

**DEVELOPMENT AND ENVIRONMENT:  
ISSUES AND STRATEGIES IN MALAYSIA DURING 1970'S**

*Dissertation submitted to Jawaharlal Nehru University  
in partial fulfilment of the requirements for  
the award of the Degree of*

**MASTER OF PHILOSOPHY**

**LENI**

DIVISION OF SOUTHEAST ASIAN AND SOUTH-WEST PACIFIC STUDIES  
CENTRE FOR SOUTH, CENTRAL, SOUTH EAST  
ASIAN AND SOUTH WEST PACIFIC STUDIES  
SCHOOL OF INTERNATIONAL STUDIES  
JAWAHARLAL NEHRU UNIVERSITY  
NEW DELHI - 110067  
INDIA - 1995



जवाहरलाल नेहरू विश्वविद्यालय  
JAWAHARLAL NEHRU UNIVERSITY  
NEW DELHI - 110067

CENTRE FOR SOUTH, CENTRAL  
SOUTH EAST AND SOUTH WEST  
PACIFIC STUDIES  
SCHOOL OF INTERNATIONAL STUDIES

July 5, 1995

C E R T I F I C A T E

Certified that the dissertation entitled  
"DEVELOPMENT AND ENVIRONMENT: ISSUES AND STRATEGIES  
IN MALAYSIA DURING 1970s" submitted by Miss Leni  
in partial fulfilment for the award of the degree  
of Master of Philosophy (M.Phil.) of this university  
is her original work and may be placed before the  
examiners for evaluation. This dissertation has not  
been submitted for the award of any other degree of  
this university or any other university to the best  
of our knowledge.

(B.D. GHOSHAL)  
CHAIRPERSON

Chairperson

Centre for South, Central and South East  
and South West Pacific Studies  
School of International Studies  
Jawaharlal Nehru University  
New Delhi-110067

(B.D. ARORA)  
SUPERVISOR

## CONTENTS

|   | PAGE NOS.<br>----- |
|---|--------------------|
| Preface   | 1 - 5              |
| Chapter I:<br>Introduction and Background                       | 6 - 15             |
| Chapter II:<br>Development Strategies in Malaysia               | 16 - 40            |
| Chapter III:<br>Impact of Development on Environment            | 41 - 66            |
| Chapter IV:<br>Governmental Responses to Environmental Problems | 67 - 85            |
| Chapter V:<br>Social Implications                               | 86 - 100           |
| Chapter VI:<br>Conclusion                                       | 101 - 106          |
| A Select Bibliography   | 107 - 111          |

## **PREFACE**

## PREFACE

Environmental issues witnessed by countries have grown out of the development strategies being pursued by them. It is the vision of the leadership and its development perspective at a given period of history in a particular society that relates to it. Sometimes the emphasis on development is so much that the importance on environment is missed out. It is in the back-drop of this that the present study has been taken up. The repercussions of environmental hazards are very wide ranging. Society as a whole might get affected by the adverse effects of development on the environment.

This study is an attempt to discuss the development strategies adopted by the Malaysian government from time to time and how these strategies affected the ecological balance in the country. The colonial rule left Malaysia in a state of destitution. The leaders, after independence, had to develop strategies to carry out the process of development. The economy was planned accordingly. The plans accounted for a steady growth in the country's economy, Gross National Product increased, per capita income grew high. But all was not well for long with the process of development. The country started facing environmental

problems. The root of these problems were traceable in many fields. Firstly, the development strategies aimed at short term plans. The idea was to maximise the gains of development in the minimum time. This made the people run in one direction. The leadership never paused to see whether there could be any adverse impact of the development process.

Secondly, the country was rich in natural resources. All the development plans, industries, etc., used these national resources as raw materials. Uninterrupted use of these resources led to ecological imbalances.

The government in course of time became aware of these problems. Law and regulations were made but the common masses of the country needed time to adjust themselves to it. The concept of sustainable development, i.e., people should use the resources in a way that they conserve a reasonably substantial portion of the same for the future generations, was hardly considered. Even if the government tried to maintain the ecological balance, it was not very effective. The task was not only to stop pollution but also to conserve the natural resources. The country will not be able to stop the process of development but it should adopt alternative strategies which would be environment friendly. This required the knowhow of the technology and the necessary finances. Both the Prime Ministers, Tunku Abdul

Rahman and Mahathir Bin Mohammed identified these problems much earlier but to tackle them was not easy.

The dissertation has been chapterised according to the following scheme:

(1) Introduction and Background:

This chapter consists of a brief outline of the country profile. Brief explanation of the country's history has been given. Various theories regarding environment and development have been mentioned. An attempt has been made to establish a relation between the developmental process and environmental problems.

(2) Development Strategies:

Malaysian economy was divided into certain regular plan periods. This chapter gives a brief analysis of each of these periods. The second half of the chapter explains the nature of strategies of development. The leaders' vision and involvement of outside agencies and the manner in which the process of development was carried out. A brief account of the various industries, plantations, mines which were considered key to Malaysian development have been discussed.

(3) Environmental Problems:

This chapter deals with the environmental problems faced by the country. There have been instances of chemical

poisoning of the Johore river, oil spillage from the tanks in the oceans, poisoning of the fishes and other marine products, scanty rainfall or dangerous floods due to deforestation, etc. This chapter analyses a few major environmental problems and discusses the reasons behind these disasters.

(4) Governmental Responce:

It is natural that the government was not oblivious of these and other problems. The environmentalists and the economists sat together and adopted some rules and regulations by which a harmonious balance between development and the ecology could be maintained. Some laws were also framed under which the defaulters could be held for defying the laws. This chapter discusses the government's response to environmental problems.

(5) Social Implications:

Ecological imbalances which are a fall out of the development strategies have their repercussions not only on the economy but also on the society. Progress in a country should not be limited to the rich urban areas. Even if the developmental projects are initiated in the rural areas, the people are not able to adapt to these changes. All this was because of the various kinds of ecological imbalances caused by the development plans. Development does not mean that



only the GNP or the per capita income should rise but also that the quality of life should become better. This chapter analyses the social implications of the development strategies adopted in Malaysia.

(6) Conclusion:

It brings out the main findings of research.

### Acknowledgements

At a time when all the developing countries are in the grip of rapid development process, environmental hazard, a serious fall out of these lopsided development strategies represents an interesting subject for study. As development does not only mean economic development but social development also, development in a country cannot be restricted to increase in the per capita income, gross national product, export-import ratio etc. Environmental hazards are so deep-rooted that the whole society is affected by its wide ranging repercussions. All these issues impelled me to undertake a serious examination of the subject.

In the course of this study, I am immensely benefited from the words of inspiration and encouragement of my supervisor Dr. B.D. Arora. I am obliged to him for his help and suggestions.

I am grateful to my parents for their encouragement and sound advice during the period of study.

In the course of this work, I have been assisted by the staff members of the Libraries of JNU, WWF, Centre for Science and Environment, The Malaysian High Commission, who made this work a broadening experience. I take this opportunity to record my thanks to them.

Further, I am grateful to all my friends who rendered necessary help in the time of need and stood by me.

I owe special thanks to Mr P.S. Rajagopal for word-processing my dissertation.

- Leni

## **CHAPTER – I**

### **INTRODUCTION & BACKGROUND**

## CHAPTER - I

### INTRODUCTION AND BACKGROUND

Like other developing countries, Malaya (Malaysia since September 1965) also underwent a colonial rule. The British colonial regime continued with their own plans for development in Malaysia. Malaysian forests, cash crop production like rubber and tin were among the few used by the colonial rules to pursue the process of development. But soon after the foreign rulers left the country in 1957, the economy was in a bad shape. This was basically due to two reasons. First, the development pursued was done with a sectarian attitude. The colonial rulers carried out the development process in such a way that the end results of this development were not expected to be used by the people of Malaysia. Secondly, the process of development was not taken as a continuous process; the colonial masters thought that development had begun with them and was supposed to end with them only.

This left the newly elected leaders of Malaya in a state of utter distress and desperation. They had to initiate the process of development all over again. The strategy which they adopted was for an overall development of the country - beginning from alleviation of poverty to a better quality of living. In order to realize these

objectives, the leadership took refuge in the natural resources of the country. Forests, rubber and tin plantation, mining and many other industries were considered the main sectors.

Till early 1970s, the Malaysian economy witnessed tremendous growth in terms of per capita income, import-export ratio, consumption, etc. But all was not well for long. The lopsided developmental strategies gave rise to various other complications. The hasty process of development overlooked the ideas of conservation and sustainable development. For example, forests, the main source of Malaysian timber export could not be managed well and after some time this led to a terrible state of deforestation and other problems linked to it; rubber and palm oil, the two leading cash crop industries, led to acute water pollution due to release of the sludge into the water. Water which was used for direct consumption became unfit due to various poisonous discharges into it. Rubber plantation dried the soil to such an extent that afterwards other plantations suffered for lack of enough moisture in the land. There were methods to treat this contaminated water but either the technical knowhow was not available or the cost did not permit its use. Mining and industry were helpful in Malaysia for promoting large scale employment opportunities and for raising the overall standard of living. But faulty mining procedures and lack of advanced

technology and finances had put the life of those who worked there in danger.

Malaysia could not be dealt in isolation from what was happening in the rest of the world. What was happening in Malaysia was a fall out of the environmental crisis in the entire developing world.

The crisis encountered by Malaysia was quite widespread. The roots of this could be deduced from some theoretical explanations.

During the last three decades or so, development had occupied the centre of the world stage. This had been concerning man's present and future. The universal conception of development was based on a number of factors. First, there was an assumption that every nation must aspire to develop as development had been the main pre-occupation of all these countries in the developing world. The post-World War decolonisation of the people of Asia and Africa had been accompanied by a general concern and efforts for development which was viewed as: "(a) a logical follow up; (b) the means to preserve the national sovereignty; (c) the only way by which the ruling elites could justify and legitimise their rule".<sup>1</sup>

---

1 Haridwar Rai, "Development and the Third World", Indian Journal of Political Science, Vol. 51, No. 3, July-September 1990, pp. 380-381.

The countries with backward economies started development on attaining independence after the Second World War in a set of hostile conditions. During the foreign rule, these countries were subjected to exploitation in many ways: they were the main source of raw materials and markets for growing industries of colonial powers. Besides, there was serious attempt to industrialise the colonies; also, there was a deliberate attempt to destroy these industries. This had two major effects: (1) continued dependence of these countries on the metropolitan powers; (2) environmental crisis.

Environmental problems arose from two things: (1) Irreversible changes in the material resources; (2) Faulty decisions by the ruling elite.

The eminent environmental economist, Michael Redclift, said that - "They tended to be stuck in the following debates - shall we build a reservoir visualising the outputs of water, power, flood control and fisheries, knowing that the valley being taken out of production can never be returned to other uses? Shall the native forest be cleared of their highly valued timber knowing that the natural forests can never be regrown? Should fish stocks that offer

valuable protein source be reduced to levels where they become extinct?".<sup>2</sup>

The process of development has a societal orientation and represents an expression of life. But approaches to growth in varied regions and nations have remained diverse. Those in Asia tended to lean more on spiritual, religious and moral emancipation and sought to attain contentment in simple living and high thinking. On the other hand, the developed North-West aspired and succeeded in acquiring material life together with their religious beliefs and techno-culture.

Exploitation of environment in the past and the resulting degradation has now been recoiling upon the future of a country's industrial development. Thus now the economists were working for a "new economic growth" taking into consideration the environmental issues.

Economists have been making major claims for their ability to estimate economic values put on environmental assets and effects, such as real cost of soil erosion, economic values of rain forests, the value of clean air, the value of wild animals, the real cost of water pollution and

---

2 Michael Redcliff; "Sustainable Development", London, 1987, p. 27.



many others. Environmentalists responded strongly to the idea of apparently reducing the value of the natural world to money terms. Many others were worried that economic criteria were partial to the interests of the future generation.

J.N. Bhagwati viewed environmental valuation as an integral part of theoretical statement of sustainable development. According to him, "valuation has three merits: (1) improves the selection of projects; (2) better measurements of economic performance, and (3) essential for resolving disputes".<sup>3</sup>

Application of economic values to environmental effects could provide powerful input to the cause of a healthy living. It also lent greater rigour to discussions about environmental problems and assessment of economic performance. At the same time, valuation results should not be accepted uncritically, since the techniques were uneven and produce implausible values. If values were widely used as part of environmental appraisal and if results were properly used in decisions, their effects on development were potentially very far reaching.

---

3. Bhagwati, J.N., "Development Economics: What have we learned?", Asian Development Review, 1989, Vol. 2, No. 1, pp. 30-31.

