

WOOD CONSUMPTION FOR SPORTS GOODS INDUSTRY IN SIALKOT

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Summary

Sialkot became the world centre for the production of sports goods in the early 20th century. Raw material was available from Kashmir and irrigated plantations of the Punjab. Presently, 250 manufacturing units are engaged in production of sports goods; 50 units working on large scale and the rest on small scale. The export earnings during 1984-85 was 350.0 million rupees. Data were collected from 35 units. The annual installed capacity of the surveyed units is 400, 291, 377+156 and 219 thousand pieces for hockey sticks, cricket bats, cricket bats+hockey sticks and all type of rackets respectively. The actual production is 294, 223, 236+130 and 202 thousand pieces for hockey sticks, cricket bats, cricket bats+hockey sticks and rackets. The annual wood demand and consumption of sampled units is 8, 191 and 5,866 m³ respectively. The average cost of production per piece is Rs.46/-, Rs.36/- and Rs.14/- for hockey stick, cricket bat and all type of rackets while the average selling price per piece is Rs. 60/-, Rs. 46/- and Rs. 25/-. The export price for hockey stick and cricket bat is Rs. 25. The export price for hockey stick and cricket bat is Rs. 140/- and Rs. 200/- per piece. The current annual consumption of wood for this industry is around 57,198 m³; the projected demand for 1990, 1995 and 2000 is 67.9, 85.7 and 103.5 thousand cubic meters respectively.

Introduction

Of all the small scale industries in Pakistan Sports goods industry has assumed a significant position in view of its being essentially an export oriented produce. It is interesting to note that since over a century, Sialkot has been known as a world famous centre of sports goods industry. This is basically a cottage industry and has been earning foreign exchange worth Rs.350.0 million during 1984-85 through exports of its products. The good quality and moderate price of the products has enabled the manufacturers to compete in almost all markets of the world. Unfortunately the sports goods industry is not meeting the requirements of total world demand for sports goods. There is obviously immense scope for the expansion of this industry. However, inadequate supply of raw material required for the manufacture of a variety sports goods has been a limited factor for future promotion of this industry.

The following amounts of foreign exchange were earned from export of sports goods from 1960-61 to 1984-85:

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Table 1.—Export earning from wood-based sports goods from 1960-61 to 1984-85

Year	Value (Million rupees)
1960-61	7.2
1961-62	9.3
1962-63	11.4
1963-64	12.4
1964-65	13.9
1965-66	12.2
1966-67	11.2
1967-68	11.9
1968-69	16.3
1969-70	19.9
1970-71	22.2
1971-72	29.9
1972-73	80.9
1973-74	97.0
1974-75	105.5
1975-76	105.2
1976-77	105.7
1977-78	96.8
1978-79	91.8
1979-80	109.6
1980-81	136.6
1981-82	156.5
1982-83	222.2
1983-84	357.7
1984-85	350.0

- Source:
1. Pakistan Statistical year book 1985.
 2. 25 years statistics of Pakistan 1947-72.
 3. 10 years statistics of Pakistan 1972-82.

Introduction of Export Bonus Scheme in 1959 caused a slow and steady increase in export earning till 1971-72. After 1971-72 export earning exhibited an upward trend both in pre-devaluation period (Prior to 1972) and post devaluation period. Devaluation in February, 1972 caused a steep rise in export earning. This trend lasted upto 1983-84. The export earning from this industry has shown an upward trend in pre-devaluation as well as in post devaluation in period.

Hockey stick : A hockey stick consists of two parts i.e. cane handle and bent blade. *Morus alba* logs 1.5 m in length and 30 cm and above in diameter are used for making blades.

These logs are first converted into scantling of 75 x 75 cm. and open air seasoning for 5 to 7 months. The cane handle is wedged and glued to the bend. Mostly the sticks are made manually.

Cricket bat: Cricket bat is made of *Salix spp*; and poplar. These logs 1.5 m. in length and 30 cm and over in diameter are converted into scantling of 115 x 75 cm which are air seasoned in shed for 4 to 6 months. However, English bat willow imported as in finished form is used in high quality cricket bats.

Tennis, squash and badminton rackets: These rackets are made of laminated wood. Generally 5 to 9 plies are glued together and then bent using steel frames on the bending tables. Nylon strings are used for gutting. Painting is done by hand. A number of wood species are used for making racket frames. However, *Morus alba*, *poplar*, *fagus sylvatica*, *Calamus merri lei* and eucalyptus are main wood species for racket frames.

Timber consumption:

Willow, mulberry and poplar are the major species used in the manufacture of sports goods. In addition ash, beach, mango, bakain, eucalyptus and simal are used in making tennis, squash and badminton rackets. The consumption of bakain has decreased due to its non-availability but the consumption of poplar has increased significantly due to its availability and relative low price.

