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Socio-economic-environmental challenges at himachal villages: findings from five unnat bharat abhiyan adopted villages

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Abstract This research pinpoints the primary socio-economic issues and inherent circumstances of rural development in Himachal Pradesh, India. It provides a critical analysis of 289 households based on the surveys conducted in 5 villages of Sirmaur district, adopted under the UBA ('Unnat Bharat Abhiyan', *transl.* '*Developed India initiative*'). This study highlights and evaluates the significant socio-economic concerns and rural development challenges based on key factors such as population, education, employment, rural development schemes, livestock assets, property distribution, essential services and transport connectivity. The findings from this study are crucial for identifying priority areas for community capacity building and sustainable rural development including literacy rates, healthcare, and agricultural products. The study emphasizes the prudent use of existing resources and the maximisation of benefits from centrally and state-sponsored schemes for the comprehensive development of the adopted villages under UBA. Although the current initiative is based on the UBA-adopted villages, it may be applied to other rural villages of Himalayan states. This article highlights inter-variations in socio-economic issues such as healthcare, sanitation, waste management, unsustainable agriculture methods, drug misuse, unemployment, and sanitation in the UBA adopted villages in the Sirmaur District, Himachal Pradesh, India.

Keywords Rural development · Socio-economic · Environmental challenges · Himachal Pradesh · UBA · Waste management

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Introduction

Fundamental requirements for a safe and improved standard of living include potable water, proper sanitation and drainage, sufficient power supply, proper housing and basic healthcare facilities (Ghosh et al., 2013, 2019; Kumar, 2014). In 2015, the UN General Assembly approved a new developmental plan, "Transforming our World: the 2030 Agenda for Sustainable Development", which replaced the Millennium Development Goals (MDGs) with 17 Sustainable Development Goals (SDGs) (Messereli et al., 2019; United Nations, 2016). Although priorities such as poverty reduction, healthcare facilities, elementary education, food security and nutrition continue to be important, the SDGs encompass a broad spectrum of economic, social and environmental objectives, and

they carry the promise of a more peaceful and inclusive society by 2030 (Fig. 1).

India is primarily a rural country with 850 million people living in over 600,000 Indian villages. Two-third of India's overall population and 72% of the working population live in rural areas (Census of India, 2011). Himachal Pradesh (H.P.) is a hilly state in north-west India with 89% rural population. The central government's Special Category Status (SCS) is granted to H.P. due to its geographical and socio-economic constraints such as mountainous terrains, strategic international borders, economic and infrastructure backwardness, and non-viable state finances (Kumar & Abdi, 2021). The state's robust institutional foundations, based on strong economic and social development results, have broadened the reach of public services rugged and difficult landscapes to the most isolated locations. Despite being predominantly a rural society, the state's educational achievements ranked among country's highest; its poverty levels are approximately a third of the national average; its life expectancy exceeds the average Indian's by 3.7 years; and its per capita income higher than the national average (World Bank, 2015). In a state where traditionally marginalised groups such as Scheduled Castes (SCs) and Scheduled Tribes (STs) make up approximately one-third of the population, the disparities among the groups are minimal. The state has experienced remarkable growth in the last two decades, accompanied by an increased human development index increasing from 0.479 in 1990 to 0.725 in 2018 (United Nations, 2016). The state's growth pace is either higher than or at par the national rate, and has made substantial strides in the social and environmental sectors. The challenge lies in maintaining this development rate while also ensuring the sustainability of growth. To achieve sustainable rural development, the state will need to implement a range of plans and programs simultaneously measuring and monitoring the progress. The SDG agenda in India has significantly contributed to a paradigm shift towards a 'whole-of-society' approach, involving joint collaborations from the state as well as local governments for inclusive growth. India has been successful in meeting various milestones set for achievement by 2030, but there is still a considerable amount of work to be done. Table 1 presents different demographic indicators for different states of India and the national average for comparison with H.P.

Despite the advancements made, significant barriers to human development still persists. Data on key indicators reveal that regional and interstate disparities continue to exist. Specifically, 7.62% of the state's total population is multidimensionally poor, 27.2% deprived of adequate nutrition, 27.8% lack proper sanitation and drainage facilities, 7.9% do not have access to potable water, 29.3% are deprived of housing, 17.4% lack maternal care and 67% do not have access to clean cooking fuel (NITI Aayog, 2021a, 2021b). Other human development indicators such as female literacy, life expectancy at birth, child mortality and household incomes can be further improved at par with high-performing states like Kerala, Goa, and Chandigarh having high Human Development Index. Figure 2 illustrates the composite score of India's SDG index from 2021, segregated by state/ union territory. The composite score ranging from 0 to 100 signifies the achievement of the State/UT in reaching the SDG targets. A score of 100 indicates that the State/UT has achieved its goals for 2030, while a score approaching 0 implies minimum progress.