Often it so happened that not only the internal factors in a country led to environmental anomalies but also various external factors created these problems. IMF and World Bank are the two controversial lending agencies at the global level that gave rise to many debates. Implementation of IMF packages, some economists feel, have tended to have disastrous economic implications. On the other hand, the governments, media and industry have been welcoming the structural adjustment programme and have been made attempts towards shaping a national consensus in favour of IMF packages. "So it cannot be denied that the major issues involved in seeking the IMF loan are not being debated. Yet, an important issue which is receiving less attention is about the impact of the IMF packages of restructuring the economy on the environment".<sup>4</sup> There still lies some ambiguity in the understanding and assessment of these packages. The reasons stated are follows: (1) very little is known about the conditionalities accepted by the governments; (2) the IMF programmes and the inadequacy of physical data make it hard to set out linkage between fund supported adjustment measures and natural resource degradation in a country.<sup>5</sup>

---

4 Singh, Kavaljit; "IMF Loan & Environmental Burden", Mainstream, Dec. 7, 1991, p. 13.

5 Ibid., pp. 13-14.

Each year billions of dollars are spent on the adjustment of policies in the developing countries but they fail to include environmental protection and sound natural resource management. Unless the programmes have a positive effect on the income distribution and the use of a country's natural resources, the packages can lead to environmental degradation and further economic deterioration.

The increasing concern for environmental degradation has led to a degree of environmental sensitivity among nation states, both developed and developing. Like other factors in a nation, environment is also being discussed at national and international level. This discussion changes the colour of the topic according to the time, place and the discussing parties. That means, even if the awareness of the common man has increased, environment in any nation is viewed and treated according to the leaders' vision. The United Nations' sponsored Stockholm conference on June 5, 1972 focussed and affirmed that these problems could be solved politically.<sup>6</sup>

A new area of study called Environmental Diplomacy, in spite of its recent origin, encompasses within itself various elements essential for a healthy environmental

---

6 M.H. Hashmi & E. El-Hinnaur., "The State of Environment", U.N. Environment Programme, London, 1987, p. 26 (Part I).

management. It deals with the basic elements of environmental policies, the political anatomy of ecological issues, the grave problems facing the environment. This subject gives a vivid picture of the conflict between environmentalists and ecological movements with forces of vested political interests whose livelihood depends on unimpeded use of the country's natural resources. As rightly stated by Sobhan, "Environmental Diplomacy includes and articulates development of a political vision wherein choices of millions of people shape the ecology of a sustainable world".<sup>7</sup>

Nevertheless, environmental protection is not subject to only laws of governments. Environment cannot be managed by the draconian laws. It does not lie within the purview of any code of law to analyse the amount of the resources plundered and the economic benefit achieved from it. Therefore, it is difficult to strike a semblance between the loss of the physical reality, profit in monetary terms and then formulate laws to maintain the ecology.

Until the nineteen sixties, environmental catastrophies remained an unknown force. It never occurred to any one

---

7 Sobhan Rehman; "Sustaining development within the Third World", Journal of Social Studies, No. 51, January 1991, pp. 2-3.

that the humanity might land itself in an environmental crisis of a great magnitude. It was only in the early nineteen seventies during which the world witnessed a process in which there was extra-ordinarily rapid transition in terms of social awareness. According to Michael Redcliff, "there was transition from environmental indifference to environmental concern".<sup>8</sup>

Economists and Western scholars have by and large ignored the environmental issues in South East Asian countries. As a matter of fact, they have tended to omit even the impact of these issues on development. However, of late, environment has come to be considered a fundamental issue with great economic, social and political implications. Environmental problems are widely perceived to be growing critically.

Malaysia with its vast natural resources could have paved the way for unhindered development but the need to stop and look back was being increasingly felt. Only the Malaysian people, their effort and a healthy vision of the leadership could make the forest more dense, vegetation, lush green, pure water, plenty of rain available for its generations to come.

---

8 Michael Redcliff, "Sustainable Development", London, 1987, p. 32.

## **CHAPTER – II**

# **DEVELOPMENT STRATEGIES IN MALAYASIA**

## CHAPTER - II

### DEVELOPMENT STRATEGIES IN MALAYSIA

Malaysia is stated to be the second most industrialised country in the south-east Asian region after Singapore. Like other countries, Malaysian economy intended to function according to plans. "The broad objectives of these plans were to eradicate poverty irrespective of race and to restructure Malaysian society so as to eliminate identification of race with economic functions".<sup>1</sup> Enough attention was paid on the strategies adopted, degrees of internal consistency, use of project appraisal and the targets they were intended to achieve. Reflecting the abundant natural resources available in the country and the nature of its economic organisation, the objectives of the plan were to be pursued in an environment of rapidly expanding economy, based essentially on private enterprise.

Earlier, the developing countries considered that industrialisation was the primary goal of development. This in a way was contrary to the balanced growth model of a country. Malaysia did not suffer from the complex issues of

---

1 Malaysia, Bank Negara Malaysia Annual Report and Statement of Accounts, 1976, p. 74.

"Industrial Fundamentalism",<sup>2</sup> and had long attempted to promote the primary industries, including agriculture. Malaysian administrators and the planning experts emphasised equally on energy and trade sector. Energy was given more prominence because of its importance both for agriculture and industry. Trade, likewise, was also inextricably linked with the manufacturing sectors of Malaysian economy. Like other welfare states, human needs and the concern for the same created a new dimension of development. Concern for public welfare received a priority in the role of the state. The government tried to maintain a balance between housing and health on one side and growing defence expenditure on the other.

Malaysian Economy till 1970s was planned along the following plan periods:

Draft Development Plan, 1950-55: This was formulated in response to the passing of United Kingdom Colonial Development and Welfare Act 1945 which provided one hundred and twenty million pounds. In 1946, heads of the departments were asked to present their proposals for development within a ten-year development programme. The draft development plan was expected to work on the

---

2 Stephen Chee, "Malaysia's Politics and Economics in Yong Meen Cheong, Trends in Malaysia (Singapore, 1974), pp. 37-38.



recommendations of two committees: first to select "priority schemes"<sup>3</sup> which were to be submitted to the colonial office for grants from colonial development and welfare funds; and second to allocate these funds between Singapore and Malaya. The draft development plan, 1950-55 "was an attempt to define the objectives of social and economic policy".<sup>4</sup>

An attempt was made to integrate the plan with the range of available resources.

First Malaysian Plan or A Plan of Development for Malaya, 1956-60:

This plan was based on the recommendations of the IBRD mission<sup>5</sup> report, which came to West Malaysia in 1954, at the height of emergency and was expected to revive the economic potential of the country. According to David Lin, the IBRD undertook a humanitarian and social strategy for development because the industries and other infrastructural facilities seemed to be well developed. The First Malaysian Plan had been stated to have concentrated on non-export sector and

---

3 Khor Kok Peng, The Malaysian Economy: Structures and Dependence (Kualalumpur, 1983), pp. 11-12.

4 Ibid., p. 12

5 David Lin, "Malaysian Development Planning" in Sonio, K.S. and R.J.G. Well (ed) Fourth Malaysia Plan (Kualalumpur, 1983), p. 6.

predominantly rural sector of economy. It also emphasised on the requirement of a rehabilitation for the rubber industry, and to enable it to compete successfully with synthetic rubber industry.

The IBRD Report paved the way for the formulation of the First Malaya Plan as it had a detailed and comprehensive study of the problems and requirements of West Malaysia.

Second Malaya Plan: 1961-65:

The Second Malaya Plan was formulated with the technical assistance from the IBRD report and was conceptually more satisfactory than the previous plan.<sup>6</sup> The main objectives of this plan were improvement of the rural standards of living, provision of greater employment opportunities, and fostering of economic growth, diversification of agricultural and industrial activities and an expansion of social overhead facilities.<sup>7</sup>

First Malaysia Plan: 1966-70:

Independent and integrated Malaysia was formed in September 1963 which came to be known as Federation of Malaysia. Earlier each of the three component states of the

---

6 For further details, please see n.3.

7 Please see n.5, pp. 6-7.

new federation, The Malayan Peninsula, Sabah and Sarawak, had its own development plan. The first Malaysia Plan was the first integrated plan for the three regions. This plan was also the first phase of the twenty-year perspective plan. This plan presented short-term measures of government to solve the economic and social problems of the country with a broad and long-term strategy for economic development. The main objective was to create an environment in which all the three major ethnic groups, the Malays, Chinese and Indians, could live in dignity and harmony.<sup>8</sup> The objective was to foster economic growth, creation of greater employment opportunities and reduction in the relative economic imbalances in the distribution of income and wealth. Economic diversification, infrastructural development and family planning programmes were pure and simple operational devices for the realisation of fundamental objectives. The objective of a more equitable distribution of income and wealth was to be achieved through the provision of better rural infrastructural facilities and establishment of land development schemes.<sup>9</sup> Malaya's participation the commercial

---

8 Esman, Administration and Development in Malaysia (London, 1972), pp. 78-79.

9 S. Anand, "Aspects of Poverty in Malaysia", Review of Income and Wealth (New Delhi, 1977), pp. 4-5.

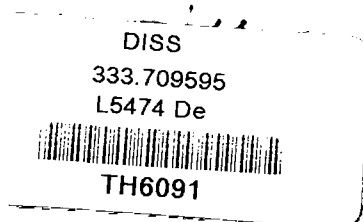
and industrial sectors was planned only on a very minor scale. The underlying strategy of the plan was that the current expenditure would be adequately met by the government revenue, while efforts would be stepped up at the same time to mobilise domestic and external capital to finance the public development programmes.

Second Malaysia Plan, 1971-75:

The formulation of this plan was influenced very significantly by the civil disturbances that occurred in May 1969. These had demonstrated that under the apparent calm and prosperity, there was a strong under-current of discontent. The objective of a "more even distribution"<sup>10</sup> of income received was, therefore, the highest priority in this plan. The New Economic Policy (NEP) which was formulated after the riots also aimed at eradicating poverty by raising income levels and increasing employment opportunities for all Malaysians, irrespective of race. The NEP also aimed at accelerating the process of restructuring the Malaysian society to correct economic imbalances so as to reduce and eventually eliminate the identification of race with economic function. Here the strategy adopted was

---

10 Malaysia, Ministry of Finance, Economic Reports (Kualalumpur, 1974), p. 26.



TH-6091



growth to eradicate poverty and to restructure the society. In order to achieve these objectives, the policies were pursued to ensure the compatibility of growth and equity objectives.<sup>11</sup>

#### Third Malaysia Plan, 1976-80:

The Third Malaysia Plan was formally launched in July 1976. Representing the second phase of implementation of the New Economic Policy of the government, the broad objectives of the plan were to eradicate poverty irrespective of race and to restructure Malaysian society so as to eliminate identification of race with economic functions. These were long term goals to which the NEP and economic planning would continue to be directed. The specific objectives of the plan designed to contribute towards the realisation of these ultimate goals, were:

1. to reduce poverty in both urban and rural areas;
2. to enhance the quality of Malaysian life;
3. greater employment opportunities;
4. to encourage and support private investment; and
5. to develop further the country's human and natural resources.

Considering the amount of natural resources in the country, the plan was pursued in an environment of rapidly changing

---

11 Ibid., p. 32.

economy, based essentially on private enterprise. The underlying strategy of the plan was that the private sector would provide the major source of output, income and employment for the country over a five year period. Government participation in economic activity was intended primarily to be a catalyst for growth and to ensure that economic programme was accompanied by desired objectives of poverty eradication and restructuring of the society.

Development in the Malaysian economy was dependent on the following natural resources.

Agriculture: In Malaysia, agriculture played an important role in the overall economic development of the country through its contribution to the gross domestic product. It had also been supporting development in other sectors by providing the raw materials for other agro-industries.<sup>12</sup> The country during 1975-76, became the world's primary exporter of natural rubber, palm oil, timber, pine apple and tobacco. Among the food commodities, padi production was given the first priority, but the goal of achieving complete self-sufficiency in rice had not yet been achieved.<sup>13</sup> The

---

12 Malaysia, Bank Negara. Annual Report of Statements and Accounts (Kualalumpur, 1976), p. 81.

13 Malaysia, Year Book, 1971-72 (Kualalumpur, 1972), p. 154.

performance of minor crops was mixed. Rice and coconut grew marginally while horticulture and other annual commercial crops registered strong growth. Though the small-holder sector was less developed, it occupied about 60 per cent of agricultural land in peninsular Malaysia. Most of these holders were involved in rubber plantation.

#### Rubber Plantation:

The birth of rubber cultivation industry in Malaysia came about as a result of a series of circumstances in 1890 which pushed up rubber prices to a phenomenal rise in the world market. What followed was the "rubber revolution"<sup>14</sup> in which virtually all contemporary cash crops were swept to plant rubber. Since independence in August 1957, great stress had been laid on maintaining Malaysia's position as the world's leading exporter of natural rubber on the one hand and on restructuring the industry in the country so as to give Malaysians a greater stake in estate ownership and production and as well as fairer and better opportunities to small holders on the other.

---

14 Von Rabenau, "Trade Policies and Industrialisation in Developing Country: the Case of West Malaysia", Malayan Economic Review (Kualalumpur, 1976), Vol. 3, pp. 18-19.

### Palm Oil

The cultivation of oil palm in Malaysia followed in the wake of rubber cultivation. Like rubber, the origin of palm cultivation in this country could be traced to the botanical gardens in Singapore where in 1860, seeds of palm oil were brought over from Sri Lanka. After World War II, the Malayan peninsula rapidly rose to become the world's most important producer of palm oil. In spite of increased productivity, the palm oil sector suffered from major labour problems which raised the cost of production.