Since 80 percent of the products are exported to foreign markets, timber consumption varies from year to year with fluctuation in volume of export. The estimate of wood requirements of sports goods industry made by different authors in the past was 9333, 9790, 16910 and 19300 cubic meters for the years 1957, 1963, 1967 and 1970, (8, 13, 6, 9) respectively.

With a view to finding the present consumption and future demand of wood for this industry a survey of sports goods industry located in Sialkot was conducted in 1987. A brief description of the methodology adopted for this survey and outcome is given below:

Methodology:

The survey was confined to industry manufacturing wood sports goods i.e. Hockey sticks, cricket bats, tennis, squash and badminton rackets.

In order to know the number of units engaged in manufacturing sports goods data were collected from Secretary Chamber of Commerce, Secretary Sports Goods and Sports goods Manufacturing Association. The total number of units producing sports goods was 250. The break up of types of total number of different sports goods and the sampling units selected for this study is as follows:

Table—2: Total Units of sports goods industry at Sialkot and the units sampled.

Type of industry	Number of total units	Number of sampled units
1. Hockey sticks.	50	9
2. Cricket bats.	90	10
3. Hockey sticks+Cricket bats.	40	6
4. Racket (all types).	70	10
Total:	250	35

Source: Survey

Sampling procedure:

The units were stratified into two strata "A" employing more than ten workers on machinery and "B" employing less than 10 workers. Details are given in Table 3.

Table—3: Details of units belonging to different strata.

Type of industry	No. of units belonging to "A" stratum	No. of units belonging to "B" stratum	Total
Hockey stick.	15	35	50
Cricket bats.	15	75	90
Hockey sticks+Cricket bats.	13	27	40
Racket all types.	7	63	70
Total:	50	200	250

Source: Survey

A pre-tested questionnaire was used for collection of data.

The units were selected randomly from each stratum with a sampling intensity of about 14 percent (1 in 7). Total number sampled in stratum "A" was 7 units and "B" was 28 units.

Data collection:

The annual installed capacity of the sampled industries are 400, 291, 377+156 and 219 thousand pieces for hockey sticks, cricket bats, cricket bats+Hockey sticks and rackets respectively. Their total wood requirement are 8,191 m³ i.e. 7,691 m³ locally produced and 500 m³ imported annually. The total production from sampled units during 1985 for hockey sticks, cricket bats, cricket bats+hockey sticks and rackets was 294, 223, 286+130 and 209 thousand pieces. The estimated actual wood consumption during 1985 was 5,866 m³ i.e. 5,466 m³ locally produced and 400 m³ imported wood. The imported wood was *Fagus sylvatica*, *Salix alba*, *Var. coerulea*, and *Calamus merri-leii*. The local principal raw material for this industry are *Morus alba*, *Salix spp.* and Hybrid poplar. Raw material *Salix spp.* and Hybrid poplar is mostly produced in Peshawar and Mardan Districts of NWFP. However *Morus alba* and other wood species and obtain from the irrigated plantation and farmlands of the Punjab.

The average factory gate price for *Morus alba*, *Fagus sylvatica*, *Fraxinus spp.* *Calamus merrileii* and Hybrid poplar is Rs.1700/-, 2050/-, 13000/-, 3500/-, and Rs. 1200/per cubic meter respectively. The average cost of production for hockey sticks, cricket bat and all type of rackets is Rs. 46/-, 36/- and 14/- per piece. The average selling price per piece is Rs. 60/-, 46/-, and 25/- respectively. The export price for hockey sticks and cricket bat is Rs.140/- and 200/per piece. All units are operating on single shift basis. The total employment level in this industry is 1108 persons all the year round.

Results:

The annual estimated wood consumption is given below:

Year X	Wood consumption Y m ³
1981	35,150
1982	40,350
1983	43,290
1984	45,800
1985	50,220

Inference:

To forecast future requirements a linear regression model was used as follows:

$$Y = a + bx$$

Where Y = Wood consumption

X = Year

The model developed from the above equation is:

$$Y = 32,285 + 3,559 X$$

Future requirements based upon the above model is given below:

X Year	Y Wood consumption (m ³)
1986	53,639
1987	57,198
1988	60,757
1989	64,316
1990	67,875
1991	71,434
1992	74,993
1993	78,552
1994	82,111
1995	85,670
1996	89,229
1997	92,788
1998	96,347
1999	99,906
2000	103,465

Recommendation:

- Removal of hard-ships faced by the exporters. Particularly on account of valuation etc. and assessment of various Government revenue.
- Relaxation in duties on importation of raw material and machinery.
- Loan with low rate of interest and on easy instalment.
- By introducing the training and apprenticeship scheme to set up factory in rural areas.
- There is extreme shortage of good quality willow. Only a little quantity of supply is obtained from the farmland, the N.W.F.P. Forest Department may consider planting this species specially in Peshawar and Mardan districts. Planting stock of English bat willow is available.

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