There is an urgent requirement to enhance the rural infrastructure swiftly to progress toward sustainable development. The Sirmaur district (illustrated in Fig. 3) is among the most impoverished and underdeveloped districts of Himachal Pradesh (NITI Aayog, 2021a). It is crucial to examine and comprehend the rural conditions and issues faced

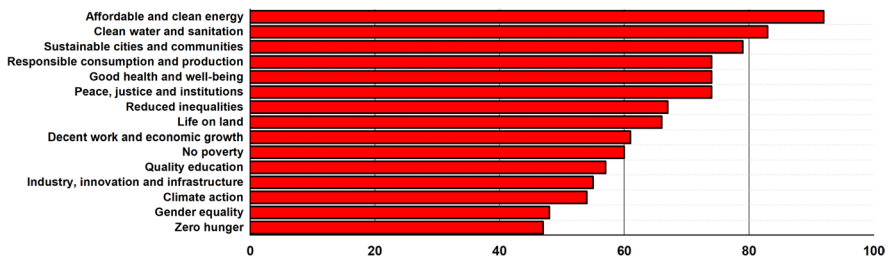

Fig. 1 SDG index India 2021

Table 1 Demographic Indicators for different states of India and the national average for comparison

Demographic Indicators*					
Indicator	Himachal Pradesh	Kerala	Chandigarh	Goa	All India
Rural Population (% of total)	89.9	52.3	2.7	37.8	68.8
Literacy rate (%)	83.78	93.91	86.43	87.40	74.04
Female Literacy rate (%)	76.6	91.98	81.38	81.84	65.4
Sex ratio (Females per 1000 males)	973	1084	818	968	940
Sex ratio (0–6 years)	896	960	845	938	927
Life expectancy	71.6	74.9	NA	NA	68
Infant Mortality rate (per 1000 live births)	19	6	13	8	30
% of Population who are multidimensionally poor	7.62	0.71	5.97	3.76	25.01

*Source: Census 2011, Sample Registration System Bulletin, 2019, and MPI Index report 2021

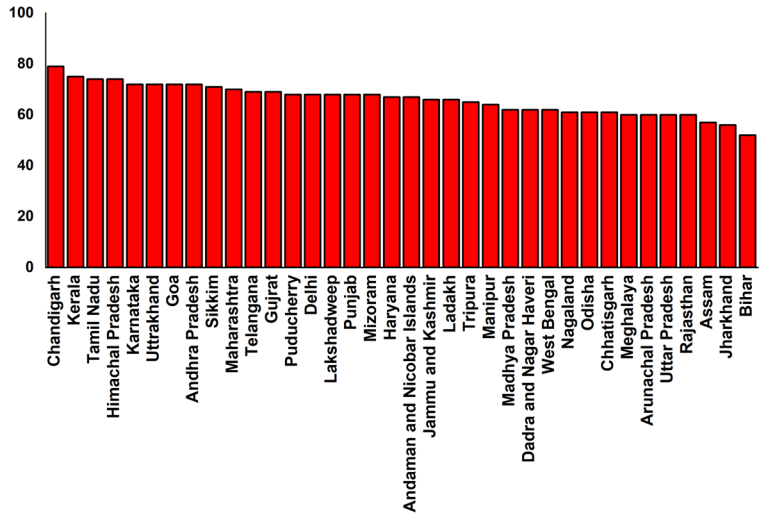

Fig. 2 SDG composite index India 2021

by the villages to devise a strategy for the eradication of socio-economic disparities in H.P. The need for immediate measures to alleviate the hardships of disadvantaged and vulnerable communities is gaining public support. The primary objective of the study is to explore socio-economic issues and the inherent developmental potential of the villages in the Sirmaur District. This article also examines the current use of resources and puts forth recommendations, identifying strategies for sustainable rural development.

Literature review

The communities are confronted with range of challenges due to harsh terrain, exgtreme weather conditions, extensive forest cover limiting land availability, scattered settlements, limited markets and extensive international borders (Gouri et al., 2004; Kumar et al., 2021; Raj, 2021; Sharma et al., 2021). In addition to uneven distribution of geographical regions across India, historical factor have played a pivotal role in creating regional disparities (Bagchi, 2011). H.P. is plagues by poor connectivity, both within its districts and with the rest of India, and inadequate infrastructure which restricts its development. Moreover, the cost of providing public services in H.P. is significantly higher than in other states owing to its geographical adversities and scattered settlements.

