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GOVERNMENT OF BANGLADESH
MINISTRY OF ENVIRONMENT AND FORESTS

MARKETING

FORESTRY MASTER PLAN

ASIAN DEVELOPMENT BANK (TA NO. 1355-BAN)

UNDP/FAO BGD/88/025

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MARKETING

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MARKETING

SUMMARY

This Marketing report investigates the existing market situation of major forest products in Bangladesh. It also reviews the marketing activities, channel of distribution, price mechanism, transportation and government policies regarding foreign trade in forest products.

Forest products of Bangladesh are mostly marketed within the country. A small proportion is exported and an increasingly large quantity is imported to meet the demand. A country with 108 million people provides a huge potential market for wood and wood products. Consumption is increasing, while the local supply is diminishing, and production can not keep pace with the increasing demand.

Data availability is a serious problem for market analysis for forest products. These are available for exports and imports in great detail but grossly inadequate for local production, consumption and sale within the country. For many products no mention exists in the government records and statistical publications.

Domestic consumption is the sum total of local production plus imports minus exports. Consumption demand for various products was assessed from a rural household consumption survey and other secondary sources. Quantifying demand is a difficult task and become more complicated when consumptions take place outside the market in non-monetized or unrecorded transactions.

Among forest products, 65 percent gets consumed as fuelwood. The demand for fuelwood is increasing because of population pressure. In 1993 total supply is 6.18 million cubic metres against the demand of 8.27 million. The gap will widen in the future if corrective measures are not taken now. Just planting fuelwood will not solve the problem. Cheap commercial energies should be made available to the rural areas. Otherwise the agri-residue and cowdung will be misused.

The estimated demand for roundlogs in the country in 1991 was 4.26 million cubic metres of which 0.25 million was consumed by the process industries and the rest was by the households. The authorised local supply was 1.28 million cubic metres.

The demand for roundwood consists of both direct and derived demand for domestic consumption and industrial processing. A recent moratorium on felling created a shortage in the market. This along with tribal insurgency problems in Hill Districts seriously affects the forest industries dependent on reserved forest for raw material supply. Bangladesh Forest Industries Development Corporation a sister concern of the Forest Department has suffered greatly from this shortage.

Wood markets are fed both by recognized and unrecognized sources of supply of logs. Among the unrecognized sources, unrecorded production or illicit felling of reserves and smuggling from neighbouring countries are important. A figure of 20 percent minimum is commonly accepted as coming from unrecognized sources.

The market for panel products in Bangladesh is in its infancy. Because of lack of standard products, market promotion and adequate marketable surplus, the production, sale and consumption is the lowest among the developing countries. People prefer using solidwood for all

types of work, house building, furniture, fixture, furnishing and panelling. Market promotion and price effectiveness may help expand the markets. Potential for growth exists in the panel products

The demand for paper, paper products and newsprint is also increasing. Lacking of sufficient pulpwood and pulp processing industries, the demand is met through imports. Development of forestry with proper emphasis on plantation of pulpwood and other soft commercial wood could save the existing paper related industries and encourage future expansion.

The geographical location of forest zones near Chittagong and Khulna as well as locations of ports in those Divisions, induces movements of forest products from production to consumption centres. The major consuming centre is Dhaka, the capital city, and its surrounding areas which are responsible for 60-65 percent of present consumption. Most of the round logs and fuelwood are transported initially by waterways and or secondarily by truck. Only imported consignments are carried by the railways. Most of the secondary and tertiary processing products are transported by road.

Over extraction and over cutting of commercial species from the reserved forests has lead to a shortage and the position is becoming critical. The popular species civit, garjan, teak, champa are in great demand. Previously identified non commercial species are increasingly used now as substitutes for preferred varieties.

Pricing policy followed by the Forest Department reflects the market price for most products, revision is required for some minor items. Prices for private supplies depends on the free play of market demand and supply.

Bangladesh is now heavily dependent on imports of forest and forest-based products both for meeting its basic consumption as well as for implementing different development projects. Import demand for development projects are more than domestic consumption demand. The situation has increased because of the imposition of moratorium on fellings. Primary imports of logs and sawn timbers are from the United States, Canada, Australia, Burma, Singapore and Malaysia. A huge trade deficit exists for forest products. The total import bill for 1990 was Tk 2.4 billion against an export receipt of Tk 1.9 million only. Bangladesh cannot support such a huge deficit for a long time.

The foreign trade policy is consistent with the forest conservation and environmental protection. Nationally, this should be a short term arrangement, future policy options should undertake to attain selfsufficiency in the longrun. National selfsufficiency in forest products is desirable social and economic goal, much can be achieved if recommendations of Master Plan are implemented with a serious interest and care.

MARKETING

INTRODUCTION

Asian Development Bank (ADB*), United Nations Development Programme (UNDP) and the Government of Bangladesh (GOB) are supporting the preparation of a long term master plan to preserve and develop the nation's forest resources. The purpose of the plan is to provide a framework which helps optimize the forest resource contribution to stabilizing the environment and to social and economic development. One of the requirements of the Forestry Master Plan Study is to review and assess the existing marketing patterns and price mechanism for the major forest products of Bangladesh. This Report by the Marketing Specialist meets that objective. The report investigates the existing market situation for major items of forests products both for primary and finished products of secondary and tertiary processing plants. It supplies information and background documentation to the Economic and Marketing Subteam Report (FMP, 1992a). Appendix 2 contains specialist terms of reference.

The demand and supply position of a commodity along with the availability of its substitute determines the type of market competition, price, quantity and the nature of equilibrium. The market situation for primary products is essentially different from that of finished products for several reasons. Primary products are mostly used as raw material in the large or small processing units to manufacture finished goods. High volume, low value, perishability and less sustainability of primary products often commands a buyers market for bulk purchases, whereas the finished products are for final consumption by households and usually commands a seller's market.

It is often difficult to draw a distinction between primary and intermediate products in the case of forest products because this can be termed primary or intermediate products depending on the use. For example, three different uses of fuelwood are final consumption by households, in the brick fields as fuel energy and as raw materials in the pulp and paper or hardboard industry. This is often noticed in the case of other forest products as well.

The demand and supply of major items of forest products have been assessed, estimated, projected and presented in the Forest Products Demand Projection Report (FMP, 1992b). The report also indicated the national as well as regional distribution of demand and supply of different forest and forest-based products.

This report will review and examine the market situation, marketing activities, channel of distribution, price mechanism, government policies and other relevant issues without detailed discussion on demand and supply.

MARKETING OF FUELWOOD

Demand and Supply of Fuelwood

Fuelwood is basic needs involved in food preparation and domestic cooking. The demand for it is overwhelmingly distributed throughout the country. The demand and supply projections (FMP, 1992b) shows the nature of markets for fuelwood and the gap between the demand and supply. Except for the Chittagong Hill Tracts regions, a huge deficit in supply has been estimated for all

* For this abbreviations and other terms or conversion factors see Appendix 1

regions of the country. The demand shown in the projection is not the actual market demand backed by the purchasing power of the consumers but an indication for consumption requirement at the present rate of percapita consumption.¹ For ready reference the supply and demand projection is presented in Table 1.

Table 1 - Fuelwood Supply-Demand Projection, Status Quo, (000 m³)

Commodity	N-West	N-Central	West	South	S-East	N-East	CHT	Total
1993								
1. Fuelwood								
Demand:								
a. Domestic	1288.61	1162.78	721.56	567.05	877.13	643.51	48.85	5309.49
b. Industrial	719.06	648.85	441.97	281.13	489.46	359.01	23.02	2962.50
Total	2007.67	1811.63	1163.53	848.18	1366.59	1002.52	71.87	8271.80
Supply	882.00	763.00	546.00	860.00	857.00	391.00	1880.00	6179.00
Balance	-1125.67	-1048.63	-617.53	-12.82	-509.59	-611.52	-1808.13	-2092.80
1998								
a. Domestic	1404.27	1267.14	786.32	617.95	955.85	701.27	53.23	5786.03
b. Industrial	790.96	713.74	486.17	309.24	538.41	394.91	25.32	3258.75
Total	2195.23	1980.88	1272.49	927.19	1494.26	1096.18	78.56	9044.79
Supply	969.00	843.00	597.00	931.00	932.00	434.00	1788.00	6494.00
Balance	-1226.23	-1137.88	-675.49	-4.19	-562.26	-662.18	-1709.44	-2550.79
2003								
a. Domestic	1519.93	1371.51	851.09	668.85	1034.58	758.95	57.62	6262.52
b. Industrial	870.06	785.11	534.78	340.17	592.25	434.40	27.86	3584.63
Total	2389.99	2156.62	1385.87	1009.01	1626.83	1193.35	85.47	9847.15
Supply	1062.00	927.00	656.00	1001.00	1027.00	478.00	1678.00	6829.00
Balance	-1327.99	-1229.62	-729.87	-8.01	-599.83	-715.35	+1592.53	-3018.15
2008								
a. Domestic	1635.59	1475.87	915.85	719.74	1113.31	816.78	62.00	6739.14
b. Industrial	957.06	863.62	588.26	374.18	651.48	477.84	30.64	3943.09
Total	2592.65	2339.49	1504.11	1093.93	1764.78	1294.63	92.64	10682.24
Supply	1174.00	1033.00	727.00	1146.00	1334.00	531.00	1577.00	7212.00
Balance	-1418.65	-1306.49	-777.11	+53.07	-430.78	-763.63	+1484.36	-3470.24
2013								
a. Domestic	1751.25	1580.24	980.61	770.64	1192.03	874.54	66.38	7215.69
b. Industrial	1052.77	949.98	647.09	411.60	716.62	525.63	33.71	4337.40
Total	2804.02	2530.22	1627.70	1182.24	1908.66	1400.17	100.09	11553.10
Supply	1300.00	1155.00	813.00	1346.00	1518.00	590.00	1486.00	8208.00
Balance	-1504.02	-1375.22	-814.70	+164.76	-390.66	-810.17	+1385.91	-3345.10

Source: Forest Products Demand Projection, FMP 1992b

The gap in consumption demand is met through diverting other biomass energies, particularly agricultural residues, which could have more beneficial uses in agriculture.

Major suppliers of fuelwood are the village households/ farmers who grow different type of trees in their homestead. The lops and tops of the trees and the sawing residue are considered to be fuelwood for domestic consumption. The same applies for reserved forests. All fuelwood

¹ The supply is estimated as the possible normal supply from all sources of homestead, reserved forests, coastal afforestation and agro-forestry.

consumed in the country does not enter the market as a monetized transaction, most of the domestic uses are outside the market.

A small portion of total consumption enters the market for transaction, providing jobs for several thousand people throughout the year. For household permit holders, extraction of fuelwood from the reserved forest is virtually free, involving a day's labour for collection and payment of a token amount as a permit fee to the Forest Department.

The village households supply about 75 percent of the fuelwood in the country while reserved forests, woodlot plantations and social forestry provides the remaining 25 percent. It is expected that the future supply position will improve with the maturation of the recently planted fuelwood forests throughout the country. Supplies for commercial consumption are traded in the market. Fuelwood for industrial uses in hard, plain, and particle board mills, pulp and paper industries, is supplied from the reserve forests under special agreement with the consuming industries and the Forest Department.

Table 1 shows the demand, supply and gaps in between for 1993, 1998, 2003, 2008 and 2013 under Status Quo situation. The demand and supply gap is widening from year to year. Projections are also made for high consumption and most likelihood scenarios as well. Report 20 may be consulted for that.

Channel of Distribution

Villagers are the major suppliers of fuelwood for domestic and commercial uses. They often sale the standing trees to a buyer who include small traders, baparies and farias. They have the trees cut and supply the logs to the brick fields and other processing industries. The Fuelwood market is seasonal, concentrated mainly during the dry season, when movement is easier and the logs dry in the sun.

The commercial activities that require fuelwood for processing their products are also mainly seasonal such as brick making, lime processing, and tobacco drying. During the same dry season small traders in towns and cities build up their stock for the wet season when the demand for fuelwood is suspected to be mostly for domestic cooking.

In villages only rich people can afford to buy the standing tree for fuelwood. The Poor try to collect it from the nearby reserved forest, if any, or use leaves, branches and wastes from his own groves or from public places.

Government forests are the next important source of supply of fuelwood. Domestic consumers around the forest fringe collect their fuelwood directly in head/shoulder loads from the forest after paying permit fees to the Forest Department. Traders also collect boat/truck loads of fuelwood from the reserves after paying appropriate royalty to the government.

The Sundarbans is the largest forest source for collection of fuelwood. Permit system is the viable means of sale for forest products like fuelwood, golpata, fish, honey, wax and hantal from the Sundarbans. During the extraction season, the registered boat owner/traders are issued permits to collect/extract fuelwood from a particular coupe on payment of royalties for the season. The loaded boats are taken to the market place for sale. Most of the fuelwood extracted from the Sundarbans is carried out by country boats and used in the south and southwest of the country.

In other reserved forests, fuelwood in bulk, as a separate product, is sold on rare occasions but normally the auctioneers buy the timber along with the fuelwood unless otherwise specified in the terms of Agreement. Auctioneers then sell to the local baparies and traders who in turn sell them to the consumers.

Fuelwood is also required for Khulna Hardboard Mills (KHBM), Kalurghat Particleboard and Veneer Plant (PBVP) and Chittagong Board Mills (CBM), Sylhet Paper and Pulp Mills (SPPM) and for Karnaphuli Paper Mills (KPM). Annual requirement of Khulna Hardboard Mills is 16,000 cubic meter of sundri and goran wood for its processing operation, all of which is supplied from the Sundarbans under special agreement between BCIC and the Forest Department. Supplies for KPM, PBVP and others are received from Chittagong Hill Forest under same type of special agreement. Contractors are appointed by the user industries to extract raw materials including fuelwood from the forests under joint supervision of BCIC and the Forest Department. Private particle board industries also get their supplies from the forest department through BFIDC. Because of the present embargo on tree felling from the reserved forests and the insurgency problem in CHT districts, both BFIDC as well as private enterprises, buy it from private sources.

Transportation and Movement

The major problem of marketing of firewood is the high transportation cost and low value. High transportation cost often results in unprofitable and uneconomic fuelwood trading. This is for two reasons, firstly, the reserved forests are located far away from the areas of excess demand or deficit and secondly, this requires uses of multi-modal and excessive handling transport at different stages of marketing. At each stage, costs are thus increased.

Price Mechanism

Fuelwood prices in different parts of the country vary very little but is more or less uniform for the same type of species. Shortage is the norm in all regions. Price determination mostly depends on middlemen as well as the bulk customers rather than the primary sellers. It is a monopoly market because most of the bulk consumers are members of some organized body and they calculate their costs and profit well before start of the season. As a result, an average price of fuelwood for the season is maintained throughout the season.

At present, the price per ton of fuelwood for mango and similar quality is Tk 800 - Tk 1,000/tonne or Tk 560 - Tk 600/per m³. The sundri, sal, gauzier etc. high quality fuelwood with high calorific value commands the higher price per tonne which is Tk 1,200 - Tk 1,500. The retail price of higher quality fuelwood is Tk 1,340 - 1,610/MT compared to mango quality.

The royalty fixed for firewood from the forest seems very low compared to market prices. For example in the Sundarbans the royalty is Tk 135/tonne. Labour, transportation, food and accommodation, costs are higher than the royalty rates. When all costs are added together it equates the market price. The vendors make little profit by selling fuelwood. The royalty rates are different for different reserved forests and for different species in the same reserve. The existing and proposed rates of fuelwood royalties for Sundarbans can be seen in Appendix 3.

The royalty rates are flexible and changed from time to time with the changes in ruling market rates. Usually, rates are fixed as 12.5 percent of the existing market rate in the case of permits or three years average of previous tender price in the case of tender sale.

Income of Forest Department

The quantity of fuelwood collected from the reserved forest ranges from 0.8-1.1 million m³ annually, which brings an amount Tk 150 - Tk 200 million to the Forest Department as royalties. Total value of fuelwood used and transacted in the market may be estimated to be Tk 3,588 million on the basis of present market price of fuelwood.

Regional Distribution of Fuelwood Demand

It is clear from Table 1 that among the regions, the northwest and north central part of the country are the major deficit areas. However, it has been observed that the price differentials between these regions and other regions are negligible. The government wants to replenish the demand-supply gap of fuelwood by creating fuelwood forests of short rotation in Chittagong and Cox's Bazar regions, but because of low values the economics of growing fuelwood in remote zones require indepth investigation.

Shortages in the deficit areas are shown growing quickly fast during the projection horizon if present plantation procedure continues. The solution may be to encourage villagers to plant fuelwood trees of short-rotation instead of horticulture trees and to speed up the programme of social forestry throughout the country.

Problems of Fuelwood Marketing in Bangladesh

Problems of fuelwood marketing include the gradual shortage of supply and shrinkage of forest areas due to encroachment and other reasons. It is believed that stocks in the villages are also depleting quickly without being replenished sufficiently. Over the years there has been encroachment and over cutting of trees throughout the country. No one has planted fuelwood for the purpose of using it as fuelwood only. Most of the trees being cut are horticulture trees which provide food, fodder, fuel and timber together. The population explosion is the major reason for increasing demand for fuelwood. Another important reason for increasing demand for fuelwood is the lack of cheap commercial fuels in the country, particularly in rural areas.

The lack of cheap fuel energies in the rural areas push the still surviving forests to a disastrous position of extinction. Finding no other alternatives, are substituting cowdung and agricultural residue for fuelwood which depletes soil fertility. The use of agriculture residue and fuelwood in Bangladesh is shown in the Table 2.

From the table it is clear that while tree fuel including tree waste provides 44 percent of the fuel energy, agri-residue provides 50 percent of the total. In the past, fuelwood plantation was not given any attention in government programmes. In Hammermaster's study this problem was highlighted for the first time. Subsequently, government has undertaken plantation programmes of fuelwood in Chittagong Hill Tracts and Cox's Bazar regions. It is assumed that consider effective deficit by regions and transportation cost of fuelwood from one region to another regions. However, now with the maturity of the plants the government has realised the practical problem of selling the output at a fair price as well as reduce the deficit in the hard hit areas of north and central regions of the country.

Table 2 - Per capita Fuel Consumption in Rural Bangladesh, 1991

Item	Quantity/ capita Kilogram	percent of Quantity	1000 not 100 Energy/ capita (1000kilo calori)	percent of total energy
Fuelwood	(470 MJ)	30.39	6.0	6.0
Branches		71.78	14.0	14.0
Tree waste		125.21	24.5	24.3
Bamboo		21.84	4.0	4.2
Agri-residue		187.61	36.4	35.5
Cow-dung		74.90	14.6	13.5
Charcoal		2.46	0.5	1.5
Total	514.19	100.0	68.97 0.68.97	100.0

Source: Forestry Master Plan Study, 1992

adjusted
 $0.68.97 \approx 0.68$ air dry tonne
 wood equivalent
 (0.68 m³)

The national demand estimate made by this study shows that total demand for fuelwood in 1991 was 7,975.49 thousand cubic meter of which 5,118.69 thousand cubic metre was for domestic consumption and 2,856.80 thousand cubic metre for industrial consumption. The consumption demand for 1991 is presented in Table 3 by user sectors and by geographical regions.

