

## A Critical Analysis of Status and Deficiencies of Health Services in Kharkhoda Block of Sonipat District of Haryana

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### Abstract

Health services play an important role in the overall development of any region; gathering basic information is the primary step in making the proper decision in the developmental activities of the study area. For planning at the micro level, a village is considered a viable micro-administrative unit. For the data primary survey was done in all forty-four villages and the Kharkhoda municipal committee in 2019. A detailed Global Positioning System Survey has been done of various health services and presented through maps. The deficiency of various utility services has been calculated based on norms given by the government schemes. The present paper focuses on the status of health services in the Kharkhoda block of Sonipat district in Haryana and highlights the areas of deficiency in health services. The paper concludes that the study area is deficient in public health centres, public health sub-centres, AYUSH centres and Anganwari centres and the status of health services in the area is not according to the various norms defined by the government of India.

**Keywords:** Health, AWC, Micro-level Planning, Utility Services.

### Introduction

Rural development stands as a paramount task within the context of India, serving as an indispensable prerequisite for the nation's comprehensive progress. Without a doubt, the true advancement of the country hinges upon the development of its agricultural sector, which undoubtedly serves as the bedrock of the Indian economy. The agricultural sector not only charts the course of growth in other economic domains but also commands the utmost attention from our planners and policymakers.

The issue of spatial imbalance and development has come to light and the government has given greater emphasis on grassroots planning or micro-level planning. Now the need for micro-level planning has become a concern for national and state governments, planners in government and the private sector. For solving the issues of health facilities at the grassroots level, the availability of data and analysis of the status of these facilities at the micro level is a necessary step. That's why the research is important for sustainable rural development. An ideal decision-making for the creation of the health utility facility needs variations in the deficiency of the health infrastructure. This paper fulfils these needs for micro-level planning for health facilities in the Kharkhoda block of the Sonipat district. Over the past four decades, a multifaceted approach has been employed to enhance agricultural production, primarily categorized into three key dimensions. Institutional reforms have been pivotal, involving measures such as the elimination of intermediaries, imposition of landholding restrictions, and the consolidation of land holdings, collectively known as land reforms. Technological advancements constitute another significant dimension, encompassing the introduction of cutting-edge technologies and improved inputs



to optimize agricultural practices. Additionally, infrastructural reforms have been instituted, bringing about substantial changes in agricultural finance and marketing systems. These comprehensive reforms aim to redefine the trajectory of the agricultural sector, aligning its orientation with the overarching goals outlined in successive five-year plans (Singh et al., 2011).

In recognition of the multifaceted nature of regional economic development, regional planning with a focus on micro-level integrated rural development becomes an imperative endeavor to rectify regional disparities. Throughout our five-year plans, several initiatives have been implemented, encompassing sectoral programs, area-based programs, and target group-oriented programs. However, due to the fragmented approach and limited scope of these programs, they have achieved only partial success in achieving holistic rural development. It is against this backdrop that the concept of "Integrated Rural Development" emerged, aiming to foster coherent and systematic progress in rural areas.

The inception of Integrated Rural Development at the block level occurred during the sixth plan (1980-85). Experience has underscored the importance of coordinated efforts over a multitude of agencies to achieve desired outcomes. The objective of minimizing rural poverty through rural development can be effectively realized only through a multidisciplinary approach at the grassroots level (Planning Commission, 1980).

Masot et al. (2018) examine the allocation of rural development investments in Extremadura, Western Spain, using the LEADER Approach. Through geolocation analysis and cluster methods like Local Moran's I and Kernel Density, the research reveals a trend where more vibrant towns receive greater investments, leaving economically and demographically disadvantaged communities underserved. Tang et al. (2018) aims to create an optimization model and framework for spatial planning in high-quality rural settlements in China. By incorporating the "life quality theory," they find that sufficient settlement space is crucial for enhancing life quality and optimizing spatial organization requires measures such as enhancing livelihoods, integrating industrial development, and implementing quality improvement strategies. The study underscores the importance of aligning rural community spatial organization with factors that contribute to an improved quality of life. Navarro Cerrillo et al. (2020) employed a cellular automaton (CA)-based land-use model, Metronamica, to simulate (1999–2007) and forecast (2007–2035) land-use dynamics, specifically focusing on rural areas in Andalusia, Spain. Utilizing GIS-based maps and assessing temporal changes in land-use covers through the Kappa index, the study aims to enhance insights into future rural land-use changes, providing a basis for more informed planning and policy development.

