to officially open this Seminar. The appointment of the Chief Secretary to the Government as Chairman of the National Council for Scientific Research and Development is indeed a wise move made by the Government. Since this appointment was made we have seen many advantages accorded to the development of science and technology in this country; we have also witnessed greater coordination and cooperation among various research organisations and professional bodies.

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Today's Seminar is the final of a series of 5 national seminars-cum-workshops on science and technology for development organised under the sponsorship of the Ministry of Science, Technology and the Environment in preparation for the United Nations Conference on Science and Technology for Development. The United Nations is organising a Conference on Science and Technology for Development (UNCSTD) in August 1979. This Conference is being organised to discuss whether the approaches so far adopted to reduce the growing disparity between the developed and developing countries have been successful or not, and to seek new approaches whereby there could be a better utilisation of science and technology that would in some measure narrow the gap between them. The Conference would offer member states, particularly the developing nations, through international cooperation, to derive the maximum benefits from science and technology, and to overcome any undesirable effects they might have. It could also help to focus the attention of scientists, technologists, planners, decision-makers and administrators on the potential benefits of science and technology. Among the principal aims of UNCSTD are the integration of science and technology with socio-economic development and the strengthening of the self-reliance of the developing countries. In order to prepare for the above United Nations Conference, the Ministry have sponsored 4 seminars dealing with specific major problems in cooperation with professional bodies, institutions of higher learning, research organisations, government agencies as well as relevant private organisations. Various topics were discussed in these seminars which provided opportunities for all relevant organisations to participate fully with sufficient depth of coverage. This final Seminar today would provide all of us the opportunity to highlight the findings of the previous 4 seminars and would also discuss national policies and strategies in science and technology for development.

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When it was harnessed for the development of technologies related to military needs during World War II, science left the seclusion of its laboratories and academic institutions forever. This resulted in the emergence and rapid development of nuclear- and electronics-based weaponry, and subsequently had an overwhelming impact on the world's post-war economic scene. Research budgets soared to unprecedented levels, as did the number of students enrolling in science and engineering, while increasing proportions of graduates embarked on research careers. By the end of the Fifties, the role of science and technology has become a public issue, and that a general world-wide concern emerged to apply science and technology to development.

In the past 30 years economic and social change in developing countries can be described best as dependent development. One manifestation of this dependent development has been the widespread reliance on external sources of technology to increase productive capacity. Initially, the financial costs of such technological dependence were modest, but they have now grown so high. With these costs expected to grow further, continuation of past patterns of dependent development is simply out of the question due to financial and other constraints. But what are the alternatives?

The 1970's have seen a profusion of ideas for action at the national and international levels to improve the condition of developing countries. Many of these ideas are good, but most have not been tried at all. Some are so recent that they have not yet had adequate opportunity to prove themselves. A perusal of the resolutions adopted by various United Nations organs and specialised agencies

and the major world conferences of the 1970's* is an indication of the degree to which the world community has already identified the key problems and agreed upon the steps necessary to solve them. The essential task before us today is not so much the generation of wholly new ideas as the making of a critical selection and assessment and creating the political will to implement ideas for action already before the governments and the world community. Implementation of these ideas must be fused with a new sense of purpose and vigour as the world enters the final two decades of the century with many of its major problems still unsolved, after three decades of efforts.

To cope with these harsh realities reflected in the unsolved problems and lessons of the past, Malaysia requires bold and radically different strategies for the 1980's if she is to harness the potential of science and technology to meet the basic needs of a majority of her people. Malaysia should always base her development strategy on her own natural resources, technical skills, historical and cultural factors as well as social objectives. In the 1980's she should concentrate on increasing her capacity to control and regulate the terms and conditions for the acquisition and utilisation of foreign technologies, and to generate indigenious technological solutions to urgent economic and social problems. In this respect, even the educational system will have to be reviewed, and if necessary, drastically changed, and in some cases new opportunities created to provide, economically and socially, knowledge and skills. This requires systematic technological planning as an integral part of overall economic and social planning; and planning also means

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* Note:

(i) International Development Strategy: Action Programme of the Second United Nations Development Decade (UN, New York, 1971).

(ii) World Plan of Action for the Application of Science and Technology to Development (UNACAST, New York, 1971).

...6/-

PERPUSTAKAAN
JABATAN ALAM SEKITAR

29

Ucapan Alu-Aluan Encik Mohd. Hashim bin Sam Abdul Latiff,
Ketua Setiausaha, Kementerian Sains, Teknologi dan Alam
Sekitar di Seminar Sistem Kejuruteraan Kualiti Air,
Dewan Tunku Abdul Rahman,
Jalan Ampang, Kuala Lumpur,
Pukul 10.10 Pagi, Julai 17, 1978.

Y.B. Tan Sri Ong Kee Hui, Menteri Sains, Teknologi dan
Alam Sekitar,

Mr. Maurice Rifkin dan rakan-rakan dari Mitre Corporation,

Tan Sri-Tan Sri, Datuk-Datuk, Tuan-Tuan dan Puan-Puan
sekalian.

Bagi pihak Kementerian Sains, Teknologi dan Alam Sekitar, saya dengan segala hormatnya mengalu-alukan kedatangan Y.B. Tan Sri Ong Kee Hui, Menteri Sains, Teknologi dan Alam Sekitar, untuk membuka dengan resminya Seminar Sistem Kejuruteraan Kualiti Air yang akan berlangsung selama dua minggu mulai hari ini hingga 28hb Julai, 1978. Dengan kedatangan Y.B. Menteri bersama-sama kita pagi ini, terutama di saat-saat yang penting dalam kesibukan pilihanraya yang sedang berlangsung di Sarawak, menunjukkan minat dan perhatian yang berat yang diberikan oleh Yang Berhormat ke atas masaalah kualiti air di negara kita.

Dengan sukacitanya saya mengucapkan selamat datang juga kepada semua peserta-peserta dari ajensi-ajensi Kerajaan baik Kerajaan Persekutuan ataupun Negeri, badan-badan berkanun, universiti-universiti dan pusat-pusat pengajian tinggi, pusat-pusat penyelidikan, badan-badan ikhtisas dan profesyenal, firma-firma perniagaan serta firma-firma perundingan tempatan, dan persatuan-persatuan sukarela. Tidak ketinggalan juga saya ingin mengalu-alukan penyertaan empat pakar perunding dari Perbadanan Mitre, Amerika Syarikat, iaitu Mr. Maurice Rifkin, Dr. Richard Brown, Mr. Robert Pikul dan Dr. Thomas Cheatham, Jr. sebagai perunding kepada Mitre dan seterusnya saya ucapkan sekali lagi selamat datang ke Malaysia.

...2/-

Saya yakin bahawa tuan-tuan dan puan-puan sebagai pakar-pakar dalam bidang masing-masing akan dapat bersama-sama mempersoalkan dan mencari jalan yang teratur serta tepat di dalam tiap-tiap perbincangan yang akan diadakan di sepanjangan masa seminar atau woksyop ini berjalan. Kejayaan Seminar ini adalah bergantung kepada sumbangan-sumbangan yang tuan/puan akan bersama curahkan tanpa teragak-agak. Semua peserta-peserta akan juga berpeluang bertukar-tukar fikiran dan pendapat.

Oleh kerana perhimpunan kita ini bercorak antarabangsa, izinkan saya mengulang kata-kata aluan saya dalam Bahawa Inggeris.

As I was saying, on behalf of the Ministry of Science, Technology and the Environment, I have the pleasure to welcome you to the Systems Engineering Seminar on Water Quality. In particular I have the pleasure once again to welcome the speakers from the Mitre Corporation of the U.S.A. - Mr. Maurice Rifkin, Dr. Richard Brown, Mr. Robert Pikul and Dr. Thomas Cheatham, Jr.

This Seminar is attended by participants from Government agencies, statutory bodies, universities and higher educational institutions, research institutions, professional and scientific bodies, commercial and consultancy firms and citizen groups. I am sure that you will have many opportunities to contribute and exchange ideas and experiences during scientific, technical, socio-economic and institutional sessions. The success of this Seminar will depend in no small measure on the quality of your inputs.

We are most honoured because the Honourable Tan Sri Ong Kee Hui, Minister of Science, Technology and the Environment is able to be with us this morning to officially open this Seminar, particularly in the context of his current tight schedule in Sarawak. The Honourable Minister's presence in person with us this morning is indeed a source

...3/-

of encouragement, reflecting his keen interest and lively concern over the whole spectrum of environmental protection and enhancement and advances in science and technology.

Dengan ini, saya dengan hormatnya mempersilakan Y.B. Tan Sri Ong Kee Hui untuk menyampaikan ucapan resmi dan mengistiharkan Seminar ini dibuka.

KANDUNGAN NOTA SYARAHAN MENGENAI KAWALAN PENCEMARAN UDARA DARI PELEPASAN EKZOS KENDERAAN

1.0 **PENCEMARAN UDARA**

Punca-Punca Utama

1. Punca Tidak Bergerak - Kilang/Industri
   Tempat pembuangan/pembakaran sampah

2. Punca Bergerak - Kenderaan bermotor

2.0 Pencemaran Udara dari Punca-Punca Bergerak

2.0 Jumlah Kenderaan Bermotor 1987

Kenderaan Petrol	3.8 juta	93 %
Kenderaan Disel	0.3 juta	7 %
Jumlah	4.1 juta	
Motosikal	2.5 juta	60 %

3.0 Jenis dan jumlah gas yang dilepaskan melalui ekzos kenderaan :

N_2 - 83.5 %	HC - 205 ppm
O_2 - 2.2 %	NO - 2900
CO_2 - 13.0 %	NO_2 - 18
H_2 - 0.23 %	* 1 % = 10,000 ppm
CO - - 0.97 %	

Purata Pembebasan Pencemaran DiSemenanjung Malaysia 1979-1983
(oleh kenderaaan bermotor)

CO - 92 %	HC - 63 %
NO - 73 %	SO - 5.6 %
Zarahan (Abuk) - 47 %	

Pelepasan Ekzos Kenderaan	CO - 100 % HC - 65 % NO_x - 100 % Pb - 100 %	Asap Hitam (Disel) dan Bau Abuk-Abuk dari asbestos (brek) Getah (Tayar)

Pencemaran oleh Kenderaan :

Kenderaan Petrol	Kenderaan Disel
CO, HC, Pb	Asap Hitam, NO_x Aldehaida

Bagaimana NO ,CO, HC Terjadi ?

- komposisi minyak - sebatian karbon hidrogen
- minyak + udara - diatomised oleh karburetor - dibakar

Di udara 79 % N, N dan Oksigen
proses ini berlaku pada suhu tinggi
pelepasan NO_xO, NO_2

- CO dan HC berlaku juga kerana pembakaran karbon tidak sempurna

4.0 Di Malaysia : Kenderaan disel mudah menjadi sasaran aduan orang ramai kerana asapnya menganggu terus kepada dua organ manusia yang paling sensitif.

Mata - asap hitam

Hidung - bau

Asap kenderaan petrol - walaupun tidak kelihatan,gas-gas dari ekzosnya telah diakui sebagai bahan toksik yang merbahaya - jika kuantitinya banyak /berlebihan.

5.0 Kesan-kesan ke atas Manusia dan Alam Sekeliling

1. CO - gas yang tidak berwarna dan berbau

CO - bertindak dengan haemoglobin dalam darah

- membentuk COHb (Carboxyhaemoglobin)

Kesan CO terhadap kesihatan manusia akan dikaji melihat paras COHb dalam darah seseorang.

Penjejasan	20 % - 30 % Hb	-	Pening kepala dan menyesakkan pernafasan
	30 % - 50 %	-	Pening,kabur penglihatan, pitam.
	50 % - 80 %	-	Kematian

WHO Standard : 35 ppm untuk pendedahan 1 jam

8.5 ppm - 8 jam

Keadaan di Malaysia Sekarang :

- Keseluruhannya, kurang dari paras bahaya (WHO).

HC (Hydrocarbons)

- Sejenis gas yang terdiri daripada aldehaida yang mudah bertindak balas dengan NO_x - menyebabkan terjadinya tindakbalas foto kimia yang membahayakan kesihatan.