Table 3 - National Fuelwood Demand, 1991

Users Sector	North-West	N-Central	West	South	South-East	N-East	Ctg Hill Tracts	Total
	S-I	S-II	S-III	S-IV	S-V	S-VI	S-VII	
Urban Rich	27.05	79.94	24.82	13.43	47.71	18.34	2.03	213.33
Urban Poor	71.59	211.53	65.68	35.55	126.24	48.54	5.37	564.49
Rural Rich	131.67	227.52	165.97	136.50	184.22	151.81	10.89	1190.58
Rural Poor	830.03	602.05	439.18	361.21	487.47	401.72	28.81	3150.29
Domestic total	1242.35	1121.03	695.65	546.70	845.64	620.41	47.09	5118.69
Industrial	690.40	625.70	426.20	271.10	472.00	346.20	22.20	2856.80
Grand Total	1935.75	1746.73	1121.85	817.80	1317.64	966.61	69.29	7975.49

Source: Household Consumption Survey, Forestry Master Plan, 1992.

Note:

- Results are derived on the basis of actual population of 1991.
- Rich and poor in urban and rural areas are assumed to be 1:4 in ratio.
- Industrial consumption includes commercial and institutional demand.
- Same level of consumption percapita is applied for Chittagong Hill Tracts region as well.

Future Demand for Fuelwood

The demand projection can be referred to in Table 1.

From the projection it is clear that there will be a huge deficit of fuelwood supply in the future if alternatives are not provided. Fuelwood plantation alone can not cope with the situation. Government has to provide alternative sources of cheap energies like coal, natural gas and others.

Present State of Fuel Energy

Agricultural waste and cow dung is used increasingly use as fuel energy in rural areas. Traditionally, agricultural waste and cow-dung is used as manure with humus nitrate to protect the fertility of the soil. Greater use of cow-dung as fuel leaves very little surplus for use as manure. The soil fertility deteriorates in the longrun if chemical fertilizers are used without natural manure. Government wants to reduce the use of cow dung and agri-waste for fuel energy and prefers to redirect them to be used as humus nitrates. Government intends to provide the consumer with more and more supply of fuelwood in future uniformity throughout the country. Consequently, there have been several programmes involving fuelwood plantation. Thana Banayan Prokalpo, woodlot plantation and many programmes of NGOs are working to this effect. These are good attempts by the Government because the projects are meant to cover all rural areas.

Economics of Fuelwood Plantation

The economics of fuelwood plantation should be assessed objectively before entering into a large scale plantation programme. Fuelwood as a low value single product should be carefully

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evaluated. Both financial and economic returns need to be analysed. In future when commercial energy will be available, people may shift to those alternatives even if fuelwood becomes cheaper. Moreover, when the government has a policy to restrict the use of fuelwood for brickburning and others processing activities, the severity of shortage may also decline shortly with the enforcement of the policy.

Traditionally, the people of this part of the world grow horticulture trees as a source of multiple products. Most of the fuelwood supplies now are products of horticulture trees of the villages. Acceptability of fruit trees is more than other trees.

Therefore, the selection of species commands high priority for large scale afforestation even plantation of fuelwood, in the rural areas and homestead groves. People may be motivated to grow high yielding varieties of fuelwood like local korai, raintree, krishnachura, etc.

Large scale plantation in one region will not help meet the gap in other deficit areas because of inaccessibility and higher transportation costs. Because fuelwood is a basic need the price should not be high. Ability to pay criterion is also to be considered when pricing. There who could afford higher price for fuelwood would immediately changed to gas, kerosene and other commercial fuels in place of fuelwood. The recommended policy options to meet the increasing demand in future can be seen in the Energy Specialist Report (FMP, 1992c).

ROUND TIMBER

Marketing of Roundwood and Sawlogs

The roundwood and sawlogs are the main products of reserved forests which have a large number of uses. All types of wood and wood-based industries depend on the supply of wood and sawlogs for their activities. In many countries the forest processing industries play a vital role in their economy as a major source of foreign exchange earning. In Bangladesh also the importance of wood-based industries cannot be over emphasized. All sectors of the economy are consumers of forestry sector produces.

The major supplies of sawlogs are coming from the village sources. But the quality of village timber is not of high commercial value like teaks or garjans. The total supply is dominated by horticulture trees like mango, jackfruit and others grown in the homestead groves. Hard and exotic species are supplied by the reserved forest. The sawlogs supplied by the villages are consumed in most part by the rural areas and urban fringes. The best part only comes to the urban areas for furniture manufacturing and building construction. The trend of village supply has increased in the cities and urban centres with the imposition of the moratorium on the felling of trees of reserved forests.

The supplies of quality timber of hard and sophisticated species come from the reserved forests or USF. In the past supply of timber was in abundance in relation to total market demand and was in the forests. As a result, BFIDC was established during the 1960's to utilize the forest resources of the country in productive purposes and, to create demand within the countries. Gradually the demand has reached a position that local supply can not cope with even for higher prices. A substantial proportion of the supplies of hard and sophisticated species have been imported since 1988-89. The import of sawlog has increased manifold during the last three years. Small quantities of supplies have entered into the market from neighbouring countries as drifted timber or through illegal trafficking.

The demand for sawlogs arises from a variety of sectors of the economy and for various uses. From the demand/supply projection it is been shown that there has been acute shortage of sawlogs

in the country and this will likely to continue in the future until some positive measures are taken to offset the deficits. The amount of shortage as shown in the projection will be 3.30 million m³ in 1993 and 3.80 million m³ in 1998. The local supply will be able to meet only 30 percent of the projected demand under Status Quo situation. It is believed that much of the gap between supply and demand is met through imports and supplies from unrecorded sources. The projection of sawlog demand and supply for the next 20 year period is presented in Table 4.

Table 4 - Sawlog Supply-Demand, Status Quo (000 m³)

Commodity	N-West	N-Central	West	South /	S-East	N-East	CHT	Total
1993								
Sawlog:								
a. Domestic Urban	196.56	542.18	173.62	96.54	326.25	129.91	14.04	1479.00
b. Domestic Rural	734.05	531.23	388.19	319.41	430.47	355.16	25.46	2783.00
c. Commercial *	56.20	155.04	49.65	27.61	93.29	37.15	4.01	423.00
Total	986.81	1228.45	611.46	443.56	850.01	522.22	43.51	4686.00
Supply	178.00	154.00	112.00	330.00	192.00	103.00	216.00	1285.00
Balance	-808.81	-1074.45	-499.46	-113.56	-658.01	-419.22	+171.49	-3401.00
1998								
a. Domestic Urban	232.98	607.80	199.72	113.47	368.32	150.95	16.01	1689.00
b. Domestic Rural	793.18	572.82	419.25	345.10	464.51	383.95	27.49	3005.00
c. Commercial	62.41	162.80	53.50	30.39	98.66	40.43	4.29	452.00
Total	1088.57	1343.42	672.47	488.96	931.49	575.04	47.79	5148.00
Supply	199.00	175.00	123.00	347.00	205.00	109.00	206.00	1364.00
Balance	-889.57	-1168.42	-549.47	-141.96	-726.49	-466.04	+158.21	-3784.00
2003								
a. Domestic Urban	269.33	673.35	225.78	130.37	410.33	171.95	17.99	1899.00
b. Domestic Rural	852.34	614.43	450.32	370.81	498.57	412.14	29.51	3227.00
c. Commercial	68.77	171.94	57.65	33.29	104.78	43.91	4.59	485.00
Total	1190.41	1459.72	733.75	534.47	1013.68	628.00	52.09	5612.00
Supply	219.00	194.00	135.00	365.00	237.00	99.00	183.00	1432.00
Balance	-971.41	-1265.72	-598.75	-169.47	-776.68	-529.00	+130.91	-4180.00
2008								
a. Domestic Urban	305.74	738.94	251.87	147.30	452.39	192.98	19.95	2109.00
b. Domestic Rural	911.48	656.03	481.39	396.51	532.62	440.69	31.55	3450.00
c. Commercial	79.61	192.72	65.59	38.36	117.80	50.25	5.19	549.00
Total	1296.83	1587.39	798.85	582.17	1102.81	683.92	56.69	6108.00
Supply	242.00	217.00	150.00	389.00	284.00	107.00	200.00	1589.00
Balance	-1054.83	-1370.39	-648.85	-193.17	-818.18	-576.92	+143.31	-4520.00
2013								
a. Domestic Urban	341.97	804.37	277.86	164.14	494.32	213.92	21.91	2319.00
b. Domestic Rural	970.69	697.68	512.49	422.24	566.71	469.23	33.58	3672.00
c. Commercial	95.48	224.58	77.58	45.83	138.01	59.73	6.12	647.00
Total	1408.14	1726.63	867.93	632.21	1199.04	742.88	61.61	6638.00
Supply	2661.00	243.00	165.00	425.00	334.00	132.00	263.00	1828.00
Balance	-1142.14	-1483.63	-702.93	-207.21	-865.04	-610.88	+201.39	-4820.00

Source: Forestry Master Study, 1992, Report No. 30

* Includes government, commercial and other industrial users

Species of Industrial Logs

The Department of Forest classified of all commercial species according to the quality and sophistication of the timber. The royalty, market price and type of use is determined on the basis of classification. The classifications are as follows:

- a. Special class - teak, mahogany, padauk.
- b. Class A - sal, champa, gamar, jarul, bhola, nageswar, sundri, rata, chapalish, garjan, bailum, telsur, chikrassi, toon, pynkado.
- c. Class B - dhaki jam, silkorai, gondori, hotia, hallock, pakashaj, kanthal, chalmugra, tali, pitraj, kamdev, khairjam, hala korai, haldu, kainjal, banapata, raktan, civit, chatian, and uriam.
- d. Class C - Other jam, local korai, kurta, sonalu, morai, poma, horitaki, telo, augles, kayangula, simul, peirok, kanak, bahera, hargaza and keora.
- e. Class D - All other species:

Suitability of the species for a particular purpose determines the market demand and price even if the royalty is the same. It has been seen that some species have higher demand than others within the same class. However, the Chief Conservator of Forest reserves the right to include or transfer any species in any category.

Consumers of Industrial Sawlogs

The major customers of sawlogs are sawmilling industries which process it upto the level of intermediate products of sawnwood. Most of the sawmills are under private sector ownership. A few modern sawmills are operating under the public sector corporation, BFIDC. Few private sector mills have composite units of wood treating, seasoning and planning along with sawmilling. The product classification by stage of processing is shown in Table 5.

Table 5 - Product Classification by Stage of Processing

	Primary Processing	Secondary Processing	Tertiary Processing
Action	Logging, timbering, sawing and transportation	Sawing, smoothing, planing, shaping, profiling, twinning, curving and surface finishing	- Assembling, mixing with other wood-based or non-wood-based materials, finishing
Products	Round logs and sawn wood	Tounged and grooved, boarding, moulding, beading, dowelling, flooring, panelling, furniture components, other components of vehicle	- Packing boxes, cartoons, - Door - window frames - Furniture including kitchen or bathroom cabinets, prefabrication, buildings etc.

Logging and timbering from the reserved forest is done mostly by BFIDC. Private auctioneers also do this primary processing manually. The logging and timbering from the village groves is also done by the private sector small trades. Only BFIDC provides mechanical logging in the country. There are about 4,500 sawmills in the country which supply the entire sawnwood to the customers at the tertiary processing level. The share for public sector is 20 percent of the total.

Sawnwood Marketing

The customers of sawn wood are furniture factories, households and industrial and commercial enterprises with furniture factories are the major customers. Furniture factories are concentrated in urban centres. The supply demand projections presented in Table 6 shows the position of sawn timber demand by region and customer group. The demand for sawn timber is increasing, because of more demand from the housing sector and modern furniture manufacturers.

The other major customer of industrial logs is BFIDC. BFIDC is solely dependent on the Forest Department for all its requirement of round logs of different species. It has never imported any log in its history. BFIDC was created to utilize the forest resources in a modern way with mechanical methods of logging and production and export of finished products to other countries.

Domestic household demand for sawlogs forms the major proportion of the total demand which includes building materials, door, window, timber, wooden furniture, agricultural implements and transport equipment. The consumption of wood percapita is higher in the urban areas than in rural areas. Other major consumers of timber and timber products are commercial and industrial enterprises. Government is also a single major consumer of timber and timber products for its various ministries and projects.

The quality timber either in round or sawn like teak, mahogany, garjan and others are brought to the cities and urban centres because of consumers concentration and higher prices. There are hundreds of sawmills and thousands of furniture manufacturing and furnishing houses using the sawnwood for further processing to make panels, furniture and fixtures.

There had been no restriction on the movements of timber from one place to another on legal or administrative matters until after the moratorium. After the moratorium all felling is restricted except the jot permit in Chittagong and CHT districts. Any movement of forest products from one place to another requires prior approval and a transit pass from the authorities.

The demand for sawn wood is projected both in terms of roundwood equivalent and actual demand for sawn timber. Another reason for severe shortage of supply of roundwood is the low recovery rates of sawn timber due to lack of modern technology and improved machinery as well as the incremental demand. The shortage can be minimized if improved technology is used for higher recovery. The demand projection presented in Table 6 is based on present rate of percapita consumption which is one of the lowest in the world. It is expected that the percapita consumption of timber will increase with the improvement of economic conditions of the people.

Table 6 - Demand for Sawnwood and Roundwood Equivalent, 1991

Users Sector	North-West	N-Central	West	South	South-West	North-West	Ctg Hill Tracts	Total
Urban Sector	45.13	135.28	42.01	22.74	80.74	31.04	3.43	361.13
Urban Poor	18.48	54.60	16.96	9.18	32.59	12.53	1.39	145.76
Rural Rich	64.26	189.88	58.96	31.91	113.32	43.57	4.82	506.89
Rural Poor	267.83	194.26	141.71	116.55	157.29	129.62	9.30	1016.52
Government & Comm	9.64	28.48	8.84	4.79	17.00	6.54	0.72	76.03
Total Sawnwood	341.73	412.63	209.52	153.25	287.62	179.73	14.84	1599.44
Total RWI	911.29	1100.35	558.72	408.67	766.97	479.28	39.56	4265.18
Industrial Consumption of RWI	5.34	57.81	66.47		39.38	25.06	10.13	204.19

Source: FMP, 1992

Price Determination and Method of Sale

Price determination of major forest products reflects the demand and supply of the commodity either directly or indirectly. Different methods of sale are practised in the country by the private sector and Forest Department. Methods of sale and price determination are discussed in the following paragraphs.

1. Village Supplies

The price of village species are determined by the forces of demand and supply in the market. In recent years the price of wood and wooden furniture has gone up. Different rural regions are differently endowed with forest resources but the price of village species is almost uniform with a 10-15 percent variation throughout the country. Village supply is mostly horticultural trees which are grown for other purposes than producing timber. Therefore, the price of timber does not reflect the cost of production. Timber is the final output of a horticulture tree sold only when the fruit bearing capacity is reduced or the owner faces financial crisis. Nobody in the rural areas tends to grow trees for the purpose of commercial and financial motive other than consumption of fruits. Recently, awareness is growing regarding tree plantation among the people and villagers are now selecting timber trees like mahogany and teak to plant in their premises.

2. Forest Supplies

The price determination for the forest supplies follow certain set procedures established by the Forest Department. The price of garjan, the most used timber, has increased from Tk 3,000 per cubic meter in 1980 to Tk 10,500 in 1991, ie. three times higher in Chittagong. This has been the case for each species of timber. The Government issued an order of moratorium on felling trees in the Hill forests of Chittagong and CHT in September, 1989. Immediately after the moratorium, the price jumped 50 percent-100 percent on a case basis and an artificial shortage in market supply was created. With the passage of time, supply became normal but price remained more or less static for last 3 years. This leads to the conclusion that the objectives of the moratorium were not achieved and timber has been coming out from the forests as before the restriction.

3. Methods of Sales

The method of sales of round timber and sawlog of the Forest Department is specified by Articles 25 and 31 of section 14 of the Forest Manual. The provisions of the Article 25 empowered the Forest Department or a professional representative of Forest Department to identify the extractable quantity from the forest and to recommend their sales. On his recommendation the administrative department proceeds toward the sale of the product following the provision of the rules. Article 31 gives detail of the methods of sale of forest products by the department of forest. Articles are presented below in the following paragraphs.

Art. 25 Section 14

The management of forest with the legal obligations imposed at the time of settlement as a first change upon it, should now be left to the provisions of working plan, drawn up by a professional forest officer, as per full examination of the capabilities of the forest and the demands, local and other, which it can supply, and with careful regard to the order and rules of the government under clause(c) of section 15 of the Forest Act,1927 (Act XVI of 1927).

Art. 31 Section 14

Forest produce of all kinds in Bengal will be disposed of in the following manner -

- (a) By auction or by sealed tender at rates fixed by competition under conditions contained in sale notices approved by the conservator,

Sales from Depots will be on a cash basis and purchasers will not be allowed to remove more timber than has been paid for;

- (b) By permit at rates fixed by schedule;
(c) By private sale in exceptional cases, subject to the approval of conservator;
(d) By special grant.

4. Pricing of Forest Products

The royalty of forest species depends on the policy of the government as well as the department of forest. For private customers the price is normally determined by auction or through open tender. The reserved price is fixed at the last three years simple average. This system is assumed to reflect the market price at the forest site. The official royalty rates for BFIDC and other permit holders are fixed on the basis of 12½ percent of the market price. The department is happy with the mechanism and 12½ percent of royalties for all products except for special class of timber. For special class of timber there has been special rate which is higher than 12½ percent of the market rate. The sale of special type of timber is normally done through auction and the price is fixed by such method applicable for all customers private or public. Recently there has been no royalties for special class but auction prices.

The royalty rates for timbers are thus flexible and changes with market price. The rate of royalty is fixed both on the basis of last auction price and on market price survey done by the Department from time to time. For different items the price changes are made at different intervals. If the market prices of some items are observed changing quickly then the rate of royalty is also changed quickly or vice versa.

In the case of sawlogs or sawn wood at forest depots, the price is normally fixed by open auctioning. The auction price again varies according to the position, accessibility, road approach, type of transport to be used. The prices at depots is more than the price of standing trees in the forest. The terms and conditions for different methods of sales are different.

The royalty of raw materials for wood-based industry is fixed for long term based on negotiation or contract with the Forest Department. The gewa for KNM, sundri for Hardboard Mills, bamboo for SPPM and KPM are supplied under bilateral agreement between BCIC and the Department of Forest. Recent schedule of royalties for corporation is presented in Appendix 3.

Because of excess unsatisfied demand, the market for forest products should be called the seller market. Whatever quantity and quality is available in the market is sold at prevailing prices. The supply situation in the market has not been aggravated because of moratorium, but has adversely affected BFIDC more than the private sawmills and furniture manufacturing due to the fact that BFIDC never has thought of importing timber for their operation as the private merchants did.

Due to expected shortage of supply from local sources because of the moratorium the government has liberalised the import of round logs, sawn timber, poles, posts and other wood products in the private sector since 1988. Import trade is growing quickly both in public and private sectors. Imported timber has also contributed to stabilise the market price to a greater extent.

Pricing in the Secondary and Tertiary Market

The price in the secondary and tertiary market goes up per cubic meter at each stage of transportation and processing. The cost of transportation, royalty, labour charges, loading, unloading, ferry charges and other service charges are added up along with the establishment cost and profit. The price in the secondary and tertiary markets is usually 40-50 percent and 60-70 percent higher than the primary markets respectively.