Upon careful examination, it is evident that block-level planning emerges as the most appropriate unit for planning, as it aligns with the realistic and need-based nature of the planning process. In this context, the current study has been undertaken. Ensuring good health conditions is a fundamental component of fostering the socio-economic development of any region. Health plays a crucial role in human resource development and contributes significantly to the overall quality of life (Jetli and Sethi, 2007). The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being, extending beyond the mere absence of diseases or infirmity (WHO, 1948, cited by Mahata and Sharma, 2017). In the pursuit of socioeconomic growth, the provision of healthcare emerges as a primary concern. The Indian Constitution safeguards the right to health, emphasizing the state's responsibility to ensure a healthy environment for its citizens, as outlined in various articles within Part IV of the constitution, known as the Directive Principles of State Policy.

The development of public health infrastructure holds paramount importance for any nation aspiring to mitigate the risks of illness for its population. Systematic healthcare initiatives and enhancements in health infrastructure contribute to increased labour productivity and life expectancy (Bircher, 2005).



Integrating health facilities into national development plans has consistently been a significant aspect, with societal improvement intricately tied to the level of healthcare, education, and nutritional support provided to the community (Ghatak and Das, 2012). Seema (2020) analyzed a remote sensing and GIS framework to assess the sustainability of healthcare facilities in Sonipat City. The evaluation was based on criteria outlined by the various government departments of India. The study utilized a multi-criteria analysis technique to identify the most suitable sites for various health facilities. The findings revealed a notable gap between the existing healthcare infrastructure and the established norms. On a positive note, the city has one general hospital that meets the required criteria, contributing to its overall healthcare sustainability.

### Study Area

Kharkhoda block is situated in the southern portion of the Sonipat district. It is located at 28°52'51" to 28°53'04" North latitude 76°53'49" to 76°55'23" to East longitude (Directorate of Census Operations, Haryana, 2011). There are a total of seven blocks in the Sonipat district. Mundlana and Kathura in the North-West, Ganaur and Sonipat in the North, Gohana in the North-West, and Rai in the East of the Kharkhoda block. The block is surrounded by three blocks, i.e., Gohan, Rai and Sonipat. It shares its boundary with the National Capital of Delhi in the South-East, Rohtak in the west and the Jhajjar districts of Haryana in the south. According to the Census of India 2011, the block has an area of 296.88 sq. km. and is divided into forty-five administrative units; out of which forty-four are villages and one is Municipal Committee named Kharkhoda. There are forty-four villages in the Kharkhoda block out of which forty-three are inhabited and one village i.e., Ziaudinpur is uninhabited. Kharkhoda municipal committee has a population of 25,051 and a density of 15369 persons/ ha. The average population of the block is 3131.97 persons. There are sixteen villages in the study area having more than the average population. The highest population is in Sisana (10169) village. The average Density of the study area is 823.78 persons/hectares and none of the villages has more than the average density of the area. Only Kharkhoda (15369) municipal committee has more than average density.

There are three AYUSH dispensaries available in the Kharkhoda block, one in each village of Anandpur, Kiroli and Sehri. (CHCs) are present in Ferozpur Bangar village and Kharkhoda town in the block. (PHCs) is available in four villages i.e., Sisana, Bidhlan, Farmana and Rohat Primary Health Sub Centres (PHSCs) are available in seventeen villages in the Kharkhoda block. In Kharkhoda block, there is a total of 215 anganwaries available. Out of these 215 anganwaries, 187 are in villages and 28 are in Kharkhoda town. Sisana (13) has maximum number of anganwaries followed by Farmana (10), Khana (10), Rohna (9), Silana (7), Gorar (7), Bidhlan (6), Barona (6), Thana Kalan (6). Garhi Sisana (5), Gopalpur Mandora (5) Nizampur Majra (5), Pipli (5), Rohat (5), Sehri (5) Ashrafpur Matindu (4), Nakloi (4), Pahladpur (4), Rampur Saidpur (4), Thana Khurd (4), Firojpur Bangar (3), Jatola (3), Jharothi (3), Kanwali (3), Kheri Dahiya (3), Mandori (3), Pai (3). Anandpur, Chhinauli, Fatehpur, Jharothi, Khurampur, Kundal, Nasirpur Cholka, Nirthan, Nizampur Khurd and Turakpur have two anganwari each. Whereas village of Kidholi and Mauzam Nagar has only one anganwari each. The Kharkhoda town has 28 Anganwaries. The situation of Anganwari is better in town of Kharkhoda than the villages.

### Research Questions

1. How does the health services in the Kharkhoda block of Sonipat district in Haryana are distributed?
2. Which areas are deficient in the health services in the Kharkhoda block?

### Research Objectives

1. To find the status of Health services in the Kharkhoda block of Sonipat district in Haryana.
2. To highlight the areas of deficiency in Health services in the Kharkhoda block.



