



Study of Wall Materials of Female Headed Households among Schedule Caste Population in India

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DOI- 10.5281/zenodo.10042976

Abstract

The home structure is often seen as a symbol of socio-economic class, and is currently used by various social groups as a tool for a better life. The pattern of distribution of wall building materials, tabular data on different categories of materials used by households in India, shows the different percentages of female-headed households in India consuming wall construction in their respective homes. The 2011 Census has given ten types of materials used in the construction of walls of houses of scheduled caste female headed households, out of which we have made four categories. The data in respect of various aspects of scheduled castes population female headed households like housing conditions, wall material has been calculated in percentage at district level in India. Finally, on the basis of various aspects, the study area has been divided into sub zones. In the case of using burnt brick; The maximum share of the total construction material used in the construction of the wall in their respective houses represents 45.65 per cent. This is followed by Mud/unburnt brick, which accounts for 39.17 per cent. Thus, the share of both the categories of the total consumption of building materials used for wall construction in female dominated households is about 84.82 per cent. In relation to other materials; Stone packed with mortar share holds 10.34 per cent. In northern India, more than 80% of burnt bricks are used in wall building materials.

Keywords: Female Headed Households, Distribution of Wall Materials, Building Materials, Availability of Amenities etc.

Introduction:

The home structure is often seen as a symbol of socio-economic class, and is currently used by various social groups as a tool for a better life. The structure and headship of families and households are rapidly altering as a result of structural changes brought about by the development of Indian society (Vardhan, 1999). Women are increasingly taking on the role of home head as a result of changes in household structure and development, and such households are referred to as 'female headed households' (FHH). Due to the enormous number of Scheduled Caste Female Headed Households population in India, the composition of their homes varies greatly across the country. Therefore, the present study attempts to identify the wall materials of female headed households among schedule caste population in India.

Study Area: India is an Asian country. India's absolute location is between 8° 4' N and 37° 6' N latitude, and between 68° 7'E and 97° 25' E longitude. India is a federal country with 35 entities, including 28 states and seven union territories. According to the 2011 Census, India has 640 districts. In India, there are 26 states and 4 union

territories with female-headed families among the schedule castes. Women head almost 27 million households in the country, accounting for 11% of all households. In India, there are 2,68,88,926 (18.60 per cent) female-headed households, of which only 5002507 (11 per cent) are found in the Schedule Castes population. The average number of homes in India is 19.63 per cent, with Grass/Thatch/Bamboo/Wood/Mud etc. On a district level, Sikkim's East District (62.81 per cent) has the largest proportion of female-headed households among the schedule castes population, while Kargil has the lowest (0.039 per cent). Puducherry has the largest proportion of female-headed families among the union territories' Schedule Castes population (72.74 per cent).

Objectives of the Study: The main objective of the present study intends to analyze the “The study of using wall materials of Female-Headed Households among Scheduled Caste Population: An Inter-Districts Analysis”.

Database and Methodology: For this study, district-level census data from 2011 will be used to examine several elements of housing conditions for female-headed households within scheduled castes population. The data in respect of various aspects of

scheduled castes population female headed households like housing conditions, wall material will be calculated in percentage at district level in India.

Finally, on the basis of various aspects, the study area will be divided into sub zones. All parameters will be divided into different categories and tables and maps will be prepared with the help of choropleth by using the QGIS 3.4 (QGIS MAP Version3.4).

Result and Analysis

Distribution of Wall Materials in Availability of Amenities: The pattern of distribution of wall building materials the tabulated figures on different categories of material, used by the households of India, shows varied percentages, consumed in constructing the wall in their respective houses in the female headed households in India. In the census

2011, 10 types of materials used in the construction of the walls of the houses of scheduled female headed households have been given, of which we have made four categories.

In case of using burnt brick; shows a maximum share 45.65 per cent of the total building material, used in constructing the wall in their respective houses. It is followed by using of mud/unburnt brick which shares 39.17 per cent. Meaning thereby, the share of the both the categories, is about 84.82 per cent of the total consumption of building materials used for wall construction in female headed households (Table 1.1). With regarding to other material; stone packed with mortar share is 10.34 per cent. The Total Material used in the households of the female headed in India is shown (Fig. 1).