### Forestry and Timber

Although about three quarters of this country was covered by forests, it was not until the twentieth century that logging started to make a substantial contribution to the economy, while forest products in general, though important as an element in the subsistence level of economy remained only of marginal importance. As far as peninsula Malaysia was concerned, timber industry did not play an important role till 1945. After World War II, the Sabah timber industry had rapidly recovered. Since then, it had resumed its preponderant role in the State's trade.



## Fisheries

Fish industry was one of the traditional and least rewarding area of Malaysian economy.<sup>15</sup> It was reckoned to support some 90,500 people in the country. Malaysia's marine fish production was expected to increase by 3.3 per cent to 983,000 tonnes.

## Minerals

Two main mineral resources played a major role in the Malaysian economy - tin and petroleum. While reserves of petroleum and natural gas had been in existence for a long time, they did not become a major factor till 1972.<sup>16</sup> By late 1960s, tin and petroleum had become the mainstay of the mining sector. Tin from the peninsula Malaysia had been mined for local use and for export. Petroleum and natural gas which had emerged as the country's most profitable exports were basically new comers to the scene and by the early 1970s, they emerged as full-fledged industries.

Malaysia, during the 1970s, seems to have undergone rapid development, according to the government statements. But all this gave an illusion to the reader, with increased

---

15 See n: 13, p. 139.

16 Ibid., p. 144.

growth and production, there were certain unnoticed anomalies in the development programmes. The anomalies had their roots in two things - "general problems in the country's economic policies, (2) secondly unhindered exploitation of natural resources had an adverse impact on the economy".<sup>17</sup>

### Trends in the Economy

During the period of the First Malaysia Plan (1966-70), the country had achieved quite an impressive rate of growth for a developing country. The gross national product had increased from R \$ 8,593 million in 1965 to R \$ 11,629 million in 1970, registering thereby an average growth rate of 6.2 per cent per year.<sup>18</sup> Interestingly, however, it had to be taken into account that such a rate of growth was achieved during a period in which the prices of the country's major export commodities of rubber, palm oil and kernels, tin and sawn timber were declining and also when the country was faced with racial disturbances in May 1969 and its unfavourable effects on production and investment

---

17 Rudner, "Nationalism, Planning and Economic Modernisation in Malaysia: Politics of Beginning Development" (New York, 1975), pp. 36.

18 Malaysia Year Book, 1973-74 (Kuala Lumpur, 1972), p. 76.

opportunities. The economy performed somewhat better in 1972, though it could not achieve the set targets. These somewhat low growth rates were further accompanied by severe deterioration in trade estimated in 1971.<sup>19</sup>

In 1972, the price of domestic products had increased and crossed the limit of one per cent per annum in 1970.

The sluggish performance of the economy during the two years seemed to be mainly due to the declining international demand for most of the country's major exports continuing low prices that these exports had fetched.

#### Highlights of Malaysian Economy

##### Currency Split:

On May 8, 1973, the Federal Government of Malaysia unilaterally announced the termination of the arrangements for interchangeability with Singapore, which since 1906 had been sharing the same currency with Malaysia at par value. This in a way was fruitful for Malaysian economy because it was based largely on agrobased products and minerals, therefore, a less rigid currency reserve ratio would release funds for further development. The currency split was

---

19 Ibid., p. 79.

accompanied by the establishment of a separate stock exchange.<sup>20</sup>

#### Establishment of a Separate Rubber Market

On August 19, 1973, the Malaysian government announced the split of the Rubber Market of Malaysia and establishment of separate Malaysian rubber market. The decision on establishment of separate rubber market was expected to bring several benefits to Malaysia. In the first place in terms of economic nationalism, it was regarded absurd to have a situation in which the world rubber markets were found in New York, London and Singapore, whereas Kuala Lumpur, the capital of the world's leading producer, constituted only a minor market. This programme which was expected to fetch good foreign exchange, was in a way beneficial to the big dealers who not only traded but were financiers also. The local dealers, generally lacked resources to finance big deals.

#### Increased Bumiputra (son of the soil) Participation

Bumiputra participation in the economy was as much a political problem as it was an economic one.<sup>21</sup>

---

20 Malaysia, Bank Negara Annual Report and Quarterly Economic Bulletin (Kuala Lumpur, 1974), p. 99.

21 S. Husain Ali, The Malays: Their Problems and Future (Kuala Lumpur, 1981), p. 11.

The government had in part committed its political fortunes to the goals of enabling Bumiputras, the Malays, control thirty per cent of the economy by 1991. This was by no means a new policy initiated in 1973. It had been a continuing goal specially after the May 13, 1969 riots. This thirty per cent goal was a part of the attempts to restructure the society under the New Economic Policy which aimed at eradicating the identification of the economic function with racial origin. In 1973, the Malaysian government continued to exert itself on behalf of the Bumiputras. The problem of economic advancement of the Bumiputras had in fact become a serious political issue, although it would not be correct to say that only the Bumiputras were facing economic difficulties.

Together with the issue of disparities in wealth was the question of disparities in the pace of economic development among the thirteen states of Malaysia.

#### Economic Development At State Level

Economic development at the state level was also as much a political as it was an economic issue. After 1969 elections when Penang and Kelantan fell under the control of opposition parties, there was a speculation that alliance government might impede economic development of those states by withholding federal funds.

One of the goals of the Second Malaysia Plan was to disperse industrial centres all over the country. Incentives were given to those industries which were located in new industrial estates. In Selangor, sites had been located for electronic and export oriented plants. Penang planned to develop further its present industrial sites, Bayan Lepas, Prai and Mah Mandiri. Johore was expected to experience a faster pace of economic progress with the development of a new international airport at Senai and a new port at Pasir Kudang. In Panung attention would be centered on the development of an all weather port at Kelantan. Kelantan was expected to develop industrial estates that were located near the proposed east-west highway. Sarawak had plans for a new port, and four new towns while Sabah aimed to develop at least five new industrial sites.<sup>22</sup>

### Rubber and High Prices

In March 1973, the Nixon administration announced that in view of world's growing detente there was no need to maintain high levels of strategic reserves, including that

---

22 L. Hoffman, and Tani Siew Ed, "Industrial Growth, Employment and Foreign Investment in Peninsular Malaysia (Kualalumpur, 1980), p. 56.

of rubber.<sup>23</sup> This announcement meant that the American government would release 172,000 tons of its stock pile rubber. This announcement created concern in Malaysia. Nevertheless, 1973 was generally a good year for rubber prices. A few days after the announcement from Washington, China entered the rubber market in a big way, buying up 100,000 tons of rubber at about 75 per cent per pound. The Chinese purchases helped to push up prices in view of the uncertain international monetary situation. The high price was also partly caused by the recent destruction of a synthetic rubber plant and work stoppage in another major synthetic plant in Japan. Malaysian rubber authorities continued to be concerned with productivity in both small holdings and estates. The small holders voiced the need for a bank of their own, for an increase in the replanting grant and for the need to merge in economic small holdings. There were also complaints of low yields even from replanted small holdings.<sup>24</sup>

"The outlook for estate rubber appeared brighter. A Rubber Research Institute Conference in July 1973 reported

---

23 Malaysia, Year Book 1973 (Kualalumpur, 1974), p. 108.

24 Rubber Research Institute Report (Kualalumpur, 1973), p. 46.

on measures to increase the yields of new cloves, how to reduce the tree's period of maturity and other things".<sup>25</sup>

### Palm Oil and High Prices

In February 1973, the prices of palm oil was quoted at £ 233 per ton. This price was approximately twice of that had been bought two months ago. It represented an increase of 150 per cent over the previous year's price. Part of the increase was due to the fall in value of the pound sterling; international vegetable shortage, fish oil and soya oil shortages were the main reasons of price rise.

Increase in the prices of rubber and palm oil had been beneficial for the country's economy but to the extent to which such parties reflected an increase in income for petty rubber and palm oil producers. Indeed, it was very likely that any increase in income had been negated by equally high prices of essential goods.

### Malaysia and World Food Shortages

Because of droughts, floods and wars, the world had been facing food shortages. Food prices had risen considerably since the past several years and such

---

25 Ibid., p. 47.



increases had posed tremendous difficulties to the average Malaysians. Before 1973, the Malaysian government's reaction to high food prices had been to introduce fixed retail prices for eighty four items to prevent random price increases. "In October 1973, it was announced that the government would impose heavier penalties on dealers and shopkeepers who raised the prices of essential commodities indiscriminately or failed to display compulsory price tags".<sup>26</sup> Government officials held meetings with the associations of poultry farmers and butchers to discuss price changes.

### Tin

The future of tin was uncertain after the stock pile release announcement. Before June 1973, the U.S. had no less than a full three year world supply of tin.<sup>27</sup> Fortunately, Washington announced a few days later a release of 1500 tons and 5000 tons by the end of 1973.

### Urban Land Value

Land values in Kuantan, Keang, Sohare Batalu and Malacca increased sharply. But the governments of the

---

26 Malaysia, Year Book 1974 (Kualalumpur, 1974), p. 89.

27 Ibid., p. 93.

states imposed some regulations on the housing developers that they could sell houses only to the Malaysian citizens, preferably state nationals.

### Oil

There was much excitement when oil was discovered at many places in 1973. According to the government reports, oil was discovered in 1972 when ESSO exploration had discovered oil off Sabah. Then in 1973, it made a further discovery in Sabah and in July 1973, another one in Sarawah. Laws in petroleum mining had yet to be formulated and there was the need to train staff to man departments that would supervise the technical aspects of oil mining. At that stage, it was not possible to say how much oil reserves contributed to the Malaysian economy. But it was found that Malaysian oil was having low sulphur content, meaning that it was highly pollution free. This would create a demand from places like Japan. In turn, Malaysian oil had the prospect of fetching high prices because of its superior quality.

### Brief Short Term Outlook

Evidently, the performance of the country's economy was, to a large extent, influenced by external conditions.<sup>28</sup>

---

28 Von Rabenau, n.14.

Export demand constituted about one-third of the total demand and hence its fluctuation would have a sizeable impact on the economy.

Moreover, going by the recent experience of 1971 and 1972, a slackening of export demand and falling export commodity prices was expected to dampen the expectations of private sector resulting in the slowing down of private consumption and investment and further reducing the total demand.

The short term performance of the Malaysian economy was thus considerably related to the business conditions in major industrial countries.<sup>29</sup> The business conditions were bound to affect the pace of production and commercial stockpiling and this in turn would determine these countries' demand for primary commodities such as rubber, tin, timber etc.

For the past decade or so, it looked as if the business conditions in these countries exhibited four to five year cycles with roughly 1959, 1964 and 1972 being years of relatively booming conditions. These cycles were transmitted to the Malaysian economy through its export sector.

---

29 Malaysia, Department of Statistics, Industrial Surveys - Peninsular Malaysia (Kualalumpur, 1981), p. 52.

On the basis of this general observation, it might, therefore, be expected that the pace of production in industrial countries, which was quickening since roughly the middle of 1972, might increasingly slow down during 1974-75. Such a down-swing might be triggered off by the various policy measures that the industrialised countries were busy in implementing to combat inflation.

The short term outlook for the Malaysian economy during 1974 and 1975 was just one of slow pace activities generally resembling the conditions existing in 1971-72. The growth in GNP and per capita income would be far lower than that achieved in 1973. Private consumptions and investment expenditure would slacken, and the performance of the economy would depend heavily on the increased activities of the public sector.

#### Obstacles to Development

It is undoubtedly very difficult to discuss about all the obstacles to Malaysian development. Nevertheless, a few were evident enough which accounted for a very narrow development of the Malaysian economy.

One of the major problems was lack of communication channel through which discussion on these would be carried on. Very often the people did not effectively communicate

among themselves or with the policy makers. As the people were not aware of the fundamentals of Malaysian development, much discussion, response and critical assessment could not be expected from them.

The primary interest of the Malaysian ruling group was to faster the rate of growth and development but in the process they never assessed the country's human and natural resources. This kind of a lopsided development strategy failed to take into account "what are the limits of the earth for support of man? How can the earth be used in a sustained manner, a pattern of sustainable development".

The underlying problem in Malaysia's economy was growth of the human population and secondly lack of awareness as to how the natural resources were being used. With the growth of population the need for development was more strongly felt. New technology allowed more intensive use of resources and expansion into untouched realms of the earth.

In Malaysia rubber plantations and palm oil were the two major sources of revenue. Cultivation of these two cash crops was done in an extremely high and large scale manner. No doubt the country became the leading producer of these two but no body stopped and looked back at the repercussions of these two. Continuous rubber and palm oil plantation made the land unfit for any other use. The discharge of the

sludge into the rivers left the water unfit for direct consumption. The acidic effluent released into the water made the water poisonous. The government took special interest to develop and expand the asbestos fibre industry. This fibre was breathed in large amounts by the people and caused a chest disease called asbestosis.

Malaysia was one of the leading producers of oil. Government intended to earn from oil exports and thus pursued large scale oil extraction - result being in 15 years time all the Malaysian oil wells were going to dry up.

Land, the most valued natural resource, was either over used or was polluted by agricultural or industrial wastes.

Rivers and oceans which were a media of transport and played an important role in the Malaysian trade, were polluted by discharge of agricultural and industrial waste or were contaminated by regular oil spillage. This had a terrible effect on the living beings in the water.

The Malaysian government was so much involved in the process of development that it never realised the state of its forests. Timber used to fetch them heavy export deals but official and unofficial felling of trees had made Malaysian forests very thin.