**Data and Methodology**

The primary survey was done in all forty-four villages and the Kharkhoda municipal committee in 2019. The survey was done using a schedule created for utility services in Kharkhoda block. A detailed GPS Survey has been done through the Geo Tracker application of the location of various health services and presented through maps. The maps are prepared using ArcGIS 10.3. The deficiency of various utility services has been calculated based on norms given by the government schemes i.e., Urban and Regional Development Plans Formulation and Implementation Guidelines (URDPFI January 2015), Indian Public Health Standards (IPHS 2012 and 2022), Ayushman Bharat guidelines and Integrated Child Development Services Scheme. For this the projected population of 2019 has been used and the villages of the study area have been merged into clusters. Population of 2019 has been used for analysing the deficiency of educational services. The projection of population for 2019 has been calculated using “Growth” function in MS Excel which give predicted exponential growth based on the existing population data. The study is mainly based on secondary data and its description, interpretation and analysis using maps portraying different indicators of the urban sustainability. The Kharkhoda block has been divided into six clusters based on the population according to the guidelines of Shyama Prasad Mukherji Rurban Mission (SPMRM) and Rural Area Development Plan Formulation and Implementation (RADPFI) Guidelines, (2016). The Census of India (2011) remarked that in the categorization of villages medium sized villages can be grouped together to form a cluster if have geographical contiguity and small sized villages where cluster plans would be feasible (RADPFI Guidelines, 2016). Every cluster has a population of 25,000 to 50,000. The six clusters in the block are Barona, Farmana, Khanda, Kharkhoda Urban, Mandura and Sisana.

**Result and Analysis****Indian Public Health Standards (IPHS), 2012,2022**

When the focus on public health increased in India, the government-initiated training in public health which includes a workforce from both medical and non-medical backgrounds including nurses, sanitary inspectors, midwives, health officers etc.; there were other national and international commitments to improve health facilities globally and locally both such as 30<sup>th</sup> World Health Assembly in May 1977 followed by 34<sup>th</sup> World Health Assembly in 1981.

To meet all these commitments, it was essential to improve the public health facilities and to deliver this IPHS was launched. The IPHS is the norms and standards for various health centres, i.e., Public Health Centres, Public Health Sub-Centres, Community Health Centres, Sub-District hospitals etc. these standards were first published in 2007 and revised in 2012 and 2022.

**Urban and Regional Development Plans Formulation and Implementation (URDPFI)****Guidelines**

The planned development of cities and towns is crucial to accommodate the expected growth and ensure a better quality of life for all residents. To achieve this, the Ministry of Urban Development has formulated the Regional and Urban Development Plan Formulation and Implementation (URDPFI) Guide, 2014. These guidelines have been designed to facilitate sustainable urban growth and development within the municipal limits.

With rapid urbanization expected to continue until 2100, it is imperative that cities and towns across the country have a well-thought-out vision for development. The URDPFI Guide plays a vital role in guiding urban planning and ensuring that infrastructure and resources are efficiently utilized.

**Integrated Child Development Services (ICDS) Scheme**

According to the 2011 census, there are 158 million population in India who is under the 0-6 age group. The Ministry of Child Development is implementing various policies for the welfare, protection and



development of these as they are the future of this country. The primary goals of this initiative are to enhance the health and nutritional well-being of children aged 0-6 years and establish a solid basis for their psychological, physical, and social development. The overarching objective includes decreasing mortality rates, minimizing instances of illness and malnutrition, and preventing school dropout. Additionally, the scheme seeks to facilitate seamless coordination among different government departments to ensure efficient policy implementation and promote comprehensive child development.

### **Norms for Health Services**

According to the norms of IPHS 2012 and 2022, a community health centre should be established for a population of 1,20,000. A public health centre (PHC) should be established in a population of 30,000, and a public health sub-centre should be established in a population of 5,000 in a plain area. Whereas according to Ayushman Bharat guidelines, every AYUSH centre should cover a maximum of 5,000 population. Integrated Child Development Services Scheme defines that there should be an Anganwadi for a population of 800.

### **Cluster-wise Status and Deficiency of Health services in Kharkhoda Block (2019)**

#### **Community Health Centre (CHC)**

There are two CHCs in the Kharkhoda block one is in Kharkhoda urban cluster and the other is in Mandaura cluster (Fig. 1). According to the projected population of the block, the existing number of CHCs fulfils the requirements of the area, and there is no deficiency of community health centres in the study area. The distribution of CHC in the Kharkhoda block is appropriate (Fig. 2). The spatial pattern of CHC shows that the CHCs are appropriate according to the norms but present only in the central and southeastern part of the study area (Fig.1).

