PRESENT AND FUTURE WOOD CONSUMPTION FOR PLYWOOD INDUSTRY IN PAKISTAN

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Summary

When Pakistan was created in 1947 hardly any plywood industry existed. An effort was made to develop this particular end use only as late as 1960. Currently ten units are working in different parts of the country. Out of these seven units are running below their installed capacity due to non-availability of suitable raw material in required quantity. The requisite data could not be had from the other three units as the owners were not prepared to give requisite information. The surveyed units are producing 428,000 sq. meter of plywood annually. The production cost per sq. meter is Rs. 45 and the whole sale selling price is Rs. 50 leaving a very nominal profit margin of Rs. 5 per sq.m. The current annual consumption of wood is around 70,000 m^3; the projected demand of round-wood for the years 1990, 1995 and 2000 is 107,000, 144,000 and 180,000 m^3 respectively.

Introduction

Rotary cutting is the most frequently used process to slice logs into veneers. Big logs with minimum diameter of 122 cm are peeled down to 0.5 mm core which can be later utilized for other purposes. The thickness of veneer sheets varies from 0.5 mm to 5.0 mm. These sheets are sized, dried, glued, assembled, pressed and trimmed; 1.22 x 2.44 m is the most common commercial size used in the country.

Considerable shortage of wood and wood products resulted in establishment of veneer based wood industries. A major portion of the wood is consumed as fuel in solid form for cooking and other purposes. The gestation period to have desired size of tree for veneer industry is much more than that for the size required for the production of fuelwood or other wood based industries.

In 1982–83 wood production from state forests was 225 thousand m^3, while 1320 thousand m^3 were obtained from farm or wastelands. 195 thousand m^3 were imported in round and sawn form to meet the requirement of wood based industries in the same year. To supplement the demand for composite wood, 3.4 thousand tonnes were imported in the year under report. Details of timber consumption trends for 1982–83 are given in the Table 1 and 2.

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Table 1: Timber consumption in Pakistan during 1982—83.

Source	Volume (000 m^3)	Percentage (%)
1. Forests	225	10.2
2. Imports	664	30.1
— Timber round+ Sawnwood based Panel, paper panel wood (round wood equivalents)		
3. Farm-land+Wastland (by difference)	1320	59.7
Total	2209	100.00

Source: PFI The State of Forestry in Pakistan 1982—83.

Table 2: Imports of wood and wood products 1982—83.

Item	Unit	Quantity 1981—82	Quantity 1982—83
1. Timber round and sawn	m^3	114,020	195,975
2. Veneer, Plywood wood manufacturer etc.	Tonnes	1,539	3,379
3. Pulp and paper	Tonnes	129,976	142,862

Source: PFI the State of Forestry in Pakistan 1982—83.

There are 10 plywood industries at present operating in the country which besides plywood also make flush doors, block board and veneer. The year-wise production of plywood from 1975—76 to 1978—79 is given in Table 3.

Table 3: Production of plywood in Pakistan

Year	Production (000 sq.m)
1975–76	435.8
1976–77	715.9
1977–78	728.8
1978–79	710.3

Source: PFI The State of Forestry in Pakistan 1982–83.

Objective of the study:

To estimate the present consumption and future demand of wood for plywood industry.

Methodology

There are 10 plywood manufacturing units in the country. Since the number was small, it was therefore decided to visit all units for the collection fo relevant data. Out of these only 7 units supplied the requisite information and the remaining 3 units were approached but were reluctant to reveal the requisite data due to unknown reasons.

Data collection and Analysis

The total installed capacity of plywood production from 7 units which were surveyed in 1244,000 sq m on single shift basis. Four units are operating on two shift basis while the remaining 3 units operate on single shift basis. The annual timber consumption has been estimated at 56 thousand m^3, out of which 20.5 thousand m^3 are required only for plywood production. The total timber requirement assessed above includes domestic as well as imported raw material; 14.7 thousand m^3 were procured locally and 5.8 thousand m^3 were imported during the year 1982–83. The bulk of imported wood comes from South East Asian countries. The following local and Exotic species are preferred for manufacturing of plywood.

