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PUNJAB-HARYANA REGION: HOUSING QUALITY – II

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Continuing with Map Series on housing quality in Punjab-Haryana Region, the present attempt is to extend further previous such study published in Volume 8 (2012) of this journal. As observed in the previous study, the type of material used in housing structures, especially roof and flooring determines the quality of housing in an area. Since the analysis of flooring material used has already been covered in the previous publication, the scope of the present analysis is, therefore, restricted to the analysis of material used for roof in residential dwellings in Punjab-Haryana region. It may be worth repeating here that only half the number of residential houses (51.7 %) in the study region were good quality houses. However, the proportion of dilapidated houses was quite low (5.6 %) making rest of the houses (42.7 %) barely liveable. Another redeeming feature was that the proportion of good quality houses both in rural and urban areas was not very far from each other. In urban areas of the study region 59.9 per cent residential dwellings and in rural areas 46.6 per cent dwellings qualified for good quality houses. It implies that the quality of housing in rural areas has improved significantly during the last 2-3 decades perhaps more so in Punjab sub-region and less so in Haryana sub-region. It does speak of improving living conditions in the rural areas of the study region.

Keeping in view the scope of the present study 4 maps and 4 tables have been prepared to portray the spatial variations in the use of material used for roofs in the residential houses. Income level, literacy and education level, external contacts, climatic requirements, percentage of population below the poverty line, government's policy vis-à-vis financial assistance/ loans or vis-à-vis rehabilitation of slum dwellers etc. are some of the factors that by and large have controlled the housing quality in general and the material used for roofs in specific.

Census of India has classified roof materials used for residential houses into four major types, namely, concrete (Fig. 1 & Table 1), burnt bricks (Fig. 2 & Table 2), stone/slate (Fig. 3 & Table 3) and tiles (Fig. 4 & Table 4). It has been observed that, on an average, 40.8 % of the houses in the study region have used concrete as roof material, though the percentage of such houses was relatively high (49.1 %) in case of Punjab sub-region than that in Haryana sub-region (32.5 %). Similarly, the proportion of houses using burnt bricks as roof material was 19.9 % for the study region as a whole and 25.3 % for Punjab and 14.6 % for Haryana sub-regions respectively. Houses using stone/slate as roof material accounted for 12.4 % of the houses in the region as a whole and 23 9 % of the houses in Haryana sub-region and only 0.9 % of the houses in Punjab sub-region. Tiles as roof material had been used in 10.1 % of the houses in the region being

Table 1

Punjab-Haryana Region: Percentage of Houses with Concrete as Roof Material.

State/ District	Percentage	State/ District	Percentage
Punjab	**49.1**	**Haryana**	**32.5**
Shri Muktsar Sahib	20.9	Mewat	6.5
Mansa	24.0	Palwal	7.7
Tarn Taran	27.8	Jhajjar	11.4
Firozpur	28.6	Bhiwani	15.5
Barnala	29.3	Mahendragarh	18.8
Bathinda	31.0	Fatehabad	20.1
Moga	31.3	Rewari	20.4
Faridkot	35.5	Sonipat	20.9
Sangrur	36.8	Jind	23.7
S.B.S. Nagar	37.5	Rohtak	24.9
Kapurthala	49.6	Sirsa	27.0
Jalandhar	53.7	Hisar	27.1
Patiala	53.9	Kaithal	27.5
Hoshiarpur	54.1	Panipat	38.3
Amritsar	58.0	Faridabad	42.5
Fatehgarh Sahib	62.8	Karnal	43.4
Ludhiana	63.5	Kurukshetra	50.5
Gurdaspur	67.2	Gurgaon	52.8
S.A.S. Nagar	72.7	Ambala	55.5
Rupnagar	76.6	Yamunanagar	67.7
		Panchkula	73.7
Regional Average	***40.8***		

Source: Census of India, 2011

comparatively high in Punjab (14.5 %) and low in Haryana (5.7 %).

