

WOOD CONSUMPTION SURVEY OF HOUSING SECTOR IN PESHAWAR DIVISION

M. I. Sheikh, R. W. Hussain and Saliheen Khan*

Summary

In Pakistan generally there are two main categories of houses namely, pucca and kutcha. In the plains pucca houses are those which are composed of brick/stone masonry while in hills a house having galvanised pitched roof is considered to be a pucca house. All types of other houses fall under the category of kutcha house. In a pucca house, wood is usually used for doors, windows, ventilators and cupboards, while in a kutcha house, in addition to above mentioned uses, wood is also used for roofing. According to 1980 housing census report, the rate of increase in construction of houses during 1973-80 was 2 per cent per annum. This rate was 1.5% in rural areas and 3.2% in urban areas. The total number of houses in Peshawar division in 1986 is estimated as 377,000. Out of these only 162 households were interviewed to conduct this study. Average family size varies between 7 and 10 persons for both rural and urban population. Mean monthly income per sample household comes to Rs.2610/- and Rs. 3390/- for rural and urban areas respectively. Number of persons using one room has been estimated as 4.03 and 3.62 in rural and urban areas. Number of rooms per sample household are 4 in rural and 3 in urban areas. Mean wood consumption in constructing one household comes to 6.11 m³ and 1.8 m³ for both dwelling areas. Consequently per capita wood consumption works out to be 0.611 m³ and 0.257 m³ for rural and urban areas. Based on this survey the current wood consumption is about 1677, 000 m³ and projected demand thus calculated for round wood for the year 1990, 1995 and 2000 is 1.800, 1.966 and 2.147 million m³ respectively.

Introduction

The housing of all types is categorised into two major types, viz., pucca and kutcha. The former are generally composed of re-inforced concrete, dressed stone or baked bricks set in clay/cement; the latter constitute unbaked bricks or undressed stone set in mud plaster with mud roof, wooden beams and ballies. In pucca type of construction, wood is usually used for doors, windows, cupboards and ventilators. Roof is generally made up of re-inforced cement concrete. However, sometimes a wooden roof or a steel joint roof is also constructed in the country-side houses. Coniferous species are preferred for constructing above mentioned houses. Kutcha houses form the usual land-scape in the villages. In this type of construction mixture of soft and hardwoods is used for joinery works and roof construction. The hardwood is usually available to the villager from his own farm land or the farms of other local population..

* Authors are the research scientists in the Pakistan Forest Institute, Peshawar.

During the period from 1973-80 the housing construction increased at the rate of 2.0 percent per annum; 1.5 percent in rural areas and 3.2 percent in urban areas. In other words, the rate of construction of new houses in rural and urban areas is 2.25 and 4.85 per 1000 capit's¹). However, wood consumption per housing unit varies with the size of house, type of construction, availability of timber and social status of the area. In addition, other factors like climate, social and economic parameters influence the type of construction and hence the consumption of wood.

The total number of housing units in Peshawar Division are 332,000 out of which 64 percent have been constructed in rural and 36 percent in urban localities (Housing Census Report 1980). 78 percent of housing units were composed of one or two rooms. The percentage of these small size housing units was higher in rural areas constituting 81 percent of the total rural housing sector. Table 1 represents housing units by number of rooms and household size during 1980.

(1) The Housing Census Report 1980 P. No. 1

Table 1. Number of housing units by number of rooms and persons per room (1980)

No. of rooms	No. of housing units		Persons per room
	No. of rooms	percent	
1	156,615	47.29	5.6
2	102,402	30.86	3.5
3	41,133	12.40	2.8
4 and more	31,648	9.54	4.0
Total	331,798	100.00	3.4

Source : District Housing Census Report 1980 page No. 17

According to housing census report 1980, about 65 percent of the total household units are being used by the owners themselves, 19 percent are rented and 16 percent are occupied on rent free basis. The distribution of the households according to tenure status is given in Table 2.

Table 2. Distribution of housing by tenure status (1980)

Tenure status	Total	Percent	Rural		Urban	
			Total	Percent	Total	Percent
Owned	214,781	64.73	151,377	71.54	63,404	52.75
Rented	64,891	19.56	24,284	11.48	40,607	33.79
Rent free	52,126	15.71	35,945	16.98	16,181	13.46
Total	331,798	100.00	211,606	100.00	120,192	100.00

Source : District Housing Census Report page No. 21.

Objective of the study

The study was undertaken with the following objectives in view:

- (i) To estimate present consumption and future requirements of the wood in housing sector
- (ii) How best to meet this demand

Methodology

The non-availability of household lists in Peshawar Division restricted the use of random sampling technique to be applied. Therefore, quota non-probability method of sampling was carried out for this study. This method is extensively applied in marketing research and social sciences. However, the study area was stratified into two major blocks i.e. rural and urban areas. District and Tehsil headquarters fall under urban sector and remaining places are in rural areas. For this purpose 8 places were visited to collect information from both rural and urban areas. In all 162 households were interviewed according to the designed and pre-tested questionnaire.