NO_x (Oksida-Oksida Nitrogen)

- terjadi kerana pembakaran bahan api/udara yang tidak sempurna dalam enjin.

- kebanyakkan NO_x daripada eksos kenderaan disel.

- NO_x boleh menyebabkan kerosakkan pada tisu-tisu buah pinggang, limpa dan jantung.

- Standards (dalam udara)

  HC - 500 ppm - tiada kesan

  500 ppm - gangguan kepada fungsi paru-paru dan menyakitkan mata.

  NO_x - 13 ppm - gangguan kepada hidung dan mata

  50 - 100 - penyakit kerongkong

  500 - Kerosakkan kepada paru-paru. Boleh menyebabkan kematian untuk dedahan selama 2 - 10 hari.

  HC + NO_x + sinaran matahari - photochemical smog (kabut fotokimia)

  Kesannya : gangguan kepada mata dan kerongkong dan lebih mudah menyerang pesakit-pesakit asthma dan lemah paru-paru.

Plumbum

tetraethyl lead
tetramethyl lead
+
minyak
petrol
---- proses pembakaran dalam enjin
------- eksos
sebatian plumbum (abuk)

Kesan :

1. Ancaman beracun ---- berhimpun dalam badan,menyebabkan berlaku berjenis-jenis penyakit secara perlahan.

2. Menganggu pembentukkan darah dengan cara :

   i) Pb melambatkan proses kemantangan (maturation) sel-sel darah merah --- pengurangan umur hayat sel darah merah.

   ii) menghalang sintesis haemoglobin --- pemendekkan protin dalam badan.

3. Pb berkumpul dalam tulang dan menggantikan kalsium.Pb yang baru diresap terhadap dalam limpa,buah pinggang dan pankreas.

- Standard : WHO 2 ug/m^3 bagi 24 jam purata

  : Malaysia 1.5 ug/m^3 bagi 24 jam

- Status 1979 - 82 : Jalan Pudu --- 1.22 - 5.7
  Jalan TAR

di UK : 24 ug/m^3 , N.York : 7.5 , Tokyo : 0.3

Zarahan / Abuk

Habuk-habuk terampai (Suspended particulate matter) ----- dari ekzos kenderaan disel.

----- abuk dari kenderaan disel 100x lebih banyak dari kend.petrol

----- habuk-habuk asbestos dari brake kenderaan + habuk-habuk getah dari tayar

\+ habuk-habuk di jalanraya yang telah sedia ada.

Kesan - dikaitkan dengan penyakit-penyakit yang melibatkan gangguan pernafasan seperti emphysema,asthma dan bronchitis.

Standard : US EPA 24 hrs/ug/m^3 average	0 - 74	-	baik
	75 - 259	-	sederhana
	260 - 374	-	memudaratkan- asthma, kesihatan - penyakit sistem pernafasan
	375 - 624	-	amat memudaratkan
	625	-	berbahaya

Malaysia : Ambient Air Quality Standard - 75 ug/m^3

Status : 1983 - Jalan Pudu,tidak dapat mematuhi standard disepanjang hari.

6.0 Kawalan Pencemaran

- Disebabkan gas-gas ini boleh mengancam kesihatan umum (terutama nya orang-orang yang bekerja/yang menjalankan aktiviti-aktiviti masing-masing - sehari suntuk di dalam bandar),mereka ini akan terdedah kepada bahaya/ancaman gas-gas berkenaan,maka kerja-kerja pengawalan pencemaran gas-gas ini amatlah perlu.

- Untuk mengawal pelepasan-pelepasan inilah maka Jabatan Alam Sekitar telah/sedang menggubal peraturan-peraturan dan cara-cara untuk mengawalnya.

- Gas-gas pencemar ini perlu dikawal sebelum berlaku sesuatu wabak (episode) yang tidak diingini yang disebabkan oleh kesan-kesan gas tersebut.

- Bila sudah terjadi,kos pemulihan dan pengawalannya adalah ←terlalu tinggi dan mungkin juga sudah terlambat.

  (tak ada gunanya ----- bila kerosakkan sudah berlaku baru nak dikawal)

Cara Kawalan

1. preventive (pencegahan)

   - periksa semasa di kilang pemasang

2. Curative (pembaikan)

   - used cars (sekatan jalanraya)

i. Bagi kenderaan Disel

- kawalan pelepasan asap hitam

- kaedah-kaedah kereta motor (kawalan pelepasan asap dan gas) 1977.

- had asap : 50 H.S.U.

- cara penguatkuasaan --- sekatan jalan raya.

ii. Bagi kenderaan petrol

- kawalan kepekatan plumbum dalam minyak

- Peraturan-peraturan Akta Kualiti Alam Sekeliling (kawalan kepekatan plumbum dalam gasolin motor) 1985,

------ 0.84 g/l ---- 0.4 ---- 0.15
Julai 85 Jan.1990

iii. Promosi kegunaan LPG/CNG oleh kenderaan bermotor.

fokus : P.S.V dalam bandar-bandar yang telah ditetapkan.

- Simpanan gas yang banyak di Malysia ---- 100 tahun

7.0 Peranan Pihak Pengusaha-Pengusaha Kenderaan

--- untuk membantu mengawal pencemaran udara mengekalkan kualiti alam sekeliling (di sekitar bandar)

1. Penyelenggaraan yang berjadual ke atas kenderaan - sejak mula kenderaan-kenderaan itu dibeli (brand new).

   - pelaksanaan perkara ini memerlukan kesanggupan/kesediaan memperuntukkan wang perbelanjaan tambahan untuk menjalankan kerja penyelenggaraan yang berjadual ini.

2. Tidak mengamalkan muatan yang lebih (no overloading) pada kenderaan.
   - bas-bas (stagebus,mini)
   - bila lebih - berasap

3. Tidak memandu dengan kelajuan yang lebih (no speeding)
   - bila speed - asap
   - kemalangan yang lain

   contoh : bas mini,teksi

   - untuk melaksanakan perkara 2.& 3. di atas,nasihat dan arahan pengarah syarikat/tawkeh kepada pemandu-pemandunya adalah amat penting.

4. Kesedaran semua pihak [daripada pengusaha/pengurus - pemandu - mekanik (foreman)] tentang pentingnya mengawal pencemaran dari ekzos kenderaan dan bahaya ancamannya dan seterusnya mempunyai sifat bertanggungjawab untuk sama-sama menjaga agar udara dipersekitaran tidak dicemari oleh asap-asap dari kenderaan.

KURSUS ASAS PENILAIAN SUMBER AIR KE VI, 1988

13hb - 18hb Jun, 1988

Ucapan Asas

Past, Present and Future Trends in Water Resources Engineering Practice in Malaysia

Oleh

Ir. Syed Muhammad Shahabudin
Syed Muhammad, Hooi dan Binnie Sdn. Bhd . (SMHB)

International Room
The Merlin, Kuala Lumpur

Anjuran bersama

Jawatankuasa Kebangsaan Malaysia Bagi
Program Hidrologi Antarabangsa (IHP)
dan
Universiti Teknologi Malaysia (UTM)

PHG.

PAST, PRESENT AND FUTURE TRENDS IN WATER RESOURCES ENGINEERING PRACTICE IN MALAYSIA

13th JUNE 1988

KEYNOTE ADDRESS

by

SYED MUHAMMAD SHAHABUDIN*, PJK
PENG, MIEM, FICE, MIWEM, M.PUJA(B), MACEM

I am greatly honoured to have been invited by the organising committee of this seminar to present the address this morning. The seminar is organised by the Universiti Teknologi Malaysia (UTM), an education institution I have known well over the years for being very active in advancing the engineering science and technology in water resources. Skilled planning for water resources management is essential, on global, national and regional scale in order to achieve the level of efficiency in water use of the future. Well-grounded understanding of engineering science and technology in water resources should be imparted early to undergraduates of higher learning so that they would be able to start well early in their working life in their chosen field of water resources engineering. It is gratifying to note that the UTM is taking a leading role in this direction.

Water is controlled and utilised to serve a wide variety of purposes. Control of water is applied in the case of flood control, land drainage, sewerage and highway bridge design so that excessive damage to life and properties is minimised. Water is utilised for beneficial purposes in water supply, irrigation, hydroelectric power development

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* Chairman & Executive Director
Syed Muhammad, Hooi dan Binnie Sdn Bhd (SMHB)

The first seven are fairly commonly accepted ones, plus an eight - waste disposal which is not usually listed as beneficial use : but which should be listed.

- Potable water really means water for drinking, but is often used with a broader definition to mean water reticulated to a house where it is used for drinking, cooking, washing and other household uses. It is expected to be of high quality, free of contamination, without unpleasant tastes or odours and aesthetically pleasing.

- Industrial water can mean a lot of things; from a very high quality supply as required by certain chemical and food processing industries to low quality water used for washdown and other simular applications. In many countries, including Malaysia, the reticulated potable water supply system also caters for industrial users.

- Irrigation water need not be of a potable quality, but it does need to be in plentiful supply and it must be reliable. In many countries, like in Malaysia, the irrigation water supply system can be the source required for potable water supply.

- Rivers and lakes are used for the production of food for mankind, particularly fish and crustaceans, and also for other forms of aquaculture.

- Power generation through hydro electricity schemes need a large amount of stored water which if not planned properly can cause severe restrictions on the development of water resources for other uses.

- Use of water bodies for recreational purposes is becoming of greater importance in today's ever increasing leisure oriented society, including body contact activities like swimming, diving, surfing and non-body conttact sports like boating, sailing and canoeing. Also, the demand by the public for pleasant lake-side and river-side environments for activities such as walking and picnicking is increasing.

- Navigation is another very important use of water bodies both for transport of goods and of people. Inland waterways, especially, needs good management for effective transportation.

- The additional final use of water is from recycled or reused water sources or more specific water from wastewater disposal. Throughout the world, wastewater produced by human beings and by industry, as well as stormwater runoff, are disposed of to receiving bodies of water. In some cases, the wastewaters are treated prior to discharge, in others they are not. Either way, the natural capacity of the receiving body of water to purify itself is taken advantage of to provide further treatment of the effluent.

Problems associated with water uses:

(i) A fundamental problem is that the various uses are competing and often conflicting. Taking a few examples, in hydroelectric schemes, it is desirable to maintain reservoirs at close to high water mark to minimise electricity generation potential, but this very often makes the stored water unavailable for an irrigation supply. Commercial navigation and recreational activities are often incompatible. Waste disposal and potable water supply do not get along together very well.

(ii) Another major problem is the increasing demand on a finite supply of readily available water. In places like California, Israel and parts of Australia, the available surface waters have been harvested. Maximum safe yields of groundwater are abstracted in many locations. A number of countries have turned to the third and most plentiful water source, the oceans, and are using desalination techniques to produce water of acceptable quality. Recently there has been talk of water from melting of the polar ice caps and from icebergs. The more we need water, the harder it is to find.

(iii) Coupled with the diminishing supply of readily available water is the deteriorating quality of what is left. Naturally, the best water has been taken first. Hence, increased treatment is being required to provide an acceptable supply. The same set of arguments applies to costs: by and large the cheapest sources are developed first.

(iv) Another issue confronting water managers and administrators are the increasing expectations and aspirations of the public. Water quality that has been acceptable in the past is now no longer so. Better sanitation facilities are being demanded, elimination of health risks is considered a right and conservation of the environment is expected.

(v) Finally, the costs of meeting the increased demand for higher quality water and of preserving the several competing and conflicting beneficial uses of our water resources are placing heavy burdens on the community's ability to pay.

Attitudes to water resources:

It would be interesting to turn to the attitudes to water resources in the past, and then compare that with the current perceptions and needs, and finally present some thoughts on where we should be heading.

Broadly, the water supply schemes of the past were characterised by the following:

- Lower demand and lower supply. People needed less water, used less water and were supplied with less water. Industry was not a great water user. Irrigation supplies were available from nearby rivers and lakes, but no massive irrigation distribution systems were provided.

