3 State of the Art of Environment in Sri Lanka

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Environment and Development are inextricably linked, and it is undeniable that sustained development will not be achieved if the very bases of development, namely, natural resources and the environment, are undermined. Up to the early part of this century, traditional practices of agriculture, forest harvesting, fishing and mining were carried out in Sri Lanka to a degree that was well within the absorptive capacities of the different ecosystems, thus giving no cause for concern as to their sustainability. Subsequently, with sharp increase in population (Sri Lanka's population almost doubled between 1946 and 1971), these practices imposed increasing environmental stresses which soon began to exceed the recuperative capacities of the respective ecosystems. The result was continuing and growing environmental degradation. The trends in the past few decades have shown traditional practices have to blend with innovative and modern approaches. What is observed in Sri Lanka is a microcosm of what is seen in the entire Third World.

There have been development efforts aimed at enhancing the natural resource base following modern approaches, but such efforts are almost invariably impaired or stultified by a serious limitation of resources, both financial and technological, resulting in ineffective execution of development activities, use up far more natural resources than are necessary, and degrade the environment.

ACTIVITIES CAUSING ENVIRONMENTAL STRESSES

Activities that have caused the more serious environmental stresses in Sri Lanka have been identified as follows :

a) Excessive deforestation (in the sense of total forest clearing in an area):-

Natural forests in Sri Lanka are of three types namely,

i) dry mixed evergreen forest of the dry zone;
ii) tropical rain forest or the wet evergreen forest of the low and mid country wet zone; and
iii) the tropical mountain forest of the mountain wet zone.

Over a span of several centuries deforestation spread to nearly all parts of the dry zone. During the British time, heavy exploitation of the dry zone natural forests for the timber supply began. In the wet, mid country and mountain region, forest began to be cleared, at the beginning for coffee planting and later for tea. In the low country wet zone, forests were cleared for the planting of rubber. Due to excessive growth in population, extensive deforestation took place to provide land for irrigation, agriculture, human settlement, hydro power development, shifting

cultivation and encroachment.

Another important disturbing aspect of forest degradation is the exploitation of the merchantable tiber that has taken place in the existing forests. As regards industrial wood, the demand has always been for traditional hardwoods of the natural types while other types of available timber remained largely unused. The implementation of the

Mahaweli Development Project has prompted widespread exploitation of merchantable timber.

As regards forest protection, the most serious problem in the forestry is the decline in the area and the quality of the forests in the country and the Forest Department is unable to control such illicit activities as felling of trees, encroachment, shifting cultivation, etc. mainly due to insufficiency of staff and lack of mobility. Forest fires have also been a major cause of destruction of forests, particularly forest plantations.

b) Conversion of large areas of natural forest into sparsely used, low productive croplands (chena):-

Sri Lanka's population has traditionally been agrarian. Although the proportion of the population engaged in agriculture decreased during the last four decades, some 45% of the country's population still depend on this sector for a living. At present, nearly one third of the total land area of Sri Lanka is used for agriculture, while another third is under forestry and wild life. The balance comprised land that is put to a variety of uses such as human settlements, transportation, etc., or remains unused due to ecological or other limitations. Historically, natural forests have had to give way to various land development activities, but, in recent decades, there has been a sharp decrease in the area under forest.

Conversion of lands to agricultural use is mainly due to increasing population, specially in the rural areas where alternative avenues of employment are limited. It is observed that in the last two decades, the highest rates of population growth were in the districts where the proportion of land under forest was highest. Increasing population has its adverse effect on Chena cultivation, which would have caused less environmental damage at a time when the population was low and the land was freely available so the chena plots could be left to recover through long fallow periods.

c) Excessive fuelwood removal from the wet, high-elevation, mountain forests:-

Biomass is the cooking fuel of over 90% of Sri Lanka house holds. It is also used by several small industries. The household biomass fuel comprises 18% rubber wood, 28.8% coconut and other crop-wastes, and 53.2% of "fuel wood". The fuel wood demand by industries is met by rubber wood and non-forest sources.

d) Soil erosion from neglected or poorly maintained tea lands and from cultivation or sloping land and river and stream reservations:-

The areas most affected by soil erosion appear to be the mid country where steep slopes, high intensity rainfall and inappropriate landuse leads to high rates of soil erosion and mass movements. In the dry zone, soils are generally more erodible than in the wet zone. Apart from the soil loss due to agricultural activities, erosion from house and road construction sites may be extremely high in localized watersheds near urban area and in civil engineering sites. Some examples are the Galaha settlement near Gompola, and the Victoria and kotmale new road development areas.

