

Mapping Education and Health Infrastructure of Aspirational Districts in India

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INTRODUCTION:

The realisation that geographies matter in the targeted programs that aim at reducing inequalities for health care services brought focus on districts rather than on states. The transformation of the Aspirational district program focuses on 115 backward districts across 28 states. The Aspirational districts follow the innovative approach of focusing on five core dimensions: health & nutrition, education, financial inclusion, agriculture & water resources, skill development & basic infrastructure.

According to Human Development report of India 2011, Infrastructure investment is an important driving force to achieve rapid and sustained economic growth. Many studies have found a positive relationship between the level of infrastructure development measured by per capita income and other indicators, and quality of housing and access to basic amenities like electricity, safe drinking water, toilets facilities etc. World Development Report (1994) published by the World Bank under the title 'Infrastructure for Development' rightly mentions that "the adequacy of infrastructure helps determine one country's success and another's failure in diversifying production, expanding trade, coping with population growth, reducing poverty, or improving environmental conditions" As in the case of health services, provision of education for all in India has also largely been envisaged within the public delivery system even though this sector has a significant presence of private providers. Since independence the government has launched various schemes and programmes for increasing literacy among all sections of the population, like the Sarva Shiksha Abhiyan and the Right to Education Bill are the two seminal steps in this direction.

Economic literature is rich with studies on the education and health sector in India identifying problem areas, providing solutions, estimating investment requirements, making recommendations for policy and institutional changes. The PROBE survey has been a landmark study on education in the country PROBE, 1999. It thoroughly

documents the inadequacy of school infrastructure and basic facilities such as proper class room facilities like furniture, blackboards, playgrounds, toilet and teaching aids are missing in many if not most public schools.

DATA SOURCES:

In the present study we have used full enumeration census 2011 data for analysis and plotting the maps of basic education and health infrastructure at districts level. Mostly these data for research purpose were unexplored. Moreover, in the present study we have used Information related to amenities available in at village, block and districts level, like distance form secondary, senior secondary, community health center, Primary health center, integrated child and nutritional center, etc. However, the Census data provide information on demographic and socioeconomic characteristics of population at the lowest administrative unit i.e. of each Village, Town and Ward of the District. The Primary Census Abstract (PCA) part of census publication contains data including data on household amenities collected during 1st phase of the Census i.e. House Listing and Housing Census. The non-Census data available in district hand book in form of Village Directory and Town Directory contain information on various infrastructure facilities available in the village and town viz; education, medical, drinking water, communication and transport, post and telegraph, electricity, banking, and other miscellaneous facilities. Thus, this data of district hand book unit level is of considerable importance in the context of planning and development at the grass-root level. Thus, the scope and coverage of Village Directory of 2011 district hand book data has been widened by including several new amenities in addition to those of 2001.

TECHNIQUE AND TOOLS

To incorporate the analysis and understanding the education and health infrastructure at district level all census data have recoded into STATA software and bivariate analysis have been done, afterward all district level results have been plotted in using ARC GIS 10.6.1 Software to visualize the realistic importance of availability and accessibility infrastructure.

Table1: Distribution of districts, sub-districts and village, inhabited by SC/ST in India, Census-2011.