- Lower quality - little treatment. People and industry used what they got.

- Inadequate sanitation and poorer health. As a result of shortage of supply and lack of treatment, sanitation was inadequate and the general condition of public health was always at risk.

- Wastage : Many of the earlier schemes concentrated on what was delivered to the consumers, with little concern about how much of the water was lost on its way. Water supplies, once developed, were abandoned.

The present

The community at large, particularly in industrialiased countries, has very high expectations regarding quality of life, including its water and sewerage services as well as environmental surroundings.

Compared to the early days when water resources studies were few and of relatively simple nature, presently large scale water resources studies are implemented. The present network of hydrological stations in Malaysia established by the Jabatan Parit dan Taliair (JPT) includes observation stations of rainfall, evaporation, river discharge and suspended sediments. In the mid 1970's, a series of hydrological procedures were developed by the JPT to make estimates if the hydrological characteristics for regions with no hydrological data or inadequate data.

Techniques presented in the procedures have been widely used as an aid to the planning and design of water resources project.

The target of near 100% coverage of public water supply by the beginning of the next century is the aim of the Government for which the biggest single item of work is the implementation of the Malaysian Rural Water Supply Scheme.

Malaysia has substantial hydropower resources, especially in Sabah and Sarawak. However, this pace of development of hydropower resources may not be sustained considering options on the use of other energy sources like coal and gas-fired generation plants.

Large-scale irrigation in Malaysia has been developed for cultivation of rice only. The recent revision to a moderate degree of self sufficiency in rice and the drive to increase the production of other food crops has created the prospect of diversifying irrigation water use.

The water supply systems in the resources system at present are generally reliable and have been designed when possible to permit maximum flexibility in their operation. However the need to supply water reliably and in a flexible manner can lead to design of systems at consequent high capital and high operating costs. The concern about 'high' cost of water has recently led to three interesting developments.

(i) First is the move towards demand management, which is being encouraged in Australia, for example, by a media campaign aimed at educating the average consumer about water use, and more importantly, water wastage. The effort is derived at delaying further development of new resources, to cut costs, by spreading the available amount of water over a larger population.

Another aspect attracting attention is reliability of the system as a whole. Systems are typically designed to maintain full service up to a 100 year drought. If the community accepts from the start that minor restrictions on use may be applied every few years, then it is often possible to significantly delay capital expenditure.

(ii) The second is the move toward the "user pays" principle. The days of government subsidised water supply schemes in many nations are numbered. From now on, consumers will begin to pay the real cost of the water they use - another incentive to save water.

(iii) The third development is privatisation, also geared at cutting government expenditure but with the expectation that it will lead to a more efficient and effective service.

The future

I have already mentioned demand management, user pays principle and privatisation. These will characterise our water supply schemes into the future. As far as potable water is concerned, high water quality in accordance with WHO standards will increasingly become the quality target. Additional water sources will be harder to find and probably will be of lesser quality and hence increased treatment will be necessary for potable and industrial water supply. The demand for irrigation water will increase as our need to grow more crops increases. Also efficiency in agriculture will affect irrigation water demand.

It can be expected that costs of supply will increase-more water, harder to find, more difficult to treat, further to convey, and all will cost money.

Water conservation will play an important role in the future, as will wastewater reuse. They already play an important role in places like Israel and California, and to some extent in Australia. However, let's not get too excited yet about reuse. Many, studies have shown that reuse is more expensive than development of a new source of water. However, this will most likely change in the future.

There must be more effort in increasing the efficiency of utilisation of our water resources - we can no longer afford to waste it. Much research needs to, and can be done. There are several things which can be done, including minimising unaccounted losses in pipework and channel distribution networks, maximising uptake of water by crops, improving efficiency in industries, reducing domestic consumption, increasing artificial recharge of aquifers.

Research into non conventional sources of supply is desirable. These other methods include sealing of natural catchments (to increase runoff), weather modification (cloud seeding), evaporation reduction (floating covers or films,, underground storage), cloud condensation and utilisation of icebergs.

Another factor to take heed of is the "greenhouse" effect, because of which it is predicted that global temperatures will rise by 1.5 to 4.5^{o}C and sea levels by 20 to 140 cm by the year 2030. These will be accompanied by possible changes in climate and rainfall. Planning for the possible changes should be implemented, the potential impact of the changes should be assessed, and strategies to cope with the changes should be developed.

In summary, we need to implement long term water resources management schemes to take us into the 21st century, which will ensure that we develop and use our water resources in the best way. Planning will be required on global, national and regional scales.

Let us briefly look at how two other nations in our region of the world are tackling the issue of water resources planning and possibly leave from their experience.

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Australia faces an interesting problem. On face value, Australia appears well endowed with surface water supply. In simple terms, such as mean annual runoff per capita, there is an abundant supply. However, the variability of runoff is very high and very large storages would be required to provide a regulated supply. Two thirds of the runoff occurs in an area occupied by only 5% of the population, hence potential sources of supply are distant from existing sources of demand, resulting in large and costly distribution systems. Similar comments apply to the large groundwater sources, and often the yields from available bores are low and quality is poor.

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- Water demand forecasts for the year 2000 will be able to be satisfied in most regions either with existing supplies or with the development of further surface or groundwater resources which are available within the basins concerned. The cost of the development will often be high.

- In northern New South Wales, predicted demand for irrigation water would exceed available local supplies. If other demands from industrial purposes and urban communities also grow, it probably will be necessary to import water at great cost.

- In Melbourne and particularly Adelaide, the available surface and groundwater resources will be approaching 100% utilisatin by the year 2000. Demand management and wastewater reuse are likely to play an important role in the future. Desalination may have to be examined.

- Research into means of increasing water use efficiency are being given priority.

- An improved data and information acquisition/retrieval system is needed, particularly on the water used for irrigation and other agricultural purposes.

- Greater uniformity in assessment procedures for yield of existing water supply schemes in needed.

- Quality of water, particularly salinity is of serious concern in some areas of Australia.

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Detailed information on the overall situation in China is difficult to come by. It is also recognised that it is both a very large country and one with a huge population. The land mass stretches from the cold north down to the tropics and it contains deserts and rich well-watered arable lands. Therefore the diversity of water resources and water demands varies enormously from region to region.

However some general comments do seem to be applicable to much of the country. Overall China is reasonably will endowed with water resources and the country has a long history of developing these resources for irrigation, domestic and more recently industrial use.

In all major industrial areas like the Municipality of Shanghai (population 12 m), the provinces of Liaoning (population 36 m) and Zhejian (population 10 m) the main urban populations generally are connected to or have access to piped water supply. Potable water in the cities and larger towns is almost invariably filtered and chlorinated.

The water supply for irrigation farming has dominated water resource development. Urban domestic supplies are relatively small compared to the irrigation needs and industry to a large extent has been left to fend for itself, either getting water from Municipal systems or developing its own supply. In the major industrial areas mentioned earlier, more than 50% of water used by industry is obtained locally by the industry itself.

All water users, agriculture, domestic and industrial have until very recently simply thrown their used water back to the rivers, canals or the sea. Thus China now has an enormous water pollution problem.

Stringent environmental standards have been promulgated and efforts are being made to implement them. It simply cannot be done overnight and now China is facing a period of perhaps 20 - 30 years whilst they find the funds from their industrial growth to rectify the damage this growth has done to the environment. In this general approach they are no different to any other developed or developing industrial country.

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Another important study about to commence is the development of a water quality assurance programme. The DOE has been collecting water quality data since 1978 from a total now of more than 600 sampling stations. The objectives of the study will be to review current practices, methods and procedures and to develop plans and manuals for a comprehensive monitoring programme aimed at providing data and information on the characteristics and quality of surface waters in Malaysia.

As the relatively easy and economic water sources have gradually been exploited, development of the more costly projects further a field from centres of demand will have to be undertaken to meet future needs. The plentiful water sources from the lower reaches of most of our rivers have to a great extent polluted. This together with the rising water treatment cost will continue to drive production cost upwards: How best to contain this trend so as to maintain a reasonably priced drinking water will remain the challenge to water supply engineering.

As our long term planning must also include rectification of any damage done to the environment, this function could also be the responsibility of the DOE. In not too distant a future, we may possibly see the DOE taking over the advisory function of planning and implementing sewerage and water supply systems for the country.

It is evident that, in addition to effort being made by the DOE to achieve the goal of a relatively pollution-free state of the country's water resources, there is also need to develop an institutional capacity and capability to provide guidance and exercise regulatory control for the orderly development of central water borne sewerage systems. The development of sewerage systems has lagged further and further behind the development of water supplies. It is estimated that only about 5% of the total population are at present served by central water borne sewerage systems.

Key Points

I would like to summarise by briefly giving the key points of my address :

- Water is required for several different uses and we must be careful and selective in assigning preferred beneficial uses for our water bodies because the uses may be conflicting, apart for just competing.

- Problems and challenges faced by water administrators are : increasing demand for a finite supply of readily available water, deteriorating quality due to pollution, increased expectations by consumers, and cost.

- We are moving towards demand management, the user pays principle and privatisation.

- We must encourage water conservation, efficiency of utilisation, research and eventually reuse.

- Planning for water resources management is essential, on global, national and regional scales.

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KURSUS ASAS PENILAIAN SUMBER AIR KE VI, 1988

13hb - 18hb Jun, 1988

Ucapan Asas

Past, Present and Future Trends in Water Resources Engineering Practice in Malaysia

Oleh

Ir. Syed Muhammad Shahabudin
Syed Muhammad, Hooi dan Binnie Sdn. Bhd . (SMHB)

International Room
The Merlin, Kuala Lumpur

Anjuran bersama

Jawatankuasa Kebangsaan Malaysia Bagi
Program Hidrologi Antarabangsa (IHP)
dan
Universiti Teknologi Malaysia (UTM)

PAST, PRESENT AND FUTURE TRENDS IN WATER RESOURCES ENGINEERING PRACTICE IN MALAYSIA

13th JUNE 1988

KEYNOTE ADDRESS

by

SYED MUHAMMAD SHAHABUDIN*, PJK

PENG, MIEM, FICE, MIWEM, M.PUJA(B), MACEM

I am greatly honoured to have been invited by the organising committee of this seminar to present the address this morning. The seminar is organised by the Universiti Teknologi Malaysia (UTM), an education institution I have known well over the years for being very active in advancing the engineering science and technology in water resources. Skilled planning for water resources management is essential, on global, national and regional scale in order to achieve the level of efficiency in water use of the future. Well-grounded understanding of engineering science and technology in water resources should be imparted early to undergraduates of higher learning so that they would be able to start well early in their working life in their chosen field of water resources engineering. It is gratifying to note that the UTM is taking a leading role in this direction.

Water is controlled and utilised to serve a wide variety of purposes. Control of water is applied in the case of flood control, land drainage, sewerage and highway bridge design so that excessive damage to life and properties is minimised. Water is utilised for beneficial purposes in water supply, irrigation, hydroelectric power development

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* Chairman & Executive Director
Syed Muhammad, Hooi dan Binnie Sdn Bhd (SMHB)

The first seven are fairly commonly accepted ones, plus an eight - waste disposal which is not usually listed as beneficial use : but which should be listed.

- Potable water really means water for drinking, but is often used with a broader definition to mean water reticulated to a house where it is used for drinking, cooking, washing and other household uses. It is expected to be of high quality, free of contamination, without unpleasant tastes or odours and aesthetically pleasing.

- Industrial water can mean a lot of things; from a very high quality supply as required by certain chemical and food processing industries to low quality water used for washdown and other simular applications. In many countries, including Malaysia, the reticulated potable water supply system also caters for industrial users.

- Irrigation water need not be of a potable quality, but it does need to be in plentiful supply and it must be reliable. In many countries, like in Malaysia, the irrigation water supply system can be the source required for potable water supply.

- Rivers and lakes are used for the production of food for mankind, particularly fish and crustaceans, and also for other forms of aquaculture.

- Power generation through hydro electricity schemes need a large amount of stored water which if not planned properly can cause severe restrictions on the development of water resources for other uses.