A perusal of four Tables computed for the purpose reveals that Punjab is only marginally ahead of Haryana as for as quality of residential houses is concerned. For instance, while the highest percentage of houses having concrete roofing in Punjab was 76.6 % in Rupnagar district, the highest such figure in Haryana sub-region was 73.7 % in Panchkula district. Interestingly, both had a location in close vicinity of Chandigarh- a city that had ushered in a revolution in the construction material of residential dwellings about 50 years ago. However, in terms of minimum percentage of such houses, Muslim predominant district of Mewat had only 6.5 % of its houses with concrete roofing in Haryana, while in case of Punjab sub-region the lowest of 20.9 % was found in Mukatsar district. It implies that in case of Haryana sub-region spatial disparities in the proportion of houses with concrete

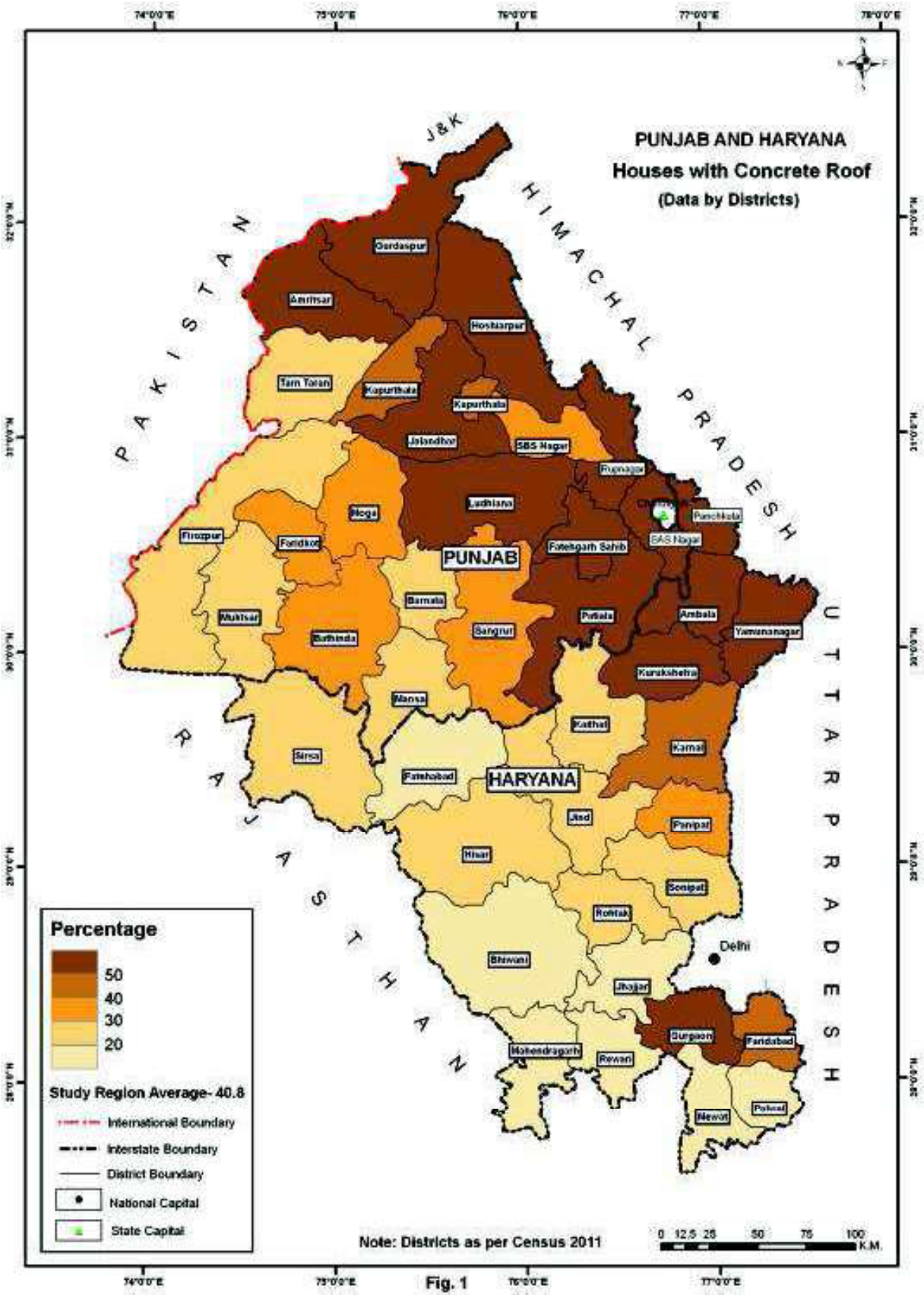

PUNJAB AND HARYANA
Houses with Concrete Roof
(Data by Districts)
J&K
HIMACHAL PRADESH
PAKISTAN
RAJASTHAN
UTTARPRADESH
PUNJAB
HARYANA
Delhi
Gurdaspur
Amritsar
Hoshiarpur
Tarn Taran
Kapurthala
Jalandhar
SBS Nagar
Rupnagar
Ludhiana
Moga
Firozpur
Faridkot
Fatehgarh Sahib
Mukhtsar
Barnala
Bathinda
Sangrur
Patiala
Ambala
Yamunanagar
Kurukshetra
Mansa
Kaithal
Karnal
Sirsa
Fatehabad
Jind
Panipat
Hisar
Sonipat
Rohtak
Bhiwani
Jhajjar
Gurgaon
Faridabad
Mahendragarh
Rewari
Nuh
Palwal
Percentage
50
40
30
20
Study Region Average- 40.8
International Boundary
Interstate Boundary
District Boundary
National Capital
State Capital
Note: Districts as per Census 2011
0 12.5 25 50 75 100
K.M.

Fig. 1

Table 2

Punjab-Haryana Region: Percentage of Houses with Burnt Bricks as Roof Material.