State	No of Districts	No of Sub-Districts	No of Village	No of Village Inhabited	No of village Uninhabited	SC Village 50 % and above	ST Village 50 % and above
ANDAMAN & NICOBAR	3	9	555	396	159	0	0
ANDHRA PRADESH	23	1,128	27,800	26,286	1,514	17,460	19,821
ARUNACHAL PRADESH	16	188	5,589	5,258	331	0	5,052
ASSAM	27	184	26,395	25,372	1,023	3,790	13,818
BIHAR	38	534	44,874	39,073	5,801	26,472	9,831
CHANDIGARH	1	1	5	5	0	0	0
CHHATTISGARH	18	149	20,126	19,567	559	6,068	17,776
DADRA & NAGAR	1	1	65	65	0	0	0
DAMAN & DIU	2	2	19	19	0	0	0
GOA	2	11	334	320	14	29	203
GUJARAT	26	225	18,225	17,843	382	6,981	10,682
HARYANA	21	74	6,841	6,642	199	5,454	0
HIMACHAL PRADESH	12	117	20,690	17,882	2,808	5,284	3,710
JAMMU & KASHMIR	22	82	6,553	6,337	216	1,648	3,239
JHARKHAND	24	259	32,394	29,492	2,902	8,221	20,222
KARNATAKA	30	180	29,340	27,397	1,943	16,806	16,935
KERALA	14	63	1,018	1,017	1	981	988
LAKSHADWEEP	1	10	21	6	15	0	0
MADHYA PRADESH	50	342	54,903	51,929	2,974	23,088	37,435
MAHARASHTRA	35	357	43,665	40,959	2,706	19,556	29,971
MANIPUR	9	38	2,582	2,515	67	48	2,186
MEGHALAYA	7	39	6,839	6,459	380	31	6,336
MIZORAM	8	29	830	704	126	0	704
NAGALAND	11	114	1,428	1,400	28	0	1,397
NCT OF DELHI	9	27	112	103	9	90	0
ODISHA	30	477	51,311	47,675	3,636	17,837	33,106
PUDUCHERRY	4	8	90	90	0	0	0
PUNJAB	20	77	12,581	12,168	413	9,709	0
RAJASTHAN	33	244	44,672	43,264	1,408	21,440	23,840
SIKKIM	4	9	451	425	26	68	421
TAMIL NADU	32	216	15,979	15,049	930	12,247	4,683
TRIPURA	4	44	875	863	12	433	816
UTTAR PRADESH	71	312	1,06,774	97,814	8,960	68,899	9,654
UTTARAKHAND	13	78	16,793	15,745	1,048	3,967	1,701
WEST BENGAL	19	360	40,203	37,469	2,734	22,908	21,661
All INDIA	640	5988	6,40,932	5,97,608	43,324	2,99,515	2,96,188

Map: Total Number of Inhabited Village and Towns in the district of India (Census, 2011)

Total Number of Village Inhabited and Towns In India (Census-2011)