- Use of water bodies for recreational purposes is becoming of greater importance in today's ever increasing leisure oriented society, including body contact activities like swimming, diving, surfing and non-body conttact sports like boating, sailing and canoeing. Also, the demand by the public for pleasant lake-side and river-side environments for activities such as walking and picnicking is increasing.

- Navigation is another very important use of water bodies both for transport of goods and of people. Inland waterways, especially, needs good management for effective transportation.

- The additional final use of water is from recycled or reused water sources or more specific water from wastewater disposal. Throughout the world, wastewater produced by human beings and by industry, as well as stormwater runoff, are disposed of to receiving bodies of water. In some cases, the wastewaters are treated prior to discharge, in others they are not. Either way, the natural capacity of the receiving body of water to purify itself is taken advantage of to provide further treatment of the effluent.

Problems associated with water uses:

(i) A fundamental problem is that the various uses are competing and often conflicting. Taking a few examples, in hydroelectric schemes, it is desirable to maintain reservoirs at close to high water mark to minimise electricity generation potential, but this very often makes the stored water unavailable for an irrigation supply. Commercial navigation and recreational activities are often incompatible. Waste disposal and potable water supply do not get along together very well.

(ii) Another major problem is the increasing demand on a finite supply of readily available water. In places like California, Israel and parts of Australia, the available surface waters have been harvested. Maximum safe yields of groundwater are abstracted in many locations. A number of countries have turned to the third and most plentiful water source, the oceans, and are using desalination techniques to produce water of acceptable quality. Recently there has been talk of water from melting of the polar ice caps and from icebergs. The more we need water, the harder it is to find.

(iii) Coupled with the diminishing supply of readily available water is the deteriorating quality of what is left. Naturally, the best water has been taken first. Hence, increased treatment is being required to provide an acceptable supply. The same set of arguments applies to costs: by and large the cheapest sources are developed first.

(iv) Another issue confronting water managers and administrators are the increasing expectations and aspirations of the public. Water quality that has been acceptable in the past is now no longer so. Better sanitation facilities are being demanded, elimination of health risks is considered a right and conservation of the environment is expected.

(v) Finally, the costs of meeting the increased demand for higher quality water and of preserving the several competing and conflicting beneficial uses of our water resources are placing heavy burdens on the community's ability to pay.

Attitudes to water resources:

It would be interesting to turn to the attitudes to water resources in the past, and then compare that with the current perceptions and needs, and finally present some thoughts on where we should be heading.

The past

The great thinkers of the past era had in one way or another contributed to science. Some drainage and irrigation works are attributable to the early Egyptians and miles of aqueducts were constructed to bring water to the city of Rome. It was, however, not until the sixteenth century that the idea of precipitation as the source of streamflow received any real support.

The history of water resources management is relatively brief. In Britain, there were no piped supplies of water or any sewerage system 180 years ago. No great schemes of water supply were initiated until mid 1850's. Chlorination was first used by the Metropolitan Water Board in 1910.

For this country, rainfall data were first collected since late 19th century with a number of stations established at hospitals, post offices and plantations. Systematic gaugings of rivers were started since 1910 with the establishment of the gauging station in the Sg. Kelang. Piped water supply was known to be in operation in George Town, Penang during the early parts of the 1800's using water of good quality from Penang Hill with practically no treatment except of sedimentation and slow sand filtration. Provision of water supply in many parts of the urban areas of the country could be said to have started in ernest only during the last five decades.

In many parts of the world, the rapid population growth was followed by a redistribution of population from predominantly rural to increasingly urban, as improved roadways and waterways were constructed.

The urban concentration had a profound effect on the water industry, as it made necessary the provision of much larger supplies of water than had been envisaged, not only for domestic use but also for industrial use by factories which started up in the larger towns.

Broadly, the water supply schemes of the past were characterised by the following:

- Lower demand and lower supply. People needed less water, used less water and were supplied with less water. Industry was not a great water user. Irrigation supplies were available from nearby rivers and lakes, but no massive irrigation distribution systems were provided.

- Lower quality - little treatment. People and industry used what they got.

- Inadequate sanitation and poorer health. As a result of shortage of supply and lack of treatment, sanitation was inadequate and the general condition of public health was always at risk.

- Wastage : Many of the earlier schemes concentrated on what was delivered to the consumers, with little concern about how much of the water was lost on its way. Water supplies, once developed, were abandoned.

The present

The community at large, particularly in industrialiased countries, has very high expectations regarding quality of life, including its water and sewerage services as well as environmental surroundings.

Compared to the early days when water resources studies were few and of relatively simple nature, presently large scale water resources studies are implemented. The present network of hydrological stations in Malaysia established by the Jabatan Parit dan Taliair (JPT) includes observation stations of rainfall, evaporation, river discharge and suspended sediments. In the mid 1970's, a series of hydrological procedures were developed by the JPT to make estimates if the hydrological characteristics for regions with no hydrological data or inadequate data.

Techniques presented in the procedures have been widely used as an aid to the planning and design of water resources project.

The target of near 100% coverage of public water supply by the beginning of the next century is the aim of the Government for which the biggest single item of work is the implementation of the Malaysian Rural Water Supply Scheme.

Malaysia has substantial hydropower resources, especially in Sabah and Sarawak. However, this pace of development of hydropower resources may not be sustained considering options on the use of other energy sources like coal and gas-fired generation plants.

Large-scale irrigation in Malaysia has been developed for cultivation of rice only. The recent revision to a moderate degree of self sufficiency in rice and the drive to increase the production of other food crops has created the prospect of diversifying irrigation water use.

The water supply systems in the resources system at present are generally reliable and have been designed when possible to permit maximum flexibility in their operation. However the need to supply water reliably and in a flexible manner can lead to design of systems at consequent high capital and high operating costs. The concern about 'high' cost of water has recently led to three interesting developments.

(i) First is the move towards demand management, which is being encouraged in Australia, for example, by a media campaign aimed at educating the average consumer about water use, and more importantly, water wastage. The effort is derived at delaying further development of new resources, to cut costs, by spreading the available amount of water over a larger population.

Another aspect attracting attention is reliability of the system as a whole. Systems are typically designed to maintain full service up to a 100 year drought. If the community accepts from the start that minor restrictions on use may be applied every few years, then it is often possible to significantly delay capital expenditure.

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WORKING PAPER LOG

TITLE AND AUTHOR	SERIES NUMBER	MONTH/YEAR
Indian Water Resources and Their Management: A Perspective on Reality by Satyesh C. Chakraborty	WP-88-1	October 1987
Fisheries Problems in the Yellow and East China Seas, by Tsuyoshi Kawasaki	WP-88-2	November 1987
Indigenous Soil Conservation Strategies in Philippin Upland Farms by Domingo M. Ramirez	WP NO. 1	February 1988
Efficiency Principles for Water Management by James Roumasset, Ujjayant Chakravorty, Tom Wilson, and James Moncur	WP No. 2	March 1988
Proposed Training Courses in Environmental Impact Assessment for Vietnam by Le Thac Can	WP No. 3	April 1988
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Property Rights, Social Organization, and Resource Management in Northern Pakistan by Nek Buzdar	WP No. 5	April 1988
Geographic Information Systems for Rural Development: Appropriate Technology or White Elephant? by Jefferson Fox and Jonathan Chow	WP No. 6	April 1988

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WORKING PAPER LOG

TITLE AND AUTHOR	SERIES NUMBER	MONTH/YEAR
Applying Ecology to Land Management in Southeast Asia by David E. Harper et al.	WP-87-10	August 1987
Forest Degradation and Biomass Utilization in an Himalayan Foothills Village by Marcus Moench	WP-87-10	August 1987

NOTA TAKLIMAT KETUA PENGARAH ALAM SEKITAR,
JABATAN ALAM SEKITAR, KEMENTERIAN SAINS,
TEKNOLOGI DAN ALAM SEKITAR KEPADA YB MENTERI
PEMBANGUNAN SUMBER SABAH DAN ROMBONGAN PADA
20HB FEBRUARI, 1984

Terima kasih kepada Tuan Ketua Setiausaha, Kementerian Sains, Teknologi dan Alam Sekitar yang telah memberi peluang kepada saya untuk menerangkan sebarapa ringkas mengenai fungsi dan tanggung-jawab Jabatan Alam Sekitar khasnya dalam kontek pengurusan alam sekitar di Negeri Sabah.

LATARBELAKANG

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The statutory means are being effectively instituted through the various Regulations in accordance with the Environmental Quality Act, 1974. They are, among others:-

(i) Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations, 1977 - P.U.(A) 342/1977

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(ii) Environmental Quality (Clean Air) Regulations, 1978 - P.U.(A) 280/1978.

(iii) Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Regulations, 1978 - P.U.(A) 338/1978.

(iv) Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979 - P.U.(A) 12/1979.

(v) Motor Vehicles (Control of Smoke and Gas Emission) Rules 1977 - P.U.(A) 414/1977.

While the first four are made under the Environmental Quality Act, 1974 and hence applicable to the whole of Malaysia, the last mentioned, having been made under the Road Transport Ordinance 1968, is applicable to Peninsular Malaysia only. Under these Regulations, the approach to control consists of the establishment of standards for the reduction of pollutants, enforced by both the legal and administrative methods including the levying of pollution charges. The rationale for the levying of pollution charges is to prod and bring home to industry the need to move in the direction of pollution control.

The non-statutory control would be in the form of guidelines intended to help the Government Agencies and State Governments to incorporate environmental considerat ons into their development plans. The Environment Department has already developed the following guidelines:-

(a) the control and prevention of erosion and siltation;

(b) the siting and zoning of industries;

(c) environmental impact assessment; and

(d) the selection and management of sites for the disposal of solid and hazardous wastes.

Basically, the problems of soil erosion and siltation result from the use of land. Therefore, this problem can only be overcome by employing suitable controls in line with the provisions of the National Land Code 1965 and Land Conservation Act 1960 and the practice

of preventive measures especially at the planning stage of a project whether for agriculture, mining, housing, road construction or logging. The guidelines supplement the existing legislation for soil conservation. As matters pertaining to land use fall within the purview of the State Authority, it is appropriate that control measures to prevent soil erosion be carried out by appropriate agencies within the legal framework of existing institutions.

The usefulness of zoning is self-evident. Without it, pollution problems can grow to unmanageable proportions. However, in order that zoning for various activities may be effective, the guidelines must be comprehensive and adhered to strictly, and co-ordination between Federal and State Authorities is required. As control over land use and siting of industries and housing rests with the State Governments and Local Authorities, these guidelines would help these agencies to integrate environmental considerations into development planning.

Under the proposed environmental impact assessment procedure, a number of scheduled projects with potential for significant impact would be required to have an assessment submitted to the Approving Authorities. Initiators of the project will be required to submit the various environmental and pollution impacts which can be foreseen and quantified so that steps may be taken in advance to plan and control their environmental consequences.

The objectives of the guidelines for the selection of sites for the disposal of solid and hazardous wastes and their management is to meet the need for the selection of environmentally acceptable landfill sites and for their proper development and management on sound engineering principles so as to bring about improvements in disposal practices at relatively low cost as well as to reclaim land for useful future use.

Similarly, all the other environment-related legislation could be resorted to effectively through existing Federal and State Agencies for the protection and enhancement of the quality of the environment with the help of appropriate guidelines developed from time to time by the Department of Environment as a means of non-statutory control.

In order to help State Governments to effectively carry out this task of environmental protection and management, the Department of Environment has established Regional Offices in Seberang Prai, Kuala Lumpur, Kuantan, Johor Bharu, Kuching and Kota Kinabalu.

CO-OPERATION IN THE CONTROL OF POLLUTION ARISING AS A RESULT OF DISCHARGE OF SEWAGE AND INDUSTRIAL EFFLUENTS (PALM OIL AND RUBBER INDUSTRIES EXCLUDED) INTO WATERCOURSES AND EMISSION INTO THE ATMOSPHERE

The Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 and the Environmental Quality (Clean Air) Regulations are directed principally towards the control of environmental pollution arising from the discharge of sewage and industrial effluents (other than palm oil and rubber effluents) and emissions which damage our common or shared resources, namely land, air and water. These Regulations are administered by the Environment Department as the enforcement authority.