The price list shown in Table 7 reflects the changes and trends of price movements for different species during the past few years for round logs and sawn timber.

Transportation of Logs and Sawn Timber

The roundwood transportation is difficult because of huge volume of trees, lack of proper handling and lifting equipments, lack of proper transport vehicles as well as remoteness and inaccessibility of the forest areas. The roundwood is carried out initially by elephants from the high forest to the nearby stream where it is gathered and kept until the monsoon. Recently elephants became expensive and unavailable and as a result, human labour is being utilized to carry out the logs to the streams and then by the river upto depots.

During the rainy seasons the heavy logs are drifted into the water and towed to the nearby BFIDC depot or road where they are loaded on trucks for transports to the sawmills or consumers.

There has been a considerable amount of wastage during extraction because of the lack of close supervision by the Departments and lack of transport. It is reported that about 30 percent of timber is wasted during BFIDC extraction. The corporation is responsible for extracting resources from Kassalong and Matamuhuri Reserves, both of which are in the interior and inaccessible.

BFIDC as the supplier of log and sawn wood to the government, semi-government and private organisations is the major customer of the Forest Department and gets preferential treatments and concessional prices from the Department.

Private sector participants, timber merchants, sawmills, and timber based industries usually take part in the auction of logs and coups organized by the Forest Department for selling the timber. BFIDC does not participate in the auction. Kassalong and Matamuhuri Reserves may be allowed logged by BFIDC but the corporation can not harvest the output because of the insurgency problem. Presently some areas in Cox's Bazar are allocated to BFIDC near the private auction to save the corporation's operation.

The sawmills in the private sector located in the urban areas of Dhaka, Khulna and Rajshahi spend more for the transportation of timber and fuelwood from the forests of Chittagong, Chittagong Hill Tracts, Cox's Bazar and Sylhet upto their premises.

Timber from the Sundarbans is mostly consumed in the south and southwest of the country. Sundarbans logs are used more as poles, piles and houseposts than for manufacturing furniture because of the nature of the timber. The only mode of transport from the Sundarbans is waterways at least upto to Barisal or Khulna landing centres. Then it is carried either by country boats or by trucks, according to the suitability of the consumption centre. Because of cheaper cost of transportation by waterways, Sundarban's products are carried out by waterways to Dhaka, Chandpur, Narayangonj and other distant places.

The extraction and sale of timber and fuelwood from the reserved forest during last few years is presented in Table 8 by divisions.

Table 7 - Retail Prices Per Cubic Feet (cft.) of Important Timber in Selected Places of Bangladesh (1973-80)

Place Species	Y E A R S															
	1973		1974		1975		1976		1980		1989		1990		1991	
	Round 2	Sawn 3	Round 4	Sawn 5	Round 6	Sawn 7	Round 8	Sawn 9	Round 10	Sawn 11	Round 12	Sawn 13	Round 14	Sawn 15	Round 16	Sawn 17
Chittagong																
Teak	56.6	n.a.	61.8	79.5	42.4	61.8	53.0	70.6	70.6	123.6	400	600	450	700	450	750
Gambur	15.0	21.7	17.7	23.0	17.7	23.0	19.4	24.7	30.0	38.8	230	350	230	350	230	400
Siliveri	12.4	19.4	17.7	30.0	19.4	23.0	21.2	24.7	30.0	45.9	320	450	320	450	330	460
Gambur	17.7	26.3	26.5	35.3	31.8	38.8	33.5	40.6	35.3	58.3	280	450	280	450	300	460
Chaplash	17.7	26.3	17.7	26.5	21.2	30.0	23.0	31.8	31.8	53.0	240	400	250	400	250	400
Civet	10.6	15.9	8.8	14.1	14.1	19.4	15.9	21.2	10.6	15.9	100	200	100	200	100	200
Jarui	21.2	30.0	24.7	31.8	26.5	35.3	28.3	37.1	35.3	56.5	250	375	270	380	270	385
Jamr	15.9	21.2	15.9	23.5	15.9	21.2	17.7	23.0	-	-	150	220	160	230	180	240
Telur	15.9	22.9	23.0	30.0	26.5	30.0	28.3	31.8	31.8	53.0	240	450	240	450	240	450
Chokrasa	17.6	24.7	19.4	30.0	21.2	30.0	23.0	31.8	24.7	37.0	220	370	220	370	280	380
Bandarhola	12.4	24.7	15.9	21.2	14.1	19.4	15.9	21.2	26.5	33.5	135	245	135	245	135	245
Simul	7.0	12.4	6.3	12.3	10.6	14.1	12.4	15.1	10.6	14.1	130	220	130	220	130	220
Am (Mango)											90	180	100	200	120	220
Dhaka																
Teak	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	141.3	158.9	450	650	500	750	500	750
Gambur	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	38.8	44.1	300	380	280	380	300	400
Siliveri	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	44.1	49.4	280	400	300	400	300	450
Gambur	10.6	21.2	17.7	28.3	17.7	28.3	17.7	28.3	45.8	51.2	300	450	300	450	300	500
Chaplash	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	49.4	53.0	300	450	300	450	300	500
Civet	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	150	200	150	200	150	200
Jarui	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	300	500	300	500	300	500
Telur	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	300	500	300	500	300	500
Chokrasa	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	350	500	350	500	350	520
Bandarhola	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	275	350	275	350	280	360
Simul	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	250	370	250	370	250	320
Am (Mango)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	170	250	170	250	170	250
Khulna																
Sundri	6.7	12.4	15.9	26.5	17.7	28.3	12.4	21.2	28.2	42.4	310	410	420	530	430	550
Fassar	8.8	13.1	21.2	30.0	24.7	31.8	14.1	24.7	-	-	-	-	-	-	-	-
Bean	4.6	6.0	10.6	15.9	8.8	n.a.	6.4	8.8	15.9	21.2	135	230	190	290	200	300
Keora	4.2	6.0	12.4	15.9	17.7	14.1	7.1	11.3	17.7	24.7	170	245	210	290	215	310
Kakra	5.7	8.8	21.2	28.3	21.2	30.0	8.8	14.1	21.2	31.8	250	350	290	400	300	400
Gajjin											255	405	290	430	300	430
Koro											130	180	130	180	140	185
Rajshahi																
Kanthai	5.3	12.7	n.a.	n.a.	28.3	38.8	21.3	45.9	38.8	54.7	250	350	300	450	300	450
Am (Mango)	2.5	4.9	n.a.	n.a.	12.4	21.2	8.8	14.1	13.1	17.0	100	150	110	160	120	200
Sal	23.0	44.1	n.a.	n.a.	28.2	42.4	20.2	42.4	-	-	-	-	-	-	-	-
Teak	4.2	7.1	n.a.	n.a.	31.8	45.9	45.9	53.0	21.1	31.8	450	650	460	670	470	700
Jam	4.2	7.8	n.a.	n.a.	17.7	28.3	31.8	31.8	28.3	31.8	200	275	200	275	200	275
Koro	4.2	7.8	n.a.	n.a.	21.2	28.3	31.8	35.3	28.3	31.8	400	500	400	550	400	550
Mchogony	8.8	14.8	n.a.	n.a.	21.2	38.8	8.8	14.1	49.4	63.6	230	350	300	450	300	450
Simul	2.8	4.2	n.a.	n.a.	8.8	12.4	8.8	14.1	-	-	70	150	100	160	100	160

Source: Utilization Division, Chittagong, Forest Department for 1989, 1990 and 1991
BFIDC, Forest Industries Report, 1982 for 1973 - 1980.

Table 8 - Outturn of Forest Products (1984-85/1990-91)

Forest Division	1984-85		1985-86		1986-87		1987-88		1988-89		1989-90		1990-91	
	Timber	Fuelwood	Timber	Fuelwood	Timber	Fuelwood	Timber	Fuelwood	Timber	Fuelwood	Timber	Fuelwood	Timber	Fuelwood
Dhaka Division	13340	18334	2250	6160	5122	27970	6420	17900	42037	26134	12300	11000	-	-
Sylhet Division	536506	1057444	611200	1426740	498690	1160000	1174600	2087960	898340	1425580	265890	938710	905040	452600
Chittagong Division	378326	4330366	456756	2329047	379559	1680760	390417	1580535	444842	808083	65260	2750350	1516150	247890
Coax Bazar Division	2681903	7509990	2990209	8393286	2254569	5581158	1358214	4289500	1628115	2741956	162000	211000	120660	87000
CHT North Division	352366	927092	1243362	3989050	546074	489640	569934	198890	650339	357667	461440	-	-	165000
CHT South Division	179122	909399	2766691	377068	460860	528747	241900	238900	164780	140517	17700	28000	8000	-
Sundarban Division	11781120	9012180	10032000	5947000	7460397	6364275	8210067	6858536	7501597	7218390	5827480	6223140	8418620	35241170
Castl Affin Div, Barisal	1836	46380	15524	99840	12326	6951	11734	88378	32659	136297	10000	106000	6000	166000
Castl Affin Div, Patuakhali	-	-	-	-	-	-	-	-	-	-	-	-	-	128000
Castl Affin Div, Noakhali	2133	583884	4666	73075	6830	8858	13497	150839	5381	270273	-	1029900	-	113000
Castl Affin Div, Chittagong	1220	148555	9000	66700	450	42100	1238	26520	120297	-	-	229040	360	1180
Forest Exen Div, Rangpur	230	-	167	-	973	-	617	165	2122	300	-	-	-	-
Forest Exen Div, Dinajpur	1525	410	1186	325	2940	130	-	-	-	-	2000	4000	2000	1000
Forest Exen Div, Comilla	156	-	25	-	-	-	-	-	-	-	-	-	7000	27000
Forest Exen Div, Mymensingh	7958	6550	30777	21011	34088	117296	4373	32733	34837	119636	12000	11000	-	-
Bandarban Division	165469	409560	164105	367824	192171	498839	-	341000	63080	373007	5800	3800	-	20490
Pulpwood Div, Bandarban	22465	3000	115718	146998	145050	360210	163984	597510	123110	881390	122810	479000	19930	298600
Plupwood Plant. Kaptai	-	-	59900	557800	34800	302850	51060	165850	16500	131000	46740	195270	22000	74940
Unclassified Forest, Rangamati	205163	2247885	121335	1860225	38970	1354889	294164	274506	223191	10565535	-	1740700	35000	526000
Jhoom Control Division	84816	2911000	692890	826800	13403	111500	147580	1122670	89523	536800	177110	278000	-	127000
Lama Forest Division	9880	-	353638	6451928	425054	4518850	906990	1782110	171640	4049980	16940	1474110	196580	805003
Khagrachari Division	136165	892200	127282	2010015	136361	204087	707434	707434	146696	1036847	99150	1654521	-	1796000
Faridpur Division	17422820	30893475	19798681	34950892	12730511	23359110	14086615	20564171	12961275	20360410	7305050	17585791	8452040	10902134
Total														

Working Plan and Timber Extraction

1. Method of Auction

Extraction and harvesting is done under the prescription of the working plan. Working plan is the basic requirement for forest management and harvesting of products determined by the forest manual. According to the prescription of the Working Plan the area of extraction is first determined then marked properly determining the volume of timber and fuelwood for each tree and preparing a detail schedule of sales. The next step is getting approval from the appropriate authority and then making an announcement following the procedure for publication of gazette after which the approval announcement is published in the national newspaper. Following the same procedure an auction is announced and conducted and revenue realised. (A copy of the Gazette is presented in the Appendix 3.

2. Payment Procedure and Royalties

Successful bidders are allowed to pay the bid money by instalment through treasury chalans. This gives bidders a chance to arrange payment before the complete removal of timber from the forest. The payment condition mentioned in the rules of procedure says that bidders must pay all of the sum before final removal. Payment procedures vary according to the method of sales. In the case of tender participation and open auction of lots, instalments are allowed at different ratio but in the case of auction in depot no instalment is allowed and the bidder has to pay full money before removing the products.

Channel of Distribution of BFIDC Timber

The timbers sold by BFIDC usually go to the institutional buyers and government organizations both as semi-finished and processed goods. The share of private sector supply is smaller than that of government sectors. Until recently the supplies for REB, Railways, Ports, Food Department and other timber using corporations come from BFIDC sources.

Sawn timber from BFIDC sawmills is mostly used by its own cabinet manufacturing and other units for further processing. Small quantities of sawn timber is sold to the private furniture manufacturers and other users when there is surplus.

Impact of Moratorium on Price and Supply

For the purpose of protecting the ever increasing degradation of environment and gradual destruction of natural forests the government has enforced a moratorium on the felling of trees from the reserved forests of Chittagong, Chittagong Hill Tracts and Sylhet since September, 1981. The effect of this regulation resulted in reduced supply of wood and logs in the initial stage, raised prices and consumers suffered. The government opened up the provision of import of wood and timber from other countries to meet the local demand. For the first year the import was free of custom's duties and taxes and terms were liberal. Gradually government has imposed custom's duties and taxes on imports of timber and as a result, the import by the private sector has virtually stopped, illegal felling has appeared and market is replenished with local supplies. The market price remained more or less constant during the last three years.

Because of administrative loopholes and loose enforcement of the moratorium law, the felling could not be stopped and the supply position has improved. The loopholes could be identified the provision of issuing USF and jot permit without proper verification. In the name of jot permit removal of trees has continued illegally from the reserve forests. Consequently the purpose of moratorium was not served properly. The market price remained stable since the moratorium was

effected except for the first year. The supply situation was also satisfactory in the private sector depots and stores. At present anybody can buy any amount of timber in the open market without paying additional price.

The effects of the moratorium was not evaluated formally by the Department but from the verbal information collected during the study it has been reported that the objective has not been achieved, instead it resulted in losses of government revenue in millions of taka and nearly caused BFIDC enterprises to close. The consequences can be summarised in the following paragraph.

- a. The activities of BFIDC enterprises were nearly abandoned both because of insurgency and moratorium. It has increased the annual losses of the corporation and curtailment of jobs.
- b. Government has been deprived of its share of the revenue from the proceeds of forest products about Tk 2.0 billion during the last three years.
- c. Forests could not be protected because of malpractices and corruption. Malpractice is more rampant now than ever before beyond the limit of control. New interest groups have envolved in the forest areas.
- d. The availability and cheaper price of local timber in market has discouraged importers to import timber for private consumption.
- e. Failure to protect the natural reserves of the country and induce growing concern among the policy makers, planners as well as general public.
- f. Forest department could not use plantation programme or other remedial measures due to lack of information on illegal cuttings. Thus it has done more damage to the forest than good.

Measures for Offsetting the Market Imbalance for Logs and Timber

From the projection of demand and supply presented in Table 5 and 6 it is obviously clear that supply could not meet the growing demand for logs and sawn timber even if there had been no moratorium. For offsetting the supply gap the following measures can be considered.

- a. Plantation of short rotation crops of commercial value with improved silvicultural practices and adequate managerial cares so that shortage of fuelwood and soft timbers can be produced within a short period of time.
- b. Import of modern sawmilling technology both for private and public sector so that higher rate of recovery can be achieved.
- c. Introduction of incentive schemes for farmers and tree growers for growing more trees of horticultural as well as commercial values.
- d. Liberalise import of timbers and logs in the shortrun through exemption of import duties and taxes so that prices of imported articles can be kept at competitive level with local timbers.
- e. Increasing local price with the import price, so that consumption is discouraged and government gets more revenue income.
- f. Formation of a national wood utilisation policy emphasizing the treatment and seasoning of wood for greater longevity and minimisation of costs.

- g. Emphasize and encourage more use of substitutes of wood and wood products like steel, aluminium, plastic, bamboo etc.
- h. Increase the efficiency of the manpower in research and popularizing the more timber trees in the forest and rural areas with the help of modern silviculture and genetic technology.

Foreign Trade in Logs and Sawn Timber

The import of wood and sawnwood is one of the major sources of supply in the country. Institutional imports against foreign aid under different development programmes has continued since the 1970's. The quantity was few thousand cubic meter a year, most of which was wood rough for electric poles, cross arms, house building materials and railway sleepers. The private sector import started in 1988 prior to the imposition of moratorium. Recently the import of wood has grown tremendously and reached to a few hundred thousand cubic meters a year. The import figure for 1979-90 is presented in the Table 9.

Table 9 - Import of Log and Sawn Wood in 1979-90

Year	Quantity (000 m ³)	Value (Tk Million)
1979	84	60.2
1980	129	92.0
1981	72	58.6
1982	59	67.5
1983	259	66.6
1984	670	210.7
1985	326	102.2
1986	449	172.5
1988	411	102.0
1989	323	109.0
1990	8,419	742.8

Source: Foreign Trade Statistics, 1990, BBS.

From the table it is clear how tremendously the import has increased over the years. The import of round and sawn timber has increased 64 times in volume and 10 times in value in 10 years from 1980 to 1990.

Importers

Major importers of logs and timbers are government and autonomous organizations like Rural Electrification Board, Power Development Board and Railways. Sometimes Port authorities have also imported some timbers for their own use. The above organisations mostly import electric poles, anchor logs, piling poles and sleepers as items of final consumption. The major sources of supplies for above organizations are USA, Canada, Australia, Scandinavian and Singapore, Malaysia and Indonesia.

Private importers import logs and timbers from countries like USA, Canada, Burma, Thailand, Singapore and Malaysia. The import usually comprised sophisticated and quality timber as substitutes for mostly used local species. Among the private imports garjan dominates by 70 percent and all other species are 30 percent.

Future of Import of Logs and Timber

It is expected that if the moratorium continues with proper enforcement the import trade will grow further. It can also grow even if moratorium is withdrawn because of price advantage if duties and taxes are withdrawn. The situation is likely to continue till the REB completes implementation of its programme for covering the whole of the country.

The requirement for poles and posts from abroad may decline thereafter. The import of timber for private consumption will grow further as consumers get acquainted with foreign products. It can be fantastically high if export oriented ventures go through.

Export of Roundwood

There has been no evidence of export of rough wood from Bangladesh in the past but wooden articles, furniture, and some associated items were exported to different countries in small quantities. Foreign trade in wood was always unfavourable to Bangladesh. The export of wooden articles and others can be seen in Table 10. From Table 9 and 10 it is clear that Bangladesh has depended more on import of wood and other forest products while exports were minimum.

In future there can be some scope for export of teak and teak furniture in large quantities. This is because thousands of hectares (100,000) of teak in the plantation forests of Chittagong and Chittagong Hill Tracts and Sylhet are nearing maturity. After their maturity within 10-20 year period a big volume of teak is possible. The present market situation and consumption pattern shows that about 10-15 percent of the total utilisation is comprised of teak and remaining 85-90 percent other timbers. Teak is sophisticated and expensive to Bangladesh consumers and is suitable for furnishing, longterm decorations, furniture manufacturing, veneering and other expensive uses. For export of teak it would be better to export finished products rather than roundwood. Furniture, fixtures, upholstery, panels, decorated doors and windows can be a better way for export. This will command high value, less volume commodities, suitable for international trade. The manpower development and technology transfer will be emphasized. A detailed feasibility can be done on this project.