#### **Public Health Centre (PHC)**

There is total four PHCs in the Kharkhoda block. Two PHCs are in Farmana, one is in Sisana and another one is in Khanda cluster. All the remaining three clusters i.e., Kharkhoda urban, Barona and Mandaura have a deficiency of one PHC each. Sisana and Khanda clusters have appropriate number of PHCs according to the population norms of IPHS 2012 and 2022 (Table 4.4). There is only one surplus PHC in the Kharkhoda block which is in Farmana cluster (Fig. 3 and 4). The spatial pattern of PHC shows that unlike CHCs, the PHCs are present in the northern and western part of the study area. All the clusters which don't had CHCs have PHCs except Barona Cluster (Fig.3).

#### **1.6.3 Public Health Sub-Centre (PHSC)**

In Kharkhoda block, there are a total of 16 PHSCs exist in various clusters. The highest number (4) of PHCS is in Barona and Khanda clusters followed by Farmana and Sisana with three PHSC each. The least number (2) of PHSC is in the Mandura cluster whereas there is no PHSC in Kharkhoda urban cluster (Table 1) (Fig. 5). The block requires a total of thirty-six PHSC and has a deficiency of twenty-one PHSCs. The Kharkhoda urban cluster is the highly deficient cluster in the block which requires six PHSCs and have none. The Mandaura cluster have deficiency of four PHSCs followed by Farmana and Sisana clusters which have a deficiency of three PHSCs each. Barona and Khanda clusters have a deficiency of two PHSCs each (Table 1). The analysis shows that every cluster in the study area is deficient in PHSC and has fewer PHSCs than required according to the norms (Fig. 6). The deficiency of PHSC shows that the central part of the study area is most deficient of PHSC followed by western and eastern area (Fig. 6).

#### **AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy)**

According to the norms of the Ministry of AYUSH, there should be an AYUSH centre for every 5,000 population. The analysis shows that the Kharkhoda block is highly deficient of AYUSH centres as there are only three AYUSH centres in the area out of which two are in Khanda, and one is in Barona cluster

(Table 1) (Fig. 7). Every cluster has a deficiency of AYUSH centres. The four clusters, i.e., Kharkhoda urban, Mandaura, Farmana, Sisana have a deficiency of six AYUSH centres, each followed by Barona and Khanda clusters with a deficiency of five and four centres respectively. The spatial pattern of deficiency of Ayush dispensary is different from other health facilities. The Northern part of the study area has least deficiency of Ayush dispensary (Fig. 8).

**Table: Cluster wise Status and Deficiency of Health Services in Kharkhoda Block (2019)**

S.No	Category	Norms (Population served per unit)	Kharkhoda Urban				Barona				Mandaura				Farmana				Sisana				Khanda			
			(TP:29870)				(TP:28245)				(TP:29808)				(TP:31580)				(TP:29290)				(TP:30415)			
			R	E	D	S	R	E	D	S	R	E	D	S	R	E	D	S	R	E	D	S	R	E	D	S
1	CHC	1,20,000	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	PHC	30,000	1	0	1	0	1	0	1	0	1	0	1	0	1	2	0	1	1	1	0	0	1	1	0	0
3	PHSC	5,000	6	0	6	0	6	4	2	0	6	2	4	0	6	3	3	0	6	3	3	0	6	4	2	0
4	AYUSH	5,000	6	0	6	0	6	1	5	0	6	0	6	0	6	0	6	0	6	0	6	0	6	2	4	0
5	AWC	800	37	28	9	0	35	34	1	0	37	35	2	0	39	46	0	7	37	35	2	0	38	37	1	0

Source: Primary Survey 2019, BEO Office, RADPFI Guidelines 2017, URDPFI Guidelines 2015., IPHS (IPHS) 2012,2019, NAM 2014, ICDS.

Note: (R = Required, E = Existing, D = Deficiency, S= Surplus, TP=Total Population.