As matters pertaining to land use such as housing development, sewerage, siting of industrial estates, location of industries and approval of industrial applications are fundamentally important in environmental management, fall explicitly under the jurisdiction of the State Governments either directly or through authorities subordinate to them such as Municipalities and other local authorities, have a definite role in ensuring the effective implementation of the Sewage and Industrial Effluents Regulations and the Clean Air Regulations.

The Environmental Quality (Sewage & Industrial Effluents) Regulations 1979 - P.U.(A) 12/79

These Regulations came into force on 1st January 1979 for industries that commenced operation on or after 1st January 1979 and on 1st January 1981 for industries that came into existence after 1st January 1979. Similarly the Regulations apply to discharge of effluent from municipal sewage treatment plants. The rationale for the somewhat more relaxed approach to existing industries is that they were established before the

coming into force of the relevant Regulations and time had to be given for the design and implementation of effluent treatment systems, where in some cases, the needed equipment having to be imported from developed countries.

The approach to pollution control under these Regulations involves both preventive measures through proper environmental planning as well as the imposition of acceptable conditions of discharge by way of effluent standards which the factories are required to meet prior to discharging their effluents into watercourses.

Regulation 4 requires that application should be made to the Director-General of Environmental Quality for permission to commence construction of any factory on any land and for carrying out any work in any premises which will result in an effluent discharge.

In approving such application, the Environment Department will carry out a presiting evaluation of the site to assess the suitability of the site on environmental grounds and ensure that all measures for the control of pollution, such as the treatment of the effluent, have been incorporated into the plans. Proper siting is of considerable importance as it helps both in the choice of effective control measures and reduces the cost of implementing such measures.

Therefore, as approving authorities for industrial applications, the State Governments and other authorities subordinate to them have an important role in ensuring that all such applications are referred to the Environment Department in good time.

This is all the more important since there is still a lack of technical know-how and skilled personnel to operate sophisticated treatment systems. In this respect it is advisable for Municipalities and other Local Authorities to adopt a policy of admitting the industrial wastes into public sewers for treatment of the wastes along with sewage at the Municipal treatment plants. In this way very effective control

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can be exercised on pollution from industries. Industry in turn can be charged the appropriate fee for the treatment of their effluents at Municipal treatment plants.

Another area where the State Governments have an important role is in the control of sewage discharges from housing estates and commercial establishments. The present practice of permitting septic tanks as a control measure should be discarded in view of its ineffectiveness, as the effluent from septic tanks will not be able to meet the standards stipulated in the Sewage and Industrial Effluents Regulations.

In accordance with Paragraph 4(4) of the First Schedule of the Sewage & Industrial Effluents Regulations, sewage discharges from any housing or commercial development or both with more than 30 units should meet the discharge standards stipulated in the Regulations. Therefore, it is necessary to ensure that all housing and commercial developments or both with more than 30 units should be provided with a centralised sewage treatment system, the discharge from which should be capable of meeting the standards stipulated in the Regulations. This would not only help abate pollution from sewage but also would expedite the provision of modern sanitation.

Environmental Quality (Prescribed Premises)(Crude Palm Oil) Regulations, 1977, and
Environmental Quality (Prescribed Premises)(Raw Natural Rubber) Regulations, 1978

The State Authority as a rule does not require conversion of land use from agriculture to industrial in the case of palm oil mills and rubber factories on the premise that it is ancillary to the operation of the palm oil or rubber estate.

Although the Environment Department, through licensing procedure, enforces appropriate conditions to safeguard the environment there is scope for closer co-operation between the State Governments and the Department of Environment by exchange of information on a regular basis.

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On the matter of siting of palm oil mils and rubber factories, since these involve appropriate siting taking environmental factors into account as well as licensing, it will be necessary for all such applications for the establishment of new palm oil mills or rubber factories to be forwarded to the Environment Department for consideration in good time.

The Environmental Quality (Clean Air) Regulations, 1978
P.U.(A) 280

The object of the Environmental Quality (Clean Air) Regulations, 1978 made under the Environmental Quality Act, 1974 and enforced on 1st October, 1978 is to control and abate air pollution by means of the following measures:-

(a) Control the location of new industrial facilities (which are potentially polluting) with respect to residential areas;

(b) Control the burning of wastes, particularly open-burning;

(c) Control the emission of dark smoke from chimney stacks;

(d) Control the installation of fuel-burning equipment;

(e) Control the emission of air impurities.

In order to achieve the above objectives, full co-operation from Local Authorities is required.

Under the Clean Air Regulations, any new industrial undertaking within a residential area or housing estate or within 1000 meters of the nearest dwelling in a housing area requires prior written approval from the Director-General of Environmental Quality. It is a good practice, there, for Local Authorities to refer all such applications for comments/approcal by the Environment Department. Likewise, for any proposed housing development within 1000 meters of an industrial area, Local Authorities are welcome to seek Environment Department's comments before approval is granted.

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In general, it is a good practice for Local Authorities to refer all applications for new industries to the Environment Department for approval/comments in the interests of action to ensure that pollution abatement measures are incorporated into the planning and design of the industrial enterprises and avoid problems at a later stage.

When planning for industrial development, State Governments and Local Authorities should provide for the zoning of light, medium and heavy industries and for the provision of suitable buffer zones between industrial zones and residential areas. For this purpose, State Governments are advised to use 'The Guidelines for the Siting and Zoning of Industries' prepared by Environment Department. Also, the State Governments are advised not to condone the setting up of industries outside designated industrial zones unless they are resource-based industries. In addition, steps should be taken to resite some of the existing polluting industries which are situated adjacent to densely populated areas. However, before a final decision is made, the State Governments are encouraged to seek Environment Department's comments.

It is also a good practice for State Governments and Local Authorities to examine the compatibility of new projects e.g. townships, tourist development projects etc. vis-a-vis the existing industrial establishments/development in any given area to forestall environmental problems.

Control of Existing Industries

To achieve best results vis-a-vis existing industries, it is best that Local Authority enforcement officers familiarise themselves with pollution control requirements under the Clean Air Regulations. In the course of their duties, if they notice or observe any act contravening the requirements under the Regulations, e.g. installation of polluting facilities within 1000 meters of residential area without

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prior written approval from the Director-General of Environmental Quality, emission of dark smoke or excessive smoke or offensive odour; open-burning of combustible materials; installation of fuel burning equipment such as boilers, furnaces, incinerators without prior written approval of the Director-General of Environmental Quality; they should report the violation to the Department of Environment Headquarters or its Office in Sabah for action. Such assistance is very much needed and appreciated for the successful implementation of the Clean Air Regulations.

In addition, it is advisable for Local Authorities to refer all proposals to resite or to renew the licence of any industry to the Environment Department so that appropriate conditions relating to provision of the polluting control measures can be recommended for adoption.

CONCLUSION

From the foregoing it is evident that the State Government of Sabah, in view of having legislative and administrative competence in specific fields, has a definite responsibility and a pivotal role to play in the enhancement and protection of the quality of the environment in the State of Sabah through proper environmental planning as well as through the application of appropriate environment-related legislation. To this end, the role and the potential for the State Ministry of Resource Development to spearhead this co-operation is self-evident.

JABATAN ALAM SEKITAR,
KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR,
MALAYSIA,
KUALA LUMPUR.

17 FEBRUARI 1984

GKS/AM/STS/sh.

Undang-Undang Yang Berkaitan Dengan
Pemeliharaan dan Pengawalan Alam Sekitar

A. Undang-Undang Persekutuan

1. Local Government Act 1976
2. Streets, Drainage and Building Act 1974
3. Fisheries Act 1963 (Revised - 1978)
4. Land Conservation Act 1960
5. National Parks Act 1980
6. Protection of Wildlife Act 1972
7. Antiquities Act 1976
8. Environmental Quality Act 1974

B. Undang-Undang Negeri

1. Waters Enactment Cap 146 - FMS
   Waters Enactment Amendment No. 11/1973
2. Irrigation Areas Ordinance FMS No. 31/1953
3. Fauna Conservation Ordinance No. 11 of 1963 Sabah
4. Waters Enactment No. 66 - Johore
   Amendment - En. 14/71
5. Waters Enactment No. 129 - Kedah En. 17/71
6. Waters Enactment En. 2/1357 - Trengganu
7. Taman Negara Enactment - Pahang En. 2/1939
8. Taman Negara Enactment - Kelantan No. 14 of 1938
9. Taman Negara Enactment - Trengganu No. 6 of 1358
10. Forest Enactment - Cap 153 - FMS
11. Forest Enactment - Trengganu - Cap 63/1937
12. Forest Enactment - Kelantan - 4/1939
13. Forest Enactment - Johore - No. 58
14. Forest Enactment - Kedah - En. 5/1357
15. Forest Enactment - Perlis - En. 3/1370
16. Forest Enactment - Sabah - En. 2/1968
17. Forest Enactment - Sarawak
    Cap 126, Reprint 1972
18. Forest Enactment Straits Settlements Cap 147

STANDARD-STANDARD PELEPASAN EFFLUEN DI DALAM PERATURAN-PERATURAN KUALITI ALAM SEKELILING

Parameter **	PERATURAN-PERATURAN				
	Effluen Kelapa Sawit (1.1.1984)	Effluen Getah Asli Mentah		Effluen-Effluen Perindustrian & Kumbahan	
		Susu Getah Pekat (1.4.83 seterusnya)	Selain dari Susu Getah Pekat (1.4.81 seterusnya)	(A)	(B)
Suhu; °C	45			40	40
Nilai pH	5.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	5.5-9.0
BOD pada 20°C	100	100 (50*)	250 (50)	20	50
COD	-	400	250	50	100
Pepejal Terampai	400	150 (100*)	150 (100*)	50	100
Raksa				0.005	0.05
Kadmium				0.01	0.02
Kromium				0.05	0.05
Kromium Heksavalensi				0.05	0.10
Arsenium				0.05	0.10
Sianid				0.10	0.5
Pelambam				0.10	0.5
Kromium Trivalensi				0.20	1.0
Tembaga				0.20	1.0
Manganam				0.20	1.0
Nikel				0.20	1.0
Timah				0.20	1.0
Zing				0.20	1.0
Boron				1.0	1.0
Besi (Fe)				1.0	4.0
Fenol				1.0	5.0
Klorin Bebas				0.001	1.0
Sulfid				1.0	2.0
Minyak dan Geris	50'			0.50	0.50
Jumlah Pepejal	-	150 (100*)		tak boleh dikesan	10.0
Amoniakal Nitrojan	150	300	40+		
Jumlah Nitrojan	200	300	60+		

* Keputusan Nilai Purata
\+ Cerakinan Ke Atas Contoh Yang Ditapis
** Semua yunit dalam mg/l kecuali Nilai pH

NOTA TAKLIMAT KETUA PENGARAH ALAM SEKITAR, JABATAN ALAM SEKITAR, KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR KEPADA YB MENTERI PEMBANGUNAN SUMBER SABAH DAN ROMBONGAN PADA 20HB FEBRUARI, 1984

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The statutory means are being effectively instituted through the various Regulations in accordance with the Environmental Quality Act, 1974. They are, among others:-

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The non-statutory control would be in the form of guidelines intended to help the Government Agencies and State Governments to incorporate environmental considerations into their development plans. The Environment Department has already developed the following guidelines:-

(a) the control and prevention of erosion and siltation;

(b) the siting and zoning of industries;

(c) environmental impact assessment; and

(d) the selection and management of sites for the disposal of solid and hazardous wastes.

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The usefulness of zoning is self-evident. Without it, pollution problems can grow to unmanageable proportions. However, in order that zoning for various activities may be effective, the guidelines must be comprehensive and adhered to strictly, and co-ordination between Federal and State Authorities is required. As control over land use and siting of industries and housing rests with the State Governments and Local Authorities, these guidelines would help these agencies to integrate environmental considerations into development planning.