Situations of irrigation and power reservoirs, river beds, and lagoons and estuaries, causing long term effects - loss of reservoir capacity, increased incidence and gravity of floods, and adverse impacts on important and sensitive coastal ecosystem. Poor water management in irrigated areas that may lead to salinization.

Deforestation in the wet zone causing disturbances in the soil water regime and an increase in he incidence of floods, earthslips and landslides, loss of biological and habitat diversity.

Increased coastal erosion due to excessive sand coral mining and unplanned coastal development. Pollution of water bodies, coastal ecosystems and beaches caused by the discharge of industrial pollutants and raw sewage. Atmospheric pollution from vehicle emissions and industries.

e) Excessive coral mining in the reefs and coastal deposits:-

The main source of lime for the construction industry is through the burning of coral. Coral for this purpose is obtained from the coral reefs along the south western coastline and by mining inland deposits of coral found along the south western coastal belt. Large scale mining of the coral reef has many serious consequences :

1) It reduces the effectiveness of the coral reef in acting as a barrier against the erosive forces of waves on the coast.
2) It destroys the living habitat and the breeding on the necessary grounds.
3) It destroys a well known tourist attraction.
4) Removal of coral debris from the beach reduces the natural availability for beach replenishment.

DEVELOPMENT ACTIVITIES RESPONSIBLE FOR ENVIRONMENTAL DEGRADATION

The development activities that are causing environmental degradation either directly, or indirectly through sub-optimal utilization of natural resources, are as follows :

a) Tea and rubber growing, where the average yields are low due to various of reasons:

Traditional export crops of tea and rubber play a vital role in providing a substantial share of the export earnings, and tea is the largest source of foreign exchange. Inspite of all this, the average yields are low as the majority of rubber planters are small holders who have other avenues of employment. This has often resulted in the neglect of most of the rubber lands in the small holder sector.
Further more, over 30% of the rubber is senile and low producing. Cultural practices are inadequate. Fertilizers are used by only 5% of the farmers. There is low input and poor management. Research, particularly in relation to small holder's needs, is inadequate and the research extension interface is too weak to make any significant improvement.

b) Weak water management and supporting services in settlements under irrigation schemes:

The present levels of water used both for irrigation as well as urban water supply, is often wasteful and costly. The recognition of this fact led to some positive action particularly since the 1970's. The establishment of the International Irrigation

Management Institute in Sri Lanka has gone a long way in providing an understanding of the problems of irrigation water used and in seeking solutions to them. However, much of the effort had been focused on State managed major irrigation systems, while the small scale village irrigation systems which accounts for over one third of the total irrigable area, did not receive due attention.

c) Unplanned growth of the tourist industry in the coastal zone:

The scenic beauty of Sri Lanka's coastline is one of the island's important tourist attractions, and tourism is an important foreign exchange earner for the country. Preservation of the coastal environment is important for sustaining this source of income. The near shore fishing resources are being exploited almost to the full, and in some locations, over-exploited. On the other hand, the off shore and deep sea have considerable untapped resources.

d) The setting up of industries without pollution abatement technology and the discharge of

pollutants to the environment.

e) Urban expansion without concomitant infrastructural growth, resulting in proliferation of slums and shanties.

FACTORS HINDERING DEVELOPMENT AND CAUSING ENVIRONMENTAL DEGRADATION

Sri Lanka's per capita GNP, at US $ 418 per year, is among the lowest in the world. The country has, has for decades, depended on the export of agricultural products for foreign exchange earnings, and, with the decreasing prices of commodities in real terms, there is a constantly worsening balance of payment problem. Frustrating development further is the fact that, having no fossil fuel resources of its own, Sri Lanka has to depend entirely on imports for its requirements of oil.

From the middle of this century, there has been a rapid growth in population, hence, a sharp increase in the demand for jobs. Industrial growth was slow, and with the limited capacity of the agricultural sector to create job opportunities, there was growing unemployment. High rates of literacy and a large unemployed workforce fired social tensions leading to civil disorder in the mid 1980s. This caused a disruption in the economy just at it was showing distinct signs of revival.