Agriculture is characterised by low productivity and the presence of disguised unemployment (Tiwari,

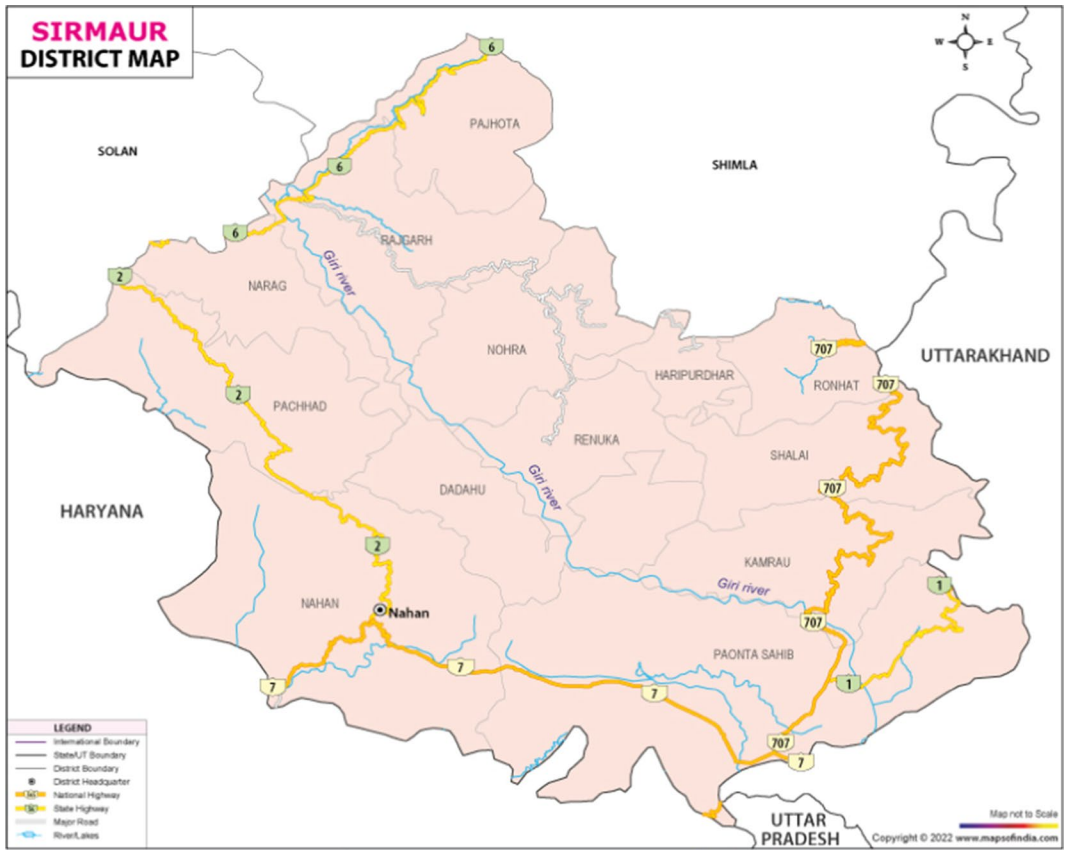

Fig. 3 District map of Sirmaur district, Himachal Pradesh

2008). The smaller farms due to uneven distribution of agricultural landmass persists due to complications in technical interventions and machinery. The steep terrain makes the irrigation expensive, leading to high capital-cost and energy charges, thus making agriculture dependent on rainfall. The primary source of livelihood in the state is agriculture providing for over two-thirds of the state's workforce. Given that agriculture and related industries account for only 10% of the state's total Gross State Domestic Product (GSDP), the contribution of agriculture to the GSDP per worker is low, in fact, among the lowest in the country (Govt. of Himachal Pradesh, 2020). While the agriculture continues to be a significant driver of the state's economic growth, the economy has seen a structural shift from agriculture towards the industrial and service sectors (Ministry of Statistics & Programme Implementation, 2017). Factors such as sufficient technology, suitable legislation, inaccessibility, diverse geography and harsh environmental conditions contribute to subpar agricultural production (Baba et al., 2010). Figure 4 presents the demographic indicators like rural population%, literacy rate%, female literacy% and multidimensionally poor population% for different Indian states and comparison with Indian mean data.

The living conditions in Himachal have seen considerable improvements over time, particularly in aspects such as the nature residential buildings and the availability of potable water in the homes (Govt. of Himachal Pradesh, 2021; Rana, 2018). However, a significant number of households still lack basic amenities like sanitation, adequate living space, antenatal care and access to clean water (Mohanan & Chakrabortty, 2008). Infrastructure is expected to continue being a primary catalyst in India's growth, and the situation in Himachal Pradesh aligns with the trend. The state's decision to pursue development led by infrastructure has raised concerns and questions about whether it might exacerbate historical patterns