Timber Merchant Association has already submitted some proposals to the government for approval of the back-to-back arrangement of import and export of timber and timber products respectively like garment manufacturing to open-up a new avenue. The technology and market feasibility is to be studied for evaluating the proposal. The Associations claims that the craftsmanship of carpenters and technicians of Bangladesh are satisfactory to do the jobs required by the export markets around the world. The testimony of their claims may also be evaluated. A market search study can also be undertaken in this respect.

Export Promotion Bureau of Ministry of Commerce and Diplomatic Missions of Bangladesh abroad can help the private entrepreneurs in location export markets as well as source of new and modern technology. Financing is another problem for such ventures. If development banks come forward to help with financial support then entre revenues things may get ready for the future.

Table 10 - Export of Wood, Wood Articles and Bamboo, 1977-1990 (Tk million)

Year	Wood and Wood Article	Bamboo/Broom	Total
		3.75	5.55
	1.8	4.13	6.03
1977	1.9	5.74	16.94
1978	11.2	5.68	12.33
1979	6.65	20.20	24.40
1980	4.20	23.37	24.30
1981	0.93	20.49	41.73
1982	21.24	28.47	30.33
1983	1.86	17.96	20.78
1984	2.82	11.89	50.89
1985	39.00	12.29	67.29
1986	55.00	3.24	55.24
1987	52.00	8.46	63.46
1988	55.00	5.00	65.00
1989	60.00		
1990			

Source: Export from Bangladesh, EPB, 1990.

MARKETING OF POLES, POSTS AND PILES

The household consumption study survey (FMP, 1992b) shows that there exists gaps between demand and supply for poles and posts in the country. This will gradually be shrink in the future until the year 2000 when it will become surplus. The present gap in supply has arisen because of damage done to the sal forests of Dhaka and Rajshahi regions which were major suppliers of poles and posts. At present, the demand for post and poles are satisfied by import from different countries. Major consumers of poles and posts are households, REB, PDB, Ports Authorities and construction industry. Households usually consumes sal, gazari, sundri, keora, goran and like for houseposts and pilings. Because of shortage of those species and higher prices people now use the lower qualities of hard species for the purpose. The import of REB and PDB comprises eucalyptus, pines of different categories and garjan from Canada, USA, Australia and Scandinavian countries.

Suitable Species and Future Supplies

Sal, gazari, sundri, baen, keora, eucalyptus, pine, teak, garjan, etc are the best species for poles and posts. In the past, most of the poles and posts were supplied from the natural sal and other natural forests. Now some quantity of poles are obtained from the thinning operation of plantation forest along with felling in the Sundarbans.

The supply of poles projected for the future will be obtained mainly from the plantation forest as an intermediate crops. Some supplies are expected from agroforestry and private plantations all over the country.

The domestic demand for poles and piles is on declining trend because of high cost of timber and preference for construction of buildings for dwelling houses and other social infrastructure like school, madrasa, mosque, clubs, godowns, health centres etc. In the urban areas, the majority of all new houses are being constructed by concrete materials. Only in southern districts are wood houses still preferred in the rural areas.

A substantial portion of demand for institutional buyers like REB and PDB formerly was met by BFIDC (60-70 percent) from the indigenous species of national reserves with the remaining portion of demand was met by import. Now, REB, PDB, Railways and others are importing almost all of their requirements from outside. One hundred percent of poles are now being imported.

Recently the policy of suitable species has been changed in REB and some non-commercial village species are recommended for cross arms and anchor logs. At present, BFIDC alongwith other private parties, are supplying REB and PDB after purchasing from the village homestead. The present rate of percapita consumption of poles and posts in the domestic sector is .0019 m³ per annum which was equivalent to 174,000 m³ in 1991. The amount of industrial demand was 52,150 m³ in the same period.

Imports of Poles and Posts

From the import statistics it is difficult to quantify the amount of poles and posts imported from abroad because figures are recorded as the import of wood in rough for all round logs. It can be ascertained that most of the imports, about 80 percent, was rough wood as poles, cross arms and anchor logs upto 1988. The import of poles and other electric logs was 154,000 m³ in 1988-89 and 234,000 m³ in 1989-90. Electric poles are being imported from abroad since the early 1970's and is a component of foreign aid for REB and PDB. Bangladesh has never exported poles and post to other countries.

Price Mechanism and Transportation

The price mechanism of poles for domestic consumption is similar to other forest products used for domestic purposes i.e. free play of market demand and supply. The institutional buyers purchase through open tender system nationally or internationally. According to the provision of tender regulation price is normally fixed at the lowest quoted rate, which may be more or less similar to the market rate. The unit price varies from species to species and according to distances of destinations.

Most of the poles and posts collected from the local sources are transported by water or road or by both as per suitability and accessibility of the forest. The imported poles are often carried by railway from the port of arrival to major depots and then by trucks to the project sites.

Future Expectation

As poles and posts are intermediate products of plantation forest it is expected that the country will achieve selfsufficiency in poles by the year 2000 because of thinning operation of existing plantations, but this requires special care to the plantations. If the usual programme continues, then the country will achieve selfsufficiency in the 2005.

PULPWOOD

Pulpwood is not a particular species of tree but comprises a wide variety of coniferous and non-coniferous wood suitable for making paper pulps. Coniferous woods are more suitable for pulp manufacturing. Bangladesh grow a small amount of melocanna pulpwood for the Sylhet Pulp and Papermill. It also grew gamar plantation for the Karnafuli Pulp and Papermill but there are yet to be harvested as they are embroiled in a royalty dispute between KPM and the Department. Coniferous species are on a trial basis only (*Pinus caribaeae* near Kaptai).

Marketing and Demand for Pulpwood

The demand for pulp and pulpwood arises from the demand for paper and paper products in the country.

The entire paper industry is dependent upon naturally grown forest supplies called fibrous raw materials (FRM) like bamboo, gewa wood, other fuelwood and reeds. Bangladesh mills were initially designed to use pulpwood. Rather, the mills were established to use the locally available bamboo, reeds, gewa and other soft woods grown naturally in the forest.

Bamboo has been the major raw material used for making pulps in KPM, KRC and SPPM with gewa from the Sundarban in KNM.

Because of a shortage of bamboo and reeds in Sylhet areas and tribal insurgency and flowering of bamboo in Chittagong, SPPM and KPM are now trying to divert their consumption towards soft wood and fuelwood of hardboard species. Initially, both enterprises consumed one hundred percent bamboo as principal raw material then gradually mixed local fuelwood with bamboo in suitable proportions. Recently, changes to SPPM and KPM has modified the technology to suit the use of pulpwood for producing pulps. At present, the ratio of bamboo and fuelwood is 60:40 for KPM and SPPM.

Because of low quality of local pulp the use of imported foreign pulp is accepted by the government to ensure the quality of products. During the early 1980's KPM started planting pulpwood around the Karnaphuli and Chandraghona valleys on their leased land but later the lease was cancelled and the responsibility was pushed back to the Forest Department. The Department later on completed the plantation and raised the crops. The wood is now mature now. Problems regarding the royalty fixation posed a serious hindrance to the use of pulpwood by KPM. The flowering of bamboos in the reserves as well as over extraction and the insurgency problem makes the collection more expensive and troublesome. Moreover, higher market price of bamboo in the market outside the industry has given the Forest Department a bargaining position which threatens paper industries for all types of raw materials obtained in natural reserves. The paper industry must think of using soft wood/pulpwood at current production levels instead of bamboos.

The exception is the North Bengal Paper Mills which uses baggasses as raw material for producing pulp. The capacity of the mill is 15 thousand tonnes of paper which often is not realised because of shortage of baggasses. The possibility of setting-up of other baggasse based paper mills is also limited. The sugar mills are now using baggasses as fuel energy, substituting for furnace oil for economic reasons.

From the past records it has been seen that demands for newsprint, writing and printing papers as well as paper boards are increasing swiftly and it is expected that the trend will continue in future. The Forestry Master Plan study has assessed the demand for different types of papers and paper boards in the country and thereby estimated the requirement of pulpwood in the future upto 2010 under different scenarios.

The requirement of pulpwood and bamboo under different scenarios is presented in Table 11.1. Details are included in the Forest Products Demand Projection Report (FMP 1992b).

Table 11 - Supply-Demand Balance of Pulpwood under Different Scenarios

	('000 m ³)				
Source	1993	1998	2003	2008	2013
Demand for Pulpwood					
- Population	256.9	320.9	377.4	441.3	505.2
- Population/Literacy	279.5	408.2	508.0	614.9	722.5
- Mass Literacy & High Export	515.34	844.7	1226.1	1499.9	1829.8
US 400 GDP Economy	462.2	688.2	929.2	1178.4	1448.7
Supply of Pulpwood					
- Status Quo	284	344	478	500	518
- Scenario 1	293.0	393.0	628.0	648.0	655.0
- Scenario 2	293.0	403.0	1122.0	1370.0	1640.0
Balance: Demand-Supply					
- Population	27.1	23.1	100.6	58.7	12.8
- Population/Literacy (Scenario 1)	13.5	(15.2)	(120.0)	(330.1)	(67.5)
- Mass Literacy & High Export Economy (Scenario 1)	(222.3)	(451.7)	(598.1)	(851.9)	(1174.8)
- Mass Literacy & High Export Economy (Scenario 2)	(222.3)	(441.7)	(104.1)	(129.9)	(189.8)
- US 400 GDP	(169.2)	(285.2)	+192.8	+191.6	+191.3

The projected demand for paper of different grades and newsprint implies that huge quantities of pulp will be required. In 1998 the demand for pulpwood will be 0.32 million m³ if only population increase and present percapita consumption is considered. It will be 0.84 million if mass literacy programmes continue and present export if newsprint is maintained. The supply under Status Quo will be 0.34 million which indicates a surplus of 23 thousand cubic meters. In the case of mass literacy, the shortage will be 0.45 million cubic meters.

If the raw material base for the pulp industry is not expanded quickly through plantation of pulpwood the country will have to depend on imported pulps to a larger extent.

Import of Pulp

The paper industry initially was not dependent on imported pulp but used it to guarantee the quality of products. All paper mills under public sector have pulp units. Among the three paper mills in the private sector, two are under operation. None of them have pulp producing units. They have to depend totally on the supply of SPPM and the imported pulp for their production. The country is depending more and more on imported pulps from different origins. Table 12 represent the import of wood pulp and other fibrous materials during the last 10 years.

The table shows the extent of shortage and expenditure of hard currency for import of wood pulp and other raw materials. The shortage up to 1983 was 7,000 tonne a year which was increased up to 41 thousand tonne in 1985. The import for 1990 was 21,000 tonne which is three times higher than that of 1980, but the amount of money spend in 1990 was seven times higher. The high figure for 1984, 85, 86, and 87 was due to process modification to SPPM and KPM.

Table 12 - Import of Woodpulp and Fibrous Materials, 1980-1990

Year	Quantity (M. Tonne)	Value (Tk million)
1980	7,972	65.97
1981	7,371	77.42
1982	7,649	82.35
1983	3,536	50.79
1984	25,659	314.30
1985	41,157	478.13
1986	26,278	346.77
1987	33,970	541.31
1988	17,325	292.21
1989	17,546	384.00
1990	21,186	472.57

Source: Foreign Trade Statistics of Bangladesh, 1981-82 to 1991-92.

Pulpwood Collection

All pulp manufacturing mills either composite or single are under the control of BCIC. The supply of raw materials from Forest Department is made under bilateral agreements between BCIC and the Forest Department. The rate of royalty is subject to negotiation which is below the normal market rates.

The responsibility of extraction, transportation, handling and storing lies with the respective paper mills. The mill has to construct and maintain the infrastructures, roads, landing depots etc for extraction and storage operation. Though the rates of royalties are minimum, the extraction cost including infrastructure development and maintenance, labour, transport and other social cost tends to be similar to the market price.

The pulp and paper mills also collect bamboo and firewood from the private sources at a market rate, where private parties bear the cost of collection and transport upto the storage depot or mill gates.

Pulp of SPPM is sold to all sister concerns producing paper and board as well as to private mills. The private paper mills have to depend more on imported pulps because the supply of SPPM pulp is not adequate and supply is not ensured.

Price of Pulp

The price of imported pulp varies from country to country and from quality to quality. The average import price per metric tonne of pulp was about Tk 22,000 in 1990 whereas the production cost of SPPM was Tk 15,000 a tonne. Local products command a comparative cost advantage over the imported pulps with a little variation in quality which may be due to quality of raw materials used.

Economics of Pulpwood Plantation

The pulpwood plantation will have a great future for the Forest Department. The ever increasing gap between supply and demand in the future even in Status Quo situation, can only be offset by large scale plantation of pulpwood which will release bamboo for other uses. It is expected that when plantation is done according to the Master Plan's recommendations, selfsufficiency in pulpwood can be achieved in 2018. Pulpwood is a medium rotation crop which can be grown easily and income received quickly at shorter intervals compared to other long rotation plants.

Marketing of Paper and Paperboard

The marketing and channel of distribution is different for various items of paper products. The products can be identified in the following categories.

- a. Writing and Printing Paper (Cultural grade)
- b. Newsprints
- c. Other Commercial Grade Paper
 - Tissue, Toilet
 - Cigarette, Tablet Packing
 - Computer, Radio bond Paper
 - Art paper & boards.
- d. Packaging and Paperboards
 - Corrugated Board
 - Duplex Board
 - Sulphate Board
 - Heavy Cartoon Board
 - Cartoon Board

Marketing of Finished Products of BCIC

Marketing and distribution of paper and paper products of BCIC enterprises is very organized and systematic. The market also provides for competition from the imported commodities without distorting the price mechanism followed by BCIC. The channel of distribution is also so designed that the consumers get the supply at their door step without paying any differential price. The price of the products remain the same throughout the country. The channel of paper distribution appears in Figure 1.

Retail and Wholesale Price

Bulk consumers get their supplies direct from the mills at mill gate price on a first come, first served basis. The responsibilities of transportation lies with the buyers. Maximum retail price is fixed considering transport, distribution and establishment costs along with margins of the wholesaler and retailer.

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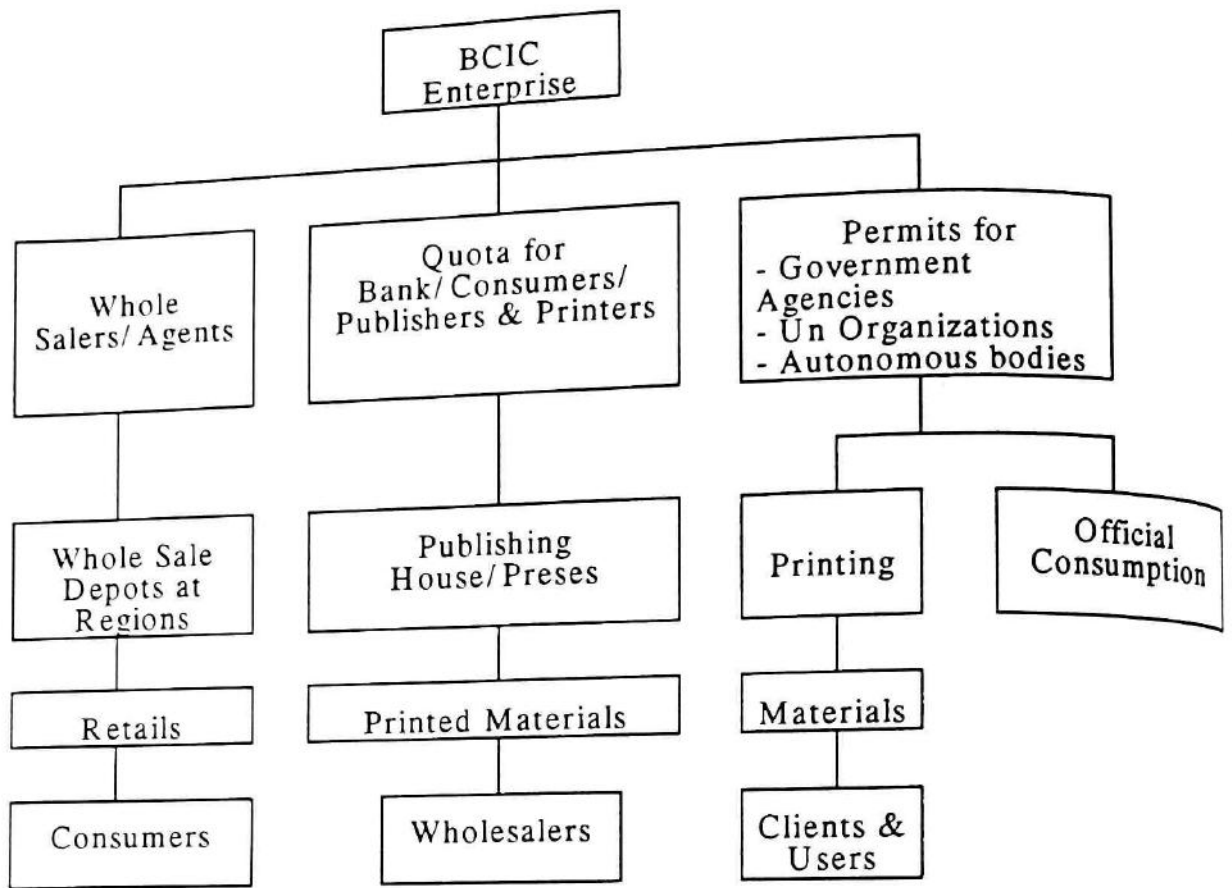


Figure 1 - Channel of Distribution of BCIC Products

Both wholesale and retail price is fixed by the corporation. The recent prices for wood-based products of BCIC is presented in Table 13, these are applicable for all places of the country equally.

Table 13 - Wholesale and Retail Price of BCIC Products, Sept 1992

Item	Specification	Price Ex-Factory (Tk)	Retail* Price (Tk)
KPM			
Cream Laid	26" x 32" - 33 lbs	600	660
White Print	23" x 36" - 36 lbs	655	721
White Print	20" x 30" - 23.47 lbs	431	474
White Print	23" x 36" - 32.39 lbs	595	655
White Print	20" x 30" - 26 lbs	473	520
NBPM			
White Writing	16" x 26" - 56 gram	305	339
White Writing	16" x 26" - 50 gram	279	310
White Print	23" x 36" - 49.50 gram	559	620
KNM			
Newsprint	20" x 30" - 52 gram	219	239
Newsprint	23" x 33" - 52 gram	21,681	-
		265	269
		20,670	
KHBM			
Hardboard	8' x 4' x 1/2"	153.63	176.67

Source: Marketing Department, BCIC

* Per ream except hardboard which is per piece.

Exports

After the liberation of Bangladesh in 1971, it was thought that Bangladesh could export paper because of surplus production over the local demand. Initially for two-three years some exports were made to neighbouring countries like India, Nepal and Burma. That was stopped because supply could not meet the increased local demand because of serious production problems.

Import of Paper and Paper Products

Traditionally, Bangladesh had been importing specialised papers for writing and printing. The import of writing and printing paper is increasing. Bangladesh cannot manufacture special types of papers like quality computer paper and high density art papers or radiobond papers. The import of papers for the last 10 years is presented Table 14.