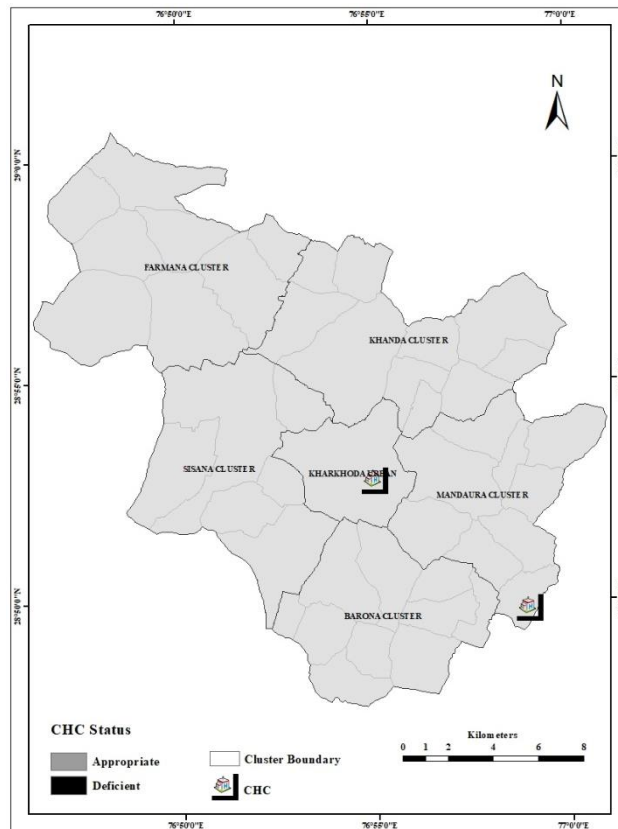


Fig. 1 Status of CHC in Kharkhoda Block, Sonipat (2019).

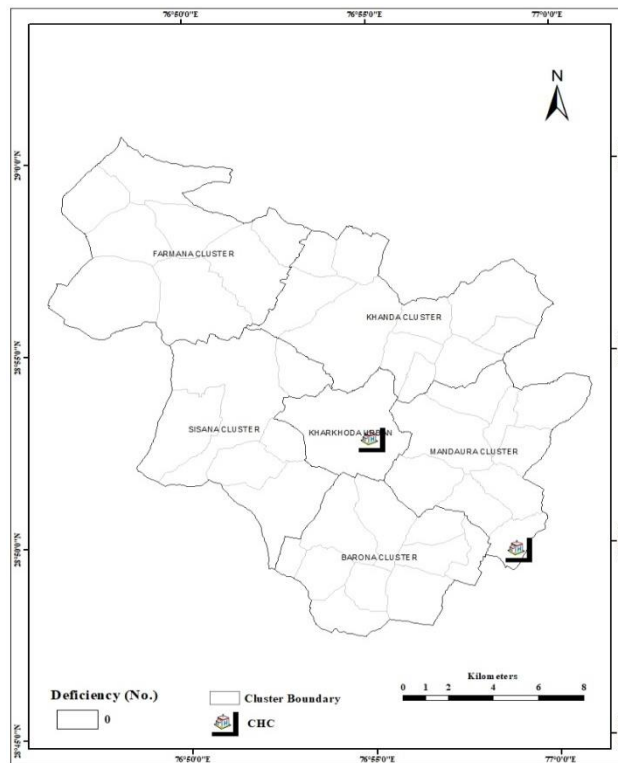




Fig. 2 Deficiency of CHC in Kharkhoda Block, Sonipat (2019).

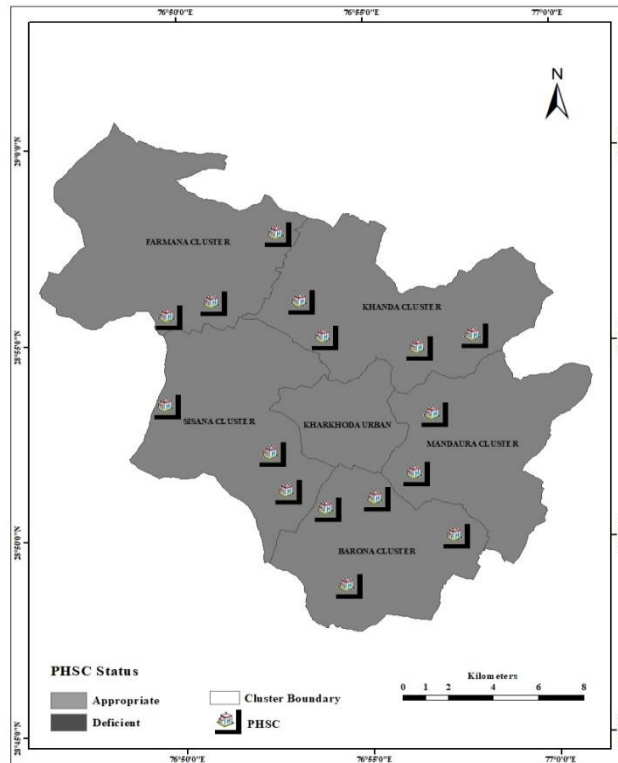


Fig. 3 Status of PHC in Kharkhoda Block, Sonipat (2019).

