The Fibrous Raw Material Situation in West Bengal Forests

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West Bengal's forest area is about 13.6 per cent of the total geographical land in the State. The forests are extremely variable in character and a very large number of tree species mostly broad-leaved, grow under a wide range of conditions. The area under forests and other inferior jungle growth has been put at 11,972.00 ha[1]. The area under the Forest Department is about 11,500.00 ha[1]. There are three principal areas of forests. At West Bengal's northern limits grow tall luxuriant vegetation over about 2,870.00 ha. In contrast, the trees in the lateritic tract of south-western districts carry small sized coppice growth of *sal* over about 437400 ha and those in the mangrove forests in the southern limit of the State along the Bay of Bengal bear a still stunted halophytic treee growth over about 426300 ha of surface area (includes 291900 ha under water courses). But the entire forest area in possession of the Forest Department cannot be considered commercially exploitable. Only about 224320 ha in the north out of about 287000 ha can be considered commercial. Again, within this, 65200 ha of forest area are land-locked and bear old, obsolescent crop. The forests in the south-west or in the south, however, are accessible and within the ambit of commercialuse now. The overall position in West Bengal is that of about 11,500.00 ha of forest areas only about 862900 ha bear tree growth within this area, at present 7,97,700 ha have been brought active management plan.

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The present stock

The exploitable and potentially such areas together in the whole State support a growing stock of about 51.8 million m³ in trees which are 5 cm or larger girth over bark at the breast height. The distribution of the stock in various areas is as in Table 1.

TABLE I

	Area (in thousand ha)	Stock* (in thousand m³)			
		Plantation	Coppice	High Forest	Total
North	287	10018	—	28923	38941
South West (laterite)	374	1315	9035	—	10350
South (Mangrove)	426		2526	—	2526
Total	1150	11333	11561	28923	51817

*Tentative ; subject to detailed inventory now in progres in the State.

The entire growing stock volume in both plantations and coppice forests of south-west and southern tracts is in the hardwoods. The plantations comprise a small fraction, in the south-western part, with only about 29690 ha of the total 437400 ha although the plantation stock is about 12.6% of the total growing stock in that area. *Ecualyptus tereticornis* and *Acacia auriculiformis* make up the bulk plantation material there. In the north which bear about three-fourth of the total stock of the State, the long fibred conifers account for about 1.82 million m³ of the total wood; of which 0.83 million m³ come from the natural forest and 0.99 m³ from the plantations. Virtually only two species, the eastern Himalayan silver fir, Abies densa and the Hemlock, *Tsuga dumosa*, both in the inaccessibly high elevation zone of about 2200 to 3300 metres make up the natural stock. The principal plantation conifer species is *Cryptomeria japonica* whose estimated stock is about 0.83 million m³. Lately the large areas are also coming to exist under *Cupressus cashmiriana* and *Pinus patula*. In addition, the other long-fibred material in the north is the natural bamboo, *Dendrocalamus hamiltonii*, growing in the foothills over about 39145 ha with an estimated stock of about 1,01,490 mt. The conditions in the mangrove forests are not congenial for increasing the output through plantations as in the North or in the South-west.

The future

It will be clear from what has been stated earlier that in West Bengal in the immediate future (a) the major source of fibrous raw materials must be hardwoods (b) this source is mainly in the natural high forests of the north and (c) the growing stock in the plantations is only about 22% of the total (so far only about 29% of the total plantation area account for quick growers for the industries like pulp and paper).

In West Bengal, the long fibred material is yet scarce. There is, however, tremendous scope for growing such materials in the northern parts of West Bengal. It has been found that conifers like *Cryptomeria japonica Cupressus cashmiriana* and *Pinus patula* in the hills (all exotics to the area) area are capable of utilising the rich environment of the northern hills much better than the natural crop. While a natural hardwood assortment in the hills of unknown but certainly a well over a century, Produces about 132 to 413 m^3 of wood per ha, depending on the site, at the time of final harvest, these species as quick growers meet the best of the natural crop in about 20/21 years[2]. From about 3639 ha at present, it may be possible to increase the areas to over 50000 ha in the northernly hills with *Cryptomeria*, *Cupressus* and *Pinus*. Besides, another 20,000 ha can be brought under quick growing hardwoods like *Ailanthus grandis* and *Lagerstromea flos-reginae* in the foothills and plains of the North. Recognition of this fact and increasing demand for fibrous material have recently led to faster liquidition of the hardwood complex and replacement with these quick growers.

Similarly, *Eucalyptus tereticornis* grown as a raw material for paper pulp in the lateritic south, also far outpaces the natural forest growth. While the former indicates m.a.i. of 8.5 to 14.0 m^3/ha, the best from the coppice can attain a maximum of only 2.80 m^3. It has been estimated that it is possible to increase *Eucalyptus* plantation area ten-fold from the present area of about 8200 ha by utilising mostly covered and blank areas. In the north and south-western part of the State, so far, the total plantation over stands at about 79190 ha of which 23747 ha (approximate stock conifers—993625 m^3, *Eucalyptus* and *Acacia auriculiformis* 406700 m^3 and other hardwoods 1197400 m^3) area meant for supplying raw materials for industries like pulp and paper. In addition, at least 3000 ha are being added annually-about 500-600 ha (about 11,000 m^3) in the North with three principal conifers mentioned earlier and *Ailanthus* and *Lagerstromea* and the remainder 2400-2500 ha (=about 25000 m^3) with *Eucalyptus* and *Acacia* in the south-western tract.

The problem

Several problems now confront the State in the matter of utilisation of fibrous raw materials from the forests for the pulp and paper industry. Firstly, in the years to come, increasing exploitation of the hardwood forests must be matched by technological development of chemical processes for the use of such hetereogenous material in the pulp and paper industry. Secondly, the major source of supply lies in the North—some even in the high hills not easily accessible and the nearest paper mill, at present, is not less than about 500 km. away. It will be more prudent to view the source at the North as a separate catchment of raw materials for development of a new industry in that vicinity. Thirdly in West Bengal, it has been possible to select and grow several species successfully at a quick pace and also identify suitable areas for growing such species, but increase and acceleration of the present rate of plantation in future, rest on the flow of finance and building up of organisation at all levels.

West Bengal, no doubt, has a small forest area, but the present problem is not of shortage of material but of under utilisation of its resources. So far the paper industries in the State have grown and developed depending on raw material resources from outside the State. It is imperative that West Bengal's resources too are geared to the interests of the pulp and paper industry, both at present and in future, to meet the country's increasing requirement.

REFERENCES

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