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coming into force of the relevant Regulations and time had to be given for the design and implementation of effluent treatment systems, where in some cases, the needed equipment having to be imported from developed countries.

The approach to pollution control under these Regulations involves both preventive measures through proper environmental planning as well as the imposition of acceptable conditions of discharge by way of effluent standards which the factories are required to meet prior to discharging their effluents into watercourses.

Regulation 4 requires that application should be made to the Director-General of Environmental Quality for permission to commence construction of any factory on any land and for carrying out any work in any premises which will result in an effluent discharge.

In approving such application, the Environment Department will carry out a presiting evaluation of the site to assess the suitability of the site on environmental grounds and ensure that all measures for the control of pollution, such as the treatment of the effluent, have been incorporated into the plans. Proper siting is of considerable importance as it helps both in the choice of effective control measures and reduces the cost of implementing such measures.

Therefore, as approving authorities for industrial applications, the State Governments and other authorities subordinate to them have an important role in ensuring that all such applications are referred to the Environment Department in good time.

This is all the more important since there is still a lack of technical know-how and skilled personnel to operate sophisticated treatment systems. In this respect it is advisable for Municipalities and other Local Authorities to adopt a policy of admitting the industrial wastes into public sewers for treatment of the wastes along with sewage at the Municipal treatment plants. In this way very effective control

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In order to help State Governments to effectively carry out this task of environmental protection and management, the Department of Environment has established Regional Offices in Seberang Prai, Kuala Lumpur, Kuantan, Johor Bharu, Kuching and Kota Kinabalu.

CO-OPERATION IN THE CONTROL OF POLLUTION ARISING AS A RESULT OF DISCHARGE OF SEWAGE AND INDUSTRIAL EFFLUENTS (PALM OIL AND RUBBER INDUSTRIES EXCLUDED) INTO WATERCOURSES AND EMISSION INTO THE ATMOSPHERE

The Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 and the Environmental Quality (Clean Air) Regulations are directed principally towards the control of environmental pollution arising from the discharge of sewage and industrial effluents (other than palm oil and rubber effluents) and emissions which damage our common or shared resources, namely land, air and water. These Regulations are administered by the Environment Department as the enforcement authority.

As matters pertaining to land use such as housing development, sewerage, siting of industrial estates, location of industries and approval of industrial applications are fundamentally important in environmental management, fall explicitly under the jurisdiction of the State Governments either directly or through authorities subordinate to them such as Municipalities and other local authorities, have a definite role in ensuring the effective implementation of the Sewage and Industrial Effluents Regulations and the Clean Air Regulations.

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These Regulations came into force on 1st January 1979 for industries that commenced operation on or after 1st January 1979 and on 1st January 1981 for industries that came into existence after 1st January 1979. Similarly the Regulations apply to discharge of effluent from municipal sewage treatment plants. The rationale for the somewhat more relaxed approach to existing industries is that they were established before the

can be exercised on pollution from industries. Industry in turn can be charged the appropriate fee for the treatment of their effluents at Municipal treatment plants.

Another area where the State Governments have an important role is in the control of sewage discharges from housing estates and commercial establishments. The present practice of permitting septic tanks as a control measure should be discarded in view of its ineffectiveness, as the effluent from septic tanks will not be able to meet the standards stipulated in the Sewage and Industrial Effluents Regulations.

In accordance with Paragraph 4(4) of the First Schedule of the Sewage & Industrial Effluents Regulations, sewage discharges from any housing or commercial development or both with more than 30 units should meet the discharge standards stipulated in the Regulations. Therefore, it is necessary to ensure that all housing and commercial developments or both with more than 30 units should be provided with a centralised sewage treatment system, the discharge from which should be capable of meeting the standards stipulated in the Regulations. This would not only help abate pollution from sewage but also would expedite the provision of modern sanitation.

Environmental Quality (Prescribed Premises)(Crude Palm Oil) Regulations, 1977, and
Environmental Quality (Prescribed Premises)(Raw Natural Rubber) Regulations, 1978

The State Authority as a rule does not require conversion of land use from agriculture to industrial in the case of palm oil mills and rubber factories on the premise that it is ancillary to the operation of the palm oil or rubber estate.

Although the Environment Department, through licensing procedure, enforces appropriate conditions to safeguard the environment there is scope for closer co-operation between the State Governments and the Department of Environment by exchange of information on a regular basis.

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On the matter of siting of palm oil mils and rubber factories, since these involve appropriate siting taking environmental factors into account as well as licensing, it will be necessary for all such applications for the establishment of new palm oil mills or rubber factories to be forwarded to the Environment Department for consideration in good time.

The Environmental Quality (Clean Air) Regulations, 1978 P.U.(A) 280

The object of the Environmental Quality (Clean Air) Regulations, 1978 made under the Environmental Quality Act, 1974 and enforced on 1st October, 1978 is to control and abate air pollution by means of the following measures:-

(a) Control the location of new industrial facilities (which are potentially polluting) with respect to residential areas;

(b) Control the burning of wastes, particularly open-burning;

(c) Control the emission of dark smoke from chimney stacks;

(d) Control the installation of fuel-burning equipment;

(e) Control the emission of air impurities.

In order to achieve the above objectives, full co-operation from Local Authorities is required.

Under the Clean Air Regulations, any new industrial undertaking within a residential area or housing estate or within 1000 meters of the nearest dwelling in a housing area requires prior written approval from the Director-General of Environmental Quality. It is a good practice, there, for Local Authorities to refer all such applications for comments/approcal by the Environment Department. Likewise, for any proposed housing development within 1000 meters of an industrial area, Local Authorities are welcome to seek Environment Department's comments before approval is granted.

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In general, it is a good practice for Local Authorities to refer all applications for new industries to the Environment Department for approval/comments in the interests of action to ensure that pollution abatement measures are incorporated into the planning and design of the industrial enterprises and avoid problems at a later stage.

When planning for industrial development, State Governments and Local Authorities should provide for the zoning of light, medium and heavy industries and for the provision of suitable buffer zones between industrial zones and residential areas. For this purpose, State Governments are advised to use 'The Guidelines for the Siting and Zoning of Industries' prepared by Environment Department. Also, the State Governments are advised not to condone the setting up of industries outside designated industrial zones unless they are resource-based industries. In addition, steps should be taken to resite some of the existing polluting industries which are situated adjacent to densely populated areas. However, before a final decision is made, the State Governments are encouraged to seek Environment Department's comments.

It is also a good practice for State Governments and Local Authorities to examine the compatibility of new projects e.g. townships, tourist development projects etc. vis-a-vis the existing industrial establishments/development in any given area to forestall environmental problems.

Control of Existing Industries

To achieve best results vis-a-vis existing industries, it is best that Local Authority enforcement officers familiarise themselves with pollution control requirements under the Clean Air Regulations. In the course of their duties, if they notice or observe any act contravening the requirements under the Regulations, e.g. installation of polluting facilities within 1000 meters of residential area without

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prior written approval from the Director-General of Environmental Quality, emission of dark smoke or excessive smoke or offensive odour; open-burning of combustible materials; installation of fuel burning equipment such as boilers, furnaces, incinerators without prior written approval of the Director-General of Environmental Quality; they should report the violation to the Department of Environment Headquarters or its Office in Sabah for action. Such assistance is very much needed and appreciated for the successful implementation of the Clean Air Regulations.

In addition, it is advisable for Local Authorities to refer all proposals to resite or to renew the licence of any industry to the Environment Department so that appropriate conditions relating to provision of the polluting control measures can be recommended for adoption.

CONCLUSION

From the foregoing it is evident that the State Government of Sabah, in view of having legislative and administrative competence in specific fields, has a definite responsibility and a pivotal role to play in the enhancement and protection of the quality of the environment in the State of Sabah through proper environmental planning as well as through the application of appropriate environment-related legislation. To this end, the role and the potential for the State Ministry of Resource Development to spearhead this co-operation is self-evident.

JABATAN ALAM SEKITAR,
KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR,
MALAYSIA,
KUALA LUMPUR.

17 FEBRUARI 1984

GKS/AM/STS/sh.

Undang-Undang Yang Berkaitan Dengan Pemeliharaan dan Pengawalan Alam Sekitar

A. Undang-Undang Persekutuan

1. Local Government Act 1976
2. Streets, Drainage and Building Act 1974
3. Fisheries Act 1963 (Revised - 1978)
4. Land Conservation Act 1960
5. National Parks Act 1980
6. Protection of Wildlife Act 1972
7. Antiquities Act 1976
8. Environmental Quality Act 1974

B. Undang-Undang Negeri

1. Waters Enactment Cap 146 - FMS
   Waters Enactment Amendment No. 11/1973
2. Irrigation Areas Ordinance FMS No. 31/1953
3. Fauna Conservation Ordinance No. 11 of 1963 Sabah
4. Waters Enactment No. 66 - Johore
   Amendment - En. 14/71
5. Waters Enactment No. 129 - Kedah En. 17/71
6. Waters Enactment En. 2/1357 - Trengganu
7. Taman Negara Enactment - Pahang En. 2/1939
8. Taman Negara Enactment - Kelantan No. 14 of 1938
9. Taman Negara Enactment - Trengganu No. 6 of 1358
10. Forest Enactment - Cap 153 - FMS
11. Forest Enactment - Trengganu - Cap 63/1937
12. Forest Enactment - Kelantan - 4/1939
13. Forest Enactment - Johore - No. 58
14. Forest Enactment - Kedah - En. 5/1357
15. Forest Enactment - Perlis - En. 3/1370
16. Forest Enactment - Sabah - En. 2/1968
17. Forest Enactment - Sarawak
    Cap 126, Reprint 1972
18. Forest Enactment Straits Settlements Cap 147

STANDARD-STANDARD PELEPASAN EFFLUEN DI DALAM
PERATURAN-PERATURAN KUALITI ALAM SEKELILING

Parameter **	PERATURAN-PERATURAN				
	Effluen Kelapa Sawit (1.1.1984)	Effluen Getah Asli Mentah			
		Susu Getah Pekat (1.4.83 seterusnya)	Selain dari Susu Getah Pekat (1.4.81 seterusnya)	Effluen-Effluen Perindustrian & Kumbahan	
				(A)	(B)
Suhu; ^{o}C	45			40	40
Nilai pH	5.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	5.5-9.0
BOD_5 pada $20^{o}C$	100	100 (50*)	250 (50)	20	50
COD	-	400	250	50	100
Pepejal Terampai	400	150 (100*)	150 (100*)	50	100
Raksa				0.005	0.05
Kadmium				0.01	0.02
Kromium				0.05	0.05
Kromium Heksavalensi				0.05	0.10
Arsenium				0.05	0.10
Sianid				0.10	0.5
Pelambam				0.10	0.5
Kromium Trivalensi				0.20	1.0
Tembaga				0.20	1.0
Manganam				0.20	1.0
Nikel				0.20	1.0
Timah				0.20	1.0
Zing				0.20	1.0
Boron				1.0	1.0
Besi (Fe)				1.0	4.0
Fenol				1.0	5.0
Klorin Bebas				0.001	1.0
Sulfid				1.0	2.0
Minyak dan Geris	50'			0.50	0.50
Jumlah Pepejal	-	150 (100*)		tak boleh dikesan	10.0
Amoniakal Nitrojan	150	300	40+		
Jumlah Nitrojan	200	300	60+		

* Keputusan Nilai Purata
\+ Cerakinan Ke Atas Contoh Yang Ditapis
** Semua yunit dalam mg/l kecuali Nilai pH

NOTA TAKLIMAT KETUA PENGARAH ALAM SEKITAR, JABATAN ALAM SEKITAR, KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR KEPADA YB MENTERI PEMBANGUNAN SUMBER SABAH DAN ROMBONGAN PADA 20HB FEBRUARI, 1984

Terima kasih kepada Tuan Ketua Setiausaha, Kementerian Sains, Teknologi dan Alam Sekitar yang telah memberi peluang kepada saya untuk menerangkan sebarapa ringkas mengenai fungsi dan tanggung-jawab Jabatan Alam Sekitar khasnya dalam kontek pengurusan alam sekitar di Negeri Sabah.