Chronic shortages of financial resources was the factor thwarting efforts at improving the pace of development in the 1960s and going on to the 1970s. With the new economic policies introduced in 1977, there was a dramatic change, and resource flows from abroad, in aid and concessionary loans, increased sharply. Economic development received a new impetus - the Accelerated Mahaweli Development Project providing water for irrigating large areas and for greatly increasing power generation, the Export Promotion Zones providing more jobs, and an all round strengthening of the private sector. The civil disorder that erupted in the mid 1980s caused a severe drain in the country's resources and a disruption of its development effort. Except in the north and east, conditions have now normalized paving the way for a renewed development effort. However, what could thwart both economic growth and environment management in the future is the continually growing resource gap.

ECONOMIC DEVELOPMENT AND ENVIRONMENTAL PROTECTION - FUTURE PROSPECTS

In the socio-economic front, the main thrust will be in resolving the still pervasive problems of poverty, unemployment and malnutrition. An economic growth rate of 7 to 8% is planned for the next few years, this being the minimum that would be required to reduce unemployment to reasonable levels. The main focus of economic development will shift from agriculture to export oriented industry. Industrial growth will be through the private sector. Expansion in the agricultural sector by better management of land and other resources would also have to make a significant contribution to economic growth. Other areas where development is planned are tourism, health, energy, urban development, etc. To ensure that development is sustainable, it is recognized that environmental safeguards will have to be incorporated into all projects.

To support a Program of economic development with adequate environmental management, Sri Lanka has to make a concerted effort in the following directions:

Institutional strengthening (regulatory, environmental, soil conservation, forestry, coastal management, mineral development, etc;
Enhancing scientific and technological capacity (including manpower training) in several fields (agriculture, forestry, industry, etc.);
Enhancing capability in environmental fields (EIA preparation, pollution abatement technology, standards preparation, testing and monitoring);
Strengthening environmental education;

Review and revision of environmental legislation and effective implementation of the provisions of the law.

Resource Constraints An International Co-operation.

Sri Lanka has been fortunate in having received generous support from the international community and financial institutions for its economic development programs in the past several years. In the more recent past, there has also been generous support for predominantly environment-related projects.

For the future, accelerated growth in the agricultural sector will not be able to produce the rate of economic growth that are required, and the major thrust in the country's development program will have to focus on export led growth. This would mean increased capital investments on industrial projects as well as on infrastructural developments and support services. A program of industrialization will also bring in its wake increased threats of environmental pollution. The adoption of environmentally designed technologies and the pursuit of new development paths would require considerable greater resources that what were needed in the past.

In order to mount a program of economic development with environmental conservation, Sri Lanka will have to mobilize far large resources that are at its disposal. A doubling of the net foreign resource flow to Sri Lanka is a national estimate of what would be required.

The key projects and programs of the government which will help to promote balanced development in the country are :

a) Establishment of an Urban Development Authority (UDA) to cover the whole country.

b) Establishment of Provincial Councils in every Province to undertake development activities utilizing the resources available within their geographical areas.

c) Establishment of Village Reawakening Schemes - this a key program which re-vitalizes and improves rural areas by providing housing and infrastructural facilities to rural areas.

d) Establishment of major industries outside the Colombo Metropolitan Region (CMR) and all major industries utilizing large extends of land and natural resources should be located outside the CMR.

e) River Valley Development - the most important of these schemes is the large Mahaweli Development Project which covers a large area of dry zone.

Agenda for the 1990's

Sri Lanka's economic development perspectives for the 1990's are set on the following strategies:

- Rapid industrialization, primarily through the private sector.
- Increasing electricity production to meet the expected growth in demand using the remaining feasible, hydro-power resources, supplemented by thermal generation, selecting options with least adverse impacts on the environment.
- Enhancing productivity in the agricultural sector through improved management, crop diversification, reforestation, etc., supported by appropriate administrative and policy initiatives and R&D inputs by the Government.
- Promotion of tourism and related activities, including integrated management of the coastal zone.
- Conservation/management of natural ecosystems, focusing on endangered habitats and species.
- Building the necessary human resources and economic infrastructures, that would be necessary to support a re-oriented development program which will focus strongly on the growth of the industrial sector.
- Implementing programs and projects - in water supply, sanitation, housing etc. - to copy with

the expected growth in urbanization.
- Enhancing the people's quality of life and productivity through appropriate programs in health, family planning, housing, sanitation, water supply, transport, rural electrification, etc., and promoting self-employment.
- Concern for global environmental issues to be expressed through enhancing the national effort in monitoring environmental changes, and participating in international programs aimed at mitigating man-made, global environmental degradation.

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