The natural resources were limited. A harmonious and conserved use could only keep them in tact, but it could be

a long time for the people to grasp it. The country's national income, gross domestic product, growth of industries etc. bring much credit to the leadership. But the only factor which was negated was environment. The government realised it late, nevertheless it tried to make projects, committees, to deal with the environmental problems. The strategies of development were such that the economic achieved part was only considered. In the process of implementation of the plan the losses incurred were ignored. Lack of awareness about the same deprived people from understanding the long term consequences of these environmental problems.

The major environmental issues were - deforestation, pollution due to contaminated water, land pollution, air pollution due to release of poisonous gases from the factories and many other problems. These issues have been discussed at length in the next chapter.

## **CHAPTER – III**

### **IMPACT OF DEVELOPMENT ON ENVIRONMENT**



## CHAPTER - III

### IMPACT OF DEVELOPMENT ON ENVIRONMENT

Development generated many problems and environmental problems were an important outgrowth of the process of development. Eventually, these problems started attaining increasing attention in social policy circles.<sup>1</sup> This was as it should be since environmental hazards show seriously harmful potential for the people for whose welfare all progress is ultimately intended. Developing countries have become aware about the abatement and control of pollution, air, water and noise only after the Stockholm Conference held in 1972. They have, since then, started giving serious thought to the problems of deforestation as well. As compared to the developed countries in respect to pollution control, they have embarked upon suitable pollution control and prevention policies and have made suitable legislations during initial stages of their industrialisation, but in respect to the developing countries, they have become conscious only after sustaining substantial loss. Earlier, the question of a choice of economic programme used to be discussed in terms of a restricted framework in which purely

---

1 Philip L. Wagner, Environment and People (New Jersey, 1972), p. 65.

technological consideration such as a process and product mix were considered. The shift of emphasis in economic analysis from problems of "pure production to an improvement in quality of life"<sup>2</sup> has come only gradually.

In most of the countries, environmental concern and action came to be limited to pollution control and impact of the same on the health of the people. A. Jeffrey wrote in 1972: "Very recently, there has been emergence of a school of thought which considers the roots of environmental problems in the development planning and development strategies".<sup>3</sup> Then grew a feeling that one-sided developmental strategies which only took into account the figures in growth tended to neglect the environmental aspects. However, efforts continued to be made to formulate plans in that regard. The progress, any way, remained very slow because firstly, it was of recent origin and secondly not enough research had been done on it.

Bangladesh was one such example. In this country, environmental managers were gradually beginning to appreciate the many components of environmental dimensions and their intricate relations with one another. Although

---

2 Ibid., p. 73.

3 A. Jeffrey, Mc Neely, The human dimension in Environmental Planning (New Hampshire, 1985), pp. 16-17.

efforts were mostly confined to well known fields such as air and water pollution, planning authorities became aware of the need to take an expanded view of environment, especially in the context of rural development. Accordingly, the need for an integrated framework to effectively incorporate the environment in the process of development was keenly felt, in order to systematically strengthen planning in the country.

In contrast, in India, environmental considerations have always been accorded high priority in both official and non-official thinking. Natural environment was considered as the most precious of man's heritage and consequently efforts to preserve it were receiving active attention. Presently, through variety of physical and fiscal measures attempts were undertaken to modify the impact of economic activity on environment.<sup>4</sup>

Earlier, however, the approaches in this field remained partial at least. Such approaches could not provide long-term solution. Attention, therefore, began to shift in early 1970s from pollution to conservation. To advocate on the grounds of conservation for a limit to growth could

---

4 Harold C. Brookefield, Environmental Sustainability with Development, Development Policy Review (Rome, 1991), pp. 113-114.

obviously be inappropriate, especially for developing countries. A reorientation of the approaches to development process incorporating rational resource management appeared to be the most appropriate action. Such a course would not only lead to a faster and steady development but also "resolve the supposed inherently basic conflict between development and environment".<sup>5</sup> Indeed, environment and development goal did not need to be in conflict; on the contrary they would be harmonious and mutually reinforcing when the aptitude for protecting and conserving the natural environment was replaced by a scheme to deploy it purposively. The search for such a scheme represented an important qualitative change in thinking on the issue necessitating the development of a comprehensive structuralist view incorporating, at a micro level, the incremental and corrective approaches as well.

#### Environmental Dimension:

A major milestone in the search for such a comprehensive scheme was the gradual understanding of the nature of environment not as problem but as a dimension. The structure of transformative time cycles involved in

---

5 Mark A. McDowell, "Environment and Development", Development, Vol. 1, No. 3, May 1991, p. 67.

three basic processes of environment - resource restoration, resource maintenance and resource utilisation - were so distinct that a comprehensive interdisciplinary approach dealing with all these required to be formulated. The need to study and research on environment was so urgent because it always made its presence felt in a variety of human problems, either as a result of human activities or as a feed-back to human activities.

The need of the hour was, therefore, to discover not only a broad subject which would encompass within itself the general problem and conservation of the environment but also would take note of the economic context of these issues such as development planning and development strategy to enable a sustainable development process. Jeffrey A. McNeely noted in his study in 1985: "This requires that all the constituents should be analysed independently in the environmental dimension and its interaction with human activities".<sup>6</sup>

As environmental resources are used and transformed in order to achieve social development, an alteration of the ecological system becomes inevitable. Several forms of

---

6 Jeffrey A. McNeely, The human dimensions in Environmental Planning, (USA, 1985), p. 138.

resource degradation, and biological, chemical and physical pollution usually accompany such a process. The equilibrium can be achieved only by a proper integrated programme. Environment needs to be protected and preserved not by way of non-use of resources, but in the sense of a rational use and replenishment of sustainable development. "Long-term sustainable development requires that the dynamics of the strength and weakness of environment be well understood before plunging into unplanned planning".<sup>7</sup>

Environment in Relation to Development Planning:

Since environmental problems often accompany the very process of development, it is essential to broaden one's understanding of crucial components of this complex process. "The ramifications involved in the process of growth are so intricate that there are certain areas which need to be explored like technology and factor endowments, structure of the population, income and wealth distribution, the rational surplus which the system can generate after meeting the socially accepted structure of consumption".<sup>8</sup> According to

---

7 Ibid., pp. 142-143.

8 Lynton Keith Caldwell, International Environmental Policy, Emergence and Dimensions (Duke, 1990), pp. 118-119.

Thomas D. Crokers and A. Rogers, the task of the policy maker then would be to work out a procedure of reinvestment which would enable the economy to accumulate a prescribed capital structure at a maximal rate.<sup>9</sup>

"The process of transformation of such an economy from the given state to the desired state hinges on two key parameters - savings-income ratio and capital-output ratio".<sup>10</sup> Given all these parameters the planning exercise tries to maximise or at least strike a balance between growth rate, output composition or income distribution. The results are then translated into financial terms for policy purposes.<sup>11</sup>

The planning exercise cannot be constant. It has to adapt itself to the dynamics of resource use and renewal variations in demographic dimensions. The introduction of resource dynamics naturally renders technology to be dynamic. Thus, the enlarged planning methodology while

---

9 Thomas D. Crokers and A. Rogers, Environmental Economics (Illinois, 1971), August, p. 15.

10 H.W. Arndt, Economic development (Chicago, 1987), p. 81.

11 Paul B. Downing, Environmental Economics and Policy (Toronto, 1984), p.11.

maximising social objective function should allow for the dynamics of technology and resource use.<sup>12</sup>

The above discussion on how development on various accounts has been against environmental conservation encompasses within itself, the case of Malaysia as well. It seems that the visions of the Malaysian rulers were short-sighted. The colonial hegemony in Malaysia brought in some developmental plans but in a short while with the departure of the colonial masters development process also came to a halt. The newly elected leaders of Malaya (Malaysia since 1963) tried to carry on the process of development and for that they planned to mobilise their internal resources. This in a way was good but quite hasty. They did not realise the importance of conservation and sustainable development. The development strategies were basically dependent on utilisation of human and natural resources. The major natural resources utilised were -

- Agriculture - rubber and palm oil plantation
- Minerals - tin mining
- Deforestation - timber logging.

---

12 Massey Stewart, "Environment Protection and Society", Social Sciences Today (Moscow, 1984), pp. 82-83.



It would be useful here to briefly analyse all these issues relating to these.

#### I. Deforestation

Man is about to destroy the cradle of all vegetation, the vast tropical rain forests of the world, an United Nations publication has cautioned. The rain forests have an area of about three million square miles and within the next ten years, according to a leading ecologist, man will ruin "50 million years of continuous evolution" by "reckless exploitation" of the forests. The warning came from ecologist Robert Allen, science writer on International Union for Conservation of Nature and Natural Resources. The governments of the countries have the machinery with the help of which 2.47 acres of tropical forests, and 900 tons of living plants could be cleared in only two hours.<sup>13</sup>

In Indonesia, 27 million hectares were officially classified as demanded by uncontrolled cutting. The Japanese companies were offering investments of US \$ 80 to US \$ 500 million to log Amazon rain forests. It is very difficult for hard-pressed ambitious government to resist such inducement even though the result would be the

---

13 Malay Mail (Kualalumpur), May 20, 1975.

destruction of a resource which, carefully used, could have lasted indefinitely.

Peninsular Malaysia's timber industry, it was estimated, would face a bleak future by 1990 if the government effort to conserve and rehabilitate forest resource failed. It was true that Malaysia had abundant forest resources but unhindered logging had made the real picture of the forests alarming.<sup>14</sup> This was stated by Datuk Ahmad Taib Mahud, the Malaysian Industries minister, who had in 1977, warned that the resources won't last for more than 12 years. To overcome this problem, Datuk Ahmad had observed that attempts were being made to conserve the same and to rehabilitate loggable forests, and to develop harvesting and processing methods that would reduce wastage. But all these things were difficult to be practised. The rapid rate of logging and forest clearing resulting from development projects, increasing export demand for timber and of proper enforcing machinery made the plans futile. In spite of the fact that 50 per cent of Malaysia's total land area was still covered with forest, timber was becoming a sadly run-down resource. In 1976, there was a massive timber boom in Malaysia and later on the country became one

---

14 New Straits Times (Kualalumpur), August 30 1977.

of the largest producers of timber.<sup>15</sup> This had further earned the country the name of being the biggest exporter of tropical hardwood, but it was never realised that within the next few years, production would decline dramatically. An UNDP technical report based on survey had indicated that 3.2 million tons of timber in Peninsular Malaysia alone went to waste due to improper logging in 1972. Intensive logging was carried out in the area of Endan Rompin National park, and it seemed that things would go worse in terms of public effort in trying to save their natural environment. It had often been argued that there should be a sanctuary for preserving the wild life which consisted of some of the rare species in the world. On the other hand, logging had been promoting soil erosion, increasing silt load of rivers, scarcity of rain water and subsequent decrease in the fish productivity.<sup>16</sup> The states and the Federal Government seemed not to be careful about these issues.

## II. River Pollution and Health Hazards

"Forty two rivers in Malaysia were so polluted that fresh water fish could not survive in them. The pollution

---

15 Paul J. Culhane, Forests and Environmental Decision Making (London, 1984), pp. 78-79.

16 "Saturday Forum" in New Straits Times, July 9, 1977.

occurred mainly at the river mouths."<sup>17</sup> The chief source of pollution being effluence from palm oil and rubber factory and agro-based industries. Pollution in Sungai Sehudai in Johore was found to be so high that it prevented the growth and propagation of all beneficial aquatic life, which included fish, shell fish and shrimp. Wastes from human beings and trade disposals accounted for other 28 per cent for total waste load in the river. The Malaysian Rubber Research Institute had found out that biological treatment was the most suitable method for treating wastages from rubber, palm oil and tapioca industries.<sup>18</sup> But then the non-availability of cheap cost of method and suitable climatic condition could not make these methods fruitful. The pollution of river waste was so deep-rooted that it had its roots in various directions. Malaysian population specially in the rural areas used river water for direct use like drinking and cooking, what would be their condition if they consumed this contaminated water. The second highly disturbing thing by the water pollution was its impact on the fish. The growth and hygiene of the fish in that condition was pitiable. The government from time to time

---

17 Malay Mail (Kualalumpur), April 14, 1974.

18 Malaysia, Rubber Research Institute, Annual Report, 1974 (Kualalumpur), 1974, p. 79.

came up with suggestions for preventing pollution of water but the record so far provided ample reason for pessimism and concern.

### III. Pollution of the Seas and Beaches

The seas and beaches in Malaysia have been witness to various kinds of dangers. These were:

(a) Collision danger every nine months: The reopening of the Suez Canal had increased traffic in the straits of Malacca by 25 to 30 per cent, boosting the risk of accidents.<sup>19</sup> An estimated 5000 ships a month used the straits and meanwhile a ship sailing at 16 knots passed another ship going in the opposite direction every nine minutes. About 90 per cent of Japan oil supplies were coming through the straits. A large portion of those vessels were tankers and that some major oil spillages that took place there. In July 1974, Black oil lumps were found in the waters of the coast in Port Dickson and were also found washed ashore on the port Dickson beaches. As a result there was a scarcity in catches of fish in the surrounding areas and this affected the livelihood of the fishermen.