Table 14 - Import of Paper and Paper Products

Year	Quantity (MT)	Value (Tk million)
1980	8,303	134.3
1981	14,474	273.0
1982	14,366	307.2
1983	7,476	180.7
1984	11,129	259.6
1985	5,540	229.3
1986	5,726	311.1
1987	5,120	513.7
1988	5,803	399.1
1989	20,107	653.0
1990	20,000	683.7

Source: Foreign Trade Statistics, 1988-90, BBS. Statistical Year Book, 1991, BBS

Table 14 shows the import of paper and paper products for the last 10 years. It is seen that within the 10 years import has grown more than double in tonnage but quadruplicate in value. The price of paper is increasing very quickly in the international market.

Projection of Demand for Printing and Writing Papers

The demand projection made in the Report (FMP, 1992b) is based on several assumptions regarding population growth, literacy growth and mass education programme of the government. It shows a huge increase in demand for all types and grade of papers. The demand for writing and printing paper will be increasing at a slower rate than the industrial grade paper. With the establishment of export based industries, the industrial grade paper for packaging has already increased manyfold since 1970's. This will increase further in future when more and more export industries come up.

The present demand for writing and printing paper is 60 thousand tonnes a year of which 20 percent is met through imports. The demand will increase to 127 thousand metric tonne in 2013 if present rate of population growth continues with a modest growth of literacy 36 percent.

At present the industrial grade papers and boards are imported. Very few of them are manufactured locally. Some private enterprises have already planned joint venture projects with BCIC to manufacture the industrial grade papers to meet increasing demand in future and

substitute the present imports. The present demand for industrial grade paper is said to be about 90 thousand metric tons, most of which is made locally from second hand papers. About 15.20 thousand are imported. Most of the imported items comprise paper boards and cartons for export industries. If the present growth of export industries continue, the demand for industrial grade paper will be 200 thousand metric tonnes a year in 2010.

Major consumption centres of industrial grade paper are Dhaka, Narayanganj, Chittagong and Khulna. Dealership is the method of distribution for local products as well as imported products. In many cases, exporters are also importing packaging material as back-to-back arrangement.

Newsprint Marketing and Distribution

Khulna Newsprint Mill is the only newsprint mill in the country. The mill depends on the Sundarban forest for supply of gewa wood, the only raw material for the mill. The mill also uses the pulps of SPPM and of imported origins.

Bangladesh is selfsufficient in newsprint. The country has been exporter of newsprint for many years. Before 1971, Pakistan was the main importer, after that, India and Nepal are the main importers. The production, consumption and export figures are presented in Table 15.

Table 15 - Export of Newsprint (MT)

Year	Production	Export	Consumption
1976	20,060	4,940	15,120
1977	14,590	7,570	7,202
1978	27,490	29,330	6,160
1979	33,610	20,330	13,280
1980	38,070	21,410	16,660
1981	30,902	16,458	14,444
1982	44,004	10,542	25,309
1983	31,202	9,163	21,804
1984	37,764	13,984	31,988
1985	50,852	18,084	31,416
1986	55,100	16,022	37,963
1987	50,396	18,600	34,280
1988	49,859	13,899	35,136
1989	47,762	7,799	39,015
1990	50,465	4,674	46,456
1991	49,510	3,500	46,010

Source: MIS Department, BCIC.

The major consumers of newsprint are the publishers of newspapers, magazines and periodicals. Some goes for publications of paperbacks and note books. A small quantity is also used for writing. The channel of distribution is similar to the writing and printing paper mentioned in the schematic diagram. Normally it is sold in bulk at mill gate price in Khulna. The price is fixed by the government and is subsidised for newspaper industry. Local consumption of newsprints is increasing tremendously. It can be assumed that Bangladesh will not be able to export any newsprint in the near future because of increasing local demand.

Projection of Demand for Newsprint

The projection of newsprint demand has been made on the basis of three alternative assumptions like paper and paper products. These assumptions are:

- demand under normal population growth and constant literacy rate of 26 percent;
- normal population growth and increasing literacy rate to 36 percent in 2013; and
- mass literacy programme to achieve 80 percent in 2000 year and 100 percent in 2003.

It is difficult to assess the demand for the third alternative. It is sufficient to say that demand will be many times more if the programme is successfully implemented. Projection for the other two alternatives are presented below:

Table 16 - Projection of Demand for Newsprint ('000 MT)

Year	Alternative-I	Alternative-II
1991	49.51	-
1993	53.47	55.70
1998	69.28	87.62
2003	85.14	114.22
2008	100.99	140.72
2013	116.85	167.41

Transportation and Distribution

Most of KNM's output is carried out by waterways. The major consumption centres are Dhaka and Chittagong which are well connected by inland waterways with Khulna. A small proportion is carried out by trucks. Consignments for export was carried away by rail upto Benapole in 1970's but it is now carried away by trucks.

Recommendations

- a. Locate more paper mills in the Chittagong Zone where pulpwood will be readily available.
- b. Diversification of products in the existing mills and newly built mills.
- c. Large scale plantation of pulpwood in the hilly regions.
- d. Establish other newsprint mills.
- e. Emphasize the production of industrial grade papers and boards aimed at attaining selfsufficiency in those items.
- f. Improve the research backup for searching out new and cheap sources of raw materials.

OTHER WOOD-BASED PRODUCTS

Wood-based panel includes many different items resulting from primary processing of wood. These are plywood, veneer board, block board, particleboard, hardboard and fibre board. This also includes manufacturing of plywood, tea chests and flashdoor. Production of many of these items is declining for various reasons and marketing is one of the major problems.

Panel Products and BFIDC

During the sixties the government has set-up some panel industries under the BFIDC management to popularise the use of panel products as an alternative to solidwood as well as for utilisation of wastes of the sawmilling plants. Later on a few private parties came forward to establish particleboard and plywood factories. Gradually the private sector started to dominate the plywood and panel products industry.

BFIDC factories have never achieved peak production and profitable operation in most cases because of many problems of internal and external nature. The most prominent of them involve marketing and management. People were never told the benefits of using the panels at personal or national level and the social cost involved in using solid timber in all spheres. Large scale marketing has never been initiated. The market was always limited within the urban centres.

After the liberation in 1971, many of the abandoned factories were nationalised and taken over under the management of BFIDC. The experiences of BFIDC were not happy with abandoned factories in most of the cases. Capacity utilisation was low, cost of product was high, financial losses and labour problems were usual. Because of perpetual losses and management problems many of those enterprises were again disinvested to the private sector.

Present situation of the panel factories both under BFIDC and private sector are serious and gloomy. The raw material supply from the forest has nearly stopped. The plants are trying to operate through private supply which can support only 10-15 percent of their capacity. The overall situation for existing panel industry is collapsing because of old age, obsolete machinery, poor maintenance low quality and high cost. The survival of the factories depends on the early supplies of the raw materials in some cases and complete rebuilding of factories in others. For detail please consult Forest Industries Report (FMP, 1992e).

Plywood

There are 14 enlisted plywood factories in the country of which four are large and the remaining are smaller. According to FAO (1981), the industry suffered from many ailments including old and obsolete machinery and plant, lack of facilities, lack of management efficiency and know how, and lack of foreign exchange. The situation has aggravated further with the imposition of the moratorium and scarcity of raw materials.

1. Plywood Production

The industry was basically installed to produce tea chests for tea exporting industry. The stable demand for tea chests is around 1 million boxes a year which tends to increase with good production of tea crops. The plywood manufactured for the tea chests is of specific size suitable for chests only. The equivalent quantity of plywood can be estimated to be 1.85 million m² a year.

The plywood factories also manufacture commercial plywood, the production of which is fluctuating and no reliable estimate of production for the last few years was found. The commercial production of plywood is subject to severe constraints of wood supply. The production of plywood and raw material used for last few years is presented in Table 17.

Table 17 - Production of Plywood and Raw Materials Used, 1976-1990

Year	Production ('000 m ²)	Raw Materials Used ('000 m ³)
1976-77	510	8,670
1977-78	660	11,200
1978-79	1500	25,495
1979-80	980	16,600
1980-81	1600	27,200
1981-82	362	6,150
1982-83	227	3,860
1983-84	352	5,980
1984-85	353	6,000
1985-86	334	5,680
1986-87	190	3,230
1987-88	168	2,855
1988-89	196	3,330
1089-90	176	2,990

Source: BBS, 1990 and BFIDC.

Thus the plywood production and consumption stands to be around 2 million m² a year. The requirements are always estimated separately for tea chests and commercial plywood.

Large factories like Sangu Valley Plywood Plant (SVPP), Bangladesh Timber, Star and Ruby Plywood have been closed because of non-availability of raw materials from BFIDC and for high operating costs when using private sources of materials. Only small enterprises in the private sector are in operation with private supplies of local species. They are mostly engaged in tea chest manufacturing.

2. Raw Materials

Traditionally the plywood industry has been using the civit (*Swintonia floribunda*), a natural species for its manufacturing. Until recently more than 70 percent of consumption was civit but due to lack of supply manufacturers are now using other soft species like kadam, pitraj, haldu, uriam, mango and others. But in many cases supply of them as not sufficient to run the factory and the substitutes were inferior. The availability of adequate raw materials is the necessary condition for survival of the industry. To ensure the supply in future the plantation of civit and other natural species should be undertaken quickly.

3. Location

The location of the industries are well dispersed near the availability of the raw materials. Majority of them are set-up in Chittagong, Cox's Bazar and Chittagong Hill Tracts regions. Some of them are established in Sylhet. The locational advantages results in less cost for transport of raw materials and finished plys because of nearness of the tea estates, their processing and packaging plants.

Most of the factories suspect that the present stock of civit is reducing day by day and what is still left is not adequate to cater to the future needs even when there striction is withdrawn. The Tea Board is specially concerned about the future of chest industry and tea business. The Board has already started working on alternative packaging to substitute the chests.

4. Capacity

According to Aliff (1981) the rated capacity of plywood industry is 1.58 million of tea chests of standard size and 0.45 m^2 of commercial plywood. About 65 percent of the existing capacity for tea chests are utilised while only 25 percent for commercial plywood.

5. Raw Material Requirement

The requirement of raw materials i.e. round log has been estimated by different persons differently for the tea chests. The estimate varies from $0.014 - .024 \text{ m}^3$ per chest, the minimum of the estimate was given by the Tea Board. The average requirement fixed by the consensus of consultants and manufacturers is $.021 \text{ m}^3$ per chest. According to this estimate the full capacity requirement of wood will be $34,037 \text{ m}^3$ for chest manufacturing only.

The requirement for commercial plywood is fixed at $1.58 \text{ m}^3 / 100 \text{ m}^2$, the requirement on this basis stands to be $7,398 \text{ m}^3$ of logs of good quality. According to Aliff (1981) the total utilization of wood by plywood factories in 1979-80 was $26,200 \text{ m}^3$.

The present consumption for tea chests is stable. Supply sources for roundwood are BFIDC and Forest Department. Only 10-15 percent comes from the villages. Factories are getting their supplies of civit from private sources but most come illegally from natural forests. Only miscellaneous non-commercial inferior wood comes from the village sources.

6. Transportation

The transportation of wood is done through a combination of water and land transports. The cost varies from place to place depending on the distance from the factory as well as degree of accessibility in the forest. While supplied by BFIDC from their depots only trucks are needed. Because of locational advantage the costs of transport of raw materials are minimum. Transport of plywood and tea chests is done by trucks upto the premises of retailers. Actual tea chest boxes are made in the packaging factories.

7. Management and Plant

The Wood Processing Report (FMP 1992d) discusses the existing technology and equipment used by the industry and recommended the improvements. It is evident that big factories cannot manage the activities and sustain the competition from the small producers. The small producers can procure their raw materials from the villages where the big ones cannot do that for large scale of production. Moreover, the labour and establishment costs are less in the small enterprises managed by the owner-manager.

Quality of product in the smaller ones is inferior to those of modern plants. The small enterprises don't have drying and hot pressing facilities and they depend on sunshine for drying and cold presses for pressing.

8. Product Marketing

The market for one million boxes of tea chests is assured and production continues even in the fence of difficulties. Because of problems of production of commercial plywood from the very beginning, the effective marketing was not attempted to introduce the products to the consumers. The market is not problem even to-day as plywoods are imported both legally and illegally from outside the country. From the market investigation it was found that local commercial plywood has low customer preference because of its poor quality and risks due to uses unknown species.

The foreign plywood or even the Indian plywood made of garjan are superior to civit, uriam and mango.

9. Import

Trade statistics show that a small quantity of plywood and veneer is imported. Recently there has been some illegal trafficking of plywood from India. The quantity of legal import in 1988-89 was 12 cubic meter only and in 1989-90 it was 58 cubic meters. It is suspected that illegal trafficking may be more than recorded imports.

Particle, Plain and Veneer Boards

This group of products is known as panelboard. The manufacturing of panelboard uses industrial wastes of sawmilling plants, jute sticks and fuelwood, the wood value of which is insignificant. The number of board plants is six, all of which are composite units manufacturing both plain wood, textured veneers and veneer board. The prominent plants are - Star Particleboard, Particleboard and Veneering Plant, Chittagong Board Mills, and T K Particleboard Mills (Pvt.) Ltd. Among the plants the Star Particleboard in the private sector and Particleboard and Veneer plants under BFIDC are large and manufacture about 80 percent of the marketable supplies. Star Particleboard Mills (SPBM) uses jute stick as the primary raw material. The production of SPBM for 1981-82 to 1989-90 along with value is presented in Table 18. Upto 1978-79 the plant used to export particleboard, the mills also produce flush doors. Previously the mill was under Bangladesh Chemical Industries Corporation and in 1988 it was disinvested to the private sector.

Table 18 - Production of Particleboard of SPBM

Year	Quantity (MT)	Value (Tk '000)
1981-82	2,575	32,322
1982-83	543	7,419
1983-84	2,371	23,474
1984-85	2,308	25,348
1985-86	1,469	21,202
1986-87	2,502	47,094
1987-88	2,303	43,664
1988-89	1,397	31,013
1989-90	1,629	39,779

Source: SPBM, BCIC

Chittagong Board Mills has been closed for board manufacturing since 1981 and at present is producing flush doors only. The quantity produced by T K Particleboard is not known. It is expected that the plant is producing less than its capacity. The production of BFIDC mills are also presented in Table 19.

1. Raw Materials

The capacity of PBVP is 0.8 million m² of wood text and 1.8 million m² of veneer, at present one-third of the capacity is being utilised. The raw material is not counted separately for this enterprise because it is considered as the waste of other plants. Because of crisis in other plants, in recent years, the supply of raw materials for this plant has also been affected. At present the plants is procuring fuelwood from private sources to keep the production going.

Table 19 - Production of PBVP and CBM ('000 sft.)

Year	Commodity	PBVP		CBM
		Target	Actual	
1977-78	Veneer	2200	1650.00	-
	Veneer WT	1000	647.00	412
	Woodtex	-	-	2417
1978-79	Veneer	2700	1045	-
	Veneer WT	1250	384	347
	Woodtex	-	-	1442
1979-80	Veneer	3900	881	-
	Veneer WT	1700	346	337
	Woodtex	-	-	1442
1980-81	Veneer	3300	1307.38	-
	Veneer WT	1100	410.05	-
	Woodtex	-	-	-
1981-82	Veneer	3300	1140.95	-
	Veneer WT	1100	183.77	-
	Woodtex	810	401.83	-
1982-83	Veneer	3300	1584.23	-
	Veneer WT	1100	538.80	-
	Woodtex	2916	1124.44	-
1983-84	Veneer	5000	1937.21	-
	Veneer WT	2000	680.31	-
	Woodtex	4200	1190.70	-
1984-85	Veneer	4600	2537.28	-
	Veneer WT	2000	897.37	-
	Woodtex	3000	1567.88	-
1985-86	Veneer	3600	3151	-
	Veneer WT	1500	1134.57	-
	Woodtex	3150	2241.10	-
1986-87	Veneer	3600	4219.28	-
	Veneer WT	1500	1462.40	-
	Woodtex	3150	2684.98	-
1987-88	Veneer	3700	4071.86	-
	Veneer WT	1650	1437.85	-
	Woodtex	2750	2647.87	-
1988-89	Veneer	3700	3439.08	-
	Veneer WT	1650	924.36	-
	Woodtex	2750	1712.18	-

Source: Planning of BFIDC, and Statistical Year Book 1991, BBS

All of the raw materials required by the SPBM are collected from private sources. The plant does not have a shortage problem but the price of jute sticks has increased substantially because of shortage of fuelwood in village areas. Villagers use jute sticks as a substitute for fuelwood.

2. Major Problems

Major problems of BFIDC mills are old and obsolete plant and machinery, unmarketable size of products, management weakness, and raw material supplies. Among other problems and adhesion, shrinkage and thickness density are prominent. High wastage and low quantity of veneering pose a threat to the operation of the plant.

3. Marketing and Sale

The problem of marketing is minor in terms of production problems. When Star Particle is selling huge quantities of jute stick board the PBVP can not sell the same amount of a superior products because of its unmarketable size. While market demands 2.4x1.2 metre size, the plant produces an odd size of 3.9x1.8 metre. Management actually can not approach the customers with such a product while better and perfect substitutes are available.

From the recent production figures of the plants it can be concluded that panelboard has potentials in this country as production and sales are increasing every year.

Market is not the problem for the industry; if production grows more, sales will also be more. For the sake of conservation of forest, panel industries should be geared up otherwise people will use more and more solid wood in place of plywood which requires more timber and means more destruction of forest.

Hardboard

Khulna Hardboard Mills is the only hardboard mills in the country. This mill was established in 1960's under the public sector initiative and managed by BCIC. The raw material used for this mills was primarily sundri and keora from the Sundarbans. The production record shows a continuous trend over the years since its inception. The installed capacity of the mill is two million m³ of boards per year at a thickness of three mm. The rated capacity of is 75 percent of installed capacity ie. 1.5 million m² of production is normally achieved. There is a problem of supply of raw wood in this plant related to the sundri top dying problem. Sundri is preferred for hardboard quality but recently the Forest Department has fixed the quota of sundri and other species for this mill, because of suspected shortage of sundri species. The Department also requires the mill to use highly defecting logs which substantially affect product quality. Presently the mill is using a proportionate mixture of sundri and keora species.

1. Raw Material Requirement

The production of hardboard and its value as well as the consumption of raw materials are presented in Table 20.

2. Domestic Selling Price

The wholesale and retail price of hardboard is fixed at the Corporation head office. The prices are equally applicable for all areas of the country. The present ex-factory price per 2.4x1.2 metre x 3mm is Tk 153 for wholesale while Tk 176 is for retail. The method of determining price is like other public sector monopolies.

Table 20 - KHBM Production Statistics

Year	Quantity ('000 sq.m)	Value (Tk '000)	Raw Material ('000 m ³)
			19.69
1981-82	1,053	13,859	28.42
1982-83	1,520	25,770	24.92
1983-84	1,333	25,783	29.86
1984-85	1,597	36,323	30.31
1985-86	1,621	41,351	27.02
1986-87	1,445	44,132	29.06
1987-88	1,554	49,681	30.01
1988-89	1,605	52,188	29.86
1989-90	1,597	52,104	

Source: MIS, BCIC.

3. Marketing, Sale and Channel of Distribution

The marketing and distribution follows the BCIC standard for all other paper products. Figure 1 represents the channel of distribution. The production of this mill is sold within the country locally. There has been no import or export of the item. The utilisation of hardboard is on the decline throughout the world, but in Bangladesh the demand remains constant at the present production level. According to the opinion of relevant persons the demand for hardboard may not increase in future because of competition from superior substitutes. There is no scope for setting-up other hardboard mills in the country because of the market constraint.