LATARBELAKANG

Negara kita telah mengalami pembangunan pesat dalam beberapa sektor ekonomi moden seperti pertanian, perindustrian, kemajuan tanah, perumahan, perhutanan, pengeluaran tenaga mahupun bagi projek-projek infrastruktur seperti lebuhraya, pelabuhan dan sebagainya. Pembangunan yang pesat ini telah menimbulkan masalah sampingan khasnya kerosakan-kerosakan kepada alam sekitar yang malangnya menjejaskan juga kualiti hidup dan mata pencarian beberapa suku kaum kepada rakyat jelata. Ianya menjadi lebih jelas dan ketara demi tahun ke setahun mengikut kepesatan pembangunan di kawasan-kawasan serta negeri-negeri tertentu di seluruh negara. Khasnya mulai tahun 1975 Kerajaan Pusat telah mengambil langkah merancang dasar-dasar dan program-program bagi mempastikan pembangunan ekonomi berjalan selaras dan berseimbang dengan pengurusan alam sekitar. Akta Kualiti Alam Sekeliling telah diluluskan dalam bulan September,1974 dan telah dilaksanakan pada pertengahan bulan April, 1975 dengan penubuhan satu agensi yang dinamakan Bahagian Alam Sekitar yang kini menjadi Jabatan Alam Sekitar di bawah Kementerian Sains, Teknologi dan Alam Sekitar. Jabatan ini telah berkembang dengan pesat sejak ianya ditubuhkan dengan pencapaian sumber tenaga pekerja daripada 45 orang dalam tahun 1977 kepada 370 orang pada tahun 1984 ini. Mulai 1 Januari, 1981 beberapa Pejabat Cawangan dibuka dan bagi Negeri Sabah ianya telah di-wujudkan pada 1 Jun, 1981. Sejak 1 September, 1983 Bahagian ini telahpun dinaikkan taraf sebagai sebuah Jabatan Persekutuan.

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The task of environmental management is both vast and complex that to accomplish it effectively, the responsibility must be shared. This is all the more necessary in the Malaysian context as Malaysia has a three-tier system of Government - Federal Government, State Government and Local Authorities with each level having legislative and administrative competence in specific fields. This implies taking into account division of responsibilities among the three levels of Governments in our approach to solving environmental problems, through effective co-ordination and willing co-operation so that available resources of manpower and funds are deployed to good purpose, avoiding both duplication of efforts and resources being spread too thinly to be effective.

In the past, there has been a tendency to equate the development goal with the more narrowly conceived objective of economic growth as measured by the rise in gross national product. It is usually recognised today that high rates of economic growth, necessary and essential as they are, do not by themselves guarantee the easing or urgent social and human problems. Indeed in not a few countries high growth rates have been accompanied by increasing unemployment, rising disparities in incomes both between groups and between regions and the erosion of social and cultural values.

Obviously a developing country like Malaysia must give priority to economic and social development programmes to meet the basic needs of the population. Equally obvious is the consideration that it cannot afford to let pollution spoil the hoped-for gains through development via adverse side-effects on the quality of life or allow its resource regenerative capacity to be sapped and undermined by environmental mismanagement. Thus a sensible balance is needed.

To this end, it is important that environmental concerns are integrated into development planning and regarded as part and parcel of the overall framework of economic and social planning. Environmental concern should come to be regarded as yet another dimension of the process of development, not viewed separately or as an afterthought.

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In summary, the current environmental problems facing Malaysia can be broadly categorised into two groups:-

* Those arising as a result of development of Malaysia's land and other natural resources, both renewable and non-renewable.

* Those arising from the discharge of undesirable wastes products or effluents into the environment as a result of industrialization and human settlement.

ENVIRONMENTAL LEGISLATION

Environmental consciousness in Malaysia can be said to date from as far back as the 1920s and 1930s when various Water Enactments and the Enactments in three East Coast States of Peninsular Malaysia establishing what has since become the National Park were passed. Currently there are 26 environmental-related legislations in force in Malaysia as shown in Appendix I. These pieces of legislation, while not necessarily devoted entirely to environmental matters, contain provisions or references that have to do with environmental control.

For example, the National Land Code 1965 divides land use into three categories:-

i) agriculture
ii) building
iii) industry

The National Land Code, therefore, enables proper land use planning taking environmental factors into consideration as well as control of siltation.

The Land Conservation Act 1960 helps to control soil erosion and siltation.

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The Waters Enactment 1920 prohibits the disruption of any river so as to interfere with the flow of water as well as restricting the discharge of specific substances detrimental to the benefitial uses of the river.

Similarly, the Factories & Machinery Act, 1967 deals with occupational safety and health in the working environment, the Mining Act controls discharges from mining activities into water courses, the Forest Enactment (1934) and Rules (1935) provide for the establishment of forest reserves as well as control of logging.

However, none of the above legislation has been or is capable of being applied towards the specific task of dealing with environmental problems in a comprehensive manner. In view of this, the Environmental Quality Act, 1974 was enacted as a substantive piece of legislation complementing existing ones.

STRATEGY FOR ENVIRONMENTAL MANAGEMENT

The Environmental Quality Act, 1974 and the various Regulations under it are directed principally towards the second group of environmental problems, namely, industrial pollution in the form of discharges and emissions and sewage from domestic sources which damage our common resources, namely, land, air and water. However, they represent by no means the complete answer in tackling the broad environmental issues of the first group emanating from the development of land and natural resources which are considered to present equally serious problems as compared to the second group. Nevertheless, these Regulations constitute positive steps towards the control of pollution from point sources.

The first group of problems can only be overcome through proper environmental planning and through measures taken right from the initial planning stage of a project or development.

Although the task of protecting the environment has been and continues to be given impetus by the Environment Department of the

Ministry of Science, Technology and Environment, it is not possible for it to be involved directly in the technical procedures and control mechanisms for coping with various environment-related matters (such as use of pesticides, solid waste disposal, control of mining discharges) and it could also taken as undue encroachment into departmental jurisdictions of other agencies. It is, therefore, only logical for the implementing agencies themselves to incorporate environmental safeguards in the course of the implementation of their various programmes or activities.

The Environment Department, therefore, has adopted a two-pronged strategy for the protection and enhancement of the quality of the environment encompassing both statutory and non-statutory means.

The choice of these control measures and their application would depend significantly on the areas to be controlled. The statutory control is adopted in areas which are expressly within the competence of the Environmental Quality Act, 1974 or more precisely in those matters which are specified in the Federal or Concurrent Lists. The non-statutory control, on the other hand, is applied in areas where the existing responsibilities are shared by various government agencies and in those areas which are within the competence of the State Governments. It will be noted that matters such as land, agriculture, forestry, mining, soil erosion, solid waste disposal, drainage and irrigation etc. which are fundamentally important in environmental management are explicitly under the State and Concurrent Lists, and it is in these areas that the non-statutory control must be directed with great care to avoid unnecessary administrative conflicts and duplication of efforts.

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In approving such application, the Environment Department will carry out a presiting evaluation of the site to assess the suitability of the site on environmental grounds and ensure that all measures for the control of pollution, such as the treatment of the effluent, have been incorporated into the plans. Proper siting is of considerable importance as it helps both in the choice of effective control measures and reduces the cost of implementing such measures.

Therefore, as approving authorities for industrial applications, the State Governments and other authorities subordinate to them have an important role in ensuring that all such applications are referred to the Environment Department in good time.

This is all the more important since there is still a lack of technical know-how and skilled personnel to operate sophisticated treatment systems. In this respect it is advisable for Municipalities and other Local Authorities to adopt a policy of admitting the industrial wastes into public sewers for treatment of the wastes along with sewage at the Municipal treatment plants. In this way very effective control

can be exercised on pollution from industries. Industry in turn can be charged the appropriate fee for the treatment of their effluents at Municipal treatment plants.

Another area where the State Governments have an important role is in the control of sewage discharges from housing estates and commercial establishments. The present practice of permitting septic tanks as a control measure should be discarded in view of its ineffectiveness, as the effluent from septic tanks will not be able to meet the standards stipulated in the Sewage and Industrial Effluents Regulations.

In accordance with Paragraph 4(4) of the First Schedule of the Sewage & Industrial Effluents Regulations, sewage discharges from any housing or commercial development or both with more than 30 units should meet the discharge standards stipulated in the Regulations. Therefore, it is necessary to ensure that all housing and commercial developments or both with more than 30 units should be provided with a centralised sewage treatment system, the discharge from which should be capable of meeting the standards stipulated in the Regulations. This would not only help abate pollution from sewage but also would expedite the provision of modern sanitation.

Environmental Quality (Prescribed Premises)(Crude Palm Oil) Regulations, 1977, and
Environmental Quality (Prescribed Premises)(Raw Natural Rubber) Regulations, 1978

The State Authority as a rule does not require conversion of land use from agriculture to industrial in the case of palm oil mills and rubber factories on the premise that it is ancillary to the operation of the palm oil or rubber estate.

Although the Environment Department, through licensing procedure, enforces appropriate conditions to safeguard the environment there is scope for closer co-operation between the State Governments and the Department of Environment by exchange of information on a regular basis.

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On the matter of siting of palm oil mils and rubber factories, since these involve appropriate siting taking environmental factors into account as well as licensing, it will be necessary for all such applications for the establishment of new palm oil mills or rubber factories to be forwarded to the Environment Department for consideration in good time.

The Environmental Quality (Clean Air) Regulations, 1978
P.U.(A) 280

The object of the Environmental Quality (Clean Air) Regulations, 1978 made under the Environmental Quality Act, 1974 and enforced on 1st October, 1978 is to control and abate air pollution by means of the following measures:-

(a) Control the location of new industrial facilities (which are potentially polluting) with respect to residential areas;

(b) Control the burning of wastes, particularly open-burning;

(c) Control the emission of dark smoke from chimney stacks;

(d) Control the installation of fuel-burning equipment;

(e) Control the emission of air impurities.

In order to achieve the above objectives, full co-operation from Local Authorities is required.

Under the Clean Air Regulations, any new industrial undertaking within a residential area or housing estate or within 1000 meters of the nearest dwelling in a housing area requires prior written approval from the Director-General of Environmental Quality. It is a good practice, there, for Local Authorities to refer all such applications for comments/approcal by the Environment Department. Likewise, for any proposed housing development within 1000 meters of an industrial area, Local Authorities are welcome to seek Environment Department's comments before approval is granted.

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In general, it is a good practice for Local Authorities to refer all applications for new industries to the Environment Department for approval/comments in the interests of action to ensure that pollution abatement measures are incorporated into the planning and design of the industrial enterprises and avoid problems at a later stage.

When planning for industrial development, State Governments and Local Authorities should provide for the zoning of light, medium and heavy industries and for the provision of suitable buffer zones between industrial zones and residential areas. For this purpose, State Governments are advised to use 'The Guidelines for the Siting and Zoning of Industries' prepared by Environment Department. Also, the State Governments are advised not to condone the setting up of industries outside designated industrial zones unless they are resource-based industries. In addition, steps should be taken to resite some of the existing polluting industries which are situated adjacent to densely populated areas. However, before a final decision is made, the State Governments are encouraged to seek Environment Department's comments.

It is also a good practice for State Governments and Local Authorities to examine the compatibility of new projects e.g. townships, tourist development projects etc. vis-a-vis the existing industrial establishments/development in any given area to forestall environmental problems.

Control of Existing Industries

To achieve best results vis-a-vis existing industries, it is best that Local Authority enforcement officers familiarise themselves with pollution control requirements under the Clean Air Regulations. In the course of their duties, if they notice or observe any act contravening the requirements under the Regulations, e.g. installation of polluting facilities within 1000 meters of residential area without

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prior written approval from the Director-General of Environmental Quality, emission of dark smoke or excessive smoke or offensive odour; open-burning of combustible materials; installation of fuel burning equipment such as boilers, furnaces, incinerators without prior written approval of the Director-General of Environmental Quality; they should report the violation to the Department of Environment Headquarters or its Office in Sabah for action. Such assistance is very much needed and appreciated for the successful implementation of the Clean Air Regulations.