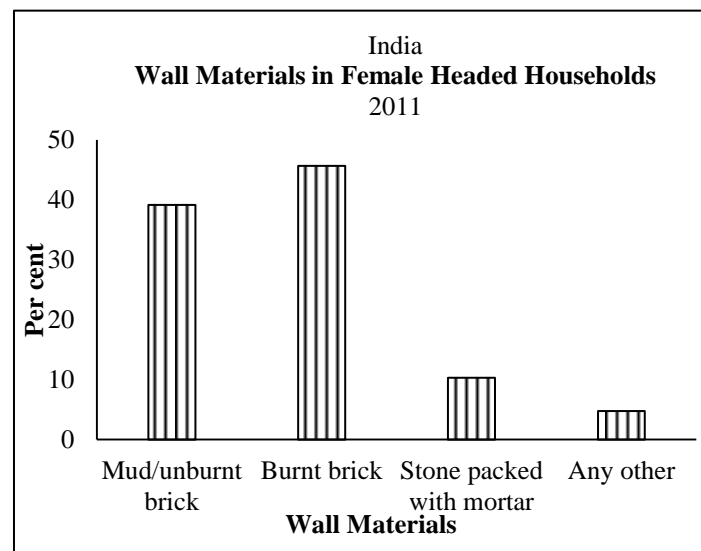


Table 1.1: Distribution of Wall Material of Female Headed Households in India.

Categories	Female-Headed Households	Per cent
Mud/unburnt brick	1959454	39.17
Burnt brick	2283738	45.65
Stone packed with mortar	517270	10.34
Any others	238109	4.76
All Materials	5002507	100.00

Source: Census of India, 2011

Burnt Brick Building Material in Wall Construction: In case of Female Headed Households in India, Serchhip district has the highest contribution of burnt brick in construction of wall. i.e. 100.00 per cent while the Jodhpur district has the lowest female headed households using these materials in building with 0.94 per cent. Although, there is massive distinguish among the district level burnt brick materials varies from district-to-district ranges from less than 20 per cent to above 80 per cent (Table.1.2). All 640 districts of India are categorized into five clusters as under (Fig. 2):

Areas of Very High uses of Burnt Brick (> 80 per cent): The proportion of burnt brick used material used in wall construction ranges above 80 percent. The high level of burnt brick has been used in the districts of the Serchhip (100 per cent) district by Bijnor (81.90 per cent) and Moga (86.41 per cent). These districts are mainly situated in northern and western part of India (Table.1.2).

Areas of High uses of Burnt Brick (60.01-80.00 per cent): The high level is assigned a range from 60.01 - 80.00. Burnt brick are widely used in 58 districts of the states like Gujrat, Maharashtra and Andhra Pradesh which cover 13.60 per cent of the total houses in this category (Table.1.2).

Areas of Moderate uses of Burnt Brick (40.01-60.00 per cent): The Moderate level is assigned a range from 40.01 - 60.00. Burnt brick are widely used in 171 districts of the states like Uttar Pradesh, Maharashtra and Andhra Pradesh, Jharkhand, Odisha, Rajasthan etc. which cover 40.86 per cent of the total houses in this category. The building materials of burnt brick was used in Jhunjhunun (59.80 per cent) followed by Pulwama (53.57 per cent) and Latur (46.80 per cent) (Table.1.2).

Areas of Low uses of Burnt Brick (20.00-40.00 per cent): The Low level is assigned a range from 20.00 - 40.00. Burnt brick are widely used in 186

districts of the states like Uttar Pradesh, Maharashtra, Bhutan, Bihar, Assam, Chhattisgarh, Lasakh, Rajasthan etc. which cover 18.97 per cent of the total houses in this category (Table.1.2).

Areas of Very Low uses of Burnt Brick (>20.00 per cent): The area of very low use having values less than 20 per cent. Burnt brick are used in 152 districts of the states like Meghalaya, Manipur, Tripura, West Bengal, Jharkhand, Kerala, Arunachala Pradesh, Rajasthan etc. which cover 3.70 per cent of the total houses in this category (Table.1.2).

Table 1.2: Distribution of Households by Burnt Brick Wall Material in Female Headed Households in India.