---

19 Malay Mail (Kualalumpur), June 6, 1974.

January 1975, the 237,600-ton Japanese super tanker "Showamaru" ran aground close to Palm Sebarok, three miles off Singapore, adjoining the Johore region. It was carrying a full load of crude oil from the Persian Gulf to Japan. The damage was detected to be caused by three ruptured tanks which resulted in an oil spill of close to 1 million gallons.<sup>20</sup>

In October 1975, the cargo ship "Tolo Sea" carrying 200 tons of bunker oil ran aground off Penang Harbour, resulting in the spill of bunker oil which adversely affected the marine life and the beach coast along the north bank of the island.<sup>21</sup>

In December 1975, the cargo ship "Tychong" ran aground at Rhu Khubur of Teangganu, causing a great concern of a probable oil spill from its bunkers.<sup>22</sup>

In July 1976, the collision between the 10,000 ton Filipino oil tanker "Diego Silang" and two other ships in the straits 12 miles off the coast between Batu Pahat and Palm Pisang, resulted in an oil spill from the tanker with a

---

20 Utusan Konsumer (Kualalumpur), August 10, 1975.

21 Ibid.

22 Ibid.

rupture at the bottom and roughly 6000 tons of oil got spilt covering an area about 450 to 500 square miles.

The spillage of the oil tanker "Diego Silang" was fought off with the use of chemical detergents by the help of Malaysian Navy. But this method was not an effective one to deal with; mechanical method to combat oil pollution must be looked into.

However, in South China Sea, it was a different problem. The ships and oil tankers used to dump bunker oil and slops on the high seas and these were being washed on to the Malaysian shores. This had affected the marine life on the east coast of Malaysia.<sup>23</sup>

Besides the above mentioned disasters, it had been warned that oil spill detergents might cause cancer also. According to a report on research in this connection, the use of detergents on oil spills in coastal waters could lead to children being born deformed within one or two generations. The report explained that detergents used on oil spills turn the oil into a type of massive sponge which picked up cancer causing chlorinated hydrocarbon.<sup>24</sup>

---

23 Asian Action, March-April, 1978.

24 New Strait Times, January 25, 1977.

Seeing all these highly disturbing developments, the Consumers Association of Penang called on to the government to ban all large tankers from the straits of Malacca. It was not that the government was not taking any step to prevent these spillages but the methods were old and needed to be checked and reviewed from time to time which the Malaysian government perhaps did not seem to be in a position to do.

#### IV. Industrial Pollution

Industrialisation was the first and foremost step in development process. Industrial pollution in Malaysia was not as that of the developed countries but definitely a reason for concern. The largest contributors of industrial pollution in Malaysia were the agro-based industries of which oil palm and rubber were of prime importance.<sup>25</sup> Research of Rubber Research Institute on effluent abatement had always been geared towards reducing the pollutant nature of rubber and latex factory effluents so that it could be safely discharged into a stream of river. Another source of industrial pollution was the discharge of asbestos fibre from the factories which got mixed in the air. This fibre

---

25 New Straits Times, May 29, 1947.



if breathed in large amounts, got lodged in the lungs and could cause a chest disease known as asbestosis. The Ministry of Science, Technology and Environment, in a paper observed that one's awareness of the environment was only aroused when something went wrong, often induced by the pressures imposed upon the life support system of land water, air and living organisms. Only then that its immediate cause, pollution was identified. Pollution therefore was a consequence of poor environmental management.<sup>26</sup>.

Air pollution was a major danger in urban industrial areas. The other urban pollutants were emissions from motor vehicles which comprised of carbon monoxide, sulphur dioxide and lead compounds.

#### Mining:

Over 55 per cent of the total mine production of Malaysia was done by gravel pump method. Since the beginning of 1977, there were 14 gravel pump accidents resulting in 35 deaths, as the nature of this method of mining had high risk element. A prominent mining consultant said, if such mines were found to be hazardous, then the only solution was to shut them down. Was the loss of life

---

26 The Star (Kualalumpur), September 9, 1977.

worth what the revenue owners got from the excavation of tin, perhaps not. But the answer was not that simple, and certainly the solution did not lie in the closing down of the mines for these mines contributed a large share to the economy of the country, making Malaysia the major producer of tin in the world. All over the world mining was dangerous. But this danger was minimised by strict safety regulations. However, the mines operating in Malaysia had little or no measures for safety. The popularity of the gravel pump method was because it was less capital intensive than other mining methods.<sup>27</sup> This was another instance showing that the Malaysian government in its process of short term development programmes did not realise the long-term consequences.<sup>28</sup> The Malaysians also tried to develop the industrial products and by-products to improve consumers' standard of living, these products were threatening their lives with diseases and death.

#### Pesticide danger to Man:

In Malaysia, 5,000 to 50,000 people died from pesticide poisoning each year.<sup>29</sup> Malaysia was one of the major

---

27 Ibid., January 1, 1977.

28 New Straits Times, December 20, 1976.

29 World Health Organization's report on Malaysia, 1976.

victims of this problem. The government imported tons of pesticides for better agriculture but unfortunately misuse of pesticides and lack of awareness as to how to handle them caused accidental poisoning cases.

#### Land Pollution:

Malaysia would be facing increased garbage disposal problem as it became more and more affluent.<sup>30</sup> If improperly tackled, it could result in severe pollution. Due to a rapid development process, the production was high, a substantial portion of agricultural and industrial produce was waste material. All the rubbish was to be dumped in the land or water. It was time to think whether this sort of development was worth carrying on.

#### Oil Crisis and the need for Conservation:

In the early 1970s, the rate of production of crude oil in Malaysia was 180,000 barrels per day. The government imposed restraint through licence on the amount of oil to be extracted. On the contrary, plans were made to increase

---

30 New Straits Times, Kuala Lumpur, February 8, 1976.

production. "In case these plans were executed Malaysian oil wells would run dry in 15 years' time".<sup>31</sup>

In Malaysia, the contractors practically had a free hand in the rate of production. Too high an extraction rate could reduce the recovery of oil to about 50 per cent. The rate of production needed to be controlled to preserve the resources as long as possible.

Though Malaysian economy was earning enough foreign exchange due to increased development and international trade but it was certain that the quality of life was declining. Be it oil spillage, inhalation of toxic gases, consumption of contaminated water or massive deforestation, the solution was definitely not to close them down but to ensure a more judicious use of these resources. The need of the hour was pollution control, conservation of resources and to make sustainable development practical. Both the governmental authorities and the common people had to join hands to ensure this. Some suggestions in this connection were noted as follows:

Pollution Index to be Introduced Soon: Malaysia needed to have a pollution index station. The main function of the station would be to observe long-term changes in the

---

31 New Straits Times, April 4, 1977.

atmospheric composition which might be related to changes in regional land use practices or other activities. Initially, the station should be concerned with measuring atmospheric turbidity which would in part measure the effect of the atmospheric aerosole on the environment. Measurement of chemical constituents in rain, water would also have to be undertaken.<sup>32</sup>

Drawing up new laws to control air pollution: Stringent measures to control air pollution should be adopted by the government "including prohibition of open burning of industrial wastes".<sup>33</sup> These measures should be clearly spelt out in clear air regulations. Any regulation adopted concerning it should be adopted in consultation with the major industrial groups. According to some leading environmentalists of Malaysia, the government should also prevent open burning of any other waste except garden wastes. It should be prohibited under the Environmental Quality Act of 1974. The regulation should also set standards for the level of pollutants that could be discharged into the air from industries and vehicles. There

---

32 The Star, March 6, 1972.

33 Asian Action, September , 1975.

should be a survey conducted to see the level of dust in the air released from the quarries. The Act should also provide for the control of emission of dark smoke from all industrial installations.

Action against those who cause pollution: The graveness of the situation did not only demand an Act to prohibit pollution but the whole machinery should be activated to take action on somebody found guilty of dereliction. "A vast majority of the people could not suffer due to the dreadfully ambitious nature and callousness of the minority".<sup>34</sup>

Need for Land Conservation: Former Malaysian Prime Minister Tunku Abdul Rahman had been quoted by the Malaysian dailies to have had expressed deep concern over the improper alienation of land and use of forest concessions by various states.<sup>35</sup> He had also regretted that during his tenure he never made any attempt to transfer the rights of the states over their forests over the Federal Government. Both land alienation and forest permits were issued by the state governments and federal government had no say at all in

---

34 Massey Stewart, Environmental Protection and Society (Moscow, 1984), pp. 61-62.

35 News Week (New York), May 14, 1975.

these matters. The former Malaysian premier had further stated that land legislation in most states did need revision since most of the laws had a lot of loop-holes. This, according to Tunku Abdul Rahman, had resulted in a lot of misuse of powers by the authorities for land alienation, especially in Peninsular Malaysia. During the early days of independence most of land applications over a big area or over areas came from important people or those who had some position in the state government. Later, Tunku wanted these applications to be referred back to him but gradually he received fewer and fewer applications. The Land Advisory Council existed but its powers were restricted to pieces of advice only. The state governments enjoyed huge concessions in the use of land and forests. Timber or timber products no doubt had increased the country's foreign exchange but it was time to realise that trees did not grow to that size within a few decades and unless something was done as soon as possible, the jungles would be devoid of valuable trees. Indiscriminate exploitation of the natural resources by the greedy permit holders and without any purposeful attempt at rejuvenation would very soon force the country to import this important building product. Not only deforestation but the government should also be aware of various other land pollutants. It should keep a vigilant eye on dumping wastes in the land which was used for

cultivation. "The government should take strong action on those who deliberately dumped toxic waste on the land".<sup>36</sup>

Last but not the least, the government and non-governmental organisations should carry on a massive campaign to create awareness about environmental protection. At many a time, it so happens that the people involved in logging, dumping wastes and using contaminated land and water do not know the short-comings of these deeds. At this juncture, if they were controlled by laws and other stringent measures, there would be a tendency to defy the laws or to carry on the work in disguise. It would become difficult to control people without convincing them that their acts were harmful to themselves as well as to others. The most important thing here is that the government should also provide viable alternatives to these people. For instance, those who survive on selling timber should be stopped from indiscriminate logging but they should be provided with some other alternatives to earn their livelihood. If the government prohibited dumping of poisonous wastes on land or releasing the same in water, it should also provide them with a place where they could do so but which would not be fatal. The effort had to be first initiated by the government and then only it could be carried on to the common people.

---

36 New Straits Times, April 4, 1977.



The progress and the process of development has had a terrible impact on the villagers. "Flood which was a definite repercussion of deforestation had hit hundreds of houses in Kampang Baru Muhire, Bagan Lallang and Sungei Puyu".<sup>37</sup> Another development factor, i.e. building of a new housing estate (Mah Mandir garden). The new private housing developer - Himseve Developers - started filling earth into the neighbouring land, towards the end of 1975. When work began to proceed at the site, a monsoon drain running through Kanpong, filled with earth and was chocked. Following this after the rains the villagers experienced the first floods. They got together and submitted a letter to the housing developer. A few weeks later, the housing developer dug a temporary drain at the site to prevent any immediate threat to the villagers in Kanpong Baru. In 1977 flood again hit the villagers. This submerged under two-foot flood water, since there was no way for water in the drains to flow on its natural course which had been cut off by the "development". The houses were flooded with dirty, muddy water, mixed with pig and human waste from the pig sites, pit latrines, drains, surrounding the area. This

---

37 Malaysia: Malaysian Environment in Crisis, Ministry of Science and Technology's Report (Kualalumpur), 1979), pp. 178-179.

lot of inconveniences to the people. The vegetable gardens, fruit trees and pigs had died due to this water all around. There were no drains or outlets to release this untidy water. Their legs and knees in dirty water caused terrible itching and sores. The muddy water often had leaches and small snakes. the wooden houses and the appliances inside were on the verge of breaking due to this water and damp soil.<sup>38</sup>

---

38 Business Times (Kualalumpur), February 28, 1977, p. 6).

**CHAPTER – IV**

**GOVERNMENTAL RESPONSES  
TO  
ENVIRONMENTAL PROBLEMS**

## CHAPTER - IV

### GOVERNMENTAL RESPONSES TO ENVIRONMENTAL PROBLEMS

Man's ambition for limitless enjoyment and comfort has led him towards exploitation of nature's wealth so indiscriminately and so ruthlessly as to reduce the nature's capacity for self-stabilisation. Man's voracious appetite for resources and his desires to conquer nature has put him on collision course with environment. The demands of modern society for development of various kinds of weapons and explosives has imposed intense stress on the state of equilibrium with the environment.

In other words, man has drawn so much from nature for the satisfaction of his multifarious needs, desires and ambitions that these are having an impact on environment resulting in immediate need for proper environment management. It requires that society and man's demands should be regulated so that natural environment is able to sustain the need for development.

Man naturally endeavours to improve quality of life but this can be done only if quality of environment and need of development synchronize. The immediate need is that environment-mental management must undertake the task of regulating man's activities in such a manner that the very

purpose of development is pursued and not defeated. Man's quest for development should be accompanied by "environmental assessment methods and environ management-concept, skills and strategies so that a balanced and dynamic equilibrium is maintained".<sup>1</sup>

In cities, pollution is a multi-dimensional problem. The factories, automobiles, solid and liquid waste disposals, high rise buildings, fast moving traffic, ever increasing pressure of population are causing air, water and noise pollution to an extent that the people are heading towards a disaster.