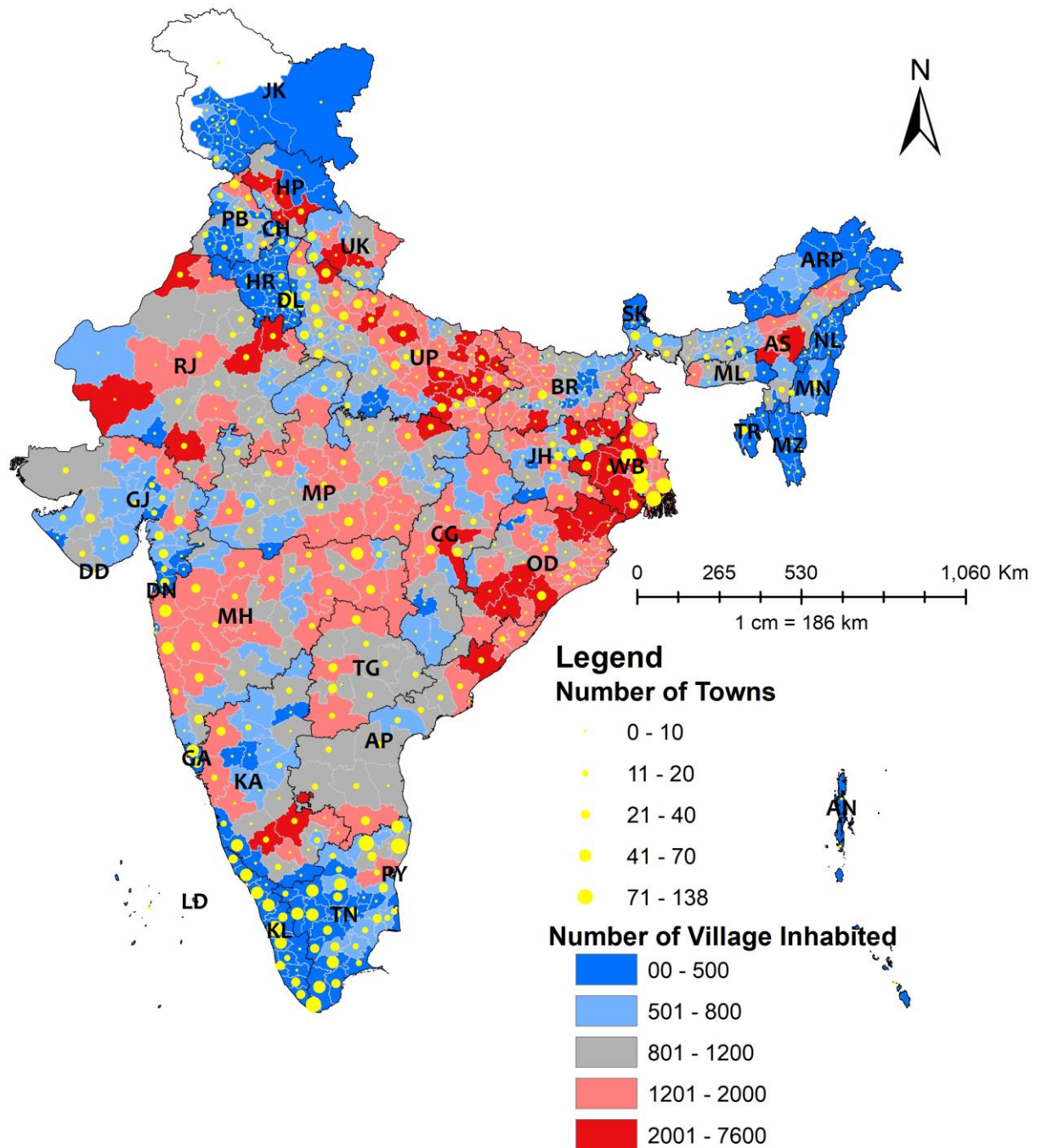


Table 2. Distribution of Village by Distance to Schools in aspirational district of India, (Census-2011)

Distance	Primary (%)	Secondary (%)	Senior Secondary (%)	College (%)
Within Village	85.1	13.38	4.94	0.89
< 5 Km	10.77	33.1	19.59	5.59
5-10 Km	3.51	33.29	31.84	18.64
> 10+ Km	0.62	20.24	43.63	74.67

Table 3. Distribution of Village by Distance to Health Centre in aspirational district of India, (Census-2011)

Distance	Primary Health Centre (%)	Community Health Centre (%)	Maternal child Health Centre (%)	Mobile Health Centre (%)
Within Village	12.17	9.84	14.42	13.74
< 5 Km	14.34	7.65	10.84	4.91
5-10 Km	34.55	21.42	30.08	15.43
> 10+ Km	38.94	61.09	44.66	65.91

SCHOOLING AVAILABILITY AND ACCESSIBILITY

we consider few educational availability and accessibility indicator for understanding the schooling scenario of aspirational districts in India. Recently government of India has been given more focused on the aspirational districts, with more emphasize on the 'Transformation of Aspirational Districts' programmed aims to quickly and effectively transform these districts. Whereas, the have also assign the weightage for the Basic infrastructure (10%) for developmental aspects. In the Table the existing secondary source of census data suggest that there is need to give priorities to the villages were basic infrastructure specially for secondary and senior secondary school were not available or far distant from the village areas. Considering the aspirational districts only 13.38 villages have availability of secondary school and distance from within 5, 5-10 and 10 Km are 33.1 %, 33.29% and 20.24 % respectively. Moreover, the same type of scenario has been found in case of senior secondary school availability only 4.94 % village having the access the facilities, while distance from within 5, 5-10 and 10 Km are 19.59 %, 31.84 % and 43.63 % respectively. However, the accessibility of college facilities in the aspirational district is very far away, most of the college is situate above the 10+ km from village.

HEALTH CENTER AVAILABILITY AND ACCESSIBILITY

In this paper, we focus on the health infrastructure availability and accessibility, which is related to access and distance to health facilities. Distance is known to be one of the most important nonmonetary barriers that impede access to health care, especially in rural areas. Large geographic distances to a health care provider coupled with a lack of transportation facilities can adversely affect the utilization of health services and health outcomes (Sarma, 2009). The preliminary aim of this study is to assess the importance of the distance to the nearest health facility such as primary, community health center etc. Due to a lack of suitable data, very few studies that are nationally representative have examined the distance on primary and community health Infrastructure center. The distribution of village by distance to health center in aspirational district shows empirical evidence that most of health center are far away from the accessibility point of view. Moreover, results also indicates within village the availability of facilities center is very less such as primary and community health unit only 12.17% and 9.84% are available and accessible for general population. While the distance much matter for the pregnant women of the villages' areas, due to lack of transportation facilities etc. In the table 3 it is clearly found that most of the primary, community, maternal child and health and mobile health center are more than above 10+ Km.