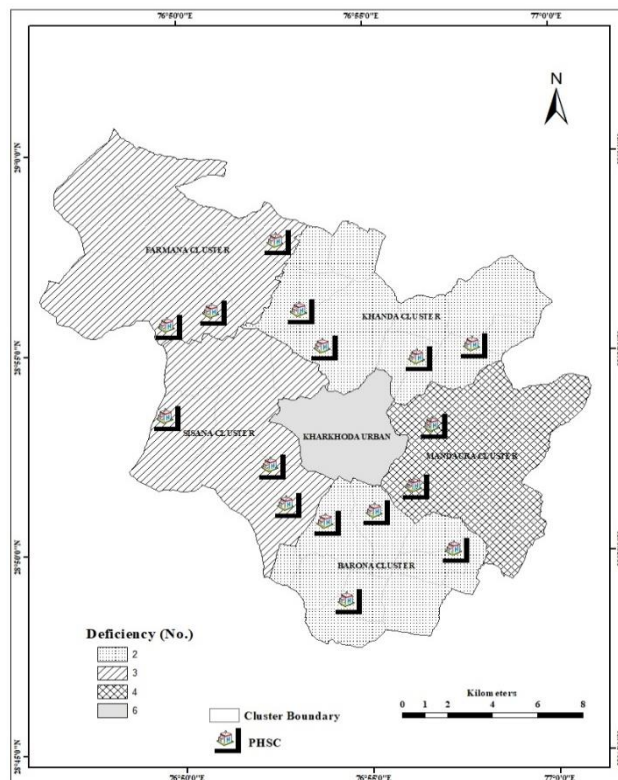


Fig. 4 Deficiency of PHC in Kharkhoda Block, Sonipat (2019).

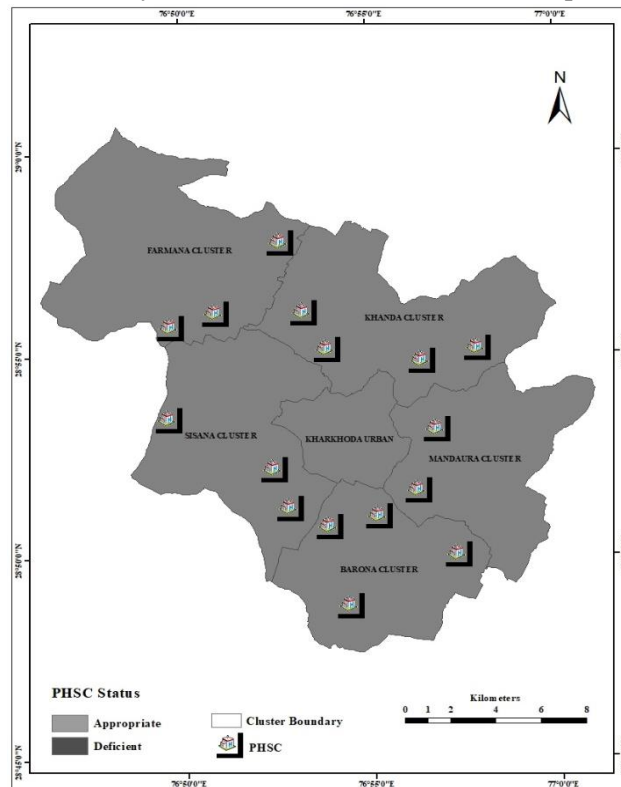


Fig. 5 Status of PHSC in Kharkhoda Block, Sonipat (2019).

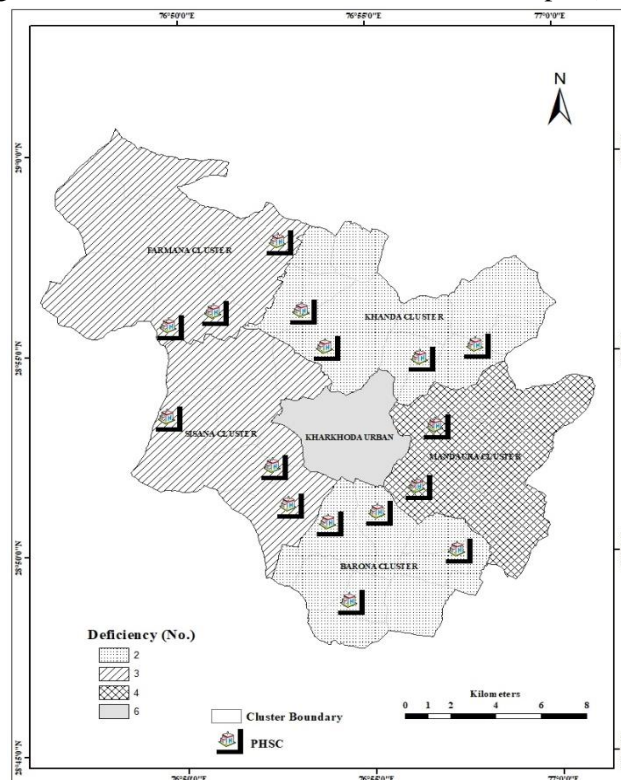


Fig. 6 Deficiency of PHSC in Kharkhoda Block, Sonipat (2019).

