CHANGING TREND OF UTILIZATION OF FOREST PRODUCE AND ITS IMPACT ON FOREST MANAGEMENT.

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PAST HISTORY

During the last decade, there was the realization of a revolutionary concept in the management of Forest, research and wood based industry. In this period, the Foresters could implement in the right way, a change in the age old pattern of Forest management to a more dynamic one; with an industrial bias. With the achievement of independence Pakistan inherited the most neglected and undeveloped part of the Forests. Not only the area was very meagre but the distribution was also uneven; yeild per acre was small and that also consists of a large proportion of miscellaneous species for which no market was developed. There was practically no wood based industries and the only research organisation fell in the share of India. The Forest was mainly meeting the rural demand for bousing, agricultural implements and country boats. Thus, the development of wood based industries, research and management of Forests posed a big problem to the new country. On the one hand, Forest management had to be Re-oriented to meet the growing need of the country and on the other hand a research organization had to be started for catering the immediate need and a balanced wood based industry was to be developed in the shortest possible time. The responsibility

of development of Industries was mainly left with the private sector and the only Public Sector organization namely - P.I.D.C. was also entrusted along with other industries to develop the industries of Forest Sector. The result was that wood based industries started coming up only in the lines found most attractive from investment point of view, resulting in an unbalanced development of industries and in many cases without seriously considering the sustained availability of raw material in the area. Besides due to lack of technical know-how, private investor did not show enough interest in the development of industries in the Forestry Sector. This deficiency was very strongly felt and Govt. of East Pakistan established an Autonomous Corporation (E.P.F.I.D.C.) with effect from 1st January, 1960 to cater the development of wood based industries in East Pakistan.

It is only in the last decade that the thinking of the Foresters were given a concrete shape to meet the growing need of the country. The Forests were aerially photographed, stock maps prepared and the resource potentials in the different Forests were acertained to form a basis for the growth of Forest Industries in the right line.The biggest achievement of the past decade is that the Forest which was meeting primarily the rural need has been re-oriented to meet the industrial requirements as well. A strong base for Forest management and product research have been created and organization have been set up to take care of the Forest Industries based on the availability of raw materials But unfortunately these organizations do not have a common plateform so that the planning and execution can be more efficiently coordinated.

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THE CHANGING TREND

The informations given in the table below will depict the picture of the changing trend of utilization of Forest produce in East Pakistan and the growth of various industries in the Forest Sector of the Province -

Particulars	1948-49	1958-59	1966-67
1. Annual production of timber in the round (in cft).	9,088,000	11,749,000	27,250.000
2. annual production of fire wood(in stack cft)	13,129,000	27,801,000	28,000,000
3. Annual production of bamboos in nos.	57,830,000	127,851,000	Not available; 102,6000,000 in 1961-62(due to whole sale death of muli bamboo after flowering)
4. Paper mills from forest raw materials - nos. of units.	Nil	1	2 + *1
5. Match industries - nos. of units.	Nil	10(approx)	18
6. Plywood factories - nos. of units.	Nil	4	5
7. Boat building & repairs	Nil	2	5
8. Railway carriage and wagon repairs - Nos. of units.	2	2	2
9. Wood Treating Plants Nos. of units.	Nil	1	4 +1"
10. Sports goods industry	Nil	Nil	Nil
11. Furniture Factory	Nil	Nil	1
12. Doors & window making factories & Cabinet units.	Nil	Nil	8

13. Seasoning Kilns - Nos. of units.	Nil	Nil	8 + *2
14. Sawmills-Nos.of units	Nil	Nil	1 + *1
15. Planner Mill -do-	Nil	Nil	*1
16. Hardboard Plant - Nos. of units	Nil	Nil	2
17. Particle board factory & veneering plant on forest raw materials.	Nil	Nil	*1
18. Tannin extraction Plant.	Nil	Nil	1
19. Sawing units	4	20(approx)	100
20. Rubber plantations in acres.	Nil	Nil	3,000 acres
21. Mechanical extraction of timber from Chittagong Hill Tracts in tons.	Nil	11,000 tons.	26,000 tons.

* under installation.

The figures furnished above will give a rough idea about the trend of utilization of Forest produce during the last two decades in the province of East Pakistan. The industries have developed primarily in Chittagong, Dacca and Khulna regions where the raw materials are available from the Forests.