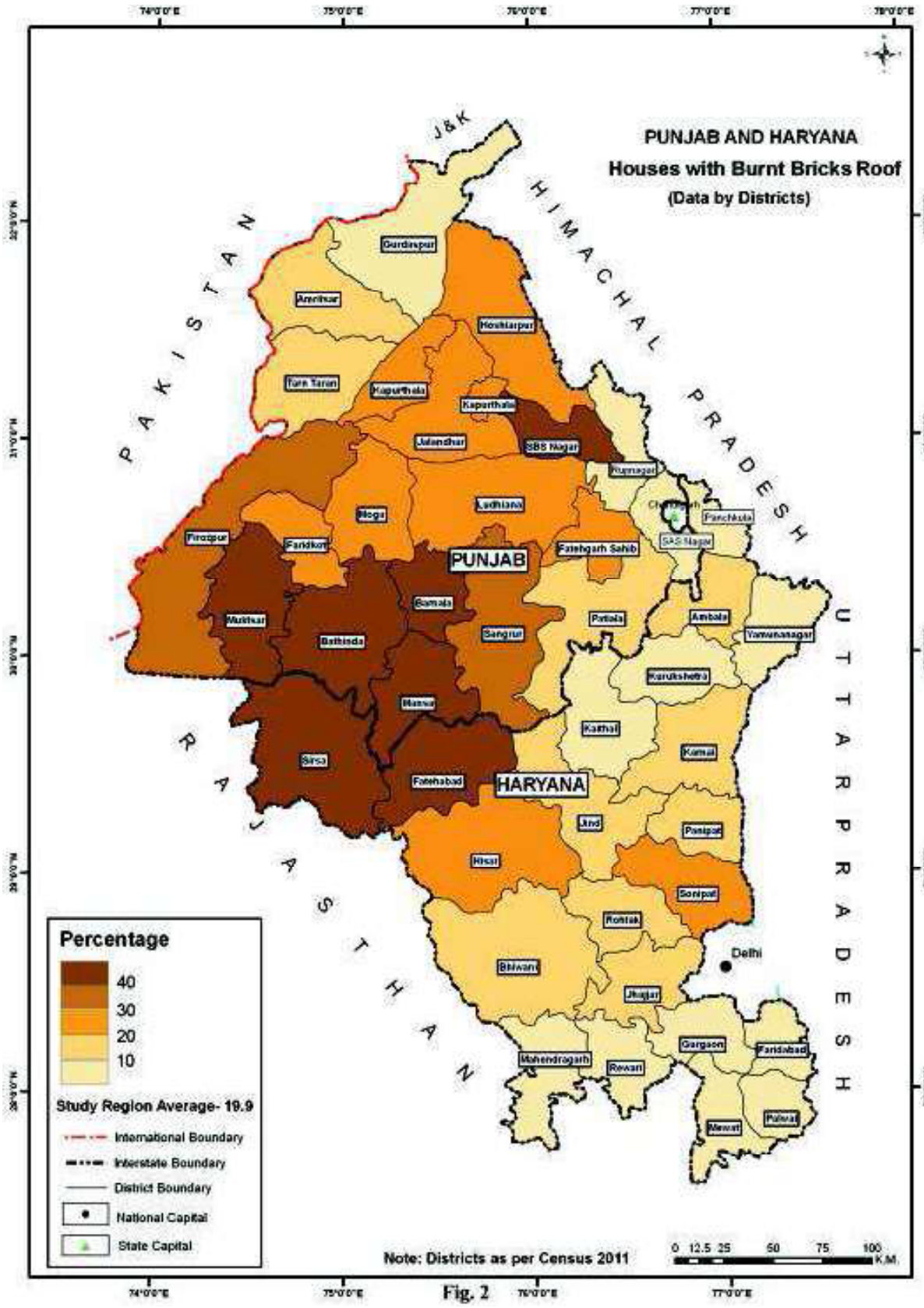
State/ District	Percentage	State/ District	Percentage
Punjab	**25.3**	**Haryana**	**14.6**
S.A.S. Nagar	5.4	Gurgaon	4.8
Gurdaspur	8.4	Rewari	4.9
Rupnagar	8.4	Yamunanagar	5.2
Amritsar	13.8	Panchkula	5.6
Tarn Taran	17.1	Mahendragarh	6.3
Patiala	19.8	Faridabad	6.4
Fatehgarh Sahib	22.7	Kurukshetra	7.9
Ludhiana	22.8	Mewat	8.5
Hoshiarpur	24.8	Palwal	9.6
Faridkot	25.2	Kaithal	9.7
Moga	26.1	Ambala	10.7
Jalandhar	27.1	Jind	13.5
Kapurthala	27.9	Bhiwani	13.9
Firozpur	31.1	Karnal	14.9
Sangrur	37.2	Panipat	14.9
Mansa	44.1	Rohtak	17.6
S.B.S. Nagar	45.5	Jhajjar	17.9
Barnala	45.5	Hisar	21.9
Shri Muktsar Sahib	46.4	Sonipat	23.1
Bathinda	50.1	Fatehabad	41.7
		Sirsa	42.0
Regional Average	***19.9***		

Source: Census of India, 2011

roofing were much sharper than those in Punjab sub-region. It does indicate late beginning of revolution in construction material used for roofing the residential dwellings in Haryana in comparison to Punjab.

Burnt bricks have traditionally been used as roofing material. No wonder, the percentage of such houses varies in Punjab from a highest of 50.1 % to the lowest of 5.4 % and that in case of Haryana it varies from the highest of 42 % to the lowest of 4.8 % (Table 2). The sharpest contrast between the two sub-regions of Punjab and Haryana, however, emerges in case of stone/slate being used as roofing material. In this case a highest of such percentage has been observed in Palwal district of Haryana (72 %) whereas in case of Punjab the highest percentage of such houses was only 1.6 % (Table 3). Tiles have been used as roofing material for 5.7 % houses in Haryana and for 14.5 % houses in Punjab (Table 4). However, highest proportion of such house in Punjab was found in Tarn Taran district (43.1 %) while in Haryana, Panipat district (19.4 %) had such highest percentage.