SECONDARY AND SENIOR SECONDARY SCHOOL DISTANCE:

Map 2 and 3 represent the secondary and senior secondary school availability distance with 5, 5-10 and above 10+ km from village. In the aspirational district more than 50% and above school infrastructure is located from village to within 5 Km mostly in northern states district. Whereas between 5-10 km from villages have observed in the state of Bihar and Andhra Pradesh and above 10+ Km are found in the state of Rajasthan, Bihar, Jharkhand and Andhra Pradesh. Moreover, the results indicate most of the senior secondary school are above 10+ km highly concentration in states- Bihar, Jharkhand and Andhra Pradesh.

PRIMARY AND COMMUNITY AND NUTRITIONAL HEALTH CENTRE DISTANCE:

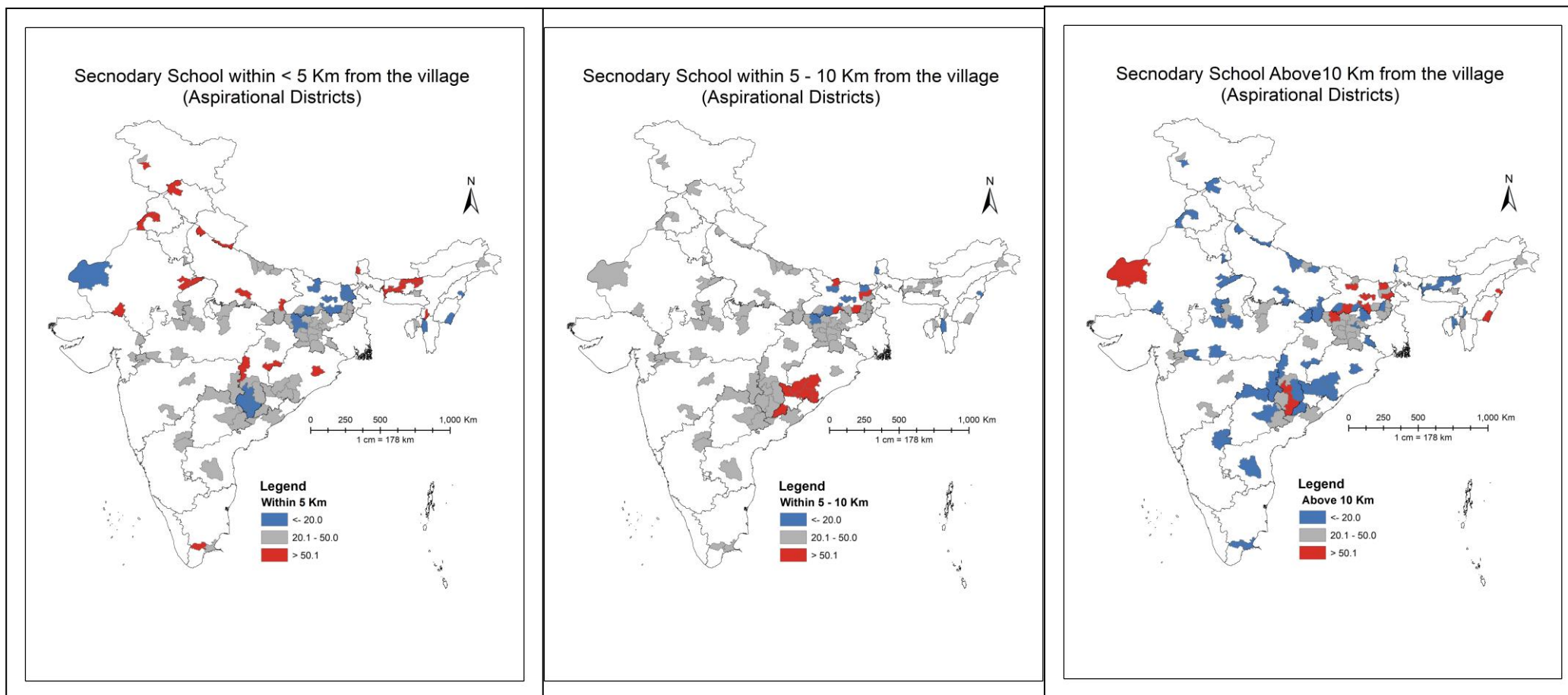
We focus on the basically on the health infrastructure facilities on primary, community and nutritional ICDS center, which is related to access and distance to health facilities