Match Factories

Match manufacturing occupies a prominent place among the wood consuming industries. Match manufacturing has a long history in this part of the world from before the partition of India in 1947. There are 18 factories now under operation. Previously the number was more than 20. They used to meet the requirements of both the wings of Pakistan. After liberation in 1971, half of the market was lost and the industry suffered. The installed capacity is 18 million gross boxes a year while operating capacity is below the installed capacity.

According to Aliff (1981) in 1980 the match factories produced 10.0 million gross boxes of matches consuming 49,950 MT (77,825 m³) of roundwood. Since then the production has improved year by year and in 1990 it was about 14 million gross boxes. The production of matches, value and utilisation of roundwood are presented in the Table 21.

1. Raw Material

Match factories use the soft species of woods mostly grown in the village areas. The species are - simul (*Salmalia*), chatian (*Alstonia* spp.), kadam (*Anthocephalus* spp), pitali (*Treuria* spp) and others. Forest woods like gewa are also being used for manufacturing matches. Villages used to supply about 80 percent of raw materials and Forest Department 20 percent before 1985, after that the Forest Department stopped supplies of gewa from the Sundarbans. Now villages supply 100 percent of the requirements. A few factories were closed down initially after the stoppage but all of them are now opened for operation.

The big advantage of match factories for getting raw material supply are their rivers locations. Match factories are well dispersed all over regions of the country. As a result raw material supply is not a serious problem to the factories because that may come from neighbouring districts.

Table 21 - Match Production, Value and RWE, 1980-1990

Year	Production (million gross box)	Value (Tk million)	Raw Material (m ³)
1980	9.3	214.36	77,825
1981	10.1	265.41	84,007
1982	11.8	370.47	98,670
1983	12.8	462.89	102,319
1984	12.1	399.89	100,470
1985	13.1	545.09	108,918
1986	13.6	643.80	113,134
1987	14.9	760.77	124,090
1988	13.8	656.83	114,592
1989	14.9	777.47	109,326
1990	11.3	790.50	114,767

Source: Statistical Year Book of Bangladesh, 1990 and 1991, BBS

2. Raw Material Usage

According to Aliff (1981) the usage of raw materials i.e. roundwood per unit of production is high, about 7.79 m³/ 1000 gross boxes. This is a very inefficient use of resources. Today because of high cost of material, the management of factories became cautious about the use of raw materials as well as interested in adopting innovative changes to save wastage. Some of the factories have already started using paper board for box cover and trays, saving about 20 - 25 percent of the wood consumption.

However, the Master Plan Study estimated the requirement of roundwood per 1,000 gross boxes at less than 4 m³. The demand projection shows less requirement of wood at higher volume of output which is about 51 percent of the forecast of previous studies made on the basis of such estimate. Raw material cost was estimated by Aliff (1981) as 18 percent of the total cost in 1980. This has increased to 22 percent in 1990.

3. Future Requirement of Raw Materials

The future demand for roundwood will remain the same or increase slightly with the increase in total production. This will happen because of awareness of the management on the one hand and switching towards paper board on the other. The improvements suggested in the Wood Processing Report (FMP 1992d) will reduce the demand for roundwood further.

The present situation of raw material markets is not comfortable for the producers. The future continuity of supply is suspected to be disrupted by the shortage. The industry mostly depend on naturally grown species of softwood. Because of high returns on investment in timbers like mahogany and sissoo, people today are not interested in plantation of soft species required by the industry, but rather go for better species.

The Forest Department along with Match factories should go for effective measures to grow the match wood in the country. The management should adopt improved technology to control the wastage and before during the actual processing. Initial water treatment may also help save the huge wastage of match logs.

4. Price of Raw Material

The price of softwood used in the match factories is cheapest of all species. But the price has been increased. In 1979-80 the per m³ mill gate price of simul was Tk 530 - 710 which is now Tk 1,400 - 1,600 in 1991. Kadam was Tk 880/m³ in 1980 and now it is Tk 1,950 - 2,120/m³. The traders and baparies carry the wood upto the mill gates mostly by waterways. Sarupkathi in Barisal and Chandpur are the big log markets for match wood in the south and eastern zones. From those markets the match factories of Dhaka city and around get their supplies. The owners of the woods in the village get approximately 50 percent of the mill gate price. Match factories in Chittagong get their raw materials from forest sources.

5. Market Demand

All matches produced in the country are sold locally, the demand has increased during last decade and production has gone back to the level of pre-liberation period. Because of comparative cost and advantage, Bangladesh may try for export market again. Management efficiency, drive and sincerity can make it possible.

Bangladesh selfsufficient in matches does not import any match. Recently, however, Indian matches are found in the city shops which are entered as illegal items.

6. Market Demand and Consumption

The demand and consumption of matches has increased at a rate of 5 percent each year and production and consumption has increased from 9.34 million gross boxes in 1980 to 14.86 million gross boxes in 1990.

Projection of demand shows that it will keep increasing in future with the population growth. The annual increment will be 2.85 percent up to 1998 and there after it will decline to 2.60 percent and continue up to year 2003. The demand projection and future requirement of match logs are presented in Table 22.

Table 22 - Demand Project for Matches upto 2013

Year	Population	Demand (Million Gross Boxes)	Raw Material (m ³)
1990	107.99	13.8	114,800
1993	112.01	15.6	62,500
1998	122.06	18.0	70,500
2003	132.12	20.3	79,600
2008	142.17	22.7	88,800
2013	152.23	25.0	98,000

Source: FMP (1992b)

7. Export Trade in Matches

Before 1971, Bangladesh used to export half of its matches to Pakistan. Because of management problems and absence of government policy the market was lost and until now no effort was made to regain the export market.

Domestic marketing channels follow the traditional chain of distribution from producer/sources to the wholesaler, from wholesaler to agent, and from agent to retailers and then to the ultimate consumers, the end-users.

FOREST PRODUCTS FOREIGN TRADE

General

Bangladesh is heavily dependent on imports both for meeting its basic necessities as well as for implementation of development projects. The country has always suffered from adverse balance of trade as well as balance of payments. The Government has envisaged various measures to boost exports of different commodities, traditional and new to narrow down the gap but virtually all efforts to that effect remained as wishful thinning.

The situation of trade balance in 1989-90 was Tk 51.2 billion deficit, while for the next financial year it was Tk 62.8 billion. The balance of payment gap is normally adjusted with the earnings of the expatriate workers working abroad. Import is growing very rapidly with the introduction of liberal import policy and through wage earners scheme. More and more commodities irrespective of their social desirability, are included in the import list every year.

On this backdrop the performance of foreign trade in wood and wood products can be examined. Foreign trade in forest products is not an exception to the general trend. Traditionally, Bangladesh exported some of its forest-based products to outside world and imported some others which she could not produce. Roundwood and sawn timber was never been in the regular trade list during 1960's. Among the new inclusions during 1970's were sawn timber, railway sleepers, electric poles and cross arms.

The inclusions were made as measures to protect local forests and environment degradation on the one hand and to continue the developmental works on the other. Because of the moratorium it was not possible to collect electric poles, cross arms, sleepers and other protection logs from the indigenous forests. As a result, organizations like REB, PDB and Railways had to import them. The imports in these sectors will continue to grow until the moratorium is withdrawn and local supplies made available. The performances of export and import will be examined separately in the following paragraphs.

Exports of Bangladesh

Bangladesh is an exporter of some wood-based products like newsprint, paper, handicraft, sawn timber, furniture and products of minor wood products. Teak was exported in the past. The export of forest and forest-based products can be identified separately as forest products and paper products. Newspaper and paper products are the major export items both in terms of volume and value rather than wood products. The export figures for last 15 years is presented in the Table 23 which explains the volume and value by items.

Bangladesh exports newsprint to Nepal and India. The export has gone upto 21 thousand metric tons during the late 1970's. Recently, the local demand for newsprint increased and exportable surplus has been reduced to 4,674 MT in 1989-90 and 7,874 MT in 1990-91. Bangladesh has been earning around Tk 200 million from the export of newsprint. The second largest export is paper and allied products. Wood and wood articles command the third position.

From Table 23 it is clear that quantities of export are diminishing yearly since 1987. The earnings from export are also declining from the same period. It was only Tk 191 million in 1990 in place of Tk 462 million in 1987.

Table 23 - Export of Wood and Wood-based Products of Bangladesh, 1976-1990

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Newspaper															
M. Ton	4980	7570	21300	20300	21410	16458	10542	9163	13984	18084	16022	18600	13899	7799	4674
Mill Tk	17.84	22.48	88.15	84.12	88.59	159.93	104.02	126.44	212.58	278.61	230.03	269.12	241.57	156.67	92.71
Paper & Allied Products															
M. Ton	16.38	22.08	41.87	20.32	63.73	28.40	39.45	11.03	39.87	41.65	51.23	125.66	161.62	128.86	33.62
Mill Tk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood & Article of Wood															
M. Ton	-	1.80	1.90	11.20	6.65	4.20	0.93	21.24	1.86	2.82	39.00	55.00	52.00	55.00	60.00
Mill Tk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bamboo/Broom															
M. Ton	1.87	3.57	4.13	5.74	5.68	20.20	23.37	20.49	28.47	17.96	11.89	12.29	3.24	8.46	5.00
Mill Tk	36.09	49.93	136.05	121.38	164.65	212.73	167.77	179.20	282.78	241.04	332.15	462.07	458.43	348.99	191.33
Total															

Source: Export from Bangladesh, 1972-73 to 1988-89, EPB
Foreign Trade Statistics of Bangladesh, 1979-80 to 1989-90, BBS
Statistical Year Book of Bangladesh, 1980, 1986, 1990 and 1991, BBS

Table 24 - Import of Wood and Wood-based Products in Bangladesh, 1977-1990

Commodity/Year	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
1. Paper & Paperboard														
M. Ton	14701	18245	18245	12276	14815	15563	8328	12091	7858	9634	10062	9340	23943	34088
Mill Tk	174.90	211.60	293.70	198.56	279.40	332.80	201.24	282.00	325.20	431.64	672.39	521.38	872.32	1197.56
i) Manufactured Products														
M. Ton	-	-	-	8303	14474	14366	7476	11129	5540	5726	5120	5803	20107	31461
Mill Tk	-	-	-	134.30	272.97	307.20	180.65	259.58	229.27	311.07	513.67	399.12	683.71	1069.81
ii) As primary Products for Consumer Goods														
M. Ton	-	-	-	3973	341	1197	825	962	2318	3908	4942	3537	3836	2627
Mill Tk	-	-	-	64.26	6.43	20.98	16.56	13.28	95.93	119.49	155.39	118.99	188.61	127.75
2. Wood Pulp & Fibrous Materials														
M. Ton	6226	6385	4942	7972	7371	7649	3536	25659	41157	26278	33970	17325	17546	21186
Mill Tk	62.70	64.30	54.30	65.97	77.42	82.35	50.79	314.30	478.13	346.77	541.31	292.21	384.00	472.57
3. Wood in Rough														
000 m ³	-	-	-	84.00	129.38	72.06	59.10	259.00	670.00	326.00	449.00	411.00	323.00	3936.00
Mill Tk	10.10	1.10	13.90	60.20	425.00	18.57	67.50	66.58	210.70	102.24	172.49	102.00	109.00	742.76
Total														
Mill Tk	247.70	277.00	361.90	324.73	781.82	433.72	319.53	662.88	1014.03	880.65	1386.19	915.59	1365.32	2412.89

Source: Foreign Trade Statistics of Bangladesh, 1979-80 to 1989-90, BBS
Statistical Year Book of Bangladesh, 1980, 1986, 1990 and 1991, BBS

Gradually, items of export are disappearing from the trade list. This is because of expansion of local demand, less production and lack of exportable surplus in recent years. Items like rayon, cellophane, hardboard, and plywood of regular list have recently disappeared.

Future of Export Trades

The future of export trade in wood and wood-based products does not show any promise until some new break-through is ventured. The major item, newsprint is losing importance because of increasing local demand. Supply of bamboo, cane and cane products is also decreasing yearly. Export markets may not be the major problem if availability of exportable surplus can be ensured.

A new possibility suggested by the Timber Merchant and Sawmill Owners Association can be examined. According to them the furniture export can be a viable alternative. Because of cheap labour, skilled carpenters and high adaptability to technology, the export of furniture, doors and windows can make a break-through in timber trade provided back-to-back facilities are available like the garment industry. In that case, timber will have to be imported for exports.

Another visible potential can be export of teak and teak furniture in near future. The Forest Department has planted 100,000 hectares of teak in the hill forests of Chittagong, and Chittagong Hill Tracts and Sylhet which are nearing maturity. The annual possible extraction will be 0.6 m³. Because of consumption pattern in Bangladesh this high valued product will be sold less in the local market. It can be suggested that export of finished products would be a better option for export. This will require government support to assist in training, financing and other assistance, but the main responsibility for development is better left to private industry.

Export markets exist for rattan products and woodwork as well. If the production and supply of cane and rattan is increased through development plantation then export can be increased too.

Imports

As mentioned earlier, the country depends on import of wood and wood products for implementation of several development projects as well as for consumption. Every year the volume of import is increasing along with new inclusion of items in the list. The major import items comprised of the wood products of primary, secondary and tertiary nature. The items of import can be categorised under the following:

- a. Roundlogs
- b. Split Wood
- c. Sawn Wood
- d. Veneer
- e. Plywood
- f. Particleboard
- g. Pulps of different category
- h. Papers - uncoated, coated, tissue papers, kraft, printing etc.

The imports of all the above items are increasing tremendously year by year. The imports of the major categories of wood and wood products are presented in Table 24. The table presents the major groups as paper and paper board, wood pulp and fibrous materials and wood in rough. The figure for 1990-91 was not available but it is suspected that total import for all items has increased from the year 1989-90.

From Table 24 it is clear that the import has increased several times during the last 10 years both in value and volume. The import of wood in rough started in 1980 and within last 10 years the volume has increased 400 times and 15 times in value in the year 1990.

Wood pulp is another important item of import which increased during the years 1984 - 1987 may be because of closure of SPPM for processing modification. After 1987, the import has declined to half. Paper and paper products were maintained a constant trend throughout those years but during the last two years it was at an all time high. Detail of imports for two years i.e. 1988-89 and 1989-90 is presented in Table 25.

Details of Import

Among the primary imports of forest products rounds logs for poles, posts, cross arms, sleepers, lumbers are prominent. The volume of primary imports was 329,000 m³ in 1988-89 which has increased to 798,000 m³ in 1989-90. In value term it was Tk 68.90 million in 1988-89 increasing to about 10 times higher at Tk 664.45 million in 1989-90. In both the years the imports for power sector was dominant.

Among the imports of tertiary products, pulp and paper imports are prominent. The pulps of different types was 17,547 MT in 1988-89 which was 21,902 MT in 1989-90. Among the woodpulp, the chemical woodpulp dissolving grade stands for 46 percent and soda/sulphate non-dissolving grade 28 percent and sulphate non-dissolving grade 22 percent. In value terms the pulps value was Tk 391 million in 1988-89 and Tk 472 million in 1989-90. The increasing import of pulps manifests the increasing demand for paper and paper products in the country. The paper mills under the private sector do not have the pulp unit and they have to depend on imported pulp more and more for their production operation. The future requirement of paper will increase greatly with successful future programmes of mass literacy.

The import of sawn wood was 3,718 m³ in 1989-90. Most of the sawn timber was imported by the private sector as a substitute for local timber from reserves. No import of sawn timber was recorded for the year 1988-89.

Regarding panel products, the import in 1988-89 was 415 m³ and was 318 m³ in 1989-90 among which densified boards are major. The import of plywood and particleboard is very small and negligible though the import of plywood has increased from 12 m³ to 58 m³.

The plywood factories as well as the particleboard factories under BFIDC have managed to continue their production programme in the face of difficulties of procuring raw materials. The rubberwoods destroyed by the 1991 cyclone provides them an opportunity to continue their production in 1991-92. Otherwise the import in this items would have been higher.

Paper and paper products are one of the major group of imports and comprised 17 different varieties of products. For convenience they can be group together in the following categories:

- a. Coated Paper and Paperboard
- b. Wooding Paper and Board
- c. Cigarette Paper
- d. Carbon Paper
- e. Newsprint
- f. Tissue Paper
- g. Kraft

Among the paper and board category, the import of uncoated was 13 percent, tissue 8 percent, kraft 2 percent, writing and printing 34 percent, cigarette paper 12 percent and remaining were other papers.

Table 25 - Recent Imports of Forest Products

Items	1988-89		1989-90	
	Volume (000 m ³)	Value (Tk Million)	Volume (000 m ³)	Value (Tk Million)
<u>Primary</u>				
Fuelwood				
Logs	.09	0.356	.09	0.389
Split Wood	298.8	68.136	7,966.61	573.596
	<u>.08</u>	<u>.412</u>	<u>10.21</u>	<u>90.474</u>
	298.97	68.904	7,976.91	664.459
<u>Secondary</u>				
Sawn Wood				
Veneer	-	-	3.72	-
Plywood	.03	.339	-	-
Particle	.01	.343	.06	2.169
Densified	.02	.435	-	-
	<u>.35</u>	<u>8.200</u>	<u>.32</u>	<u>9.482</u>
	<u>.41</u>	<u>9.317</u>	<u>4.10</u>	<u>12.320</u>
Total wood products	299.38	78.221	7,981.00	676.779
<u>Tertiary</u>	<u>MT</u>	<u>Tk million</u>	<u>MT</u>	<u>Tk million</u>
<u>Pulp</u>	27	.950	2,331	9.876
Mechanical	3,196	88.238	10,730	308.911
Dissolving	8,673	184.414	3,047	61.689
Sulphate	4,434	111.630	3,691	77.954
Sulphate	410	2.0160	0.6	0.022
Cotton Lintons	<u>807</u>	<u>4.598</u>	<u>2,094</u>	<u>14.055</u>
Waste Paper	17,547	391.846	21,902	472.507
<u>Paper</u>				
Uncoated Paper	4,605	116.737	7,195	155.023
Coated	2,415	53.915	1,883	50.871
Newsprint	2	.033	20	.342
Tissue	2,110	61.439	4,071	113.394
Kraft	554	9.661	1,889	33.81
Writing	1,406	67.173	9,425	299.649
Printing	4,811	177.285	1,048	155.182
Specialities	2,947	142.823	2,305	109.792
Cigarettes	15	1.052	23	<u>0.421</u>
Parchmas	<u>220</u>	<u>10.458</u>	<u>232</u>	<u>12.623</u>
Other	23,943	872.315	34,088	1197.545
Total Paper	17	1.089	0.8	.205
Free Board	41,507	1,265.25	55,991	1,670.257
Total Pulp & Paper		1,343.471		2,347.036
Total Forest Product		<u>21.849</u>		<u>65.854</u>
Unaccounted		1,365.320		2,412.890
Total				

Source: Foreign Trade Statistics of Bangladesh, 1988, 1990, and 1992, BBS

The import of paper and pulp in 1988-89 was 41,507 MT of which 23,960 MT was paper and paper products i.e. 57 percent and pulp of different type was 43 percent. The usual import of pulp and paper in 1989-90 was 55,991 MT of which 21,902 MT was pulp and 34,089 MT was paper the ratio being 40:60, a three percent increase in favour of paper and paper products.