Such inter-district variations do bring out conspicuous belts of high and low percentages in each such case and, therefore, all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Houses with Burnt Bricks Roof
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J&K
PAKISTAN
HIMACHAL PRADESH
UTTARPRADESH
RAJASTHAN
PUNJAB
HARYANA
Delhi
Gurdaspur
Amritsar
Hoshiarpur
Tarn Taran
Kapurthala
Jalandhar
SBS Nagar
Ropar
Ludhiana
Moga
Firozpur
Faridkot
Fatehgarh Sahib
Mukhtsar
Bathinda
Barnala
Sangrur
Patiala
Ambala
Yamunanagar
Kurukshetra
Mansa
Karnal
Sirsa
Fatehabad
Jind
Panipat
Hisar
Sonipat
Rohtak
Bhiwani
Jhajjar
Gurgaon
Faridabad
Mahendragarh
Rewari
Mewat
Palwal
Percentage
40
30
20
10
Study Region Average- 19.9
International Boundary
Interstate Boundary
District Boundary
National Capital
State Capital
Note: Districts as per Census 2011
0 12.5 25 50 75 100
K.M.

Fig. 2

Table 3

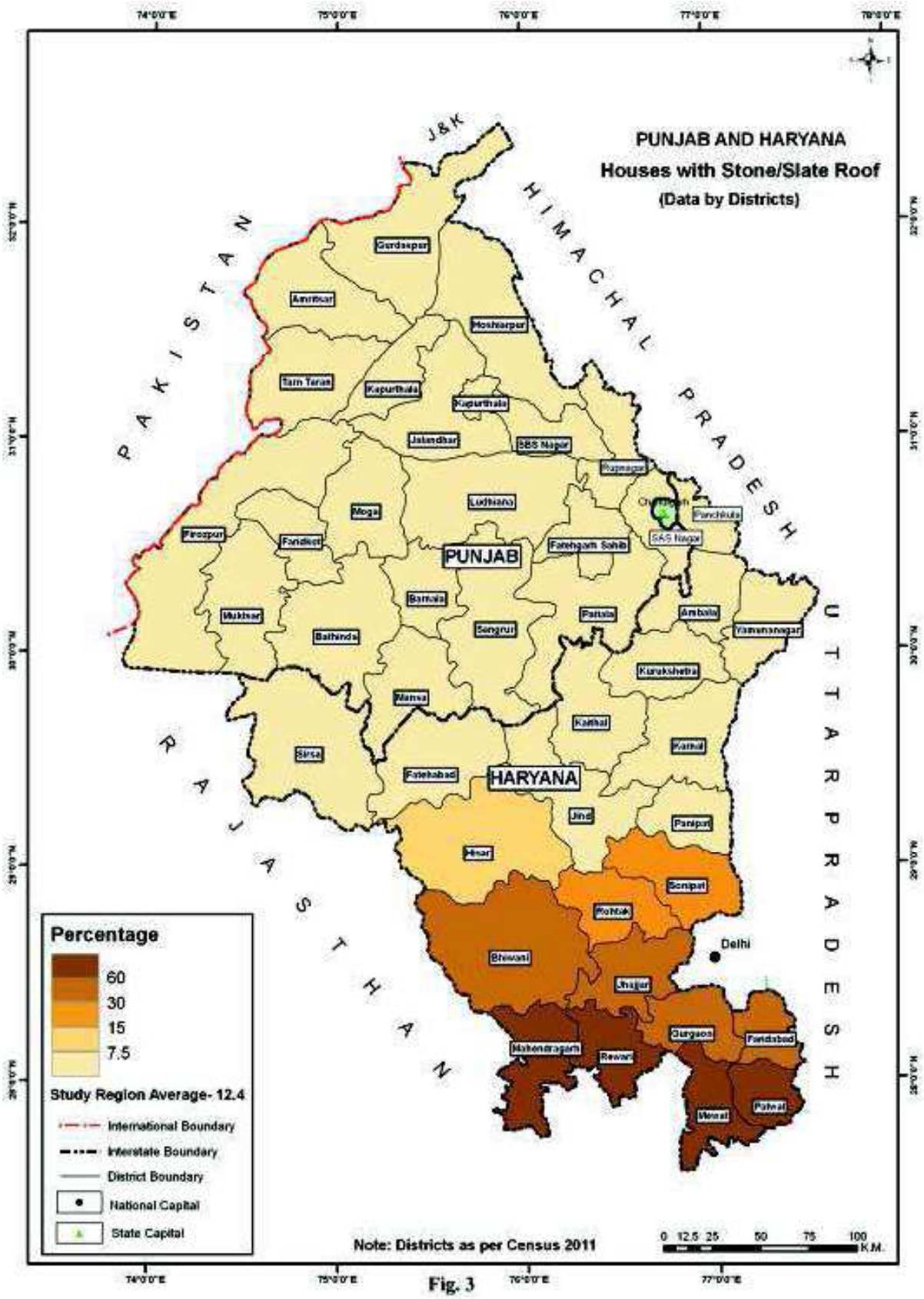
Punjab-Haryana Region: Percentage of Houses with Stone/Slate as Roof Material.