In the year 1964, E.P.F.I.D.C.got a market survey prepared with the help of consultants M/s.Forestal International Incorporated. This Survey has revealed very useful informations showing the utilization of Forest produce in the year 1962 and the projected requirements upto 1972. The projections are based upon juddgement of the economic development planned for 2nd Five Year Plan and preliminary Third Five Year Plan and not upon

statistical analysis for which no suitable basis existed in Pakistan. The consumption based on the various end-uses for 1962 along with the projected requirement for 1972 for the whole country is given below (in round timber) -

Enduse	1962 (In million cft) Total	E.P.	W.P.	1972 Estimated. (In million cft)
1. Construction Industry	7.00	3.50	3.50	8.98
2. Match Industry	3.85	3.85	-	4.00
3. Pulpwood	2.99	2.99	-	6.66
4. Crating Industry	3.40	1.70	1.70	5.03
5. Furniture Industry	2.30	1,15	1.15	3.09
6. Pitprops and mining industry	1.76	-	1.76	3.41
7. Hardwood Industry	-	-	-	1.08
8. Railway Sleepers	2.54	1.04	1.50	3.04
9. Tea Chest Industry (Plywood)	0.82	0.82	-	0.87
10. Boat Building and repairs	1.00	0.80	0.20	1.10
11. Bus-truck and trailor bodies	0.52	0.26	0.26	0.52
12. Railway carriage and repairs.	0.40	0.20	0.20	0.40
13. Bale boards	0.39	0.39	-	0.50
14. Poles & Piongs	0.12	0.12	-	1.33
15. Commercial Plywood	0.22	0.06	0.16	0.55

Enduse	1962 (In million cft) Total	E.P.	W.P.	1972 Estimated. (In million cft)
16. Sports good	0.06	-	0.06	0.15
17. Others	0.37	0.20	0.17	1.75
18. Particle board factory.	-	-	-	1.00
Total requirement for timber in the round for Pakistan	27.74	17.08	10.66	43.46

Percentage increase in 10 years - 57% on 1962

Average per year 5.7%

The above mentioned market survey did not include the requirement of bamboos reeds and rubber which are also potential raw materials on which industries are being developed.

A. For bamboos	1962 East Pakistan	1972 East Pakistan
1. Pulp & Paper Mills and Rayon Factory	*40,000 tons	250,000 tons
2. Domestic uses:-	250,000 tons	250,000 tons
Total bamboos in A/D tons.	290,000 tons	500,000 tons

*Actual demand was of 100,000 tons but due to whole sale death of muli bamboos on account of flowering, pulp had to be imported to meet the demand of Karnaphuli Paper Mill.

B. Reeds from Sylhet.	1962 For East Pakistan	1972 For East Pakistan.
1. Pulp and Paper	Nil	40,000 tons
2. Other uses including domestic purposes	60,000 tons	60,000 tons
Total for reed in A/D tons	60,000 tons	100,000 tons

C. Rubber (anticipated requirements now being met by import).

	1964-65	1984-85
1. Demand for East Pakistan:	1,800 tons	23,000 tons
2. Demand for Pakistan	8,000 tons	68,000 tons

PLANNING FOR FUTURE

The requirements specified above on the basis of end uses will be a very valuable guide in planning the management of forests and development of wood based industries. The problem can be divided into two broad categories viz: '1) To develop a bold and dynamic forest management policy to cater the present growing demand by intensive and extensive exploitation of the resources, and (2) to plan the growth of a forest to meet the requirements of the country after 30 to 40 years or more by developing a rational plantation and regeneration programme.

Regarding the exploitation of the forest resources, the Forest Directorate have already got the survey of important and major forest areas done. These will be valuable guides for future planning. By 1972 the requirements of round timber has been estimated to be 43.46 million cubic feet for Pakistan. The present production of round wood is to a tune of only 32 million cubic feet (E.P.-28.0 million, W.P. -4.0 million). Thus about 11.5 million cubic feet of round timber will have to be produced annually in excess over the present production in course of next 5 years. This can be met by rationalising the rotation of the crop. The areas where substantial increase in production is

expected are the forests of Chittagong Hill Tracts and Chittagong Districts. From the forests of Kassalong and Rainkheong in Chittagong Hill Tracts, an increase of 2 million cubic feet is possible, and from the forests of Sangoo and Matamuri in Chittagong Hill Tracts, another 3 million cubic feet can be had. The reduction in rotation can yield another 1 million cubic feet of timber from the forests of Chittagong district. The forests of Sundarbans can possibly yield 1 million extra. Thus, a total increase of about 7 million cubic feet of timber can be reasonably expected if proper exploitation schemes are worked out. The present production of fire wood is to a tune of 30 million cft for E.P. and 20 million for West Pakistan. A part of this can be diverted to meet the requirements for pulp, hardboard, particle board and crating timber. Besides, a substantial increase in the production of firewood is expected with the intensive exploitation of Forests, in East and West Pakistan. Shortage in round timber can be met by using substitutes like hardboard, particle board etc. to be made out of waste wood and firewood.

The anticipated requirements for bamboos are 500,000 tons by 1972. The present production is to a tune of 350,000 tons. From the forests of Chittagong Hill Tracts, the balance of 150,000 tons of bamboos can be harvested if proper exploitation scheme is worked out.

The anticipated requirement for reeds has been worked out to be 100,900 tons by 1972. The present production is to a tune of 60,000 tons. This can be increased by another 40,000 tons by scientific management and harvesting of grass land in the district of Sylhet.