In value terms the paper and pulp group stands at Tk 1,365 million in 1988-89 and Tk 2,412 million in 1989-90 of which ratio of pulp and papers was 29:71 in 1988-89 and 20:80 in 1989-90.

Government Regulations

Among the forest products, fuelwood and timber were initially restricted both for import and export. Later import was shifted to controlled category while export remained in the restricted list. The rate of import duty was fixed at 200 percent for import during 1985. At this stage there has been very little commercial imports. The import by the government for implementation of development projects was opened free of duties. In 1988, the government realised the importance of import to protect the fast deteriorating forests and environment. Consequently the import was liberalised by reducing customs duty to 100 percent of advalorem cost, from the previous 200 percent.

Because of recent worldwide concern of possible global warming and environment deterioration the Government, Bangladesh being a high risk country, promulgated, the moratorium on felling of trees in the reserved forest. Before that enforcement was once for sal forests. To make the regulation successful and provide alternative for supplies of forest products, the government has further liberalised the import of forest products. Duties and taxes were withdrawn, restrictions and controls on items were also removed. The imports of timber had a modest start in the financial year.

The provisions of liberalisation did not continue for long. In the following year, 10 percent import duty along with sale tax and other taxes were imposed. Imports became less profitable and as a result the private imports declined.

In 1991-92 the rate of duty was again raised to 20 percent alongwith imposition of 15 percent VAT. With the enforcement of this duty restriction, private imports was declined further to a stage of stoppage. The Timber Merchants Association was always against the imposition of duties on the argument to protect the local industries as well as the reserves. They took up a propaganda campaign for their cause. Ultimately, the government has been convinced to withdraw the VAT and reduce the duty to 7.5 percent of advalorem for raw logs, for the year 1991-92 and 1992-93 (see FMP, 1992a for more detail on import duty rates).

Impact of Trade Regulations

The reduction of national reserves and forest resources in Bangladesh is an outcome of long neglect of the government to undertake appropriate forest management and implementation of development programmes in the past. The government was more interested in collecting revenue from the forests rather than enriching them with new plantations. After the imposition of moratorium, the legal extraction from the reserves was stopped and market supply was affected and consumers suffered at the initial stage of enforcement, which has adversely affected the whole sector. However, some recovery occurred through the import of logs and sawnwood from abroad. In the meantime, Government has imposed duty restriction on imports pushing the prices up with local supplies becoming cheaper than imports. Illegal felling was rampant the moratorium could not be successful.

The impacts of moratorium and import restrictions on the economy can be summarised in the following points:

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- a. Forests could not be protected because of population pressure on the forest in the one hand and lack of proper enforcement of law on the other.
 - b. Market supply for logs and timber for private consumption for long was not affected very much.
 - c. Government has lost at least Tk 2.0 billion of revenue earnings from the forest during last three years.
 - d. Unplanned illegal cuttings have damaged the forests by indiscriminate uncontrolled felling of all trees, mature and immature.
 - e. The assessment of impacts on environment, wildlife and biodiversity is yet to be done. Costs of enrichment replacement plantations are also yet to be estimated.
 - f. Uneconomic operation of forest industries particularly BFIDC enterprises. Financial losses alongwith job curtailment and market loss for the industry and creation of market gap for imported and smuggled goods.

Policy Recommendations

- a. Import should continue to be liberalised so that price can be kept less than local price in the shortrun.
- b. Moratorium should be liberalised to extract overmature trees from the deep forest through selected fellings, so that government can get revenue and BFIDC get regular supplies.
- c. Import of timber and logs should be an interim arrangement which is to be restricted in the longrun. To this effect, large scale plantation of commercial species is to be undertaken.

Trade Policy and Strategy

1. Trade Policy

The existing trade policy relating to the import and export of forest products is consistent with the overall economic and forest conservation policy of the government. Immediate priority of protection and development of forests and reducing the pressures on forest resources through liberalised import and restricting export is well conceived.

The present huge imbalance between imports and exports of forest and forest-based products should thus be considered a short-term arrangement. In the longterm, attainment of selfsufficiency and even for export should be planned. Formulation of longterm strategy for trade and consumption of forest resources should be made. Before such an exercise, the following options should be clearly resolved:

- a. Whether the country should go for import for consumption or for re-export.
- b. Whether production should be aimed at domestic consumption or export or both.
- c. Whether production should be based on economic and commercial consideration or for conservation of biodiversity and environment.
- d. Whether the country should restrict consumption or emphasis on producing import substitutes.

e. Whether the objective is to attain selfsufficiency or surplus production. As mentioned earlier, the present crisis is the result of negligence and wrong policy of the government in the past. The demand for today could not be for seen in the past. As a result, the diversified demand of REB, PDB, paper industry and others commercial sectors have to depend on import for supplies. Large scale plantation of teak during last 30-40 years could not help supply increase to meet the present demand for various types of consumption.

The import figure shows that in 1989-90, electric poles, cross arms and anchor logs dominate the import trade. The imports of logs were 3.4 million m³ for those purposes which cost this country Tk 742 million in hard currency. The situation could be saved easily if the demand was properly assessed 20-25 years ago. The recent plantation of eucalyptus and other species suitable for poles are yet to mature. The harvest of poles and logs from thinning operation of teak plantation is also disappointing.

Though the demand for sawnwood and logs could be supplemented by imports, the fuelwood could not. Therefore, plantation of fuelwood and supply of cheap commercial energy should be emphasized.

Strategies

- a. Bangladesh cannot afford to pay the huge bills of import of timber and logs for a long time. Production for domestic consumption and import substitution should get priority. Production for export should get less preference after the import substitution.
- b. Pilferage and illegal fellings should be stopped at any cost even if it is harsh and punitive. The purpose of the law should not be defeated. Along with the strict enforcement of the law, selective felling should be allowed to harvest the over matured and centuries old trees in the deep forest which may go to waste if not collected.
- c. Bangladesh had been in the past and could be in the future selfsufficient in forest resources because of its natural endowment and fertility. Appropriate strategy should be formulated to do that. Instead of monoculture of the past, diversification of products and plantation should be accepted as appropriate technology to meet both demands in the market as well as diversity of the nature.
- d. Plantation species should match the industrial and commercial requirements of the country. In the case of plantation, research in local commercial varieties should give preference to those species passing the tests of time and nature. Further improvement of local commercial species should be the priority. The experiment with exotic and foreign species needs careful evaluation because of high risk and high investment. The example of experiment with *Acacia mangium* is a case in point. It does not mean discouraging the research and development efforts but trying to avoid the luxury of unnecessary, undirected research.
- e. Imports for re-export should be encouraged if found viable. The government should discuss the issue with the promoters of the idea and undertake experimental projects providing small incentives. If successful, this may have tremendous impact on creating jobs in the country along with serving commercial purposes.
- f. Production for consumption was not given emphasis in the past by the government. Large scale teak plantation is the testimony. The planners might have seen the high potentiality of export market for teak and teak products in the future. Teak comprised only of 10-15 percent of local demand. Teak is a long rotation and highrisk crop needing special care for

growth. Planted teak did not show good promise to the planters. Growth is slow and expected MAI is hard to achieve. It is assumed that no economic appraisal was done before undertaking such plantation programme. Other important commercial indigenous species programmes must recognize economic goals before selection and implementation. Production for export can only be done when the comparative advantage is higher.

- g. When teak availability increases greatly in the future, logs or timber should not be exported. The present restriction should continue in future for export of timber. Only processed products can be allowed for export which have more value added.
- h. Both conservation of biodiversity and production for consumption must go together. A resource poor country like Bangladesh can not afford to pay for conservation and imports at the same time.
- i. The growing demand for pulpwood, soft industrial wood and horticulture trees should also get priority in plantation programmes. Industrialisation for wood-based products also needs consideration in industrial policy of the government otherwise the import bills will increase tremendously.
- j. The exports of nonwood or minor forest products can easily be promoted within a short period of time. The gestation period is minimum for such products. What is required is coordinated and organized efforts for promotional activities. Import bills for medicinal herbs are increasing daily. The government should encourage the establishment of medicinal plant farms in the country in a commercial way so that imports could be eliminated.
- k. Finally, the village homestead plantation should be taken care of by the Forest Department and BFRI. Farmers should be motivated to increase their tree growing efforts.

DOMESTIC FOREST PRODUCTS POLICY

General

1. Fuelwood

Among the forest products the demand for fuelwood is the highest in terms of quantity and volume. About 65 percent of the wood consumed is fuelwood. The demand/supply gap is increasing daily. Plantation of fuelwood alone can not solve the problem even in the available fallow lands are planted with the fuelwood, An alternative energy supply is the viable solution to reduce the severity of demand. The commercial use of fuelwood for brickburning, road tarring should be strictly prohibited with proper enforcement, natural gas, a reasonably priced local substitute is readily available.

National energy policy should highlight the matter with serious consideration. Present price policy should be revised to enable participatory forestry to cover the cost of production. The rate of royalty at 12.5 percent seems low for participatory and other forests easily accessible by road.

2. Timber and Wood Utilisation Policy

Due to lack of appropriate policy for utilisation of timber and wood, the country had to suffer a huge wastage both in terms of recovery rate and longevity of products. If longevity of the products could be increased then it would have effect on market demand and conservation of forests.

To enhance the life and longevity of wood and wood products, wood treatment and proper seasoning are important and effective. The utilisation policy should incorporate the provisions of seasoning and treatment in the case of all government, semi-government and public sector consumption. Their consumption of wood should not be allowed until it is mechanically seasoned and chemically treated. Later on, this provision can be extended for all consumption small or big, private or public.

It is noticed that REB, PDB, BSEC and others have already made provision for wood treatment and seasoning for all of their timber consumption.

Establishment of treating and seasoning plants should be given consideration along with choice of technology, financing and import liberalisation. Manpower development and training should also get priority in this aspect.

Research for diversified use and increasing longevity should be extended to other forest products like bamboo, cane, rattan, hogla and golpata also.

Pricing Policy

Price determination is a complex process and normally considers the marketing objective of an organization. It becomes more difficult when the cost of production is unknown and products are essential. Mineral, forest and water resources are normally controlled by state monopoly. The timber market and pricing in Bangladesh falls under that category. Price determination by the Department is constrained by two sets of considerations - welfare of the consumer and competitions from imports. The features of price policy followed by the Department are discussed below.

1. Salient Features of Price Policies

- a. Although the Department enjoys the monopoly in several aspects of production, competition and marketing, the prices are not fixed with the monopolistic attitude of maximising profit. Prices are initially suggested by the respective Divisional Forest Officers (DFO) considering the quality, quantity, market demand, market price, logging cost, and transport for his own division. Then the headquarters along with the DFO and Ministry fixes the price for the Division or Consignment Schedule of rates for each product subject to variations. The prices are therefore not uniform for all divisions even for the same products. This reflects the market price and ability to pay by the consumers.
- b. Each DFO, identifies his products by categories and classify timbers according to the guidelines of the government and enlists all other products in his jurisdiction.

Commodity classifications for forest products usually followed are:

- Timber Logs
- Sawn Timber
- Poles and House posts
- Firewood
- Bamboo
- Grazing and Fodder
- Minor Forest Products
- Sand, clay, stones and shingles.
- Other miscellaneous products including fish and fish products

The prices are then proposed for each of the above items for approval. More than one alternative price is recommended subject to conditions of the products.

- a. Before determination of price the market is surveyed and the new price is proposed on the basis of existing market price as well as observed changes during auction prices of the last 10 years. Once approved by the Department and the Government, it becomes price for the year. The prices sometime are determined by consignments or lots. However, the Department and the government preserves all rights to approve or disapprove any proposed rate for the greater interest of the public.
- b. The general principles followed are fixation of rates for logs is done first, once the rate is fixed for the logs, then rates for sawn timber and poles are fixed. Normally, the prices of sawn timber is fixed double the rate of round logs. Poles and house posts command the same prices as round logs. Prices for fuelwood and other products are determined independently on the basis of past historical price trends. Veneer and plywood is charged 25 percent higher than the normal rates of logs.
- c. Two types of prices ie. spot prices and royalties, are practice in the Department. Spot price is the auction price which is determined for a particular auction through the competition among the buyers. All prices for private sector is determined following the auction price. Royalty is admissible for public sector industries, permit holders, local domestic consumers and for government consumption. The rates are normally fixed at 12.5 percent of the market price.
- d. The price or royalty for special class of timber like teak and mahogany is determined on a case to case basis and charged according to the merits of the case. Normally they command higher prices than other produces. Special class timber is never allowed at a concessional rate. A recent price circular can explain the position, Appendix 3.
- e. The prices of the wood-based industries under BFIDC and BCIC are determined jointly by the respective department and the government. The government may allow subsidies for some of the important products of public interest like newsprint.
- f. Price for other minor items are normally slow moving and once determined may continue for 10 years or above. 12.5 percent of market price is the general principle applied when the rate is first set.

2. Recommendations

- a. The existing practice of price determination seems workable for forest products other than logs. The royalty for logs at 12.5 percent of the market price is low in terms of present improved transportation network and higher market demand. This can be increased to 20 percent or more depending on the accessibility of the forests.
- b. If import price is kept higher than domestic price then it discourages imports and vice versa. The price mechanism should be such that both prices look similar to the customers. This can be done either by increasing local stumpage value or withdrawing existing duties and taxes from imports.
- c. The improved technology for high recovery should be imported under technology transfer schemes, which will help reduce the pressure on log supplies. When market demand declines the unapproved felling stops automatically.

- d. Regular supplies to confirmed operating BFIDC and BCIC enterprises need ensuring. Special plantation programme should be undertaken by them, if necessary. For the shortrun, BFIDC may think of import of timber for its enterprises on a trial basis. Industry, private or government should have control over its raw material supply.
- e. Public sector enterprises should undertake management efficiency programmes to achieve capacity production. Otherwise the cost of production will be high and they will continue to incur losses, even after paying concessional prices for raw materials.
- f. More forest industries need encouraging in the private sector to increase the income and employment in the country, even based on imported materials in the shortrun, re-export based industry can gradually shift to local materials in the longrun, once supplies became available.
- g. A market demand study needs carried out to assess the type of demand for furniture, fixture, panels and other items of industrial outputs. An information centre should be set up to promote the business of wood products by dissemination of proper information and technology.
- h. Commercial motive must be the prime consideration in any plantation, public or private. Rates of return on investment must be assessed before any investment is undertaken.
- i. Substitution of wood should be popularised by propaganda campaigns and price incentives for using steel, aluminium, plastic, cement etc. in place of timber, and gas, coal and oil in place of fuelwood.
- j. Forest products utilisation policy to be formulated to popularize the use of mechanically seasoned and chemically treated woods. The use of panels in lieu of solid wood also should be popularized.
- k. Strengthening the Timber Merchant Association to look after the interest of the timber business in the private sector. Their cooperation and help is essential to save the forest resources of the country and implementation of all other programmes of the government in case of forestry and environment.

APPENDIX 1
ABBREVIATIONS, TERMS AND CONVERSION FACTORS

PROJECT 372001/14
FORESTRY MASTER PLAN,
BANGLADESH (TA NO.1355-BAN)

ASIAN DEVELOPMENT BANK
MANILA PHILIPPINES
DATE: DECEMBER 1992

MARKETING

APPENDIX 1

ABBREVIATIONS, TERMS AND CONVERSION FACTORS

ADB	- Asian Development Bank
BBS	- Bangladesh Bureau of Statistics
BCIC	- Bangladesh Chemical Industries Corporation
BFIDC	- Bangladesh Forest Industries Development Corporation
BMRE	- Balancing, Modernisation, Renovation and Expansion
BSEC	- Bangladesh Steel and Engineering Corporation
CBM	- Chittagong Board Mills
CHT	- Chittagong Hill Tracts
DFO	- Divisional Forest Officer
EPB	- Export Promotion Bureau
FAO	- Food and Agriculture Organization of the United Nations
FPMP	- Forestry Master Plan Project
FRI	- Forest Research Institute
GB	- Gross Boxes
KHBM	- Khulna Hard Board Mills
KPM	- Karnafuli Paper Mills
KRC	- Karnafuli Ryon Complex
MAI	- Mean Annual Increment
MIS	- Management Information System
NBPM	- North Bengal Paper Mill
NGO	- Non Government Organization
PBVP	- Particle Board and Veneer Plant
PDB	- Power Development Board
REB	- Rural Electrification Board
SPBM	- Star Particle Board Mills
SPPM	- Sylhet Paper and Pulp Mills
SVPP	- Sangu Valley Plywood Plant
USA	- United States of America
USF	- Unclassed State Forest
VAT	- Value Added Tax

APPENDIX 2
TERMS OF REFERENCE

PROJECT 372001/14
FORESTRY MASTER PLAN,
BANGLADESH (TA NO.1355-BAN)

ASIAN DEVELOPMENT BANK
MANILA PHILIPPINES
DATE: DECEMBER 1992

MARKETING

APPENDIX 2
TERMS OF REFERENCE

- a. Review and assess the existing marketing patterns for major forest products and determine the pricing structures;
- b. Examine imports and exports of forest products and evaluate the impact on the country's economy;
- c. Review Government policy, legislation and regulations regarding forest product imports and exports. Assess their impact on the economy and recommend a programme of reforms if necessary; and
- d. Prepare a marketing strategy for forest products in Bangladesh.

APPENDIX 3
FOREST PRODUCE ROYALTIES

PROJECT 372001/14
FORESTRY MASTER PLAN,
BANGLADESH (TA NO.1355-BAN)

MARKETING

APPENDIX 3
FOREST PRODUCE ROYALTIES

ASIAN DEVELOPMENT BANK
MANILA PHILIPPINES
DATE: DECEMBER 1992

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1. **SCHEDULE OF RATES, SUNDARBAN FOREST**
 1a. **Revised Schedule of Rates of Firewood/Timber/Other Forest Products of the Sundarban Forest, 1989**

Sl. No.	Fuelwood & other Produces	Existing Rates of Royalties (Tk)	Present Market Rates (Tk)	Proposed Rates of Royalties (Tk)	Remarks
1.	Sundri & Kakra per 100 mds	500	5,000	600	Proposed rate is 12.5% of the market price
2.	Bachhai Goran per 100 mds	500	4,500	560	- do -
3.	Bhadi Goran per 100 mds	400	4,000	500	- do -
4.	Keora, Dhundul and Bain per 100 mds	300	3,000	375	- do -
5.	Amur and Kripa per 100 mds	300	3,500	440	- do -
6.	Gewa per 100 mds	200	2,700	300	- do -
7.	Baula, Jeer, Vaila & others per 100 mds	250	3,000	315	- do -
8.	Jhana per 100 mds	300	3,500	440	- do -
9.	Branches and Twings (Sundri, Kakra etc.) per 100 mds	300	3,500	440	- do -
10.	a. Golpata per 100 mds b. Golpata per 80 pc.	200 5	3,000 45	375 6	- do -
11.	Refined was per md.	200	2,700	340	- do -
12.	Unrefined wax per md.	60	1,600	200	- do -
13.	Honey per md.	30	1,300	160	- do -
14.	Shell per 100 md.	50	1,500	185	- do -
15.	Reed and Mahiagrass per 100 md.	20	220	30	- do -
16.	Sungrass and other grasses per 100 md.	30	1,000	125	- do -
17.	a. Hental per 100 md. b. Hental 1 pc. c. Goran 1 pc.	100 10 1	1,500 5 5	185 1/25 1/25	- do -
18.	<u>Fish:</u>				
	a. Any fish other than Hilsha and shrimp per md.	30	700	85	- do -
	b. Hilsha fish per md.	50	600	75	- do -
	c. Dried fish per md.	30	1,200	150	- do -
	d. Shrimps/prones/loles ter per md.	120	4,000	500	- do -
	e. Small shrimps	45	480	60	- do -

1b.