On the one hand, it is argued that science and technology being fundamental expressions of human creativity must be free of constraints or regulations. On the other hand, it is argued that too much use of science and technology has caused great miseries to man kind and is the cause of pollution in our contemporary society and therefore, we should institute control mechanisms to ensure that such abuses do not occur. No industry should be allowed to come up unless it has installed pollution control mechanisms. Ultimate costs of controlling pollution will be much less than the present rate of growth of development.

---

1 C.V. Rajashekhar, "Environment Problems"; Global Environment Series-1 (New Delhi 1992), pp. 101-102.

Thus the main task of the society is the management of environmental crises. But this task has also to be seen in the backdrop of human freedoms and liberty. It seems to be inevitable that for preventing loss of all liberties - by inviting environmental disaster, "man will have to renounce some of his much cherished liberties".<sup>2</sup> The stage of development and consequent pollution and imbalance in ecology that the western world and some developing countries have reached - has not left many alternatives at man's disposal. So long as it has not been possible to direct the trend away from one-sided growth and plundering of resources towards a system of equilibrium, it will be imperative to limit some of the freedoms of individual as well as for the nation in order to protect the fundamental rights which allow existence with human dignity and equality. Democracy, since its dawn, has cherished many freedoms and fundamental rights what was called in lofty clarion call of the French Revolution of 1789, the inalienable rights with which man is endowed. These "endowed rights" have led to the environment crises which are leading mankind to disaster if these "inalienable endowed rights" are not bridled.

---

2 Ibid., p. 104.

Since pre-historic times, man's endeavour and meditation, research and action have dwelt on one singular theme: to free himself from the bondage of nature, his environment. He has sought to conquer hunger, thirst, heat and cold, sickness and even time and space and forces that bind him to earth itself. Man who was endowed with intelligence and bestowed with insight extensively exploited and mastered his environment to what he thought was his happiness, good and prosperity. Such have been the endowments of man that he has the capacity to contemplate about the past and the present and plan the future developments.

In his quest to conquer his elements, earth and outer space, he has overlooked that the planet earth is and will remain a closed system, with the exception of radiation from the sun. The realisation of environmental crises requires revaluation of societal developmental priorities, objectives and goals. It necessitates new standards, new values, new strategies as well as evaluation of *laissez faire* and that of the concepts of freedom and liberty.

In such a state of crises, one cannot always go by the notions of fellow feeling and humanity because there will be always some people who would get their work done at the cost of others. At this juncture, a law making authority with a

set of rules and regulations should be able to implement the laws and command obedience from the people. The government as a whole should own up the responsibility for this kind of legal enforcement.

The Malaysian government response should be analysed in view of the above discussion about environmental hazards. To go by the Malaysian government reports - the Ministry of Science and Technology and Environment ensured that enhancement of science and technology activities in industrial development would not degrade the nation's quality of life and its natural resources. For this purpose, the ministry developed, coordinated, popularised and conducted research on science, technology and industry, advised the government on matters pertaining to research and development of science and technology and coordinated relations and cooperated with foreign countries and science and technology organisations. It also developed, proclaimed and promoted standards for industrial products to ensure that the locally manufactured as well as the standard of exported and imported goods was better.

The ministry's broad tasks could be put under these categories:

- (1) To extend analytical chemistry and meteorological services.



- (2) Control environmental pollution as well as conserve and protect it.
- (3) Protect wild life and manage national parks.
- (4) Develop better technology in the microelectronics, information technology, biotechnology and remote sensing as well as to develop research and monitor the usages and nuclear energy.<sup>3</sup>

#### Department of Environment

The department was established to help maintain the uniqueness, diversity and quality of environment in ensuring the peoples' health, prosperity, safety and comfort at present and in future and to administer and enforce the environmental quality Act 1974 and section IV of the Economic Exclusive Act of 1984.<sup>4</sup>

#### Enforcement and compliance

On paper, the ministry had lot to do about the environment, but in the early 1970s, the government practically did nothing about conserving and protecting the

---

3 Business Times (Kualalumpur), February 29, 1978.

4 Malaysian Year Book 1970, Government Press (Kualalumpur), 1971, p. 110.

environment, excepting the enforcement of environmental Quality Act of 1974. Very lately was environment taken up as an important responsibility. Lately, department of environment cooperated with the air wing of the Malaysian royal police force in controlling air pollution. A committee was formed as a guide for both the departments in air-borne surveillance reporting and enforcement. Till the end of 1974, 30 complaint cases were reported by the air wing, whereby 35 per cent involved open burning, 36 per cent due to emission of bleach smoke, 13 per cent due to excessive emission of white smoke, 6.5 per cent on dust emission and 9.3 per cent on water pollution. In this regard, the Department of Environment had taken enforcement action in the form of issuing four written notes, four written directives and two prohibition orders as well as carrying out two formal samplings and two prosecutions, while 16 other cases were referred to local authorities for enforcement actions under their jurisdiction. To ensure effectiveness of the enforcement programmes through air-borne surveillance, the Department of Environment had spent Ringget 168,308.00 under the allocations of the Sixth Malaysia Plan for the procurement of one set of video camera, video cassette recorder, colour video monitor and computers with accessories.<sup>5</sup>

---

5 Business Times, June 7, 1978.

### Oil Spill Response Planning Unit

Under the national oil spill contingency plan, the Department of Environment (DOE) acted as the Directorate of Action Plans, Expenditure and Consumption where DOE Headquarters acted as enforcement and public relations agency and where the DOE state office concerned acted as the coordinator of land and for pollution assessment.

### Programme Formulation Section

The Law Review Committee of Environment, established in 1972, continued to examine the weakness of existing environment protection legislation in the country. Four expert groups were subsequently set up to draft amendments to the legislations. A report highlighting the recommended amendments stated that under no circumstances could the development go contrary to the environmental protection.<sup>6</sup>

### Environmental Input to Development Planning Section

The Department of Environment continued to provide environmental input to a total of 37 developmental and natural resources planning projects. These projects included developmental plans, coastal protection works,

---

6 Malaysia, Year Book 1971 (Kualalumpur 1972), p. 136.

sewerage, flood mitigation and sustainable development projects as well as natural resources studies such as forestry, tourism, water resources and conservation.

During the year 1972-73, a total of 4,414 applications for evaluation were received by the Department of Environment. Compared with the number of applications received in 1970, there was increase of 25 per cent. Meanwhile, a total number of 699 applications for written permission for water pollution control installations were received by the Department's state offices, showing an increase of 38 per cent over the preceding year. For air pollution control equipments, a total number of 670 applications, an increase of 33 per cent over the preceding year was received. Under meteorological services Department of Environment and University Pertanian Malaysia participated in the air quality management study for Klang valley region. The objective of the study was to prepare a guideline to mitigate air pollution over Klang valley region".<sup>7</sup>

One of the outcomes of the project was in the development of an air dispersion stimulation model that would be installed in Malaysian Meteorological service headquarters.

---

7 Malaysia, Year Book 1973 (Kualalumpur 1974), p. 205.

The Ministry of Science, Technology and Environment was first established in 1973 with the name Ministry of Technology, Research and Local Government. In September 1973, the ministry was renamed the Ministry of Technology, Research and Coordination of New Villages and became the Ministry of Power, Technology and Research in 1974. In 1976, it came to be known as Ministry of Science, Technology and Environment.

#### Goals and Strategies

The goal of the Ministry of Science, Technology and Environment was to develop and expand science and technology, development activities in national development and at the same time to preserve the quality of life and the country's national resources.<sup>8</sup> The first strategy was to enhance the role of Ministry and its agencies by contributing towards research, and increasing the capability to absorb new technologies as well as adapting and developing indigenous technologies. The second strategy was to control pollution and manage activities that would safe guard the natural state of the environment through better coordinated natural resources planning to ensure a balance between development and environment.

---

8 Malaysia, Year Book (Special Issue) (Kualalumpur), p. 118.

The objectives of the department were to enhance and improve the quality of environment, in order to achieve a better quality of life as well as to balance the goals of socio-economic development and environmental control and to promote efficient and sustainable utilisation of natural resources.

### Strategies

In order to meet the above objectives, the Department of Environment adopted the following strategies:

- (a) Control and prevention of pollution;
- (b) comprehensive development and integrated project planning;
- (c) environment education and information; and
- (d) cooperation and involvement in activities at international and regional levels.<sup>9</sup>

Through the pollution control and prevention approaches, 13 regulations had been formulated and enforced under the environmental quality Act 1974. In comprehensive development planning approach, environmental factors were incorporated into land use plans such as regional plans, master plans, structure plans, local plans or development

---

9 Ibid., pp. 120-121.

plans. In the integral project planning, environmental considerations were integrated into project planning and implementation as required by the Environment Quality Order of 1980s.<sup>10</sup>

### Activities

Air Pollution Control: A survey by the Department of Environment in cooperation with traffic police stated that 22,207 vehicles were charged of black smoke emissions. The drivers were summoned under Motor Vehicles (control of smoke and gas emission) rules 1977. Besides a total of 12 gas sampling from chimney were also conducted during enforcement visits to the industries.<sup>11</sup>

Water Pollution Control: Efforts on water pollution control were focused on the control of effluent discharges through the Environmental Quality Act 1979 (sewage and industrial effluents). A total of 88 formal samplings of industrial effluents were conducted during enforcement visits to the industries.<sup>12</sup>

---

10 Malaysia: Report of the Department of Science, Technology and Environment (Kualalumpur 1978), p. 25.

11 Ibid., p. 27.

12 Ibid., p. 31

Marine Pollution Control: Marine pollution control was administered through the National Oil Spill Contingency Plan. In this respect, the five sub-plans for combating oil spills in the region of East Johore, Pahang, Terengganu, Kelantan, Sarawak and Sabah had been reviewed in order to consolidate the National Oil Spills Contingency Plan. Meanwhile, the marine pollution communication and response procedures were also updated, particularly with regard to the roles of the Department of Civil Aviation and Maritime Rescue Co-ordination Centre for combating oil spills and guidelines on the use of dispersants had been formalised and accepted by the National Oil Spill Response Committee. Out of 931 factories inspected under the Environmental Quality Act 1974, a total of 19 factories were prosecuted, 416 were compounded and 540 were given warning for violating various regulations.

#### Environmental Impact Assessment

Environmental Impact Assessment was made a mandatory requirement for 19 categories of activities under the Environmental Quality Act. A total of 113 Environmental Impact Assessment reports were reviewed by the Department of Environment, whereas 47 reports were approved and 15 rejected.<sup>13</sup>

---

13 Malaysia, The Department of Science, Technology and Environment Report (Kualalumpur 1975), p. 55.



### Environment Inputs to Development Planning

The Department was involved in the preparation of five reports on urban and regional planning, nine on resources planning projects and one on infrastructure development project. The movement was significant in that the environmental dimensions and inputs were given due consideration. The Department was also involved in the coordination of United Nations Environmental Project and produced the final report on socio-economic impacts and Policy Response resulting from climatic change - "A Regional Study in South East Asia".<sup>14</sup>

### Environmental Education and Information

Environmental programmes were implemented and focused on the efforts to increase public awareness about the importance of preserving the environmental quality in line with the concept of sustainable development. About thirty environmental talks were delivered and 2,000 people from various strata of society and 7,000 school students under the International Hydrological Programme, throughout Malaysia, joined.

---

14 Ibid., p. 71

In addition, a documentary, drama, video trailers entitled "green world" and "Pencemar" were in the production stage. A theme song entitled "Warna Dunia" had been composed, specially for the purpose of film video production on the environment.

Pollution index to be introduced soon

A pollution index for Malaysia would be introduced soon with the setting up of a "background station" in the Cameron Highlands.<sup>15</sup> The Treasury's economic report for 1974-75, tabled in the Dewan Rakyat, Lower House of Malaysian Parliament, stated that this station was expected to be in operation in a month's time, and would collect the necessary data to be analysed by the meteorological department. The main function of the station was to observe long-term changes in regional land use practices or other activities. Initially, the station would be concerned with measuring atmospheric turbidity which would in part measure the effect of atmospheric aerosols on the environment. Measurements of chemical constituents in rain water would also be undertaken.

---

15 Business Times, July 19, 1978.

### News Laws to Control Air Pollution

Stringent measures to control air pollution, including the prohibition of open burning of industrial wastes, were expected to be introduced in the later part of 1977. This was stated by the director of Air Pollution in the Department of Environment, Goh Kiam Seng at a briefing session for a group of planners.<sup>16</sup> He informed that the measures would be spelt out in the Clean Air Regulations. He added that they had just completed a series of consultations with fourteen industrial groups on it. He assured that the regulations would provide for control of the siting industries, which would cause air and noise pollution near housing areas. He added that it would also prevent the open burning of industrial wastes. They would have to be burnt in incinerators. The regulation would also set the standards for the level of pollutants that could be discharged into the air from the industries and vehicles. With the implementation of the regulation, the quarry operators would have to instal devices to control the dust release to the permitted level.

---

<sup>16</sup> New Straits Times, April 23, 1977.