State/ District	Percentage	State/ District	Percentage
Punjab	**0.9**	**Haryana**	**23.9**
Kapurthala	0.5	Yamunanagar	0.9
Faridkot	0.6	Kurukshetra	1.1
Amritsar	0.7	Karnal	1.3
Rupnagar	0.7	Sirsa	1.4
S.B.S. Nagar	0.8	Panchkula	1.6
Firozpur	0.8	Kaithal	1.6
Bathinda	0.8	Ambala	1.8
Mansa	0.8	Fatehabad	2.1
Tarn Taran	0.8	Jind	2.4
Sangrur	0.8	Panipat	4.0
Barnala	0.8	Hisar	9.4
Jalandhar	0.9	Sonipat	25.8
Fatehgarh Sahib	0.9	Rohtak	27.7
Shri Muktsar Sahib	0.9	Gurgaon	31.5
Patiala	0.9	Faridabad	39.7
Ludhiana	1.1	Bhiwani	45.6
Moga	1.1	Jhajjar	55.5
S.A.S. Nagar	1.2	Mewat	64.5
Gurdaspur	1.3	Rewari	67.7
Hoshiarpur	1.6	Mahendragarh	68.1
		Palwal	72.1
Regional Average	***12.4***		

Source: Census of India, 2011

the four maps prepared for the purpose are significant in this respect and succeed in highlighting sharpness in the spatial distributions. Punjab has the largest contiguous belt of high percentage of houses with concrete roofing extending further into Haryana's northeastern parts right up to Karnal on Map 1 that depicts the proportion of houses using concrete roofing. This dividing line, divides Punjab into two halves running from northwest to southeast while the adjoining areas of Haryana too merge into this belt. This belt apart, the southern districts of Gurgaon and Faridabad due to their nearness to NCT of Delhi too have more than 50 % of their houses with concrete roofing. Broadly speaking, as one moves from northeast to southwest in Punjab-Haryana region, the proportion of houses with concrete roofing gradually declines. Such a gradient may have some association with climatic regime of the study area as the southwestern part has the highest temperature and lowest precipitation conditions.

Map 2 presents a contrast to the previous map as southwestern Punjab and adjoining northwestern Haryana emerge as the largest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J&K
PAKISTAN
HIMACHAL PRADESH
UTTARPRADESH
RAJASTHAN
PUNJAB
HARYANA
Delhi
Gurdaspur
Amritsar
Hoshiarpur
Tarn Taran
Kapurthala
Jalandhar
SBS Nagar
Ropar
Ludhiana
Moga
Firozpur
Faridkot
Fatehgarh Sahib
SAS Nagar
Panchkula
Mukhtsar
Bathinda
Barnala
Sangrur
Patiala
Ambala
Yamunanagar
Kurukshetra
Mansa
Kaithal
Karnal
Sirsa
Fatehabad
Jind
Panipat
Hisar
Sonipat
Rohtak
Bhiwani
Jhajjar
Gurgaon
Faridabad
Mahendragarh
Rewari
Mewat
Palwal
Percentage
60
30
15
7.5
Study Region Average- 12.4
International Boundary
Interstate Boundary
District Boundary
National Capital
State Capital
Note: Districts as per Census 2011
0 12.5 25 50 75 100
K.M.