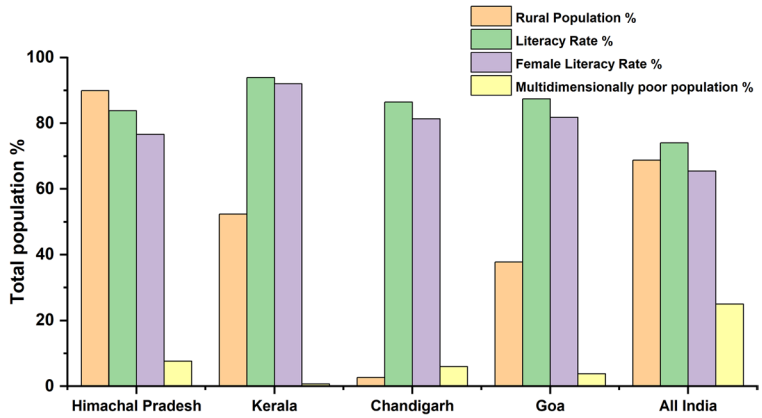

Fig. 4 Demographic Indicators

of exclusion, whether it will be environmentally sustainable, and whether the benefits will be distributed equitably. The challenges associated with the natural resources and their impact on low-income households have been a growing source of concern.

A meticulous review from the limited available literature indicates that the majority of research on socio-economic disparities in India has focused primarily on comparing urban and rural households (Chaudhuri & Roy, 2017; Das & Pathak, 2012; Kumar, 2014). There are studies that investigate socio-economic disparities within the districts of Himachal Pradesh (Das et al., 2015; Rana, 2018; Tiwari, 2008). However, there is a dearth of studies investigating the intra-regional disparities among the rural households in the Sirmaur District. The literature review revealed that most of the existing studies primarily rely on secondary sources like NFHS (National Family Health Survey) and Census data. In contrast, the present study offers a more comprehensive dataset as it is utilises primary data to analyse the socio-economic concerns and potential opportunities for rural development. To our knowledge, there have been few research efforts aimed at understanding the developmental needs in the villages of Sirmaur District (Table 2).

Methods

Study area

Under the Ministry of Education's initiative, the Universities and Colleges are required to adopt at least five villages under the UBA for uplifting the backward areas using institute's technological and social resources (Unnat Bharat Abhiyan, 2021). The UBA's goal is to create self-reliant and resilient rural

Table 2 Details of the UBA Adopted Villages

Name of the Village	Kunja	Ajauli	Jamniwala	Danda	Dobri
Area of village (Hectares)	235.49	98	310.17	191	174
Total Number of Houses	531	101	424	353	340
Total Population					
M: Males, F: Females, C: Child (0–6)	2,427 M:1,316; F:1,111:C:352	516 M:254; F:262; C: 55	2,073 M:1,072; F:1,001; C: 258	2,003 M:1,030; F:973; C: 254	1,798 M:935; F:863; C: 242
Schedule Caste Population	320	32	396	958	1,052
Schedule Tribe Population	25	-	-	4	0
Literacy Rate (%)	70.7	68.2	70	64.2	62.5
Total Employed People	853	149	794	748	972
Unemployment Rate (%)	64.9	71.1	61.7	62.6	46

*Source: PRI Officials and Census 2011

clusters, in line with Mahatma Gandhi's vision of "Gram Swaraj". The current study was carried out in the five UBA-adopted villages namely Kunja, Ajauli, Jamniwala, Danda, and Dobri in the Paonta Sahib block of Sirmaur District (illustrated in Fig. 5). The selection of these villages were based on series of discussion and consultation with the District Authorities. Sirmaur, one of Himachal Pradesh's twelve administrative districts, is situated in the Shivalik range of the outer Himalayas. It shares the border with Solan district (west) and Shimla district (north). The district also shares an interstate border with Haryana and Uttar Pradesh in the south, and Uttarakhand in the east. About 82% of the population depends primarily on agriculture and related activities The primary food crops grown in this region are rice, wheat, maize, lentils, chilies, ginger and sugarcane.

Sirmaur was chosen for the study due to its status as one of the worst-performing districts of H.P. in terms of literacy, poverty, and sanitation. Additionally, the high average size of households (5.4) and significant population of Scheduled Castes (30.34% of total district population) underscore the need to investigate the human development indicators of the households (presented in Figs. 6 & 7). Despite being more accessible and less isolated than Chamba, Kinnaur, and Lahaul Spiti, Sirmaur remains one of the poorest and most under-developed districts in H.P. To comprehend the existing socio-economic disparities in Sirmaur District, it is crucial to examine the dynamics of rural development in these villages.