Government of the People's Republic of Bangladesh
Ministry of Forestry and Environment
Section - 2

Date: 24.10.1990 AD
08.07.1397B Yr

No. Sha-2/PBM-191/90/681

Subject: Revised Schedule of Rates/Royalty Rates for Produces of the Sundarban Forest.

A joint meeting attended by the officials of this Ministry, the Directorate of Forest and other concerned departments was held on 10-09-1990 in this Ministry to consider the revised schedule of Rates of Royalties for some produces of the Sundarban forest. In that meeting it was decided that the following rates of royalties are refixed for the produces of the Sundarban forest until further order considering and reviewing the proposals for revision placed earlier.

Vide Memo No. NA-1/BAN/(Mise)-69/88/(20/795) dated 07.08.1990

Sl. No.	<u>Produces</u>	<u>Schedule of Rates (Tk)</u>
1.	Any fish other than Hilsha and Shrimps (per mound)	50.00
2.	Hilsha fish (per mound)	75.00
3.	Dried fish (per mound)	65.00
4.	Shrimps/ Prones/ Lobster (per mound)	300.00
5.	Small shrimps (per mound)	50.00
6.	Golpata (100 mds)	300.00
7.	Refined wax (per mound)	150.00
8.	Unrefined wax (per mound)	100.00
9.	Shells (100 mounds)	100.00
10.	Honey (per mounds)	60.00
11.	Sungrass/ other grass (100 mounds)	

By Order of the
President

(M. Azizul Huq)
Additional Secretary In-charge

This schedule is approved considering the proposals made in 1989, in the preceding page.

2. STATE OWNED CORPORATION RECENT PRICES

2a. Government of the People's Republic of Bangladesh
Department of Forest
Banabhaban, Gulshan Road, Mohakhali, Dhaka-1212

Memo No. Dev-205/92/771

Date: 12.08.1992 AD
28.04.1399 B. Yr

The Secretary
Bangladesh Secretariat
Dhaka

Sub: Fixation of Royalties for different organization/corporations.

Ref: PBM-PAKO/FRMP/BAN(10)/92-93/part/582 dated 20.07.1992 AD/05.04.1399 B.Yr.

The Government of Bangladesh decided to fix-up royalties for different forest products required by different corporations as raw materials on the basis of going market rates. The government has decided the following rates of royalties for forest products supplied to the corporations.

Sl. No.	Item of Forest Products	Market Price		Royalties for BCIC Tk	Royalties other organization Tk
		Estimated Tk	Actual Tk		
1.	Gewa (per cft.)	15.00	-	15.00	-
2.	Albezia falcateraria (per cft.)	15.00	-	15.00	-
3.	Pulpwood for KPM (per cft.)	15.00	-	15.00	-
4.	Bamboo for SPPM (per 1000 Nos.)	-	3790.00	3790.00	-
5.	Bamboo for KPM (per 1000 Nos.)	-	400.00	400.00	-
6.	Sundri Poles for BFIDC (per cft. of 25-30 long)	-	156.00	-	156.00
7.	Sundri poles for BFIDC (per cft.) above 30 feet long	-	164.00	-	164.00
8.	Timber collected by BFIDC, (per cft.)	45.00	-	-	45.00
	A-Class	56.00	-	-	56.00

As per requirement of the above reference the undersigned is directed to inform you the above rates.

AKM Fazlul Haque, DCF
Development and Planning
Department of Forest
Bangladesh.

(N.B. Translated from Bengali version).

(Proj. 372001/14, App. 3)

3. DEPOT AUCTION NOTICE

3a.

Government of the People's Republic of Bangladesh
Office of the Divisional Forest Officer
Dhaka Forest Division
Banabhaban, Gulshan Road
Mohakhali, Dhaka-1212

Auction Sale Notice

Date: 22.11.1992

This sale notice is served to inform members of the public that an open auction is going to be held to sale the confiscated and extracted forest products in 'as and where' condition in accordance with terms of following schedule. The interested persons/ parties are requested to inspect the products any day before the auction. Any complain arises due to non-inspection may not be entertained after the auction is over.

SCHEDULE

Sl No.	Range	Place of Auction	Quantity of Forest products to be sold	Date and time of Auction
1.	Dhaka Sadar Range	Auditorium of Banabhaban, 6th floor, Mohakhali, Dhaka-1212	Timber (Misc.)=27375 cft. Gazari Poles (Ballah)=629 unit Fuelwood = 952 cft.	5.12.92 Saturday at 10:00 a.m.
2.	Sreepur Range	Range Office, Sreepur	Timber (Misc.)=1600 cft. Gazari Poles(Ballah)=4382 unit Fuelwood = 5336 cft.	6.12.92 & 7.12.92 Sunday & Monday at 10:00 a.m.
3.	Kaliakoir Range	Range Office, Kaliakoir, Chandra, Dhaka	Timber (Misc.)= 604 cft. Gazari Poles (Ballah)=570 unit Fuelwood = 5313 cft.	6.12.92 Sunday at 10:00 a.m.
4.	Kachighata Range	Range Office, Kachighata	Timber (Misc.)= 50 cft. Gazari Poles (Ballah)=155 unit Fuelwood = 3809 cft.	8.12.92 Tuesday at 10:00 a.m.
5.	Rajendrapur Range	Range Office, Rajendrapur	Timber (Misc.)=3000 cft. Gazari Poles(Ballah)=1000 unit Fuelwood = 3000 cft.	7.12.92 & 8.12.92 Monday & Tuesday at 10:00 a.m.

Terms of Auction

- Interested persons/ parties wanted to take part in the auction may inspect the saleable forest products by making contact with the respective range officers before the bid is opened. No complain will be entertained after the auction is over.
- Interested persons are required to pay an earnest money of Tk 1,000.00 (Taka One thousand) only to the DFO through Postal Order/ Bank Draft/ Treasury Chalan in RD head. The original copy of the Bank Draft/ Chalan, etc. to be submitted to the Auction Officers. No person will be allowed to participate in bidding without showing the certificate of money deposit. In unavoidable cases Auction Officers may accept cash for security. However, no cash will be refunded in the spot of auction.
- Auction Officer reserves the right to accept or reject any bid higher or lower. He is not liable to show cause to any bidder for his decision.
- The successful bidders have to pay whole amount of bid money in cash on the spot.

- e. Successful bidders have to take possession of the auctioned produces immediately after the bid is over and those should be removed within 7 days from the government depot after proper marking. If the buyers fail to remove the sold out products within one month, a delay charge/ demurrage will be realised @ 1 percent of the sale price for each day. All timbers should be marked within 7 days.
- f. Liability of the security of goods will lie with the purchasers soon after the bid is over. Government will not be liable for any theft and pilferage of the sold timber.
- g. The Auction Officer reserves the right to include or exclude any lots from the auction in case of emergency.
- h. Sawing, logging or chipping of auctioned timber for convenience of transport will required written permission from the DFO. Otherwise removal of timber will not be allowed. Legal action may proceed against those who violated the provision.
- i. The auction beyond the amount of Tk 50,000.00 (Taka Fifty thousand only) will be executed subject to the approval of the higher authority.
- j. The Auction Officer reserves the right to accept or reject the offer/ bid of those who have previous dues unsettled with the department or are defaulters for any reasons of illegal extraction of forest products or against whom legal suits are lodged by the department.
- k. The DFO or his approved forest officer responsible for conducting auction may change, shift or extend the date of auction or adjourn the sale in case of emergency.
- l. No lot will be sold to more than one person/ party but one person/ party can buy more than one lots, if he wishes.
- m. Compensation will be realised from the buyers for any damage done to the forest, road or infrastructure during the removal of sold products.
- n. The Auction Officer responsible for auction reserves the right to make correction in this schedule for printing or other mistakes.
- o. Before removal of the auctioned lots they are got be sold marked by the range officer. If necessary Transit Pass to be collected. Transit pass should be collected from the DFO incase inter-district movements.
- p. The buyers have to pay the income tax @ 3 percent fixed on sale proceeds.

Sd/-
Abdul Mottaleb
DFO, Dhaka Forest Division

(N.B. Translated from Bangla version).

4. PRICE SCHEDULE FOR ALL FOREST PRODUCTS, SYLHET

4a.

Government of the People's Republic of Bangladesh
Forest Department (Sylhet Division)

Schedule of conditions and rates for the removal of Forest produce from (i) Reserved Forests and (ii) Unclassed State Forests and similar other Government lands of the Sylhet Collectorate. Approved by Government vide G.O.No.XX/For-41/80/147 dated 11.3.81.

To be Enforced with effect from the date of publication of the Bangladesh Gazette.

DEFINITIONS

Forest produce includes:

- a. The following, whether found in or brought from a Forest or not:
Timber, Charcoal, India-rubber, Wood-oil, resin, natural varnish, bark and myrobalans, and
- b. The following when found in or brought from a Forests:
 - (i) Trees and leaves, flowers and fruits and all other parts or produce of trees not herein before mentioned.
 - (ii) Plants not being trees (including grass, creepers, reeds and moss) and all parts and produce of plants.
 - (iii) Wild animals and skins, tusks, horns, bones, silk, cocoons, honey and wax and all parts and produce of animals.
 - (iv) Peat, surface soil, rock and minerals (including limestone, laterite, mineral oils and all products of mines and quarries vide section 2 of the Forests Act).
- c. Tree - includes palms, bamboos, stumps, brush-wood and canes.
- d. Timber - includes trees when they have fallen or have been felled and all wood, whether cut up, or fashioned or hollowed out for any purpose or not.
Log - A piece of wood in the round 3 feet and over in girth at the larger end and over 4 feet in length.
Poles or House post - A piece of wood in the round, below 3 feet, above 1 foot in girth at the larger end.
Scantling - Sawn timber.
Firewood - Timber or branch wood under 6 feet in length unsuitable owing to hollowness, crookedness or other defect, for conversion into scantling and suitable for use as fuel only.
Dug-out - A boat formed from hollowed out log.
Gail Bakth - Parts of agricultural implements.
Dhaki - Husking paddy.
Kund - Small dug-out for watering paddy field.
Ish, Baitha, Langal - Plough parts.
Jaith - Oil mill (Ghanny) parts.

STATEMENT SHOWING REVISED SCHEDULE OF RATES OF ROYALTIES

TIMBER

- Class A - Sal, Cham, Gamari, Jarul, Bholia, Bonsum, Nageswar, Sundri, Rata, Champa, Chapalish & Garjan.
Class B - Dhaki Jam, Silkorai, Gondori, Hotia, Hallock, Pakashaj, Kathal & Chalmugra.
Class C - Other Jam, Karai, Urium, Kurta, Sonalu, Morai, Poma (Cedrela speices) Hollong, Khokan, Haritaki, Augles, Kayangula, Telo (Calapyllus polyanthas), Simul, Kawatuti, Texia (Cinnomomum obtusi folum).
Class D - All other speices.
Special Class - Teak, Mahogany, Pynkado and other high Class hard Wood species.

RATE PER CUBIC FOOT

REMARKS

1. LOGS

Class - A	Tk 12.00
Class - B	Tk 8.00
Class - C	Tk 6.00
Class - D	Tk 4.00

Trees can only be cut from Forests with the special permission of the competent authority.

Rate for special Class timber will be fixed by the Conservator of Forests, Central Circle, Dhaka for time to time keeping in conformity with the market price.

N.B. Cubic contents of logs will be determined by quarter-girth measurement in force.

RATE PER CUBIC FOOT

REMARKS

2. SAWN TIMBER

Class - A	Tk 24.00
Class - B	Tk 16.00
Class - C	Tk 12.00
Class - D	Tk 8.00

No sawing is permissible in the Forest without the special permission of the Divisional Forest Officer

3. Poles or House posts

(i) Upto 2 feet in girth at the larger end.

RATE PER RUNNING FOOT

<u>CLASS</u>	
A & B	Tk 2.00
C & D	Tk 1.00

(ii) Below 2 feet in girth at the larger end.

RATE PER RUNNING FOOT

<u>CLASS</u>	
A & B	Tk 1.50
C & D	Tk 0.75

4. Fire wood-dry

(i)	Shoulder load to be removed only once a day for one month.	Tk 10.00	
(ii)	In billets of less than 3 feet in girth	Tk 1.00	per stacked cft.
(iii)	Green firewood from open coupe.	Tk 1.00	per stacked cft.

5. Agriculture Implements

(i)	Bakath, Gail of all species (each)	Tk 0.60
(ii)	Baitha, Gail (each)	Tk 0.50
(iii)	Kunda Gail (each)	Tk 2.50
(iv)	Plough parts Gail (each)	Tk 0.60
(v)	Dekhi (Gail) each	Tk 2.50
(vi)	Jaith Gail each	Tk 0.50

6. Charcoal per mds. Tk 4.00

7. Dug-outs

Pass for extraction of dug-outs will only be issued with the special permission of the Divisional Forest Officer in each case Royalty will be realised at rate per logs under timber on measurement taken before consideration.

8. (a) Schedule of Rates of Bamboos in Number

Bariala	Tk 60.00	
Bhaluka Barua/Jai.	Tk 60.00	Per 100 Nos.
Jari Mirtinga	Tk 40.00	" " "
Mule	Tk 25.00	" " "
Hill Jari Bajali	Tk 20.00	" " "
Make pecha	Tk 20.00	" " "
Dalu	Tk 40.00	" " "
Muli	Tk 40.00	" " "

Remarks

(b)	Luli not exceeding	25 Nos. per load per day	
	Jari Mirtinga	10 " " " " "	Tk 6.00
	Make pecha	10 " " " " "	Tk 3.00
	Dalu	10 " " " " "	Tk 2.00
	Bajali	100 " " " " "	Tk 3.00
	Rupai or khang	10 " " " " "	Tk 2.00
(c)	For Raghunandan Hills, Satgaon, Dinarpur Hills & Bhattara Baramchal.		
	Per shoulder load per day Tk 1.00 irrespective of species but not exceeding the following nos. per load per day.		
	Muli	....	Tk 3.00
	Mirtinga	25 Nos.	
	Barali	20 Nos.	
	Rupaioorkhang	100 Nos.	
(d)	For west Bhanugach, Belashcherra, Longlicherra, Taraf Hill and addition to Taraf Hills:		
	Muli not exceeding	....	25 Nos. Tk 5.00
	Mirtinga not exceeding	....	10 Nos. Tk 2.00
	Bajali not exceeding	....	75 Nos. Tk 3.00
	Rupaioorkhang not exceeding	....	10 Nos. Tk 3.00
(e)	For home consumption only in areas other than Raghunandan, Satgaon, Dinajpur & Bhattara & Baramchal. Tk 0.75 per shoulder load per day irrespective of species but no transit pass will be issued and no other kind of movement except on shoulder & not beyond 5 miles border of the Forest Tk 2.00.		
9.	(a)	Sungrass or thatching grass per 100 bundles	
		Bundle of 2' - 0 girth	Tk 15.00
		Bundle of 4" diameter	Tk 10.00
		Bundle of 2'-9" diameter (Binna san)	Tk 3.00
	(b)	2 Boundless of 4'-6" girth or per Bhar to be carried on shoulder.	
		5'-0" girth	Tk 1.00
10.	Cane 4" diameter rate per 100 rft.		
	(i)	Sundri, Tita	Tk 2.00
	(ii)	Jali, Raidenge Honks, Horma Jalla	Tk 2.00
	(iii)	Legarle	Tk 0.50
11.	Ekra & other reeds-rate per 100 blds. Tk 4.00		
12.	Ekra & other reeds-bundles of 18" girth or less Tk 40.00		
13.	Boulder rate per 100 cft. Tk 40.00		
14.	Gravel broken stone or shingle per 100 cft. Tk 40.00		
15.	Gilan stone per 100 cft. Tk 12.00		
16.	Sand per 100 cft. Tk 40.00		
17.	Silica sand 100 cft. Tk 40.00		
18.	Squared stone per 100 cft. Tk 30.00		
19.	While stone Tk 50.00		
20.	Lime stone per 100 mds.		
20.	Fishing		
	No fishing is allowed in the R.F. without the special permission from the Divisional Forest Officer.		
			Tk 5.00
	For one day	....	Tk 50.00
	For one month	....
21.	Grazing		
	No grazing of cattle is allowed in the reserved Forests without the Divisional Forest Officer's written permission except controlled grazing in the grazing reserves:		
			Tk 5.00
	FEES		Tk 1.00
	(i)	Buffaloes	Tk 100.00
	(ii)	Cattle	half rate.
	(iii)	Elephants	
		Elephants calves upto the age of 2 years	
22.	Agar wood Tk 250.00		
	(i)	Agar proper	Tk 100.00
	(ii)	Kalagachi Agar	Tk 25.00
	(iii)	Dom Agar	

Honey - per maund.
Wax (crude)
Murta

Miscellaneous
Tk 25.00
Tk 50.00
Tk 10.00

per thousand Nos.

(While the murtas are in a form of 'Beti' the relationship should be 5000 Nos. of whole murta to one bundle of 'Beti' of 25 paties of 2 bundles or Holai).

		<u>Rate</u>
Pan	per kori (1200 leaves)	Tk 5.00
Creepers	per bundle	Tk 1.00
Haritaki fruit	per md. of basket load	Tk 2.00
Amlaki	per md. of basket load	Tk 2.00
Sutamul	per md. of basket load	Tk 2.00
Bohera leaves	-	Tk 10.00
Green	per mds.	Tk 35.00
Dry	per mds.	Tk 2.00
Bohera fruits	per mds.	Tk 10.00
Tejpata	per mds.	Tk 2.00
Patidal	per thousand	Tk 20.00
Fish	per mds.	Tk 20.00
Kumble leaves	Green per mds.	Tk 1.00
Sugar cane	per mds.	

(one tin of 'Gurh' is equivalent to 16 mds. of sugar cane).

23. Forest import duty is to be realised at 25 percent of the schedules royalty on all the produces coming from outside Bangladesh.
24. The rates of all Forest produces not listed above will be fixed at 12½ percent advalorem by the Divisional Forest Officer in consultation with the Conservator of Forests of the Circle.

A - 3581

কর্তৃপক্ষ
বন অধিদপ্তর 20.1.93
সচিবালয় - ঢাকা

কর্তৃপক্ষ
বন অধিদপ্তর
সচিবালয় - ঢাকা

**APPENDIX 4
REFERENCES**

PROJECT 372001/14
FORESTRY MASTER PLAN,
BANGLADESH (TA NO.1355-BAN)

ASIAN DEVELOPMENT BANK
MANILA PHILIPPINES
DATE: DECEMBER 1992

MARKETING

APPENDIX 4
REFERENCES

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