### National Policy on Use of Forest Resources Adopted

The National Forestry Council had adopted a forestry policy in recognition of the vital role of forest welfare of the community and the national economy. The policy spelt out in detail several points whereby multiple forest utilisation could be based on certain guidelines such as -

(1) to set up as permanent forest estates sufficient areas of land strategically located throughout the country as an effective measure to safeguard climatic conditions, water sources, soil fertility, environmental quality and to prevent floods and erosion;

(2) to ensure perpetual supply of all forms of forest produce which could be economically produced within the country and which were required for agricultural, domestic and industrial purposes as well as for export;

(3) to conserve adequate forest areas for recreation, education, research and protection of the country's unique flora and fauna;

(4) to produce a sound programme for forest development through approved silvicultural practices to achieve maximum productivity from permanent forest estates;

(5) to ensure through the efficient utilisation of forest resources on land not included in Permanent Forest Estates through coordinated planning by land development agencies;

- (6) to promote efficient harvesting and utilisation of all forms of forest produce;
- (7) to stimulate the development of appropriate wood-based industries, thus creating more employment opportunities and generating foreign exchange;
- (8) to promote the export of forest products by ensuring the sound development of trade and commerce;
- (9) to promote effective "Bumiputra" (son of the soil) participation in forests and wood-based industries consistent with the government policy;
- (10) to undertake and support an intensive research programme in forest development;
- (11) forest training and supply of adequate man power to forest mining;
- (12) to encourage private sector involvement in forestry research and training at all levels with a view to accelerating industrial development and to enhance the quality of professionalism in forestry and forest industrial practices;
- (13) to foster by education and publicity, a better understanding value of the forests to them and their descendents; and
- (14) to foster close cooperation among all to achieve optimum utilisation of the valuable resources of the country.

Development generated environmental problems, the government responded to these problems and made regulations to protect the environment. The society was the most important victim of the lopsided developmental strategies and environmental problems. The social implications of the environmental problems are dealt with in details in the next chapter.

**CHAPTER -- V**

**SOCIAL IMPLICATIONS**

**CHAPTER - V**  
**SOCIAL IMPLICATIONS**

In the late 1940s, there emerged a new group of development planners, who promised every man all the luxuries of life. They forgot to take the paradoxes in the society into consideration and could fulfill their promises to a privileged few. They were generally western liberals who played the game of liberalisation and development with deadly seriousness.

These people were partially successful, they could raise the per capita income by a few dollars but they often left the masses more acutely aware of the inadequacy of the rewards of growth and development. At many places, as observed by Mahbub Haq, "the socially disruptive nature of the entire development process was witnessed".<sup>1</sup> What went wrong, after all with the planners and their planning and development?

Malaysia witnessed a steady process of development and growth, became the largest exporter of rubber and palm oil, had some major industries. In spite of all this, the people

---

1 Mahbub Haq, The Poverty Curtain: Choices for the Third World (Delhi 1976), p. 11.



in the rural areas were away from this whole process or were burdened with the ecological imbalances.

### Short-comings of the Development Plans

One of the major mistakes of the development planners in Malaysia was that they were stuck with numbers. It seemed that whatever was measurable was relevant; what was non-measurable could be conveniently ignored. Endless efforts were made to make econometric models not enough into economic policy formulation or project appraisal. The planners ignored the social side of the plans, that is, investment plans, economic policies, economic institutions and projects had a human element.

Another problem of the planners was lack of uniform treatment to the people during implementation of the plans. Either they imposed variety of bureaucratic controls to regulate economic activity, on the other side, the bureaucracy suffered from red tapism and corruption. The Malaysian federal government made legislations, against excessive timber logging and export but the state governments carried on this task without informing the central government. Two major mistakes were committed in Malaysia, first, the economic policies were hedged in by too many controls, which diluted their earlier impact.

Secondly, since the fiscal policy and economic distribution was not uniform, it was not fair on the part of the Malaysian government to favour the richer regions through market mechanisms. Promotion of exports never tended the exporters to realize the short-comings of their deeds.

Malaysian planners seemed to be making a distinction between planning and implementation. When hard pressed, they generally argued that while development planning was their responsibility, its implementation was the responsibility of the entire political and economic system.<sup>2</sup> A good development plan often came with a realistic blue print for its own implementation. It should contain specific recommendations on all detailed policies, institutional reforms, administrative framework and well conceived projects which were necessary for its successful implementation but this was not the case in Malaysia.

#### Neglect of Human Resources

One particular mistake committed by the development planners in Malaysia was that they neglected the human resources. Very little investment was made in the field of development of human resources. According to Mahbub Haq, this was precisely because "the presumed gestation period of

---

2 Ibid., p. 21.

any such investment and the lack of any quantitatively established relationship between such investment and output".<sup>3</sup> "The most unforgivable sin of development planners", he stressed, "was that they were mesmerised with high rates of Gross National Product and forgot about the real objective of development. High economic growth was accompanied by rising disparities in personal as well as regional incomes. It seemed that development had not touched the lives of ordinary people. Very often, economic growth meant little social justice. It was accompanied with rising unemployment, worsening social services and increasing absolute and relative poverty.

#### Environmental Threat in Malaysia

Rising concern about physical limits to global growth in early 1970s was accompanied by an increasing anxiety about environmental degradation. This concern was also felt in Malaysia. It seemed that unlike other developing countries, public concern about environment in Malaysia was more than that of government. The kind of problems the Malaysians did face due to environmental discords were as follows:

---

3 Ibid., p. 22

After the Suez Canal was reopened, the traffic in the straits of Malacca had increased by 25 to 30 per cent. Every month, 5,000 ships crossed the straits. It meant that a ship sailing 16 knots would pass another ship going in the opposite direction every nine minutes. These ships carried tankers of oil. The moment there was an accident, the oil from the tankers spilled on the ocean; in about 36 hours, the oil reached and blackened both the shores of the straits of Malacca. As mentioned earlier, the 'Diego Silong' oil spill, 'Showa Maru' affair caused public outrage over the oil spills.<sup>4</sup> These sensational oil spills affected the marine life very badly. Some time the oil spill contained some toxic materials in them which had a harmful effect on the fish and other living organisms. The spillage off the oil tanker Diego Silang was fought off with the use of chemical detergents by the Marine Department with the help of the Malaysian Navy. However, it came to be known that the method of dealing with oil spills was not usually the most effective one and the pollution caused by the detergents added to a greater loss of the marine life. For the detergents in contact with the oil and water could bring about a synergetic effect in producing a toxic end-product. A major portion of Malaysian population which earned its

---

4 Utusan Konsumer (Kualalumpur), August 10, 1975.

livelihood from the marine industry, fish in particular, were the worst affected by the marine pollution. The poor fishermen were either caught by the rich suppliers or had to go hungry.

Another instance of water pollution was that all the industries in Malaysia dumped their wastes in the nearby water source. Some factories had highly toxic end-products. When released into the rivers and other water sources, these caused tremendous tension among the people. A substantial portion of the Malaysian population used river water for direct consumption like drinking, washing, irrigation of plants, giving it to their cattle to drink. These people were worst affected due to this pollution and sometimes acute water pollution caused deaths of men and their animal folk. Water supply from reservoirs and purifiers was meant for a privileged few. The rest were made the victim of the carelessness of the few. The government facilitated the growth of factories and industries but never enquired about such minor details of garbage disposal which could cost the life of many thousands.

Some people and places were affected by rubber and palm oil plantations also. The sludges and other waste products from these plantations were dumped either on land or in water. This had detrimental effect on further cultivation

on land. People residing in the nearby locality could not use such land for cultivation or water for consumption.

Deforestation was a regular phenomenon in Malaysia. Rich forests were indiscriminately destroyed by two groups, the government and the timber hoarders. The government was interested in keeping its timber export growing. So were the timber hoarders indulging in unofficial activities. This unhindered logging fetched them money but they were not aware of how much the ecological balance was disrupted due to this. The land gradually lost the power to hold water under it. Rainfall became less, and the people were affected by floods. Felling of trees destroyed the natural balance. Logging in tropical rain forests promoted soil erosion, thus increasing the silt load of the rivers. The regular flow of water was disturbed by deforestation. Such changes led to a marked decrease in fish productivity in downstream areas. Logging and timber industry which was meant for social welfare became a reason for social distress.

"People were often affected by natural calamities like floods and droughts. Malaysia encountered two major floods in 1975 and 1977. Hundreds of households were affected by floods. Later on it came to be known that the flood was caused due to construction of some new housing project. The private housing developer dug the earth of a neighbouring

area and piled it up at the site of development. A monsoon drain running through the area to a nearby river got choked with the earth. In 1975, this particular village witnessed very bad flood situations. On complaining, the housing developer dug another temporary drain. This continued whenever there was any construction. This kind of progress drowned the villages. Stagnant flood waters caused several problems for the village dwellers. Their houses and surrounding land were flooded since there was no way for the water in the drains to flow on its natural course. The houses were flooded with dirty muddy water, mixed with pig and human waste from the pig sties, pet latrines, drains and surrounding area"<sup>5</sup>. This posed a lot of inconveniences to the people, both young and old. Further more this kind of a situation was clearly a health hazard to the people living in the area . Their livelihood was affected by the flood water, vegetation, fruit trees, poultry and pigs died; "their legs were knee-deep in dirty water all the time. Elders and children developed itchy sores on the legs. Snakes and leaches were found around their houses. The stagnant water also affected their wooden furniture and other belongings"<sup>6</sup>. Their lives were at danger. The worst

---

5 Business Times, September 26, 1977.

6 Straits Times, May 19, 1977.

affected were the poor who could not afford alternative living arrangements even if they wanted to do so.

Malaysia was one of the recognised exporters of tin. Over 55 per cent of the country's tin was produced by the gravel pump method. Yet, the nature of this method of mining had a high risk element. By the beginning of the year 1977, there were 14 accidents and 35 deaths. Prominent mining consultants said that "if such mines are dangerous then the only method is to get rid of them". But closing down of the mines was not an easy solution given. Mines operating by this method contributed a large part of the country's economy, making Malaysia the major producer of tin in the world. All over the world, mining was dangerous but the dangers could be minimised through strict safety regulations. "However, the mines operating by the gravel pump method in Malaysia had little or no awareness of safety aspects".<sup>7</sup> The traditional miners at many a times were not professionally trained, nor did they arrange for proper engineering devices and facilities. The popularity of the gravel pump method was because it was less capital-intensive. Due to low investment this method was suitable for small entrepreneurs.

---

7 Business Times, April 26, 1972.



In order to regularise the safety conditions in the mines, the government under the above-mentioned circumstances had to make a choice between the revenue to be earned from the mines and the lives of its people. According to the officials, such mines were dangerous only for those adventurous miners who treated mining as a gamble, and who were willing to take risks. Such miners disregarded safety measures. It seemed that both the parties were prepared to take the risk, disregarding the margin of error that could occur, as their aim was to optimise whatever capital they had invested. Was gravel pump mining worth the risk? It remained an unanswered question.

Not only the above-mentioned pollutants, Malaysians had to suffer severely from other things in day to day life like emissions from vehicles. The asbestos industry released asbestos fibre dust; when breathed, it resulted in severe heart diseases to the people.

Malaysia is just an example, an important one because it is the main subject of this study. However, problem in the physical world is not only due to plunder of resources but it has a global political and economic reason behind it. Direct effects of environmental pollution on living organisms' health is a serious matter; on the other side there is a hidden consequence of environmental pollution that is debt or financing ecocide. According to Susan

George, "indebted countries have not just borrowed money, they have mortgaged the future. Nature puts up the collateral".<sup>8</sup> The environment is a little noticed victim of the debt crisis in the world seeking development. Yet one day every one will have to pay for the damage this crisis has done to the ecosystem.

Our economies have short term horizons, budgets are annual; for a banker a few months can be a very long time. national economies, both socialist and capitalist, proceed for the most part, as if there were no long term costs for anything. In the process of short term events they cannot foresee that it can have longer effects. What is still more dangerous is that there is no solidarity with the future.

World Bank and International Monetary Fund with their neo-classical economists are continuing to finance projects with developing countries and pay scant attention to the ecological costs.<sup>9</sup> The price of cleaning up the mess now being made in the developing world is going to be horrendous

---

8 Susan George, A fate worse than debt (New York 1988), p. 155.

9 Robert Goodland and George Ledec, "Neoclassical economics and principles of sustainable development", Environmental Scientific Affairs, World Bank, April 1986, p. 71.

and it can only be added to the present debt bill. In all, too many case damages will be irreversible.

There is a dual connection between debt and environment. First is borrowing to finance ecologically destructive projects. The second is paying for them, and all the other elements of debt-financed modernisation, by cashing in on natural resources, the two are necessarily inter-twined. Many of the big projects that helped to put the developing countries on the dangerous debt cycle, to begin with, are environmental disasters in their own right. Mega projects are part of the standard development model; "they pay no heed to future penalties for present recklessness. Large dams and hydro projects are typical examples now admirably documented by Edward Gold Smith and Nicholas Hildyard".<sup>10</sup>

No one is against irrigation or power. Successful societies must find appropriate ways of improving agriculture and providing energy or perish. Unfortunately, huge dams do neither of these nearly as efficiently as a series of smaller, less costly ones could and they create a flood of ancillary problems as part of the bargain.