Data collection and analysis

The average household size was 10 persons in rural and 7 persons in urban areas. Mean monthly income per sample household was Rs. 2,610 and Rs. 3,390 in rural and urban community. The average number of rooms per sample household were 4 and 3 in rural and urban areas respectively. Number of persons using one room has been estimated as 4.03 and 3.62 in rural and urban areas. However, average room size was 6.4 x 3.6 m and 4.6 x 3.6 m both in rural and urban areas respectively. The average wood consumption per sample household for various items in both the localities is given in Table 3.

Table 3. Average wood consumption per sampled household

Wood used in	Rural		Urban	
	Average wood consumption m ³	Percentage	Average wood consumption m ³	Percentage
Doors	0.60	7.57	0.80	44.86
Windows	0.19	2.37	0.31	17.02
Ventilators	0.06	0.67	0.090	4.97
Cupboards	0.32	0.04	0.203	11.22
Roofs	4.94	85.35	0.401	21.93
Total	6.110	100.00	1.811	100.00

Source : Survey by the Pakistan Forest Institute Team.

From the table average wood consumption per sampled household comes to 6.11 m³ in rural area and 1.8 m³ for urban area. Per capita wood consumption is 0.611 and 0.257 m³ for rural and urban areas respectively. The common commercial species used in house construction are *Pinus roxburghii*, *Pinus wallichiana*, *Cedrus deodara*, *Abies webbiana*, *Picea smithiana*, *Melia azedarach*, *Morus alba*, Hybrid Poplar, *Dalbergia sissoo* and Eucalypts.

Results

The wood consumption per dwelling unit was found higher in rural areas as compared with urban areas. The major reason of this higher wood consumption is the kutcha type of construction with flat mud roof. In the urban areas the houses are pucca with R.C.C. roof. The R.C.C. roof is not only the better substitute of wooden roof but also adds to the durability of the construction. The second reason of higher rate of wood consumption in rural locality is the availability of wood locally from farm lands or surrounding areas.

Forecasts for future wood consumption in Peshawar division have been worked out till the end of century. These are based on the present data collected for the wood consumption and rate of increase in housing units as depicted in Housing Census Report of 1980. The projected number of housing units and wood requirements are given in Table 4.

Table 4. Projected number of housing units and wood requirements (1986 — 2000)

Year	Rural		Urban		Grand Total	
	No. of houses (000)	Wood consumption (000 m ³)	No. of houses (000)	Wood consumption (000 m ³)	No. of houses (000)	Wood consumption (000 m ³)
1986	232	1417	145	260	377	1677
1987	235	1436	149	267	384	1703
1988	239	1460	155	278	394	1738
1989	242	1479	160	287	402	1766
1990	245	1503	165	297	414	1800
1991	249	1521	170	305	419	1826
1992	253	1546	175	314	428	1860
1993	257	1570	181	325	438	1895
1994	261	1595	187	336	448	1931
1995	265	1619	193	347	458	1966
1996	269	1643	199	358	468	2001
1997	273	1668	205	368	478	2036
1998	277	1692	212	381	489	2073
1999	281	1717	219	393	500	2110
2000	285	1741	226	406	511	2147

The projected demand for round wood for the year 1990, 1995 and 2000 is 1.800, 1.966 and 2.147 million m³ respectively.

Recommendations

In rural areas, the housing construction is still following the traditional use of wood. In order to reduce wood consumption in this sector proper demonstration of technology is necessary.

Prefabricated steel doors, windows and ventilators are becoming common in urban areas in new construction. At present these are considered better substitute of wood without considering their durability. Similarly use of composite wood is also gaining importance in newly constructed houses which is another way of wood saving in the country/area.

REFERENCES

- Anon 1961 Timber trends and prospects in Asia-Pacific region. F.A.O. Geneva.
- Anon 1980 Housing Census Report of Pakistan. Population Census Organisation, Statistics Division, Government of Pakistan, Islamabad.
- Anon 1980 Housing Census Report of NWFP and FATA Population Census Organisation, Statistics Division, Government of Pakistan, Islamabad.
- Anon 1983 The State of Forestry in Pakistan. Pakistan Forest Institute, Peshawar.
- Ishaq, S.M. 1957 Timber Trends study in West Pakistan. Pakistan Forest Institute, Peshawar.
- Khan, S. and M.I. Sheikh 1986 Present and Future wood consumption for plywood industry in Pakistan Pakistan J. Forestry Volume 36 No. 3. pages 125-131.
- Lerche, Cai 1967 An estimate of timber trends in West Pakistan. Pakistan Forest Institute, Peshawar.
- Sheikh, M.I., Saliheen Khan and R.W. Hussain 1986 Match industry in Pakistan — Past present consumption with future requirements. Pakistan J. Forestry volume 36 No. 4. pages 205-210.