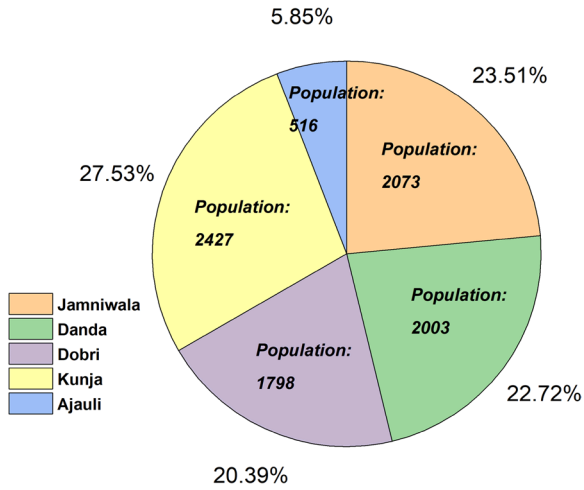

Fig. 6 Population of UBA adopted villages

Data collection

The current study is primarily based on the household survey conducted (October 2020 to April 2021) in the above-mentioned UBA-adopted villages in Sirmaur District, Himachal Pradesh. The data was collected using a standardized questionnaire designed by the Ministry of Education, Govt. of India which covered aspects like population, education, employment type, rural development schemes, livestock assets, property distribution, essential services, and transportation links. The survey aided in identifying the socio-economic challenges faced by the UBA adopted villages.

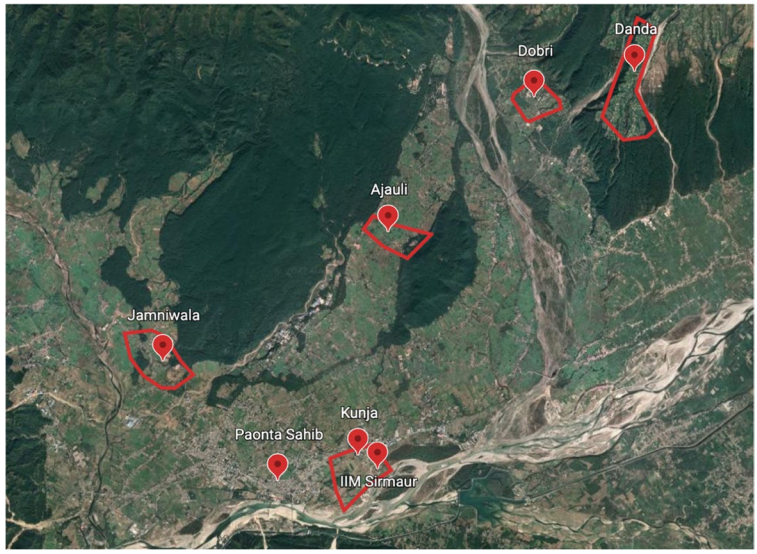

Fig. 5 Adopted UBA Villages of IIM Sirmaur

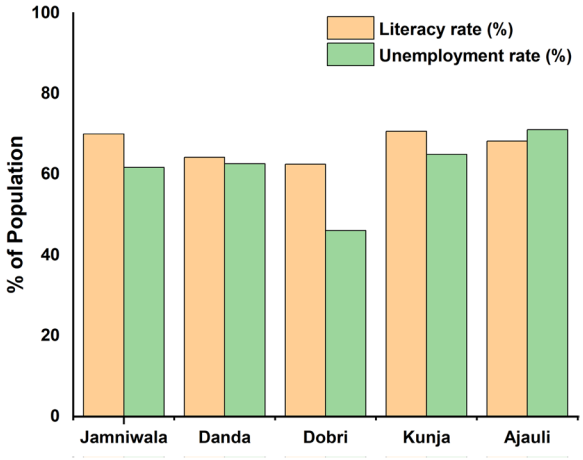

Fig. 7 Literacy and Unemployment rates of adopted villages

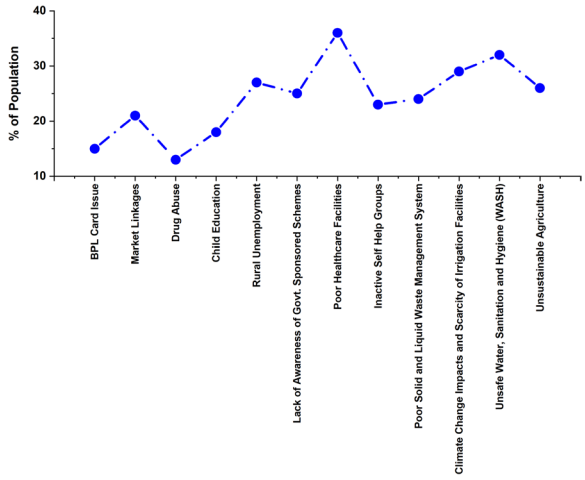

Fig. 8 Identified Socio-economic issues from the adopted villages

Results and discussion

Socio-economic issues identified

Unsustainable agriculture

Although the chemical fertilizers have aided farmers in enhancing plant nutrients despite extreme weather conditions, they also have detrimental side-effects. Apart from their impact on human health upon consumption, the chemical fertilisers also cause runoff, erosion, water contamination, acidification and mineral depletion of the soil. Despite being aware of the detrimental impacts of chemical fertilizers on their health and agriculture, most farmers in the UBA-adopted villages persist in their excessive usage. Conventionally farmed foods, due to increased pesticide residue, greater nitrate content, heavy metals, hormones, antimicrobial residue, and genetically altered organisms, are associated with increase in negative impact on human health. The local residents have reported an increase in health issues and disorders in kidney, lung, and liver with several instances of cancer. Only a handful of farmers from villages of Ajauli and Danda are known to practice organic farming (Fig. 8).

