

Forest Resources

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The tropical forest, possibly the oldest biome on earth, is a complex of symbioses and of subtle processes of co-operation of which we know very little. Technology and the vastly increasing human population have been the main causes for the destruction of the climax forest types which covered the greater part of the earth's surface in historical times. The great tropical ecologist Paul Richards, the author of 'The Tropical Rainforest', sees the tropical forests disappearing within another generation.

However, modern man as a matter of struggle for existence and of his own survival is now once again looking on his ancestral home, the forest, as one of the greatest natural resources and as having some function of guardianship of plants and animals, including man himself.

That the forests play a protective, productive and aesthetic role is well illustrated in a declaration of the Seventh World Forestry Congress which states that 'Forests counter erosion, protect agriculture, reduce floods, assures clean water, provide amenity and recreation, shelter wildlife, reduce pollution generally constituting a defence against environmental deterioration, provide timber, wood based industrial products which enter into every sphere of man's activities and also provide employment. In short, forests make a decisive contribution to the environmental, social and economic progress of mankind'.

Forests play a very vital role in moderating the effects of climate and in reducing the impact of pollution in the atmosphere. Forests help in ameliorating the effects of rain and wind, in checking soil erosion and controlling the water regime of the soil. Thus, it is not surprising that at present the protective function of the forests is given precedence over that of production. The productive role of the forest can be quantified easily. However, the protective role of forests cannot be quantified as easily. This difficulty precludes the direct assessment of the importance of the forest within the national economic framework.

Sri Lanka has a land area of 25,332 square miles or about 16 million acres. Of this land area, 7 million acres i.e. 45% of the land area was under forest in 1956. Between 1956 and 1980, there has been a substantial reduction in the forest areas and at present there are only about 4 million acres or 25% of the land area under forest.

There are 3 main rainfall regions in Sri Lanka, namely the Wet, the Intermediate and the Dry Zones. Each of these regions has its own distinctive type of forest differing from the forests of the other regions in species composition. Certain species grow only in the wet zone, while the growth of others is restricted to the

dry zone. Both the Dry Zone species and the West Zone species grow side by side in the Intermediate Zone.

Within each of these 3 climatically defined zones, the distribution of quality classes (timber yield) and the individual species is determined by the combination of local factors, among which the availability of moisture, the texture, depth, permeability and nutrient content of the soil, the slope of the land and the degree of interference by man figure prominently.

The evergreen rain forest in the South West region of the Island (Wet Zone) consists of a total area of 152,000 ha. which includes 40,000 ha. of montane forests which is of an inferior type in timber production to the typical wet evergreen forests and excludes the 81,000 ha. of the intermediate zone forest. The wet zone and intermediate zone forests at present adds up to 8% of the total forest area. Most of these forests are located in the mountainous and therefore inaccessible terrain.

Although the untapped timber resources of the country are concentrated in the wet zone, their location in critical watershed areas imposes an additional problem on the management of these forests. The more important tree species found in these forests are as follows: the Duns, Horas, Na (*Mesua ferrea*) Kataboda (*Cullenia* spp.), Malaboda (*Myristica dactyloides*) Pelen (*Kurrimia ceylanica*) and Gurukina (*Callophyllum calaba*).

The dry zone type of forest covers about 1.7 million ha, or about 82% of the forest area. These forests are of little economic importance with regard to timber production due to low stocking and low annual yield per unit area. Further, utilizable species are few and widely scattered. Among the main tree species are Wira, Mora, Welang, Milla, Satin, Halmilla and Kon.

Table I lists the extents of natural forests in Sri Lanka as at 31.12.1978.

1978 — Administration Report Conservator of Forests

TABLE I

Natural forest (Forest Reserves) in acres as at 31.12.78.

Territorial Unit	Area of Unit	Area of Reserve	% of Area
Southern Division			
Southern Province	... 1,373,440	132,994	9.68
Up-Country Division			
Uva Province	... 2,019,200	21,657	1.07

Kandy & Nuwara Eliya Districts in Central Province	879,360	104,722	11.91
Northern Division			
Northern Province ...	2,152,320	428,728	19.92
North Central Division			
North Central Province ...	2,561,280	433,474	16.92
Trincomalee District in Eastern Province ...	745,600	169,127	22.10
Eastern Division			
Batticaloa & Amparai Districts in Eastern Province...	1,837,440	522,606	28.44
North Western Division			
North Western Province	1,918,080	329,715	17.19
Matale District in C.P. ...	592,000	36,105	6.10
Sabaragamuwa Province (Part) ...	282,880	6,994	2.45
Western Province (Part) ...	140,800	4,430	3.15
Western Division			
Western Province (Part) ...	775,680	56,366	7.27
Sabaragamuwa Province (Part) ...	933,760	116,871	12.52
Total :	16,211,846	2,363,762	14.58