from the villages. The results presented so far show that distance is an important aspect to understand the real situation on basic health outcomes in India. Whereas, approximately 50 and above aspirational districts have access of community health facilities are above 10+ km. This linked to the women living farther away from health facilities have a lower probability of health care check-up and institutional delivery. However, in primary health facilities more or less similar situation have been observed in accessibility of PHCs in the district. The distance from village to health facilities above 10+ km aspirational districts are mostly concentrated in Jharkhand, Chhattisgarh, Madhya Pradesh and Andhra Pradesh. To improve maternal and neonatal care nutritional ICDS center at the grass root level playing an important role to facilitate the nutritional services. Moreover, in the aspirational district most of the nutritional ICDS centers have located far away from the villages.

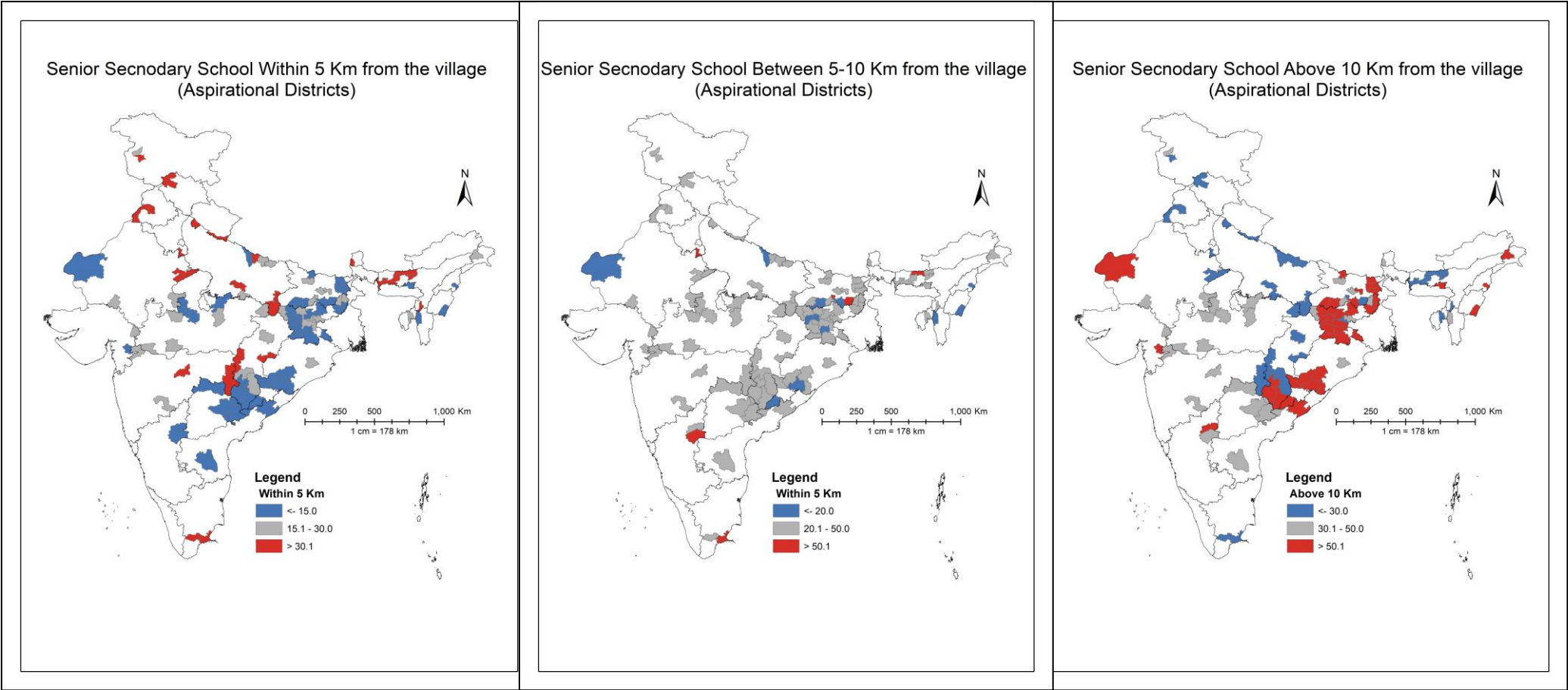
CONCLUSION:

There are several literatures provide insightful results on education and health domain. Also, the various researchers present the results based on sample survey, but no such type of studies provide information related to availability and accessibility Infrastructure in aspirational district of India. Both for education as well as the health care, it is poor delivery of the services that has exacerbated the consequences of poor infrastructure. The Indian government should (1), ensure that the poor have adequate choice. (2), ensure that public delivery mechanism is strengthened. (3), local governments bodies need to be allocated these tasks in an unambiguous fashion, outcomes regularly assessed and publicized, and responsibility for both successes and failures clearly assigned. Currently, both in the education and health sectors, responsibilities have not been adequately assigned. If we focused on geographically and hierarchically development of educational and health infrastructure lead to provide users better services in both rural as well as urban areas.

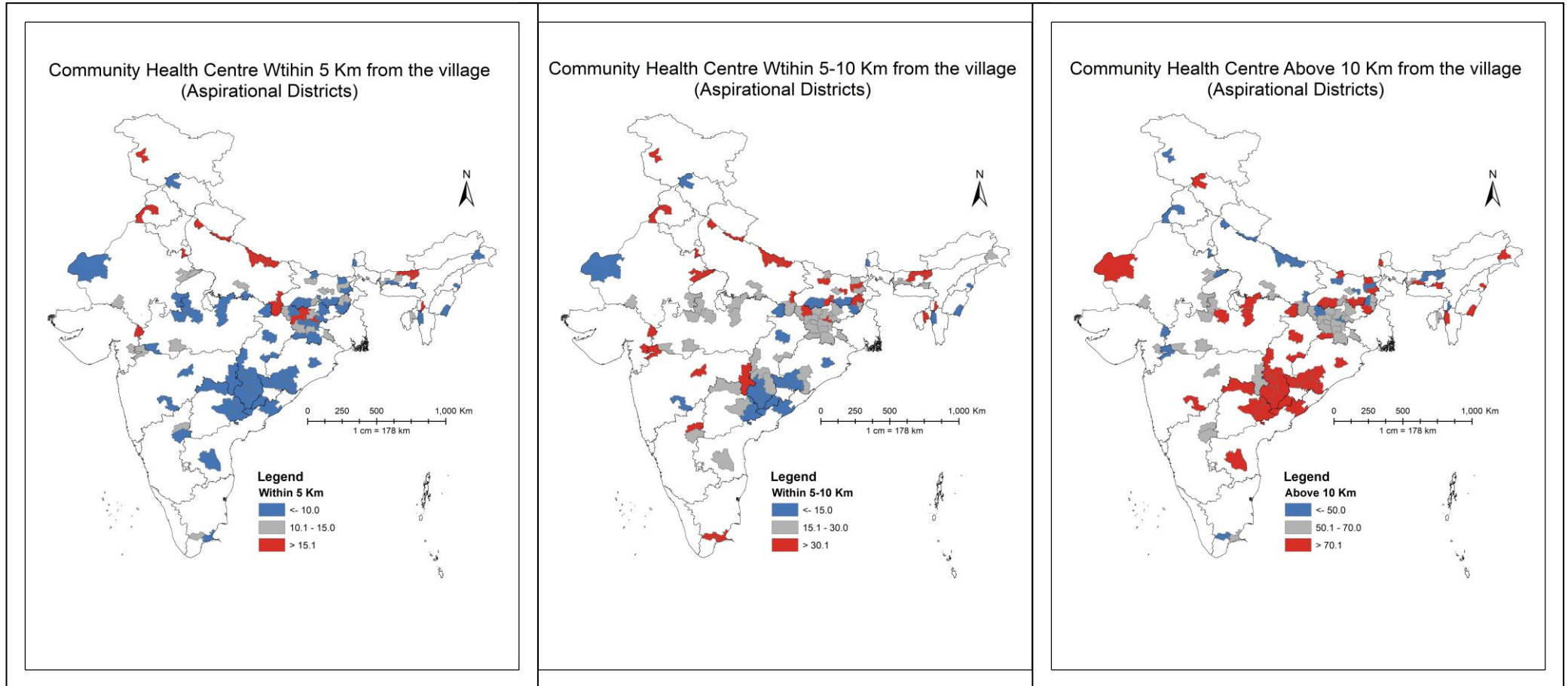
Map 2: Secondary School If not available within the village, the distance range of nearest place where facility is available within < 5 Km, between for 5-10 Km and above for 10+ Km.