Categories	Per cent	No. of District	Per cent	Total Households	Households (Burnt Brick)	AVG. (%)
Very High	> 80.00	73	22.87	596714	522179	10.44
High	60.01 - 80.00	58	13.60	443566	310640	6.21
Moderate	40.01 - 60.00	171	40.86	1892377	933044	18.65
Low	20.00 - 40.00	186	18.97	1417866	433306	8.66
Very Low	< 20.00	152	3.70	651984	84569	1.69
Total		640	100.00	5002507	2283738	45.65

Source: Calculated by Author

Mud/Unburnt Brick Building Material in Wall Construction:

As per 2011 census, in case of Female Headed Households in India, Dhalai district has the highest contribution of burnt brick in construction of wall i.e. 94.98 per cent while the Pithoragarh district has the lowest female headed households using these materials in building with 0.96 per cent. Although, there is massive distinguish among the district level Mud/Unburnt brick materials varies from district-to-district ranges from less than 15 per cent to above 60 per cent (Table 1.3). All 640 districts of India are categorized into five clusters as under (Fig. 3):

Areas of Very High uses Mud/Unburnt Brick (>60.00 per cent):

In India, 161 districts are considered to be very high female headed households in districts as per the census 2011. In these districts mud/unburnt building material is more than 60 per cent. The Surguja (92.86 per cent) has used the maximum followed by Rajgarh (80.72), Saharsa (59.94), and Ganganagar (60.17 per cent). The whole belt is very backward, poor and the almost low income in the part of India (Table 1.3).

Areas of High uses Mud/Unburnt Brick (45.01 - 60.00 per cent):

The spatial pattern of mud/unburnt brick material shows that ranges (45.01-60.00 per cent) are included into the High category. The building materials of mud/unburnt brick was used in the

districts of Tikamgarh, Bikaner, Unnao, Tiruppur, Ramgarh (Table 1.3).

Areas Moderate uses Mud/Unburnt Brick (30.01-45.00 per cent):

The share of mud/unburnt brick material has used in districts of having range 30.01 – 45.00 per cent. The building materials of mud/unburnt brick was used in the State of Chattisgarh, Tamil Nadu, Odisha, Madhya Pradesh, Rajasthan which cover 27.18 per cent of the total houses in this category (Table 1.3).

Areas Low uses Mud/Unburnt Brick (15.00-30.00 per cent):

The range of low used of Mud/Unburnt materials in wall is found in 120 districts of India. Mud/unburnt brick are used in 96 districts of the states like Uttar Pradesh, Maharashtra and Andhra Pradesh, Jharkhand, Odisha, Rajasthan etc. which cover 9.84 per cent of the total houses in this category. The Mahbubnagar (29.90 per cent) district has the lowest proceeded by Bilaspur (21.86 per cent), Navsari (18.97) (Table 1.3).

Areas Very Low uses Mud/Unburnt Brick (<15.00 per cent):

The range of low used of Mud/Unburnt materials in wall is found in 153 districts of India. Mud/Unburnt brick are used of the states like Uttar Pradesh, Maharashtra and Andhra Pradesh, Jharkhand, Odisha, Rajasthan Alwar (13.22) etc. which cover 40.86 per cent of the total houses in this category (Table 1.3).