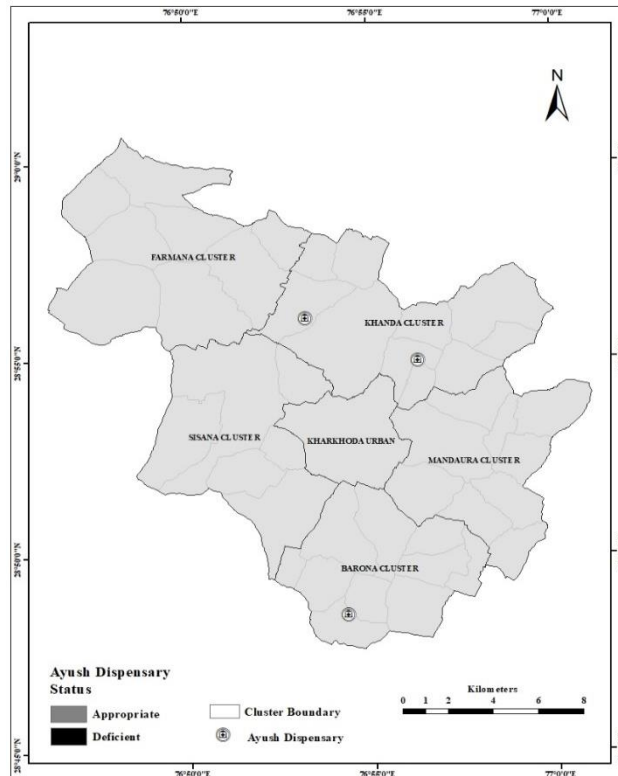


Fig. 7 Status of AYUSH Dispensary in Kharkhoda Block, Sonipat (2019).

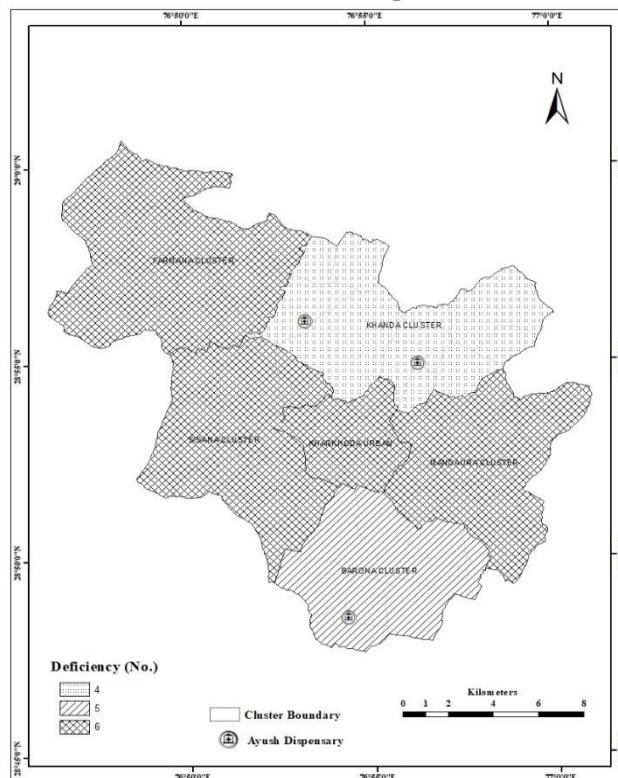


Fig. 8 Deficiency of AYUSH Dispensary in Kharkhoda Block, Sonipat (2019).