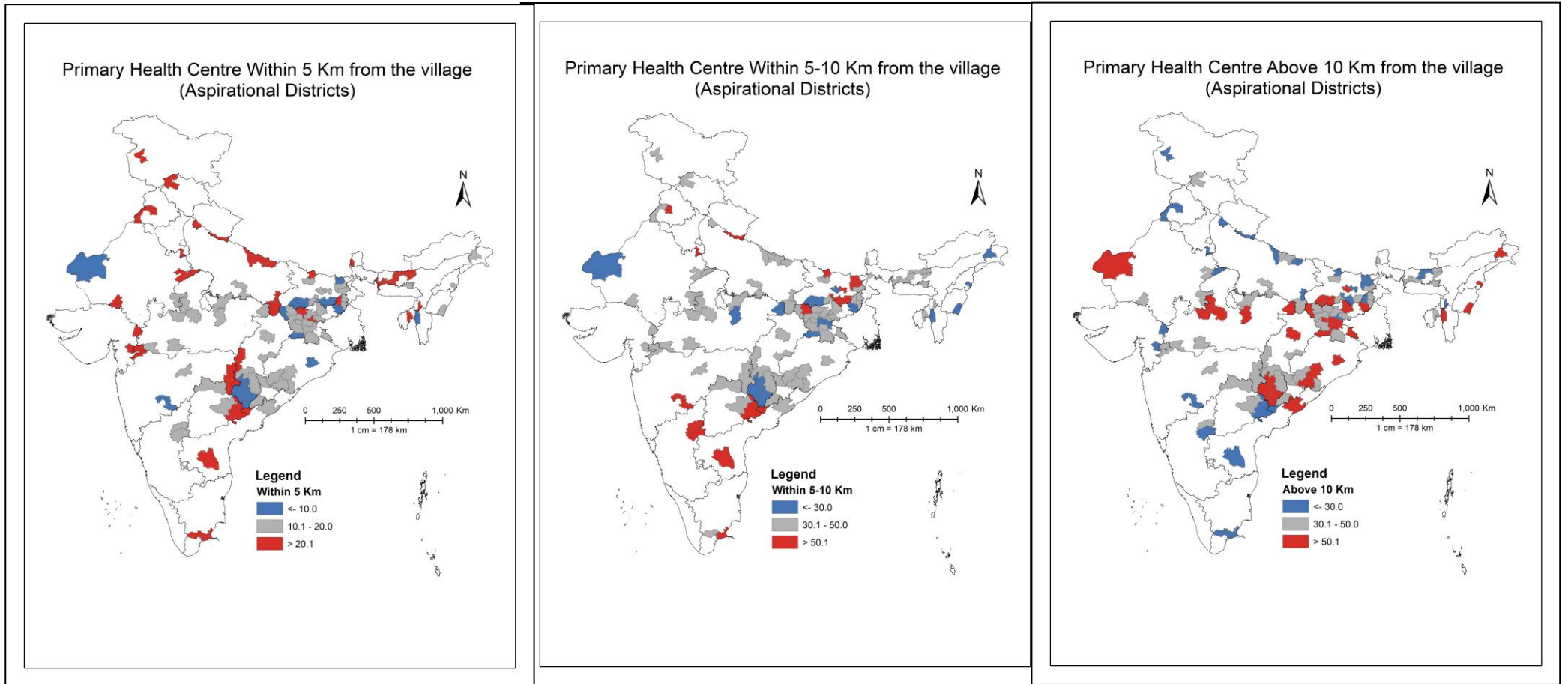
Map 3: Senior Secondary School If not available within the village, the distance range of nearest place where facility is available within < 5 Km, between for 5-10 Km and above for 10+ km.