Fig. 2

Fig. 3

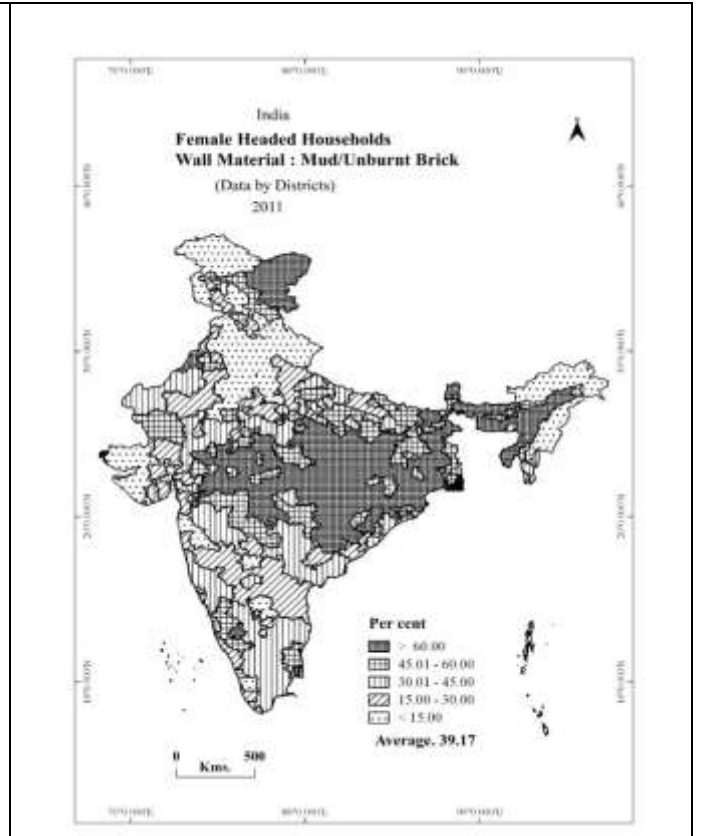
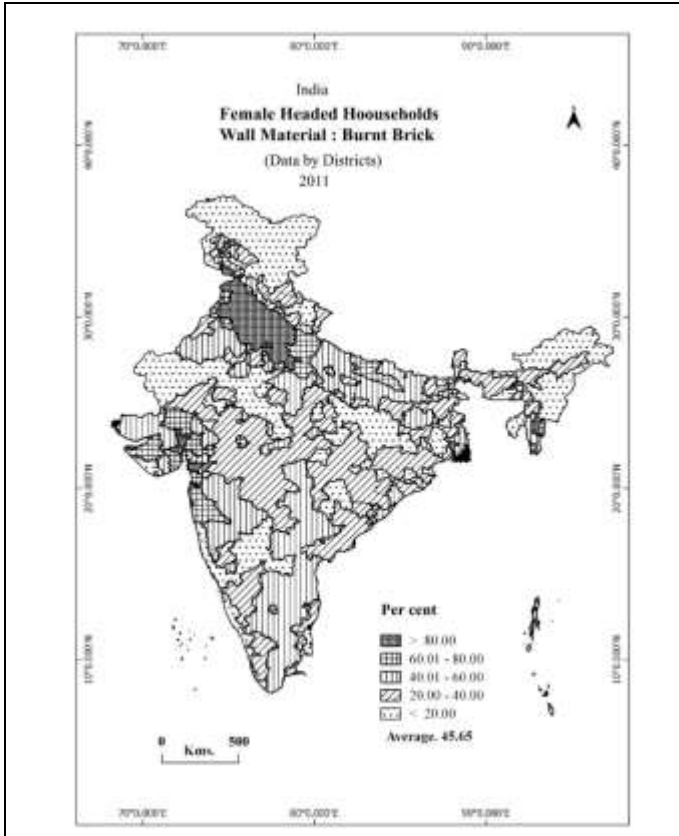


Fig. 4

Fig. 5

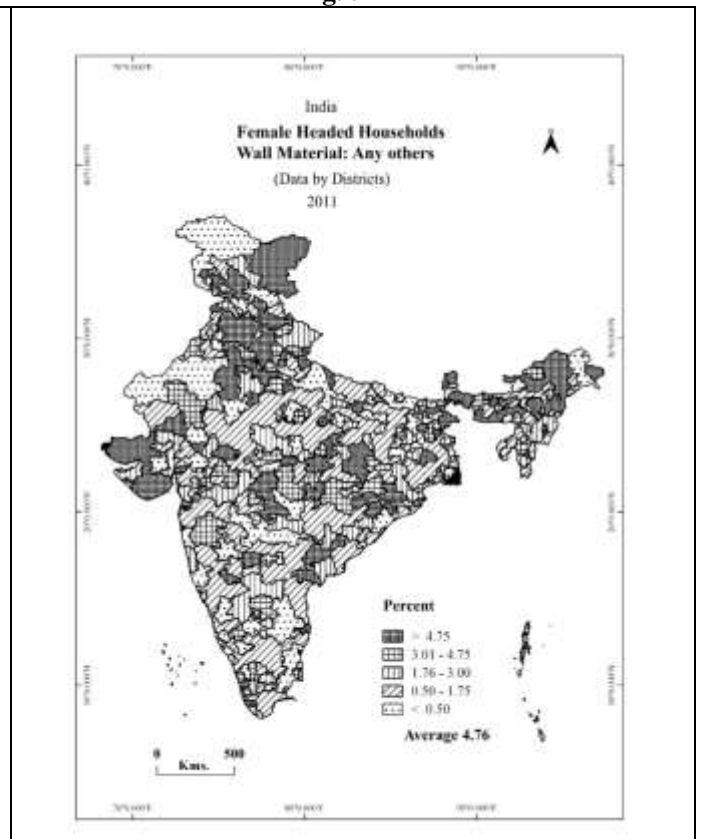
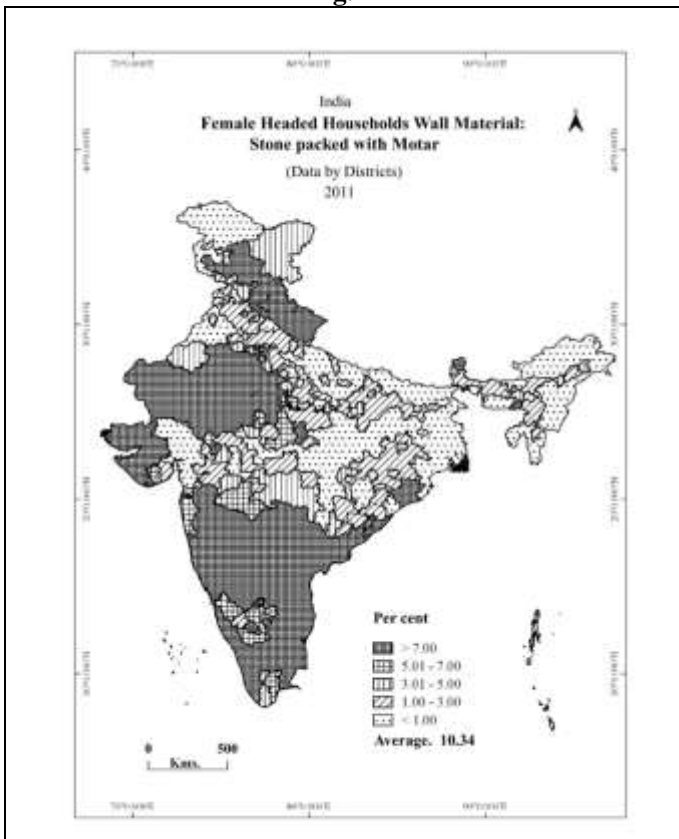


