

PREFACE

The research project on “Urbanisation and the Environment in Malaysia: Managing the Impact” was undertaken by the Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia for the APEC Study Centre at the Institute of Developing Economies, Japan. It was carried out in the context of the joint declaration issued at the APEC Ministerial Meeting which was held in Manila, Philippines in 1996 which concerned the initiative on the impact of expanding Population and Economic Growth on Food, Energy and the Environment (FEEEP). This declaration called for different countries to work towards balancing food and energy requirement and the environment, with economic growth and population needs in different ways, within the context of individual economic development, consumption patterns and diverse supply structures.

The objective of the research is to analyse the consequences of urbanisation on the environment in Malaysia and to examine management plans and policy interventions. In order to fulfill the objectives, the research focused on urban growth and development in Malaysia, the environmental consequences of urban growth for the case of Kuala Lumpur, the management of the urban environment, and some policy implications.

The Institute for Environment for Environment and Development, better known as LESTARI (meaning sustainable in Malay), was founded in 1994. LESTARI has four main objectives:

- To strengthen local institutional capacity to address the needs of sustainable development
- To provide the structure for inter- and multi-disciplinary research and training in environment and development in Malaysia and the Asia Pacific Region
- To host research and training programmes nationally and internationally
- To facilitate access to and exchange of information on the environment and development

LESTARI conducts research and training programmes and promotes interaction for wider awareness of the balance between environment and development.

EXECUTIVE SUMMARY

Urban Growth and Development in Malaysia

The modern urban system in Malaysia was founded during British colonialism, when basic commercial, financial, social and administrative functions were required, to strengthen and further the cause of British colonial exploits in the country. This period saw the immigration of Chinese and Indians, and left a legacy of segregated ethnic groups within the urban framework, doing clearly differentiated work. The pace of urbanisation after Independence, in the 1957-1969 period, was relatively slower, partly due to rural urbanisation through massive rural land development projects and the slower growth in urban job opportunities. Symptoms of over-urbanisation in the form of spontaneous settlements, disguised unemployment and an involuted informal sector of the urban economy were evident, further accentuating the social mosaic of colonial urbanism, thus exacerbating the already strained urban atmosphere. The 1969 racial conflict, albeit confined to the Kuala Lumpur-Petaling Jaya urban area, pointed sharply to the need to deconstruct the under-development of the cities and the country.

Subsequent to this, the Malaysian government pursued a deliberate urbanisation policy and adopted the New Economic Policy which aimed to restructure the Malaysian society by enhancing the interchangeability of economic activities regardless of race, and eradicating poverty. In order to implement the policy successfully the government had to create wealth for equitable distribution. This was possible in the 1970's onwards because during this period world development hinged on the globalisation of industrial production. If in the past industrial production had been confined to within the national boundary of a country in traditional core industries, from the late 1960's and 1970's onwards manufacturing was carried out in locations all over the world, especially in developing regions. Malaysia positioned itself to take advantage of the changing world pattern by installing appropriate policy instruments that opened the country to direct foreign investments.

The Malaysian regional development policies since 1970 have been based on the concept of growth centres. Through this concept, the Malaysian urban system is restructured to allow for more orderly industrial growth throughout the urban hierarchy. Thus, while Kuala Lumpur was designated to be the national growth pole emphasis was also given to counter poles delineated for the northern and southern regions. In addition to this, Kuala Lumpur is bounded by an area of 243 square kilometers that limits physical growth. New towns in the outlying areas have been able to absorb the growth and prevent the overt concentration of people in the city. Political decree and sound administrative procedures have together ensured the success of the growth centres concept and prevented Kuala Lumpur from becoming a runaway primate city.

Environmental Consequences of Urban Growth

One of the impact of rapid urban growth is the transformation and, in many cases, the deterioration of the natural environment. Landuse changes in Kuala Lumpur over the last ten years have been dramatic. Forests and other natural vegetation have now been replaced by infrastructure, residential homes, office space, industries and other commercial buildings. Too often not enough provisions are made for open spaces and green areas, and this has led to the depletion of green areas. Landuse changes have also contributed to rapid land degradation and this problem has been compounded by development in unsuitable and environmentally sensitive areas such as the highlands, areas with foundations containing limestone cavities and ex-mining land. The increase of geohazard events in the last five years is a clear sign of the negative impacts of increased land degradation.

One area in which the impact of urban growth on the natural environment has been clearly demonstrated is the atmosphere. Of all the pollutants monitored, total suspended particulates pose the greatest problem, almost always exceeding the $90 \mu\text{gm}^{-3}$ level specified in the Malaysian Guidelines for Total Suspended Particulates. The problem of air pollution is exacerbated by the existence of "haze" arising from forest fires during certain parts of the year.

Apart from its influence on the atmosphere, urbanisation also exerts a considerable pressure on water resources. Rapid growth has resulted in higher demands from the commercial and industrial sectors, straining the water supply system in Kuala Lumpur and the Klang Valley, particularly under conditions of prolonged drought. Data shows that the Sungai Klang flow quantities are relatively small compared to the degree of development in the Klang Valley region. Sungai Klang is among the most polluted river in the country, both in terms of BOD and ammoniacal nitrogen, with major sources of pollution coming from agro-based industries, manufacturing, livestock farming and domestic wastes.