In addition, it is advisable for Local Authorities to refer all proposals to resite or to renew the licence of any industry to the Environment Department so that appropriate conditions relating to provision of the polluting control measures can be recommended for adoption.

CONCLUSION

From the foregoing it is evident that the State Government of Sabah, in view of having legislative and administrative competence in specific fields, has a definite responsibility and a pivotal role to play in the enhancement and protection of the quality of the environment in the State of Sabah through proper environmental planning as well as through the application of appropriate environment-related legislation. To this end, the role and the potential for the State Ministry of Resource Development to spearhead this co-operation is self-evident.

JABATAN ALAM SEKITAR,
KEMENTERIAN SAINS, TEKNOLOGI DAN ALAM SEKITAR,
MALAYSIA,
KUALA LUMPUR.

17 FEBRUARI 1984

GKS/AM/STS/sh.

Undang-Undang Yang Berkaitan Dengan Pemeliharaan dan Pengawalan Alam Sekitar

A. Undang-Undang Persekutuan

1. Local Government Act 1976
2. Streets, Drainage and Building Act 1974
3. Fisheries Act 1963 (Revised - 1978)
4. Land Conservation Act 1960
5. National Parks Act 1980
6. Protection of Wildlife Act 1972
7. Antiquities Act 1976
8. Environmental Quality Act 1974

B. Undang-Undang Negeri

1. Waters Enactment Cap 146 - FMS
   Waters Enactment Amendment No. 11/1973
2. Irrigation Areas Ordinance FMS No. 31/1953
3. Fauna Conservation Ordinance No. 11 of 1963 Sabah
4. Waters Enactment No. 66 - Johore
   Amendment - En. 14/71
5. Waters Enactment No. 129 - Kedah En. 17/71
6. Waters Enactment En. 2/1357 - Trengganu
7. Taman Negara Enactment - Pahang En. 2/1939
8. Taman Negara Enactment - Kelantan No. 14 of 1938
9. Taman Negara Enactment - Trengganu No. 6 of 1358
10. Forest Enactment - Cap 153 - FMS
11. Forest Enactment - Trengganu - Cap 63/1937
12. Forest Enactment - Kelantan - 4/1939
13. Forest Enactment - Johore - No. 58
14. Forest Enactment - Kedah - En. 5/1357
15. Forest Enactment - Perlis - En. 3/1370
16. Forest Enactment - Sabah - En. 2/1968
17. Forest Enactment - Sarawak
    Cap 126, Reprint 1972
18. Forest Enactment Straits Settlements Cap 147

STANDARD-STANDARD PELEPASAN EFFLUEN DI DALAM PERATURAN-PERATURAN KUALITI ALAM SEKELILING

Parameter **	PERATURAN-PERATURAN				
	Effluen Kelapa Sawit (1.1.1984)	Effluen Getah Asli Mentah			
		Susu Getah Pekat (1.4.83 seterusnya)	Selain dari Susu Getah Pekat (1.4.81 seterusnya)	Effluen-Effluen Perindustrian & Kumbahan	
				(A)	(B)
Suhu; °C	45			40	40
Nilai pH	5.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	5.5-9.0
BOD pada 20°C	100	100 (50*)	250 (50)	20	50
COD	-	400	250	50	100
Pepejal Terampai	400	150 (100*)	150 (100*)	50	100
Raksa				0.005	0.05
Kadmium				0.01	0.02
Kromium				0.05	0.05
Kromium Heksavalensi				0.05	0.10
Arsenium				0.05	0.10
Sianid				0.10	0.5
Pelambam				0.10	0.5
Kromium Trivalensi				0.20	1.0
Tembaga				0.20	1.0
Manganam				0.20	1.0
Nikel				0.20	1.0
Timah				0.20	1.0
Zing				0.20	1.0
Boron				1.0	1.0
Besi (Fe)				1.0	4.0
Fenol				1.0	5.0
Klorin Bebas				0.001	1.0
Sulfid				1.0	2.0
Minyak dan Geris	50'			0.50	0.50
Jumlah Pepejal	-	150 (100*)		tak boleh dikesan	10.0
Amoniakal Nitrojan	150	300	40+		
Jumlah Nitrojan	200	300	60+		

* Keputusan Nilai Purata
\+ Cerakinan Ke Atas Contoh Yang Ditapis
** Semua yunit dalam mg/l kecuali Nilai pH

Briefing Notes to Ministry of Science, Technology & Environment
25 September 1985

Pollution is a result of material progress. Traditionally industry is the major source of pollution. But as a whole, the real cause of environmental pollution viz-a-viz, noise, air and water contamination is the modern society itself and in particular the advancement in urbanization.

It is the result of millions of people engaging in their day-to-day activities, such as manufacturing, burning of garbage, using automobiles, disposing of sewage etc. Thus it require a co-ordinated effort by all parts of community, agencies and government departments to ensure a satisfactory environment.

The prime objective of town and country planning is to enhance the quality of environment and life in urban or rural settlements. The process involve the proper distribution of land uses and control of current urban activities.

The Role of Town and Country Planning Department in this country is divided into 3 levels:

i) The Federal Department: is responsible in supervision of the service, provision of guidelines, policies and assisting other agencies in producing master plans.

ii) The State and

iii) The local government: is responsible in the formulation of local planning policies, its implementation and the day-to-day control of development.

At Federal Department, we have 5 divisions each responsible for promoting physical planning policies and master plans at various level of settlements.

i) Spatial & Landscape:
   a. responsible in producing guidelines, standards for planning and development control, and
   b. implementing the beautification or landscape projects.

ii) Regional Division: as counterpart to Economic Planning Unit in preparing regional master plans.

iii) New Town Division: assisting Regional Authorities in preparing new town plans.

iv) Urban Division: Implementing the Town and Country Planning Act, and preparation of Structure Plans for most existing towns.

v) Rural Division: assisting various agencies in preparing plans, strategies for rural settlements such as FELDA, Aboriginal settlements and traditional villages.

For purpose of todays discussion, the subjects that are of prime importance here are the:

i) Implementation of the Town & Country Planning Act.
ii) The standards/guidelines for development control.
iii) Projects undertaken in promoting beautification i.e. landscaping, as part of ensuring better quality or urban environment.

The Act is an instrument to allow planning process have its legal backing, while the planning standars are needed in ensuring each urban development will meet its environmental objectives.

Each State has already adopted the Town and Country Planning Act and a number of Structure Plans are already prepared/under preparation such as, Seremban, Kota Setar, Johor Bharu, Ipoh, Kota Bharu, and Kuala Trengganu.

Others like Kuantan, Melaka, Kerteh, Kemaman, Seberang Prai are being allocated.

At present, the spatial provisions are found to be vague, inadequate and often incomprehensive, to comply satisfactorily to enhancing the quality of life. With this in view, standards/guidelines are being prepared (and still in draft form) to provide the State and Local Authorities a clear guideline on four basic physical planning aspects, which are:

i) Space standards.
ii) Site requirements.
iii) Locational requirements, and
iv) Distributional criteria

The above 4 aspects are covered/considered in the formulation of standards for various categories of urban activities as follows:

i)	Residential	- include the requirement for Building setbacks - height control - distances between buildings - minimum size of building lots - Road standards - utility requirement.
ii)	Recreational Open Space	- include minimum area and size - types - hierarchy
iii)	Industry	- include setbacks from access road - lot size - site coverage - buffer zones/distances from other urban uses - roads, parking standards
iv)	Parking	- include minimum number of parking bays for each category of building uses.

v) Community facilities - include the number and lot sizes for various types of facilities normally required for a certain number of catchment population.

vi) Cemetries - include minimum size and layout requirement.

As far as the beautification programme is concerned, the department has prepared the following guidelines:

i) Trees and their uses
ii) Fruit trees for landscaping
iii) Planting techniques and site preparation
iv) Plant maintenance

A total of 180 landscape detail plans have been prepared between 1980 to 1985. 37 projects have been implemented with a total cost of 1.84 m. ringgit. Others are yet to be implemented and postponed due to lack of funds. These landscape projects include, the beautification of holiday resorts, hotels, beaches, botanical gardens, office complexes, highways, road interchanges and recreational open spaces.

In conclusion, it may be pertinent to inform here that the role of Town and Country Planning Department in this country at the moment is to advice and assist the various agencies in whatever measures they are taking in promoting the quality of environment. The department's direct contribution in environmental quality control is to plan ahead the proper spatial distribution of land uses through the implementation of Town and Country Planning Act, and the implementation of standard guideline in determining and controlling the density, location and space requirements for land building development.

ABD. MUTALIB B. JELANI
Town and Country Planning Dept.
25 September 1985.

AMJ/mo.

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Draft

Ministry of Science, Technology and the Environment

PRESS RELEASE

Proposed Control on the Consumption of Chlorofluorocarbons and Halons for the Protection of the Ozone Layer

The Ministry of Science, Technology and the Environment will propose to the Government of Malaysia an acceptance of the Vienna Convention for the Protection of the Ozone Layer of 1985, and the ratification of the Montreal Protocol on Substances that Deplete the Ozone Layer of 1987. The proposal constitutes the Malaysian response to the global commitment to protect human health and the environment against harmful solar ultraviolet (UV) radiation which is otherwise shielded by the ozone layer in the stratosphere. The Vienna Convention has come into force on September 22, 1988, and the Montreal Protocol will enter into force on January 1, 1989.

A consensus has emerged at international fora in Montreal that chlorine from synthetic chemicals called chlorofluorocarbons (CFCs), and bromine from chemicals called halons will reduce ozone in the stratosphere. A significant reduction in ozone in the upper atmosphere could result in long-term increases in skin cancer and cataracts, and probably damage the human immune system. Scientific evidence also supports the conclusion that reductions in the total abundance of stratospheric ozone could reduce crop yields and alter both terrestrial and marine ecosystems.

The CFCs are used as blowing agents in the manufacture of plastics and rubber products, as refrigerants, as solvents particularly in the manufacture of electronic chips, as sterilants in medical care, as coolants, and in aerosol applications. Halons are used as fire extinguishing agents, particularly for electronic and computer installations.

The proposal essentially calls for the control of our use or consumption of the CFCs and Halons effectively at 0.3 kg per capita per year or less at 1986 population level for the next ten years from the date of entry into force of the Montreal Protocol on January 1, 1989 or at the earliest opportunity. The eight chemicals to be controlled under the Protocol are as follows:

Group I: Fully Halogenated Chlorofluorocarbons

CFC-11
CFC-12
CFC-113
CFC-114
CFC-115

Group II: Halons

Halon-1201
Halon-1301
Halon-2402

Like others, Malaysia will benefit from various incentives and provisions enforced under the Protocol. Malaysia, as a participant developing country now using little of the chemicals, will be allowed to increase its present consumption of 0.14 kg/capita/year to 0.30 kg/capita/year from 10 years before being required to abide by the restrictions of the Protocol. In other words if we do not accept the convention and ratify the Montreal Protocol the following restrictions would apply:

(i) a freeze in CFCs at 1986 consumption levels, beginning in July 1989, or 90 days after the date of entry into force;

(ii) by July 1, 1993, reductions of 20 per cent from 1986 levels of the CFCs would be required; and further 30 per cent, or

(iii) 50 per cent reductions by July 1, 1998.

Further restrictions would also extend to a freeze in halons at 1986 consumption levels in 1992, or 3 years after entry into force.

The trade provisions in the Montreal Protocol are so discriminatory to non-parties that many countries are left with little options but to accept the international obligation to protect human health and the environment. The import of products containing the controlled substances from non-parties will be severely restricted or banned in 1993. Within five years, consideration will be given by participating member-countries to restricting imports from non-parties of products produced with controlled substances such as electronic chips or computers.

On balance, Malaysia as fast developing into an industrial economy will not only meet its international obligation to protect the global commons but will also benefit from numerous provisions and incentives accrued from the Protocol. The incentives would include export preferential treatment by many member-countries, financial and technical assistance on production, research, exchange of information, and on alternative chemicals and new technologies.

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