People are directly hit by the diseases (malaria, schistosomiasis, blindness) that proliferate when water

---

<sup>10</sup> Ibid., p. 86.

patters are disturbed. They are forcibly uprooted from their homes. One should add that resettlement is often an optimistic term, since many of those uprooted are simply left to fend for themselves, without compensation. People can also be uprooted without dam building. Indeed ecological destruction seems wedded to contempt for ethnic minorities and for the basic needs of poor people.

If these conditions remain, nature will pay back with interest. Massive deforestation, for example, "will probably change the whole world's weather for the worse, though climatologists disagree about exactly how".<sup>11</sup> What we already know is that it carries heavy economic penalties. Aside from providing fodder to the animals and vegetables species, the habitat of native peoples and a source of fuel wood, forests have a clear economic role to play because they protect the very projects that drain so much investment, including dams. A team of World Bank experts explains: "...when forests ... are cleared, reservoirs often become much shallower due to sedimentation. As a result, less electricity can be generated and the useful economic life of the hydro-electric invested is shortened".

---

11 Peter Bunyard, "World Climate and Tropical Forest Destruction", The Ecologist, Vol. 15, No. 3 (United Kingdom 1985), p. 21.

"Forests stabilize the soil and prevent erosion. When they disappear, so does the soil - into rivers, harbours and canals. Deforestation is jeopardizing the continued operation of .... the panama canal, which suffers from heavy sedimentation and lack of sufficient water during the dry season which blocks the sailing of the larger ships. In Thailand, important water ways are most navigable due to sedimentation resulting from deforestation".<sup>12</sup>

Deforestation turns storms, floods and drought - naturally recurring and expected phenomenon - into major disasters. Forests also play a major role in agriculture by storing water and releasing it gradually, so that droughts are less severe. Agricultural export crop production valued at \$ 36 billion per year depends upon the water supply and soil stabilization functions of forests. Everyone knows that tropical forests are not suitable for cultivation but those who have no alternative due to government promises have to settle in those areas. It is criminal to send masses to uninhabited or deforested land.

There are fears of increasing availability of World Bank funds which encourage deforestation in poor countries;

---

12 Examples of silting from J.W. Kirchner, World Bank, World Development Report VII, Office of Environmental and Scientific Affairs, November 1983, pp. 26-27.

that they can gain twice over, first by selling their forests, and then repairing the environmental damage - to pay for which they cut more forest, while the banks and lending countries acquire interest payments, export orders, political and economic power, indeed everyone gains except the environment, which is being ruined at an accelerating pace.<sup>13</sup>

Though such problems are not always taking place at our door step, it is not possible to think that we shall not be affected by it. Biosphere is a seamless web and any climatic change would affect every one everywhere. Malaysia and the Malaysian people will be no exception.

---

13 Susan George, Debt and Environment (New York 1987), pp. 164-165.

**CHAPTER – VI**

**CONCLUSIONS**

## CHAPTER - VI

### CONCLUSION

Malaysia is endowed with rich natural resources, cash crops like rubber and palm oil, rich minerals like tin. The rain forests in Malaysia are an asset for generations to come.

When Malaysia was a British Protectorate by and large the development that took place was in tune with the British interests. Following the withdrawal of the British, the country was not in a position to continue the process of development as earlier. Nor could it do so all by itself and the economy of the country had reached a bad state. The process of development initiated by the British was more beneficial to the British than to the people of Malaysia. For the British, the development was initiated by them in such a way that it had begun by them and should come to an end by them.

After independence in August 1957, the newly elected leadership found itself in a state of helplessness. Nevertheless, the ruling elites were grateful to the British for starting the growth and cultivation of cash crops. The new leadership aimed at overall development in the country. They wanted to alleviate poverty and to improve the quality



of life. During the period of study, the Malaysian economy witnessed substantial growth in terms of per capita income, gross national product, import-export ratio etc., the credit of which goes to the leadership. This is only one side of the story. On the other side, the whole process of development tended to be dependent upon exploitation of the natural resources of the country. Under such circumstances, an unhindered exploitation of the natural resources led to serious environmental problems.

The country's economy was planned to be developed by different strategies scheduled under different plan periods. The leaders emphasized on further development and efficient use of cash crops like rubber and palm oil. The government took special interest in developing and profitably using the mines in Malaysia (named so since 1963). Along with other things, Malaysia became the leading producer of rubber, palm oil, and tin in the world. The forests in Malaysia were full of rich dense timber. Timber export industry fetched Malaysia enough foreign exchange.

It is evident from the above mentioned facts that the development of the economy was dependent largely on exploitation of the natural resources. In the process the craze for development further intensified this exploitation. The leadership could not visualize that the exploitation of the natural resources could have serious repercussions

somewhere else and this is what happened. Several environmental problems resulted from these lopsided development strategies such as deforestation, land and water pollution due to deposition of industrial and agricultural wastes. Timber export which was one of the major sources of foreign exchange led to large scale timber logging and deforestation. The rubber and palm oil plantations dumped their sludges in land or released into the nearby water source. After some time, this resulted in acute water and land pollution. The oceans were polluted due to oil spillage from the tankers in the straits of Malacca. Various kinds of pesticides were imported by Malaysia which often led to poisoning of the crops. The owners of the mines used gravel pump method in their mines and never took into consideration the kind of technology to be used. The crude technology and traditional methods killed many people working in the mines.

The government took note of the prevailing problems. The Department of Science, Technology and Environment was established to help maintain the quality of the environment and to protect the country from environmental pollution. The famous legislation of the Environmental Quality Act of 1974 was also formulated. Various institutes were established to do research on the problems and to find solutions to them. these were the Rubber Research Institute

of Malaysia, Oil Spill Response Unit, Environmental Impact Assessment Unit etc.

Though the development process was smooth, excessive use of the natural resources resulted in severe environmental hazards. The problems resulted from the lopsided development strategies had their manifestation on the society and people of Malaysia. The development was becoming hostile to the eco system. From being made eco-friendly, the development tended to disturb the environmental balance. It was thus bound to have adverse effects on the society. The development planners thought that their task would be over after the plans were formulated and launched. Actually the problem arose at the implementation stage of the development strategies. When the plans were implemented, the authorities tended to calculate their effect on the economy. They could not visualize that these plans, if not implemented properly, could have ill effects on the society. The social side of the development strategies was neglected. They forgot that all the investment plans, economic policies, economic institutes and projects had a human element. The fact that human resource was one of the biggest assets of the country and no development could be complete if the human resource was not paid attention to. Another problem was lack of uniform treatment during the process of implementation of

the plans. Poor people were the worst affected by these lopsided development programmes. People faced several dangers resulting from environmental hazards like flood, different diseases caused due to pollution, contaminated water caused several diseases to their children and animal folk. Though the country witnessed growth and progress in the economy in a long run, all the progress went detrimental to the people's lives for whose welfare all this was done.

The problems which the people in Malaysia had been facing were not limited to them alone. These were matters of concern for the people in all the developing countries. One could say that the environmental issues and problems were not merely due to exploitation of the natural resources but a fall out of the leaders' vision, kind of development strategies adopted by the country, role of the external agencies like IMF and World Bank, the attitude of the developed countries towards the developing ones. Development was something which could not be restricted to economic development only. What actually matters is how good is the quality of life of the natives of a country. This kind of eco-hostile development is not worth to be pursued at the cost of the life of the people.

What was needed urgently was that the people should be made more and more aware of the shortcomings of development leading to environmental hazards. More research and study on the issues relating to these and a more vigilant government can minimise the problems to some extent and save the society from environmental pollution caused by the lopsided development strategies adopted.

## **BIBLIOGRAPHY**

## A Select Bibliography

### Primary Sources

Bank Negara Malaysia, 1976, Annual Report and Statement of Accounts, Kuala Lumpur, 1976.

Malaysian Year Book 1970 to 1980, Kuala Lumpur, Government Press of Malaysia.

Report of the Department of Science, Technology and Environment, 1973 to 1980, Kuala Lumpur.

Rubber Research Institute Report, 1975 to 1980, Kuala Lumpur.

### Books

Altman, Irwin, Chemers Martin; Culture and Environment (California: Brooks/Cole Publishing Company, Monterey, 1980).

Blumm, Michael, C., Environmental Law (England: Dart Mowth Publishing Company, 1982).

Collins Mark, Jeffrey A, Sayer and Timothy ed., Conservation Atlas of Tropical Forests: Asia and Pacific (New York: Simon and Schuster; 1991).

Courtney, Geography of Trade and Development in Malaya (London: G. Bell and Sons Ltd., 1978).

Dasgupta, Partha., An Enquiry into Well Being and Destitution (New York: Oxford University Press Inc., 1983).

Downing, Paul B., Environmental Economics and Policy (Canada: Little Brown Company Ltd., 1984).

Esman, Milton, J., Administration and Development in Malaysia (London: Cornell University Press, 1972).

Gag, Richard L., Before it is too Late (Tokyo, New York, San Francisco: Kodansha International Ltd., 1984).

Graham and Totman, Martinus Nijoff, ed., Environmental Problem and Sustainable Development: Legal Principles and Recommendations (London/Dordrecht/Boston: 1987).

Orge, Susan., A Fate Worse Than Debt: A World Financial Crises and the Poor (New York: Division of Wheat Land Corporation, Broadway, 1988).

Haq, Mahbub., The Poverty Curtain: Choices of the Third World (Delhi: Oxford University Press, 1976).

Holdenn, John, P., Ehrlich, Paul, R., Global Ecology (New York: Harcourt Brace Janovich, 1983).

Jomo, K.S. and Wells, R.J.G., ed., The Fourth Malaysia Plan. Economic Perspectives (Kualalumpur: Malaysian Economic Association, 1983).

Manivasham, N., Environmental Pollution (New Delhi: National Book Trust, India, 1984).



Miller, Morris; Debt and Environment: Converging Crises (New York: UN Publication, 1991).

Moorcraft, Colin., Must the Seas Die? (London: Maurice Temple Smith Ltd., 1970).

Peng Khor Koh; Recession and the Malaysian Economy (Malaysia: Institute Masyarabal Palau, 1988).

\_\_\_\_\_ ; Malaysian Economy Structures and Dependence (Kualalumpur: Marican and Sons K.L., 1983).

Repetto, Robert, ed., The Global Possible (New Delhi: Segment Book Distributors).

Smith, Neil; Uneven Development (Oxford: Basil Blackwell Publishers Ltd., 1984).

Stretton Hugh; Capitalism, Socialism and the Environment (London: Cambridge University Press, 1976).

Singh, Ram Bali., Studies in the Environment and Development (London: Cameron Wealth Publishers, 1988).

### Articles

Athison, Adrian, "Environment and Development: Concepts and Practices in Transition", Public Administration and Development (Brisbane, Toronto, Singapore, Chichster, New York), Vol. 11, 1991, pp. 402-413.

Aiken, Robert, S., "Struggling to Save Malaysia's Endau-Rompin Rain Forests, Environmental Conservation (Switzerland), Vol. 20, No. 2, Summer, 1993, pp. 157-161.

Akhter (Farida) and Mazhar (Farhad), "Beyond the Earth Summit: How to Depopulate the Earth?", Frontiers (Bangladesh), October 26, 1992, pp. 160-163.

Anwar Devi Fortena, "Indonesia in the changing regional and International Environment", Indonesia Quarterly (Jakarta), Vol. XVII, No. 2, January 1992, pp. 223-229.

Ho Khai Leong, "The Political Economy and Procedural Constraints: Malaysia's Regulatory Agencies and Industrial Legislation", Asian Profile (Hongkong), Vol. 22, No. 2, December 1991, pp. 39-47.

Jomo, K.S., "Whither Malaysian New Economic Policy?", Pacific Affairs (Vancouver), Vo. 56, Spring, 1986, pp. 21-39.

Klinpenny, James, "Environmental Values and their Implications for Development", Development Policy Review (Sage: London, Newbury Park and New Delhi), Vol. 9, 1991, pp. 381-390.

Mc Dowell A, Marh, "Development and Environment in Asean", Pacific Affairs (Vancouver), Vol. 60, 1993, pp. 68-80.

Singh, Kavaljit; "IMF Loan and Environmental Burden", Mainstream (New Delhi), December 7, 1991, pp. 13-15.

Thakur, Sandhya; "The First Earth Summit: A Challenge to Mankind", New Quest (Pune), May-June, 1992, pp.165-167.

Touruoha, Dong; "The Pen and the Saw", Far Eastern Economic Review, August 27, 1992, pp. 8-10.

Wong, Tai, Chee; "Industrial Development and the New Economic Policy in Malaysia and the International Division of Labour", ASEAN Economic Publisher (Hongkong), Vol. 7, No. 1, July 1990, pp. 23-30.

## Newspapers and Periodicals

Asia Week (Hongkong)  
Bangkok Post (Bangkok)  
Business Times (Kualalumpur)  
Far Eastern Economic Review (Hongkong)  
Hindu (Madras)  
Hindustan Times (New Delhi)  
International Herald Tribune (Paris)  
Indian Express (New Delhi)  
New Straits Times (Kualalumpur)  
News Week (New York)  
Malay Times (Kualalumpur)  
Patriot (New Delhi)  
Statesman (New Delhi)  
Star (Kualalumpur)  
Sunday Observer (London)  
The Times (London)  
Time (New York)  
Times of India (New Delhi)