The impact of urban growth on the natural environment is also manifest by changes in climatic conditions and increased levels of background noise. In addition, the generation of all forms of waste has increased in Kuala Lumpur, causing a plethora of environmental problems. One example is the open dumping method of solid waste disposal which has raised fears of groundwater contamination as well as problems related to vector borne diseases, airborne dusts and odours.

Several socio-economic problems have resulted from Kuala Lumpur's remarkable transformation and economic growth over the past few decades. Although the quality of life and the standard of living for the city's residents have improved, the increase in population and their demands for a better life have exerted unprecedented pressures on the city's transportation network, housing and provision of basic amenities. This in turn has created problems related to

health, squatters, youth development and a change in the culture and lifestyle for those living and working in Kuala Lumpur.

Managing the Urban Environment

The management of the environment in urban areas is obviously related to and very much influenced by the environmental management policies at the national level. At this level, the Environmental Quality Act 1974 contains about 20 pieces of regulations promulgated under it that are available for the purpose of environmental management. In addition, there are other pieces of environment-related legislation, by-laws and guidelines that are administered by the different government agencies and local governments. Despite these regulatory measures, a myriad of outstanding issues related to the management of land degradation, depletion of urban greens, air, noise and water pollution, waste disposal and the socio economic dimension, remain to be solved.

Policy Implications

DBKL has established broad goals and objectives, and formulated strategies and policies to achieve these goals under the Kuala Lumpur Structure Plan. These policies which were promulgated in 1984 pertain to landscape and conservation, transportation and public utilities, commerce and industry as well as socio-economic development. After more than 10 years of implementation these policies need to be reviewed and ranked according to priority. Environmental policies in an urban setting are complex and in Kuala Lumpur, and as elsewhere, these are closely linked to the socio-economic and population factors. Any attempt to draw up effective planning and management policies for urban areas requires an understanding of the city as an interacting system and an appreciation of its linkages with the national and international settings.

With regard to APEC cooperation, several subjects covered by various Working Groups under the Economic and Technical Cooperation Programme are relevant. These include issues related to Human Resource Development, Industrial Science and Technology, Small and Medium Enterprises, Energy, Transportation, Tourism, Trade and Investment and Sustainable Development. The FEEEP initiative, which offers a framework for analysis similar to that of Brundtland Commission and proposed measures for cleaning the environment and broadening the basis for prosperity as a means of creating welfare gains, is in line with the Malaysian Vision 2020.

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LIST OF ABBREVIATIONS

APEC	Asia Pacific Economic Cooperation
APHA	American Public Health Association
API	Air Pollution Index
As	Arsenic
ASEAN	Association of South East Asian Nations
Bkt.	Bukit (Hill)
BOD	Biological Oxygen Demand
bohjan	Unconventional male delinquent behaviour, usually sexual in nature
bohsia	Unconventional female delinquent behaviour, usually sexual in nature
CBO	Community Based Organisation
Cd	Cadmium
CO	Carbon Monoxide
Cr	Chromium
DBKL	Dewan Bandaraya Kuala Lumpur (City Hall of Kuala Lumpur)
DID	Department of Irrigation and Drainage
DOE	Department of Environment
EIA	Environmental Impact Assessment
EQA	Environmental Quality Act
Fe	Iron
FEEEP	Impact of expanding Population and Economic Growth on Food, Energy and the Environment
FELDA	Federal Land Development Authority
FTDD	Federal Territory Development Division
FTDKVPD	Federal Territory Development and Klang Valley Planning Division
GDP	Gross Domestic Product
GOM	Government of Malaysia
gotong royong	Voluntary Community Cooperation
GSM	Geological Survey Department
Hg	Mercury
IKRAM	Institute of Public Works Malaysia
Jiran Muda	Neighbourhood programmes for youths

Jiran Wanita	Neighbourhood programmes for ladies
JKR	Public Works Department
Kg.	Kampung (Village)
KL	Kuala Lumpur
KOBENA	Youth Cooperative
KVIP	Klang Valley Environmental Improvement Project
KVPS	Klang Valley Planning Secretariat
LRT	Light Rail Transport
MMS	Malaysian Meteorological Service
Mn	Manganese
NADI	DBKL's Squatter Upgrading Programme
NEP	New Economic Policy
NGO	Non-Governmental Organisation
NH ₃ -NN	Ammoniacal Nitrogen
NIOSH	National Institute for Occupational Safety and Health
NO ₂	Nitrogen Dioxide
NST	New Straits Times
O ₃	Ozone
OSHA	Occupational Safety and Health Act
Pb	Lead
PDRM	Polis Di Raja Malaysia (Royal Malaysian Police)
PM ₁₀	Particulate Matter less than 10 micron in size
Rakan Muda	Government programme for youths
RM	Ringgit Malaysia (Malaysian Currency)
Rukun Tetangga	Neighbourhood Watch
Sg.	Sungai (River)
SME	Small and Medium Enterprises
SO ₂	Sulphur Dioxide
SPM	Suspended Particulate Matter
SS	Suspended Solids
TSP	Total Suspended Particulates
WHO	World Health Organisation
WQI	Water Quality Index
Zn	Zinc