Simultaneously with the increase in exploitation, a rational plan to regenerate the forest to meet the future requirements is equally important. We are in the early stage of converting out less valuable forest into more valuable ones. Therefore, it is comparatively easier to have a master plan prepared on broad outline in the lines of future requirements which can be projected from the data furnished above. The concept of short rotation and long rotation crops has already been introduced in the forest management in recent years. But instead of having short rotation and long rotation working circle for each forest, it will be better if this is introduced on a regional basis taking into consideration the location of the existing industries; otherwise the benefit out of the concept will not be derived to the fullest extent. In a region, the areas which are easily accessible may be put to short rotation crop and the remote ones to long rotation crops. The short rotation crops are required to be available to the industries at cheaper rates as the end products out of the raw materials cannot afford high cost of transportation. Once we fix up the short and long rotation crop areas, we are determine the species that should be put in such areas in order to meet the future requirements. The various and uses indicated above can be grouped into the following broad categories for the purpose of choice of species and allocation of areas.

Sl. No.	Rotation	Group	End uses	1972-requirements (In million cft.)	Annual requirements at maturity (In million cft.)	Area required for the group under forest	Choice of species	Remarks.
1	2	3	4	5	6	7	8	9
1.	Short rotation crop.	A	1. Match Industries.	4.00	8.00	Annual area = 15,000 acres. Total area = 450,000 acres	1. Gewa 2. Kadam 3. Chatian 4. Pitali 5. Simul 6. Mango	Rotation 30 years Yield = 30 tons.
			2. Hardboard	1.08	2.00			
			3. Particle board	1.00	2.00			
			4. Crating	5.00	7.00			
			5. Bale boards	0.50	1.00			
				11.58	20.00			
		B	1. Pulpwood	6.66	10.00	Annual area = 10,000 acres Total area = 200,000 acres.	1. Gewa 2. Kadam 3. Gamari 4. Exotic tropical conifer	Rotation = 20 years Yield = 20 tons.
		C	1. Poles and Pilings	1.33	2.00	Annual area = 6,000 acres Total area = 120,000 acres	1. Tali 2. Garjan 3. Dhakijam 4. Eucalyptus spp. (Exotic)	Rotation = 20 years. Yield = 20 tons.
			2. Pitprops etc.	3.41	4.00			
				4.74	6.00			
		D	1. Sports goods 2. Bobbin & shuttles 3. Rifle butts and other special Products	0.15	0.30	Annual area = 300 acres. Total area = 9,000 acres	1. Haldu 2. Willow 3 Chikrassi 4. Silkoroi 5. Mulberry 6. Shishak 7. Gamar 8. Exotic 9. Walnut	Rotation= 30 years Yield = 20 tons.

1	2	3	4	5	6	7	8	9
2.	Special crop	E	1.Rubber latex for Last Pakistan	1,800 tons (1964)	23,000 tons (1985)	Total area = 46,000 acres	1.High yeilding variety of Hevea Brasilincensis.	Rotation = 40 years. Yield 1/2 tons.
		F	1.Bamboos	500,000 tons.	600,000 tons (1982)	Total area = 600,000 acres	1.Muli bamboos & other local bamboos	Felling Cycle 3 years. Yield 3 tons.
		G	1.Reeds (L.P.-Sylhet)	100,000 tons	100,000 tons.	Total area = 30,000 acres	1.Ikra 2.Khagra 3.Nal	Cutting cycle= 1 year. Yield= 3 tons.
3.	Long rotation crop	H	1.Construction	8.98	40.00	Annual area = 20,000 acres. Total area = 1200,000 acres.	1.Teak 2.Champa 3.Chapalish 4.Chikrassi 5.Garjan 6.Pynkado 7.Jarul 8.Toon 9.Mahogany 10.Silkoroi 11.Sal 12.Sal 13.Sundri 14.Passur 15.Keora 16.Dhakijam 17.Telsur	Rotation = 60 years. Yield = 60 tons.
			2.Furniture	3.09	10.00			
			3.Boat	1.10	3.00			
			4.Bus & Truck bodies	0.52	1.00			
			5.Railway Carriage	0.40	1.00			
			6.Sleepers	3.04	5.00			
				17.13	60.00			
		I	1.Tea chest	0.87	3.00	Annual area = 2,000 acres. Total area = 120,000 acres	1.Civit 2.Uriam 3.Teak 4.Mahogany 5.Toon 6.Chikrassi 7.Champa	Rotation = 60 years Yield = 60 tons
			2.Plywood	0.55	3.00			
				1.42	6.00			

It will appear from the above statement that approximately the following areas will be required under forest to meet the future demand of the country:

1. Short rotation crops	...	7,79,000 acres
2. Special crops	...	6,76,000 acres
3. Long rotation crops	...	13,20,000 acres
	Total	27,75,000 acres

With a proper scientific management of the forest, the above area should be in a position to give the specified yield. The above exercise will only furnish a general idea as to how we should proceed in future.