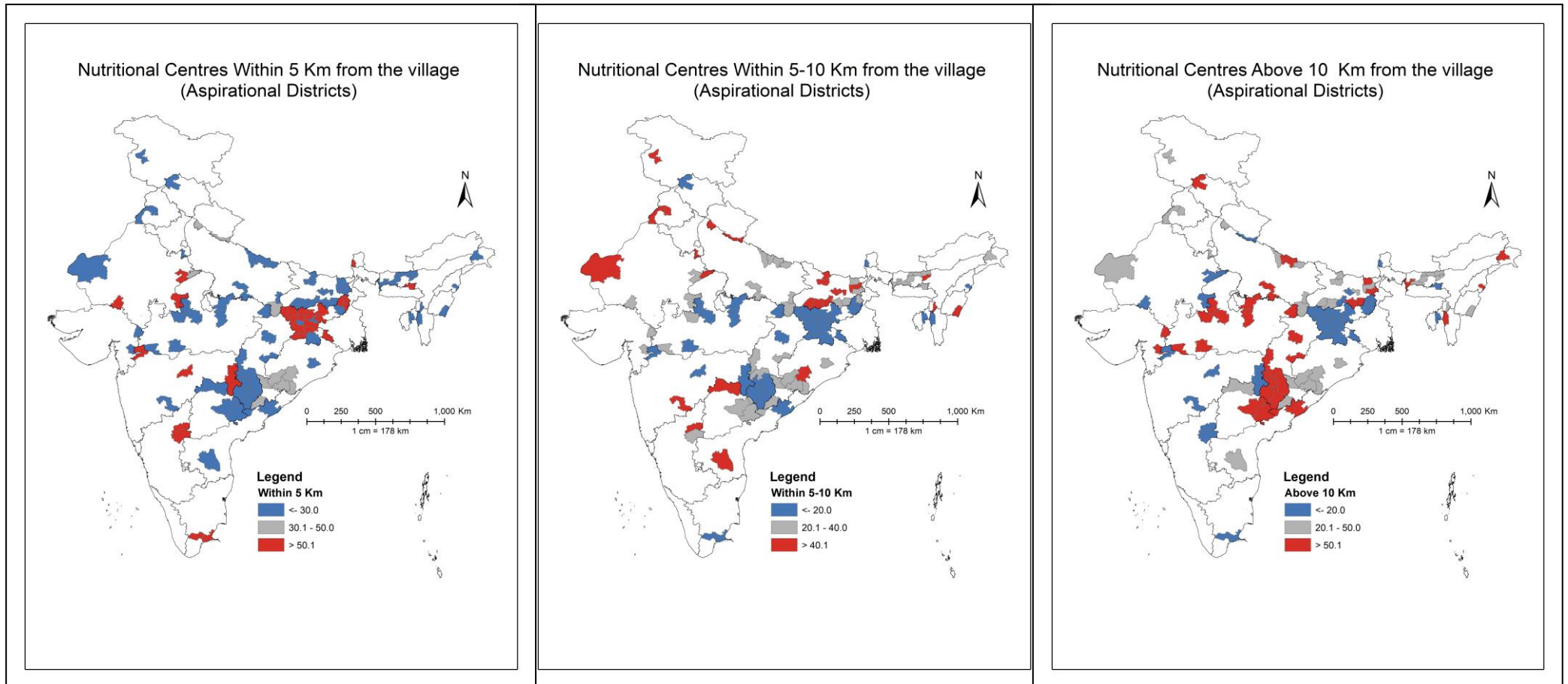
Map 4: Community Health Centre If not available within the village, the distance range of nearest place where facility is available within < 5 Km, between for 5-10 Km and above for 10+ km.



Map 5: Primary Health Centre If not available within the village, the distance range of nearest place where facility is available within < 5 Km, between for 5-10 Km and above for 10+ km.



Map 6: Nutritional Centre (ICDS) If not available within the village, the distance range of nearest place where facility is available within < 5 Km, between for 5-10 Km and above for 10+ km.



Note: Nutritional Anganwadi Centre and Others Nutritional Anganwadi Centre are not included in analysis.

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