Table 1.3: Distribution of Households by Mud/Unburnt Brick Wall Material in Female Headed Households in India.

Categories	Per cent	No. of District	Per cent	Total Households	Households (Mud/Unburnt brick)	AVG. (%)
Very High	> 60.00	161	34.52	947378	676499	13.52
High	45.01 - 60.00	110	24.36	913453	477373	09.54
Moderate	30.01 - 45.00	120	27.18	1433867	532552	10.65
Low	15.00 - 30.00	96	09.84	814171	192829	03.85
Very Low	< 15.00	153	4.09	893638	80201	01.60
Total		640	100.0	5002507	1959454	39.17

Source: Calculated by Author

Stone Packed with Mortar Building Material in Wall Construction:

In case of Female Headed Households in India, Diu has the maximum contribution of concrete in construction of roof that is 97.72 per cent while the Kheda has the lowest female headed households using these materials in building with 0.05 per cent. Although, there is massive distinguish among the district level Stone Packed with Mortar materials varies from district-to-district ranges from less than 1.00 per cent to above 7.00 per cent (Table. 1.4). All 640 districts of India are categorized into five clusters as under (Fig.4):

Areas of Very High uses Stone packed with mortar (>7.00 per cent):

The 223 districts which have stone packed above 7.00 per cent are included in the high category. The Very high level of stone packed has been used in the districts of Jodhpur (67.47 per cent) followed by Bundi (39.78 per cent), Doda (27.26 per cent) Agra (9.76 per cent) (Table. 1.4).

Areas of High uses Stone packed with mortar (5.01-7.00 per cent):

The spatial pattern of Stone packed with mortar material shows that ranges (5.01-7.00) are included into the moderate category. The high level of stone packed has been used in the states of Maharashtra followed by Madhya Pradesh, Rajasthan and Ladakh. The proportion of Very High range includes 35 districts (Table. 1.4).

Areas of Moderate uses Stone packed with mortar (3.01-5.00 per cent):

The spatial pattern of stone packed material shows that ranges (3.01-5.00 per cent) are included into the moderate category. The building materials of stone packed was used in the districts Ribhoi, Una, Kathua, South District, Leh (Ladakh). The proportion of Very High range includes 44 districts (Table. 1.4).

Areas of Low uses Stone packed with mortar (1.00-3.00 per cent):

The spatial pattern of stone packed material shows that ranges (1.00 -3.00 per cent) are included into the moderate category. The Panna (2.98 per cent) has the lowest followed by Ratlam (2.07 per cent), Jalandhar (1.33 per cent) and Patna (0.71 per cent). These districts are situated in the eastern to western part of the India. The proportion of Very High range includes 144 districts. (Table. 1.4).