TABLE II

Natural Forests and Wildlife Reserves in Sri Lanka

Category	Area in hectares		
	1975	1976	1977
Proclaimed Reserves ...	470,774	470,955	470,183
Proposed Reserves ...	482,826	482,799	482,825
Other State Forests ...	1,762,753	809,717	809,717
National Parks ...	304,557	304,557	304,570
Intermediate Zones ...	36,092	36,092	36,092
Natural Reserves ...	55,517	44,841	63,914
Jungle Corridors ...	10,517	10,517	10,364
Sanctuaries ...	199,928	199,928	205,222

The heavy exploitation of the natural forests which took place in the past has resulted in rapid deforestation and it has come to a stage when we cannot afford to continue this practise. (The present extents of natural forests including the wildlife reserves are given in Table II). This situation shifted the responsibility of timber supply from the natural forest to the 'manmade' or plantation forests.

These manmade forests began as a mere 20 ha. of teak in 1880. The extent of plantation forests risen rapidly due to the efforts of the Forest Department and in 1976 stood at 101,348 ha. of various species mainly teak (*Tectona grandis*.) This value is expected to rise to 300,000 ha. (0.75 million acres) or 4.6% of total land area by 2000 A.D. at the present rate of reforestation of around 8000 ha. (20,000) acres per year. The main species used in afforestation in the Dry Zone are teak and eucalyptus. In the Intermediate Zone, the species used is mainly mahogany. In the West Montane zones, species like Pinus and eucalyptus are planted on a large scale. Ipil-Ipil is another species introduced

lately in the Dry Zone. These species mentioned are all exotics and are fast growing. The indigenous species which are far slower growing than these exotics are also grown to a limited extent.

TABLE III

Record of Plantations

Species	Area on 31.12.78 (Acres)
Teak ...	161,386
Eucalyptus ...	30,897
Jak/Mahogany ...	11,910
Jak ...	10
Mahogany — Line Planting ...	45,802
Nedun — Line Planting ...	102
Light Hardwood ...	4,777
Bamboo ...	2,756
Pinus ...	27,758
Cypress/Pinus ...	1,981
Tamarind ...	49
<i>Araucaria cunninghamii</i> ...	29
<i>Alstonia</i> ...	45
<i>Casuarina</i> ...	505
Hulanhik ...	84
Nedun ...	200
Milla ...	9
Kumbuk ...	49
Et-Demata ...	295
Mahogany/Halmilla ...	10
<i>Acacia mollissima</i> ...	3
<i>Gravillea robusta</i> ...	3
Kudumberiya ...	14
Bamboo/Eucalyptus ...	888
Toona — Line Planting ...	35
<i>Callitris</i> ...	5
Margosa ...	422
Halmilla ...	37
Mixed species ...	307

Table III gives a record of the manmade forests in terms of acres of each species.

The plantation forests of Sri Lanka yield standardized premier timber as reflected in the high value component of the total turn over of the State Timber Corporation of a total turnover of 54 million during 1976, yield of plantation timber amounted to Rs. 13 million. This contribution is likely to rise steadily with the progressive maturing of the plantation forests.

Of the species planted Teak gives the highest socio-economic gain. The enormous capital value of Teak plantations can be gauged from the fact that at a rotation age of about 50 years it is worth around Rs. 100,000/ha at a very modest assessment.

The Mahaweli Development Scheme by virtue of its sheer magnitude and scope is the largest development scheme undertaken in Sri Lanka. For the first time in the history of an irrigation cum hydro-power scheme, the total value of forestry as a necessary input to maximise and maintain gains from this scheme has been accepted. The Mahaweli Scheme envisages the conversion of 650,000

acres of mainly forest land to irrigated agriculture, the generation of 500 M.W. of hydroelectric power, the setting up of agrobased industries and the settlement of 500,000 families.

TABLE IV

Mahaweli Ganga Basin Forest Resources as at 1956

		Forest	Total
Wet Zone	...	138,180	736,540
Intermediate Zone	...	111,550	551,200
Dry Zone	...	881,460	1,286,970
Total :	...	<u>1,131,190</u>	<u>2,574,710</u>

The intrinsic value of the forests in the upper catchment of the Mahaweli is in no doubt regarding the regulation of the stream flow, in increasing deep storage of water in the ground, in drastically reducing floods and erosion and in increasing the purity of water. Therefore, the strict maintenance of river and stream banks and their reservations in undisturbed vegetative growth whether natural or planted, all along the course of the Mahaweli is of great importance.

Even though the macroclimate is uninfluenced by the forest, the microclimate is influenced by the forest to a great extent. Thus the removal of vast extents of forests in the lower Mahaweli would affect the plant and animal life adversely. Therefore the multiple use of land on a rational, long term basis incorporating the forestry sector is of utmost importance.