Locally available	Price at factory gate (Rs./m^3)
Dalbergia sissoo (Shisham)	4,400
Mangifera indica (mango)	5,000

Locally available	Price at factory gate (Rs./m^3)
Salmalia malabarica (Semal)	1,700
Cedrus deodara (Deodar)	1,600
Exotics through imports	
Tectona grandis (Teak)	2,600
Dipterocarpus tarbinatus (Gurjan)	4,500

The actual plywood production of the surveyed units comes to 428 thousand sq. m., out of which flush door blockboard and veneer was 213,000, 193,000 and 22,000 sq. m. respectively. The average cost of production for plywood has been estimated as Rs. 45 per sq. m. whereas it was selling at Rs. 50 per sq. m, during 1982–83. The total employment generated by the surveyed units has been estimated about 500 persons annually. The working days turned out to be about 300 per annum. Thus 150 thousand man-days are required to keep present level of production every year. The particulars of surveyed units are given in appendix-I.

Results

The annual actual consumption of wood is given below:

X (Year)	Y (Wood consumption) 000 m^3
1979	27.00
1980	34.36
1981	41.64
1982	48.64
1983	56.20

To forecast the future requirement a linear regression was used as follows:

$$Y = A + BX$$

Where Y = Wood consumption

X = Year

The regression equation developed from the above model is:

$$Y = 19.8 + 7.28\,X$$

Future consumption based upon the above regression equation is as under:

X (Year)	Y (Wood consumption) 000 m^3)
1984	63.50
1985	70.70
1986	78.00
1987	85.03
1988	92.60
1989	99.80
1990	107.16
1991	114.14
1992	121.72
1993	129.00
1994	136.30
1995	143.56
1996	150.84
1997	158.12
1998	165.40
1999	172.68
2000	180.00

Observations and recommendation

The factories are not running at full installed capacity due to non availability of the raw material, both in quantity as well as quality. The forest departments may, therefore, not only raise the desired species on larger areas but also ought to increase the rotation age to get proper sized logs. Special silvicultural measures should also be taken to step up the rate of growth. Since the costliest wood is that of mango, forest departments should start regular plantations of this species.

Farmlands are contributing bulk of raw material to the plywood industry. The marketing system is not satisfactory and it is difficult for the consumer to approach each and every farmer. It is highly desirable that integerated marketing system may be developed for the benefit of producer as well as the consumer.

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Appendix I

Particulars of surveyed plywood industries 1983

Sl. No.	Name of Unit	Annual Installed compacity per shift of 8 hours. (000 sq. meters)	No. of shifts operated per day	Plywood (sq. meter)	Flush doors (sq. meter)	Block board sq. meter)	Veneer (sq. meter)	Annual[1] timber consumption m^3	Annual[2] timber requirements m^3	No. of workers
1.	Kashmir Development corporation	250	1	60,801	—	—	15,598	14,020	1,693	55
2.	National plywood Industries	232	1	78,996	5,576	—	—	3,300	4,200	67
3.	Oosman Brothers	320	2	166,000	195,000	180,000	—	3,275	4,200	82
4.	Sterling plywood Industries	14	2	11,617	11,800	12,732	—	29,300	3,600	114
5.	Sadiq plywood	140	1	37,011	—	—	—	807	850	40
6.	Shalimar plywood	241	2	46,012	—	—	—	2,708	2,800	75
7.	Lyallpur plywood	47	2	27,881	1,115	—	6,505	2,793	3,200	48
		1244		*428,318	213,491	192,723	22,103	56,200	20,543	481

1. It indicates the wood actually consumed in plywood, blockboard, veneer and flush doors manufacturing.
2. It indicates the quantity of timber required for plywood manufacturing on full capacity shift basis. It excludes the wood required for blockboard, veneered timber & flush doors.

* Approximate value at Rs. 1866 million.