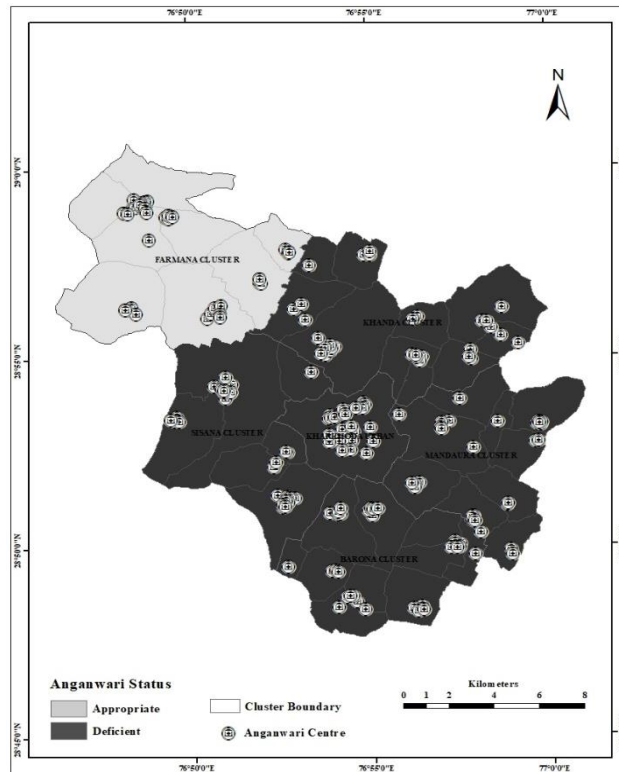


Fig. 9 Status of Anganwari Centres in Kharkhoda Block, Sonipat (2019).

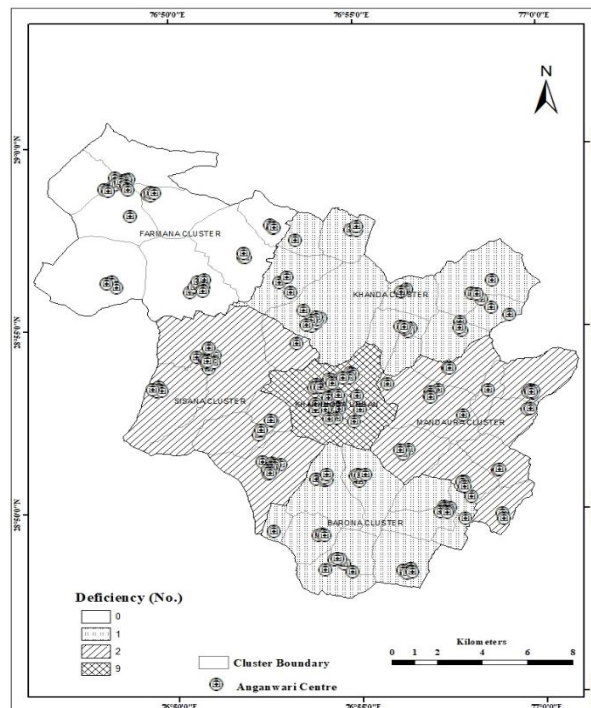


Fig. 10 Deficiency of Anganwari Centres in Kharkhoda Block, Sonipat (2019).

### Anganwari Centre

The cluster-wise status of Anganwari centres shows that amongst the health centres the maximum number is in Anganwari centres. The norms also state that there should be an Anganwari centre for every 800 population in the area. The number of the Anganwari centre in the Kharkhoda block is 215 whereas according to population norms there should be 223 Anganwari centres in the area. The overall status shows a deficiency of eight Anganwari centres in the block. The highest number of Anganwari centres is in Farmana (46) cluster followed by Khanda (37), Sisana (35), Mandaura (35), Barona (34) and Kharkhoda urban (28) cluster (Table 1). Only Farmana cluster has a surplus number of Anganwari centres; apart from this, all the other clusters have a deficiency of Anganwari centres (Fig. 9). The Farmana cluster has seven surplus AWC. The Kharkhoda urban area requires nine more AWC followed by the Mandaura and Sisana clusters which have a deficiency of two AWC each. The Barona and Khanda clusters have a deficiency of one AWC each. The spatial pattern of deficiency of Anganwari centres shows that central part of the study area is most deficient of Anganwari centres and the clusters which are adjacent to it also has deficiency of health services (Fig. 10).

### Conclusion

There is only one surplus PHC in the Kharkhoda block which is in Farmana cluster. The analysis shows that every cluster in the study area is deficient in PHSC and has fewer PHSCs than required according to the norms. Every cluster has a deficiency of AYUSH centres. The four clusters, i.e., Kharkhoda urban, Mandaura, Farmana, Sisana have a deficiency of six AYUSH centres, each followed by Barona and Khanda clusters with a deficiency of five and four centres respectively. The Farmana cluster has seven surplus AWC. The Kharkhoda urban area requires nine more AWC followed by the Mandaura and Sisana clusters which have a deficiency of two AWC each. The Barona and Khanda clusters have a deficiency of one AWC each. Overall study shows that health services are not appropriate in the Kharkhoda block and the study regarding the land suitability for these health services is the need of the hour.

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