1 Environmental Issues in Sabah

Any country undergoing development and expansion into previously undeveloped lands will face challenges related to the environment. As the natural vegetation cover is cleared environmental change invariably takes place. A typical pattern of development would be that of an increase in environmental degradation related to natural resource exploitation, followed by a period of stabilisation once expansion has halted, only to be superseded by further environmental degradation related to industrial pollution and urbanisation.

The clearance of natural vegetation cover exposes the soil layer to erosion and soils, which may have taken thousands of years to form, run the risk of being washed away. The fate of the soil is largely dependent upon the successive land use. Unfortunately the magnitude of the erosion risk is amplified in the humid tropics due to high intensity rainfalls and the rapid rate of land conversion. The challenge now is how to manage and survive this process without threatening quality of life and further degradation of the very resources that must sustain economic development in years to come.

Sabah is currently faced with this challenge. Until the post World War II timber boom, driven by the expanding economies of industrial countries, the hinterland of Sabah was largely undisturbed. Much of the economy was based on small-scale agricultural activities and natural resource exploitation was limited in extent and scale. However, within the last 30 years most of Sabah's forests have been logged over at least once and forests outside of the Permanent Forest Estate are rapidly being converted to other land uses.

An additional challenge to Sabah and other countries in the region is linked to the incredible diversity of life, both on land and in the sea. Continued and heightened international awareness of the rich fauna and flora and the rapid loss of the very habitats that sustain them, places Sabah under a certain degree of scrutiny, fair or otherwise, as she strives to develop.

1.1 The Main Issues

The final report of the Sabah Conservation Strategy published in 1992, identified that all aspects of the environment in Sabah and hence conservation and human welfare are linked intimately with the use of two primary resources: Land and Natural Forests. Directly linked to the management of these resources and in need of immediate attention is the rationale for allocation of land and timber harvesting. With the aim of promoting socio-economic development, land and natural forest have been utilised to generate both the revenue and materials for development.

In the absence of specific, practical measures to halt the trends in degradation of natural resources, prospects for achieving any form of sustainable development will become increasingly limited. Hence there is an urgent need for planning and firm control of land allocation on a national, regional and local basis, while integrating the needs of all sectors.

1.2 The Specific Issues

Linked to the land development and conversion processes, the specific environmental problems include:

1.2.1 Soil Erosion

Soil erosion reduces the on-site capacity of land to support vegetation and results in downstream costs. The worse soil erosion occurs where land has been allocated for an inappropriate use. Soil conservation depends, therefore largely on appropriate land allocation and available evidence suggests that soil erosion is greatest under land development without cover crops and in association with forest harvest of natural forests on steep slopes. There is little soil erosion from stable shifting agriculture or from any situation where there is permanent cover of vegetation on the soil surface.

1.2.2 Freshwater

State wide, the greatest threat to freshwater quality is high levels of suspended solids, resulting from a whole range of uses of land and forests. Locally damaging pollution of freshwater by domestic agricultural and industrial wastes and by use of chemicals to kill fish does occur. Sabah still has the opportunity, however, to control these sources of pollution before they become widespread, through EIA, enforcement of legislation covering point source pollution in urban and sub-urban areas and through better land use planning. In the absence of greatly reduced logging rates or expensive erosion control measures during road construction, the input of sediments into freshwaters through use of heavy machinery and exposure and movement of soil is unlikely to be controllable to a significant extent through statutory power. However, the adherence to recommended mitigation measures goes some way to reducing the problem. Land which forms the catchments of important freshwater sources should be given priority attention and protected from any unnecessary disturbance.

1.2.3 Natural Forests

Rates of timber harvesting and levels of damage have been high and if not checked may undermine the prospect for effective water catchments protection; biodiversity conservation and sustainable timber production.

1.2.4 Biodiversity

Much of the present extents of important areas for biodiversity conservation, which enjoy strong statutory protection, were reserved prior to 1980. The years subsequent to 1980 have seen rapid period of forest loss and changes in land ownership and use.

1.2.5 Coastal and Marine Resources

The coastal zone and marine resources are under escalating pressure due to deposition of sediment from activities on land, development of infrastructure for recreational tourism and settlement purposes, excessive fishing and trawling in the inshore zone, bombing of coral reefs and the dumping and accumulation of waste material, particularly non-degradable plastic based products.

1.2.6 Roads and Hill Cutting

Poorly designed roads have been seen to be initiators of serious environmental degradation wherever land settlement has not been carefully planned and regulated. All roads attract settlement irrespective of soil suitability. Under the conditions of high rainfall experienced in hill regions of Sabah, typical standards of road alignment, design, construction and maintenance cause roads to be a significant cause of soil erosion and water pollution

1.2.7 Plantation Forests

While on the one hand plantation forests form a suitable use of deforested land with gentle slopes, more than half of the forests in Sabah were developed through the conversion of productive natural forests and this trend is increasing alarmingly. The absence of interest from mill owners in investing in plantation forests indicates an absence of long-term commitment to the industry.

1.2.8 Riparian Reserves

Well-managed oil palm plantation agriculture can prove to be extremely productive, both in terms of biomass and revenue. Converting land to more and more large-scale plantations can cause irreversible catastrophic if sound environmental measures are not incorporated into the management system. For instance, therefore plantations should include reserved land on slopes, which are too steep and an appropriate system of riparian reserves.

1.2.9 Forest Fire

As witnessed in recent years, the changing environment of Sabah has become increasingly more vulnerable to forest fire. It is well documented that primary forest rarely burns whereas logged over forest, due to the availability of waste timber debris and increased dryness, create environments that are susceptible to fire. Apart from the associated air pollution, damage to the soil and destruction of the remaining ecosystem, the sustainability of other forestry operations (i.e. plantations) are threatened.

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