The state government strongly advocates for natural farming to promote healthier and pesticide-free farming. Natural and organic agriculture are gaining immense popularity due to their nutritional and health advantages. Thousands of farmers, especially women, have embraced the state government's Subhash Palekar Prakritik Kheti Khushhal Kisan (Singh, 2013). The elimination of chemical fertilizers and pesticides have led to lower cultivation expenses and higher soil productivity. Farmers are encouraged to raise vegetables and other crops through natural farming, either individually or with the help of self-help groups. There is still a lot of work to be done in Sirmaur district to make Himachal Pradesh an organic state like Sikkim. A series of mass-awareness campaigns, training sessions and seminars are required to promote natural farming among the farmers of the state. The primary focus is on building upon farmer's capacity through continuous support, certification, value chain and technology. Furthermore, an effective structure is needed to ensure proper marketing and certification of natural farm produce, allowing farmers to earn better rates for their output.

Unsafe Water, Sanitation and Hygiene (WASH)

Access to potable water, sanitation and hygiene is critical for human health and well-being. These services not only foster good health but also contribute to employment, school attendance, dignity and the development of resilient communities in healthy environments. However, some rural communities in the target areas still lack these essential services. Instances of untreated excreta contaminating groundwater and surface waters, which are used for drinking,

irrigation, bathing and other domestic activities are reported. Consumption of this contaminated water has led to the villagers contracting diseases such as diarrhoea, cholera and typhoid. Muslim populations in the UBA-adopted villages, especially the Gujjar tribe, have the most least access to improved toilets. Furthermore, while previous sanitation initiatives have successfully increased the reported coverage of household toilets, they have not been successful in terms of toilet usage, cost-effectiveness, or long-term sustainability (Fig. 8).

Despite Himachal Pradesh's condemnable achievements in human development indices along with access to public facilities and services, its sanitation performance was subpar until recently. Following Sikkim, Himachal Pradesh became the second state of India being designated as "Open Defecation Free" as a part of Swachh Bharat Mission in 2016. According to the NFHS 5 data (2019–20), the population in Sirmaur with access to improved sanitation facilities increased from 70.4% to 84.3% since the NFHS 4 data (2015–16). To maintain the ODF status, it is crucial to focus on comprehensive education and community awareness initiatives to ensure people understand the significance of basic sanitation and hygiene. There should be a greater focus on behavioural change initiatives that include measure sanitation access and usage.

Climate change impacts and scarcity of irrigation facilities

The state has recently endured undesirable conditions such as moisture stress, water scarcity and losses due to climatic extremes, impacting Sirmaur as well. Detailed research by the Department of Environment, Science and Technology, revealed that the Paonta Sahib block has a vulnerability score of 0.94 in terms of its ability to adapt to climate change. These scores necessitates immediate actions to develop climate-smart strategies in the district to mitigate the harmful repercussions of climatic changes (Fig. 8).

Adopted villages are grappling with issues such as reduced yield, lack of irrigation and unseasonal rain varying from village to village. The availability of water for irrigation is crucial for a successful crop production, but the availability of limited natural water nearing depletion is unfavourable. To meet their irrigation needs, farmers in the low-lying areas have resorted to digging their own borewells. This not only imposes additional financial burden on them but also causes decline in the water table, causing scarce availability of potable water and affecting moisture content of the soil thereby reducing its quality. The continuous decline of groundwater level in the examined areas has become a significant concern. Multiple instances of ponds, baoris and rivulets drying up are reported in the UBA adopted villages over the past decade. The increasing water stress in villages in the Paonta Sahib block can be attributed to large-scale urbanization, industrialization and changing climate.

Climate-smart agriculture (CSA) is an approach that transforms agricultural and food systems to be more environment-friendly and climate-resilient. It addresses the intertwined problems of food security and climate change striving for higher productivity, increased resilience, and lower emissions. By integrating traditional irrigation methods with water management, it equips farmers with a climate-resilient, self-sustaining, and financially viable water management system. There is a pressing need for capacity building, hands-on training, and awareness creation for incorporating CSA techniques.