Areas of Very Low uses Stone packed with mortar (<1.00 per cent):

The share of uses of stone packed with mortar material has used in 144 districts less than 1 per cent in India. The low level of stone packed material has been used in the states of J & K, Punjab, Manipur, Uttar Pradesh, Madhya Pradesh, Bihar, Gujarat, Bihar, West Bengal, Mizoram, Tripura, Meghalaya etc. (Table. 1.4).

Table 1.4: Distribution of Stone packed with mortar Wall Material in Female Headed Households in India.

Categories	Per cent	No. of District	Per cent	Total Households	Households (Stone packed with mortar)	AVG. (%)
Very High	> 7.00	188	89.14	2001437	461103	9.22
High	5.01 - 7.00	35	3.86	334834	19983	0.40
Moderate	3.01 - 5.00	44	2.57	339321	13277	0.27
Low	1.00 - 3.00	144	3.00	926358	15496	0.31
Very Low	< 1.00	229	1.43	1400557	7411	0.15
Total		640	100.00	5002507	517270	10.34

Source: Calculated by Author

Any Others Material uses in Wall Construction:

In this category, we have included any other materials like tiles, plastic polythene etc. As like

above any other materials have also divided into five clusters as under (Fig. 5):

Areas of Very High uses of any other materials (> 4.75 per cent):

The range of high proportion of uses wall material is recorded in 152 districts of the India. The highest per cent of used this wall materials in Ramban (51.96 per cent) followed by Doda (46.54 per cent) Shimoga (5.82 per cent), and Thiruvarur (4.72 per cent) (table 1.5).

Areas of High uses of any other materials (3.01-4.75 per cent):

The range of High share of uses wall material is recorded in 86 districts of the total 640 districts in India. The high per cent of used materials in the states of Maharashtra, Tamil Nadu, Arunachal Pradesh, Andhra Pradesh, Uttar Pradesh, J & K, Rajasthan and Gujrat (table 1.5).

Areas of Moderate uses of any other materials (1.75 -3.00 per cent):

The range of moderate share of uses in wall construction is recorded in only 92 districts of households in this category. These districts are Dhenkanal (2.94 per cent) followed by Guna (2.90 per cent), Maurai (2.61), and Thane (2.51 per cent). These districts are confined to eastern to northern part of the India (table 1.5).

Areas of Low uses of any other materials (0.50-1.75 per cent):

The range of low share of uses wall material is recorded in 202 districts of the total 640 districts in India. The low per cent of used materials in Cachar (1.73 per cent) followed by Kheda (0.76) and Bhopal (1.66) (table 1.5).

Areas of Very Low uses of any other materials (< 0.50 per cent):

Table 1.5: Distribution of Households by any others Wall Material in Female Headed Households in India.

Categories	Per cent	No. of District	Per cent	Total Households	Households (Any others)	Average
Very High	> 4.75	152	68.49	1288642	163091	3.26
High	3.01 - 4.75	86	14.98	948332	35672	0.71
Moderate	1.75 - 3.00	92	9.02	935952	21487	0.43
Low	0.50 - 1.75	202	7.07	1530573	16836	0.34
Very Low	< 0.50	108	0.43	299008	1023	0.02
Total		640	100.00	5002507	238109	4.76%

Source: Calculated by Author

Conclusion:

The conclusion is that due to the relatively good socioeconomic status of women, the facilities available to the average person, the high level of urbanization, the high female literacy rate and the better economic situation, household-headed households have emerged in northern India. We found that more than 40 per cent (45.65 per cent) of brick building materials are used in wall construction by female-headed households. More than 35 per cent of burnt bricks are used as resources in all regions of India. In the eastern states of India, bricks made of mud/unbricks are used as wall building materials. In the southern and western states, stone packed with motor were used for the construction of houses. For example, wall in the Himalayan region is often made of wood-based materials. On the other hand, the plain areas, where the economic condition of the people is comparatively better than the tribal or hill areas, belong to the tribal or hilly areas. As a result, most Indians make their wall out of brunt bricks to construct the wall of their buildings. Those who have a good socio-economic status, in Indians who belong to the lower strata of the society, usually use a cost-effective material such as grass or thatch-based material.

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