Fig. 3

Table 4

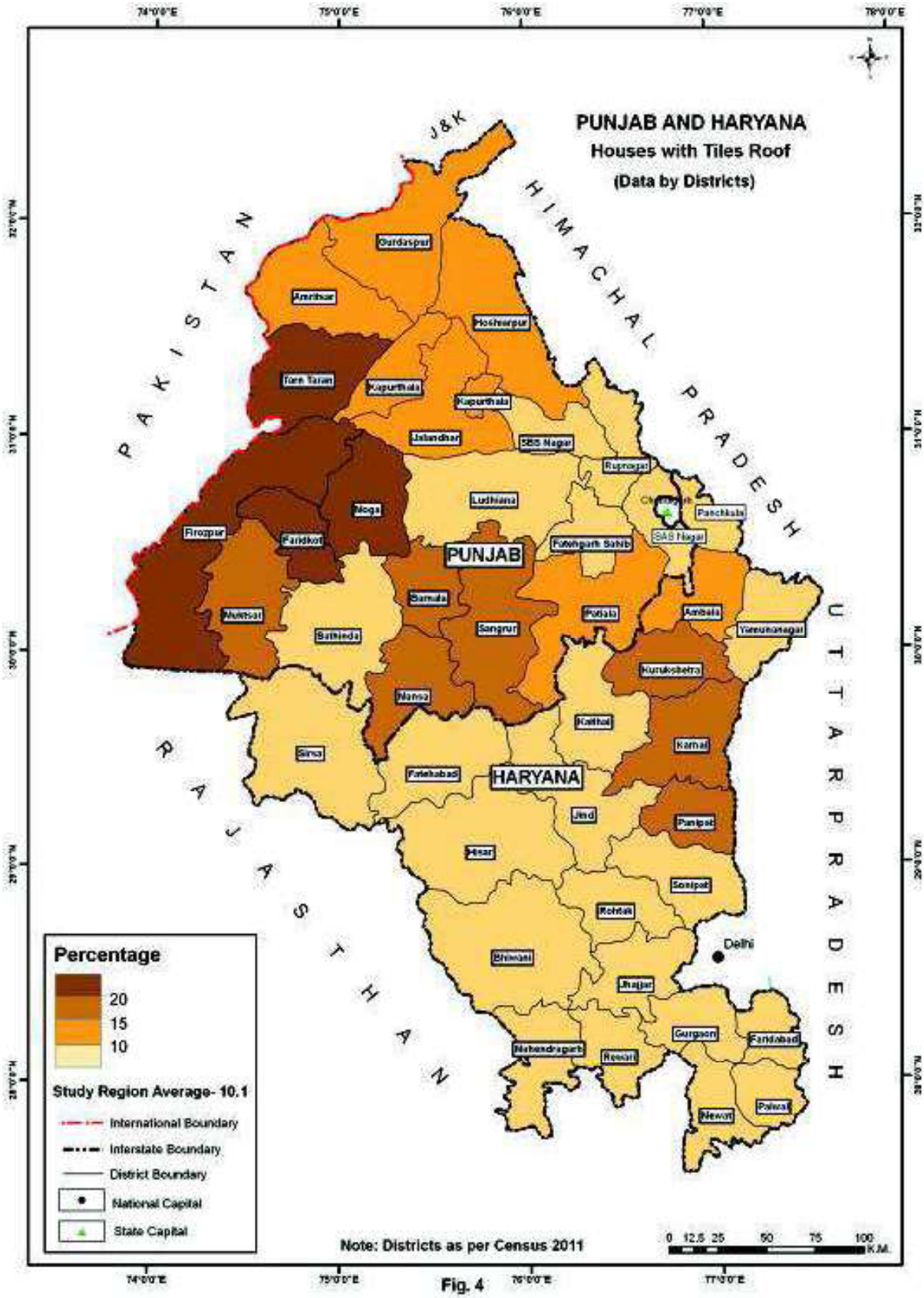
Punjab-Haryana Region: Percentage of Houses with Tiles as Roof Material.