Poor solid and liquid waste management

The urgent need to address solid and liquid waste management in rural areas is evident. Swachh Bharat Mission- Gramin have achieved minimal success in terms of garbage collection, transportation and disposal in the study area. There is no dedicated infrastructure for the collection of solid waste in any of the other villages except for a few wards in Kunja village. Most of the population either burns or disposes of their waste on private or public land. The lack of proper drainage systems causes overflowing of sewers right in front of houses which not only stink but also become a mosquito breeding grounds spreading malaria, dengue fever and other ailments. Stubble burning by farmers contributing to pollution already caused by nearby industrial units. A microorganism Pusa, developed by the Indian Agricultural Research Institute, speeds up the decomposition process and transforms stubble into compost within 25 days, enhancing soil quality. This can help in reducing pollution sources in our study area, helping India achieve its goal of net-zero emissions by 2070 (Fig. 8).

Most of household garbage in rural areas is non-toxic organic material, with very little inorganic material. Composting is an acceptable disposal option in rural settings because of its environmental friendliness. Accountability at the local level and civic engagement at all phases are crucial for achieving SLWM (Solid and Liquid Waste Management) initiatives economically and efficiently. A succession of IEC (information, education and communication) initiatives and continuous follow-ups are required to educate the residents.

Inactive self-help groups

Various Self-Help Groups (SHGs) were identified in each of the villages during the survey. The National Rural Livelihood Mission focuses primarily on women to form SHGs to become self-sufficient and financially independent. However, we discovered that most SHGs were inactive, and those that were active seemed solely involved in lending. Due to a lack of support and capacity building, the SHGs could not establish sustainable livelihood opportunities (Fig. 8).

Systems should be strengthened through regular monitoring of SHGs and their proponents should ensure that members receive the required support at least the first five years. Resource should be allocated for ongoing guidance to all group members, fostering a collaborative and participatory initiative involving all members, rather than just a few well-informed individuals. Participants' training will ensure a seamless transition to new livelihood prospects.

Poor healthcare facilities

The state's healthcare distribution exhibits significant discrepancies between the rural and urban areas. The majority of Primary Health Centres and Community Health Centres in the village area are understaffed, have poor facilities and lack medical equipment. Consequently, the residents are compelled to travel to Paonta, despite the absence of an ambulance service. According to the residents, the helpline number 108 has been instrumental in providing immediate medical assistance to pregnant women, newborns and those in critical situations. There still remains a massive disparity in villagers' access to high-quality healthcare, especially for expectant mothers and newborns (Fig. 8).

It is crucial to establish and strengthen primary healthcare teams and train healthcare professionals to provide a wide range of care. Efforts are being made to recruit and retain healthcare professionals at rural PHCs and CHCs for enhanced medical services. There is a need to revise the undergraduate medical and nursing curriculum to align with rural priorities.

Lack of awareness of government-sponsored schemes

Most of the individuals surveyed were economically vulnerable and lacked awareness about government initiatives tailored for their benefit. High-interest rates on loans taken to manage financial crisis added to their woes. There was a noticeable lack of knowledge about financial schemes and a deficiency in financial literacy. Our research revealed that children in certain hamlets lacked access to proper education, families were deprived of primary healthcare, the elderly were without pensions, and the unemployed youths faced an uncertain future. Several government welfare programs directed to address these issues remained inaccessible to the people in need, particularly those living in rural areas with minimal resources (Fig. 8).

Rural unemployment

The issue of unemployment, especially among the educated youth, and under-employment in our adopted target areas is a grave concern. The massive prevalence of sub-standard agricultural employment and disguised unemployment are equally worrisome. Because of rural poverty, poor education and unemployment, the migration of villagers to towns and cities is significant. The Unemployment Allowance scheme was only accessible to a few respondents, and the MGNREGA scheme was similarly unfamiliar to the villagers. According to PRI officials, the low wage rates have resulted in villagers' lack of enthusiasm in working for the MGNREGA scheme. The locals preferred employment in the surrounding private firms which offered slightly higher compensation but had limited job openings (Fig. 8).

Enhancing employable skills with the aid of technology can enable unemployed youth to pursue skills relevant to industry. The private sector and NGOs can bridge the skill gaps despite the introduction of several government initiatives. Implementation of crop rotation can extend the duration of employment for

the rural residents. Training in off-season occupations such as dairy farming, poultry farming, horticulture, beekeeping, furniture making, weaving baskets and ropes among others can provide employment opportunities for rural individuals.

Child education

The survey revealed a significant decline in the number of students attending public schools while enrolment in private schools has seen an increase. The standard of primary education is no only low but has been on a downward trend in recent years, the situation further worsened by the COVID-19 pandemic. As per the villagers, both small and large government schools are plagued by a lack of competent staff, shortage of quality teachers and inadequate physical infrastructure. Economically weaker section individuals are left with no option but to send their children to public schools due to their inability to afford private school fees. The small size of rural schools corresponds to limited teacher availability and low student enrolment. Muslim families show a preference for sending their children to madrassas over primary and secondary schools (Fig. 8).

During the COVID-19 era, both schools and students managed to maintain some form of education using basic technology such as mobile phones and the internet. However, in rural areas, the continuity of education could only be managed to a limited extent, highlighting the critical need for the access of technology. For comprehensive development outcomes in rural areas, there needs to be a focus not just on academic results, but also on extracurricular activities and the development of personality and behaviour.

Drug abuse

Drug addiction is escalating into a major concern in Himachal Pradesh, posing a significant challenge for the state. Many young people are becoming drug abusers, addicts, and even peddlers. Over three dozen drug overdose deaths in the last two years are a strong indication that the hill state is quickly becoming another drug capital. The problem is severe in Sirmaur District due to the proximity of pharmaceutical businesses, which makes chemical medications readily available, increasing the number of drug abusers. During the study, we discovered an increase in drug users in the villages, particularly in Kunja and Jamniwala (Fig. 8).

Moreover, the establishment of rehabilitation clinics will contribute to a deeper understanding of the fundamental issues of drug addiction, alcoholism, drug misuse and other forms of addiction. These clinics offer appropriate counseling and supervision, a variety of treatments and therapies, and educate addicts on managing relapses and cultivating positive habits.

Market linkages

During the survey, it was noted that the smallholder farmers face numerous obstacles in reaching consumers It includes hefty transportation costs, a lack of bargaining power and a drop in pricing during peak harvest seasons. There is a noticeable lack of transition from subsistence to commercial agriculture among small-scale farmers. Due to limited market access and time constraints, low-income smallholders (farmers with less than two hectares) may choose to sell their produce at less than optimal prices. Rural farmers cannot sell at premium prices due to limited access to large markets, high transportation costs, and a lack of pricing information between marketplaces (Fig. 8).

Additionally, smallholder farmers can increase economies of scale by joining collective action groups such as Farmer Interest Groups and Cooperatives. These groups help smallholder farmers lure larger buyers, gain access to more significant marketplaces, negotiate better deals, and lower operating costs. Switching to contract farming can indeed assist in the move from volatile informal markets to more stable markets.

BPL card issue

During our research, we discovered that the households with the lowest levels of land ownership were the ones who did not have a ration card. People expressed concern that well-to-do households were still categorized as BPL, depriving the poor of the benefits. The beneficiary list of the public distribution system has not been updated for over five years, resulting in many children and newlywed women being excluded.. The Panchayat and District

government officials should regularly update the BPL functionaries list to avoid any discrepancies (Fig. 8).

Conclusion

While Himachal Pradesh stands as one of the most economically developed hill states, this development is not uniformly distributed due to significant inter-regional disparities in natural wealth, geographical, and agro-climatic factors. The state's challenging physical and climatic conditions, coupled with its rugged terrain and steep slopes, have escalated the cost of service delivery and infrastructure construction. In the process of development, engaging with populations from diverse socio-economic backgrounds presents a unique set of challenges. The state's shift to an infrastructure-led growth model, supported by various social and economic transformations, has implications for social inclusion and sustainability, widening the gap in access to essential amenities between poor and non-poor households, and between Scheduled Caste and other households.

This article sheds light on the intra-regional differences in socio-economic issues such as healthcare, sanitation, waste management, unsustainable agriculture, drug abuse, unemployment, and sanitation in the Unnat Bharat Abhiyan (UBA) adopted villages in the Sirmaur District. Significant improvements have been observed in access to cleanliness and potable water in these villages, but the provision of sanitation and housing facilities varies considerably. A family's living standards are reflected in its assets and amenities, including power, safe drinking water, road conditions, sanitary conditions, health and hygiene, and access to cleaner fuel and smokeless stoves for domestic use, all of which contribute to a region's overall development.

Rural areas form the backbone of the state, and while there is a need to focus more on these areas for the state's overall growth, socio-economic challenges in rural areas act as barriers to development. People are migrating to urban centers for better services and infrastructure, but this is leading to overburdening and inhabitation issues in urban areas. Despite the implementation of several rural development schemes, they are in a state of disarray due to shortcomings in strategic planning and financing decisions.

Sustainable rural development is crucial, and rural issues must be addressed with the adoption of appropriate policies. This study aims to address the challenges at the village level that are hindering the development and growth of the Sirmaur District, ultimately aiding in the creation of peaceful and inclusive Himalayan villages. The research underscores the need for the government and policymakers to enhance the district's socio-economic infrastructure. Future research should focus on a broader study area covering more villages in the Sirmaur District and possibly other districts. This will help address the deprivation of marginalized and vulnerable populations who continue to lack access to basic amenities and investigate the reasons for the same.

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Declarations

Competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.The authors declare the following financial interests/personal relationships which may be considered as potential competing interests.

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