State/ District	Percentage	State/ District	Percentage
Punjab	**14.5**	**Haryana**	**5.7**
Fatehgarh Sahib	5.2	Mahendragarh	0.6
Rupnagar	5.3	Rewari	0.6
S.A.S. Nagar	5.5	Mewat	0.8
Ludhiana	6.6	Palwal	1.0
Bathinda	8.8	Gurgaon	1.1
S.B.S.Nagar	9.0	Panchkula	1.6
Jalandhar	11.1	Bhiwani	1.6
Gurdaspur	11.3	Faridabad	1.8
Hoshiarpur	11.3	Hisar	2.0
Patiala	14.2	Jhajjar	2.1
Kapurthala	14.8	Jind	4.0
Amritsar	15.2	Rohtak	4.1
Shri Muktsar Sahib	16.4	Fatehabad	4.4
Sangrur	16.9	Yamunanagar	6.2
Mansa	17.2	Kaithal	7.6
Barnala	18.0	Sirsa	7.8
Firozpur	23.4	Sonipat	8.5
Moga	29.6	Ambala	11.8
Faridkot	30.9	Karnal	15.5
Tarn Taran	43.1	Kurukshetra	15.8
		Panipat	19.4
Regional Average	***10.1***		

Source; Census of India, 2011

belt of highest proportion of house with burnt bricks roofing. Southern Haryana and northwestern Haryana by contrast have low percentage of such houses. On Map 3, southern half of Haryana emerges as an area of highest proportion of stone/slate having been used as roofing material, the proportion being more than 30 per cent or even 60 per cent. By contrast, entire Punjab and much of northern Haryana display extremely low percentage (less than 7.5 %) of such houses. Map 4 brings out intra-regional contrasts in proportion of houses using tiles a roofing material. The southeastern Punjab along with northeastern parts of Haryana together make a contiguous belt of more than 20 % houses using tiles as roofing material whereas rest of the region, by and large, has less than 10 % houses with tiles roofing.

What emerges from the above observations is that Rupnagar district has highest percentage (76.6 %) of houses with concrete roofing; Palwal has highest percentage (72.5 %) of houses with stone/slate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HIMACHAL PRADESH
PAKISTAN
UTTAR PRADESH
RAJASTHAN
PUNJAB
HARYANA
Delhi
Gurdaspur
Amritsar
Hoshiarpur
Tarn Taran
Kapurthala
Jalandhar
SBS Nagar
Ropnagar
Ludhiana
Panchkula
SAS Nagar
Fatehgarh Sahib
Firozpur
Faridkot
Moga
Mukatsar
Bathinda
Barnala
Sangrur
Patiala
Ambala
Yamunanagar
Kurukshetra
Karnal
Kaithal
Mansa
Sirsa
Fatehabad
Jind
Panipat
Hisar
Sonipat
Rohtak
Bhiwani
Jhajjar
Gurgaon
Faridabad
Mahendragarh
Rewari
Mewat
Palwal
Percentage
20
15
10
Study Region Average- 10.1
International Boundary
Interstate Boundary
District Boundary
National Capital
State Capital
Note: Districts as per Census 2011
0 12.5 25 50 75 100
K.M.

Fig. 4

roofing; Bathinda has the highest proportion (50 %) of house with burnt bricks roofing; and Tran Taran has highest proportion (43 %) of houses with tile roofing in the study region, all pointing toward sharp intra-region contrasts in the type of material used in residential dwellings.

Such interesting and sharp intra-regional contrasts in the material used for roofing of residential dwellings in Punjab-Haryana region are to be viewed in the context of such factors as climatic (especially temperature and precipitation) variations; disparities in income levels; proximity to NCT of Delhi or regional capital of Chandigarh. In fact the number of factors that may explain such spatial patterns of quality of housing in terms of variety of roofing material may include: (i) climatic conditions; (ii) power of the purse or the income bracket of the house owner; (iii) quantum of foreign remittances received especially in case of traditional areas of emigration from Punjab; (iv) literacy and educational level; (v) proximity to National Capital Territory of Delhi; (vi) nearness to regional capital of city of Chandigarh (known for ushering in a revolution in the housing quality in this part of the country); (vii) proximity to sensitive international border with Pakistan subscribing to fear psychosis in the adjoining areas; (viii) physiographic conditions such as desert or foot-hill landscape; and (ix) socio-cultural background.

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