

RURAL INFRASTRUCTURE DEVELOPMENT THROUGH GOVERNMENT INITIATIVES: A CASE STUDY OF THE VILLAGE SHALA IN UTTAR PRADESH

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ABSTRACT

Infrastructure plays a critical role in the economic development of any country and Economic growth without investment in rural infrastructure is unsustainable - and unethical. According to the World Bank report, 2021 Rural population in India was reported at 64.61 %. Therefore rural development has assumed global attention, especially among developing nations. For a country like India, it has a great significance where Rural development focuses on the development of the sections of rural economies, that experience serious poverty issues and effectively aims at developing their productivity. Building reliable & effective rural infrastructure remains a major challenge. Thus to address various pressing issues Government of India has taken numerous steps and programs for the overall socio-economic development of Village Economies. The present paper is about a case study of The Village – Shala from Agra in West Uttar Pradesh. Specifically, the paper shows the gradual progress of the village after the implementation of various schemes. This paper also discusses gaps in the implementation and the remedial actions that must be taken to address these gaps. The methodology of this research paper includes group discussion, interviews, field observation, and household surveys.

Keywords: Rural Development, Government Schemes, Village in Uttar Pradesh.

Introduction

Rural infrastructure is of utmost importance for stimulating the rural economy and achieving the United Nations' Sustainable Development Goals (SDGs) by 2030. India can become a \$5 trillion economy by FY2025 too but it requires additional infrastructure. Studies reveal that an almost 1% increase in the stock of infrastructure is associated with a 1% increase in the gross domestic product (GDP) across countries. Also, the estimated welfare multiplier of 0.8 for effective public infrastructure investment may lead to substantial welfare gains. Several studies also revealed the positive impact of infrastructure development on overall rural welfare.

A recent study by Gulati *et al.* (2021) found that in six states, viz. Punjab, Madhya Pradesh, Gujarat, **Uttar Pradesh**, Bihar, and Odisha, there are three factors that explained most of the agrarian growth, i.e., (i) access to infrastructure that includes irrigation, roads, and uninterrupted quality power; (ii) diversification to high-value agricultural products such as fruits, vegetables, and allied activities like dairy and poultry; and (iii) price incentives or favorable terms of trade.

Rural infrastructure is a crucial ingredient for agriculture and agro-industry development and the overall economic development of rural areas, also provides basic amenities that improve the quality of life-style in rural areas. Adequate infrastructure not only raises productivity but also lowers production costs (Satish 2007), thereby improving rural livelihoods and human development in rural areas.

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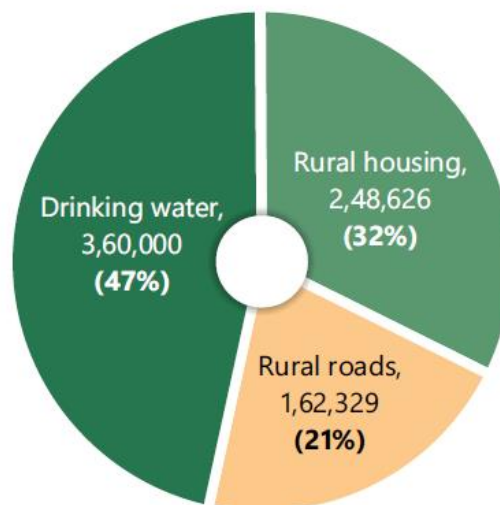
Access to public infrastructure also affects household labor, transforms gender roles, and favor the diversification of their livelihoods and activities generating income. Hence, the majority of studies show that infrastructure investment has positively impacted rural income (Satish 2007).

Binswanger et al. (1993), in a study of 13 states in India, found that while **investments in rural infrastructure lowered transportation costs**, it also increased farmers' access to markets, and led the commercialization of agriculture.

According to the need for stepping up the agricultural growth rate to 4.5 per cent in the Ninth Five Year Plan, it was necessary to emphasize on developing rural infrastructure such as - irrigation, roads, bridges, etc. as an essential requirement for better productivity of capital and labour. However, one of the basic limitations to creating adequate infrastructure was the lack of resources and difficult financial position of the state governments, who are mainly responsible for developing and maintaining rural infrastructure. Therefore, it was important to create a fund in the name of Rural Infrastructure Development Fund (RIDF) to be operationalized by NABARD. It aimed at financing rural projects in the area of basic infrastructure like agriculture, production, transport, marketing and other allied activities.

India has prioritized infrastructure development maximum during FY2021. The Taskforce on National Infrastructure Pipeline (NIP) estimated a capital expenditure of ₹7,73,915 crore between FY2020 and FY2025 on rural infrastructure development by the centre and states.

Capital Expenditure Distribution for rural infrastructure (FY2020–FY2025) (₹ crore)



Source: GOI (2020), Report of the Taskforce on National Infrastructure Pipeline Volume II, Department of Economic Affairs, Ministry of Finance, Government of India

Chart 1

A state-wise composite Rural Infrastructure Index (RII) constructed by the Economic and Political Weekly Research Foundation shows **Uttar Pradesh** (among others) as a state with a low RII. It is, therefore, imperative to accord high priority in terms of access to financial resources as well as proper implementation of government schemes and programs for the creation of rural infrastructure and overall growth of the state.

The emphasis laid by successive five-year plans on the development of rural infrastructure comprising irrigation, rural connectivity, post-harvest infrastructure, and the digital network has shown results.

World Bank (2019) in an evaluation of the scheme found that a major government initiative - Pradhan Mantri Gram Sadak Yojana (PMGSY)- constructed roads positively impacted rural India's human capital formation. Children in middle or high school had 0.7 more years of schooling in 2017; the share of babies delivered at home decreased by 30 percent in connected habitations; vaccination among children under the age of four increased by 15 percentage points, with boys and girls benefiting equally.

According to the census 2011, the rural population in Uttar Pradesh declined from 72.19% to 68.84% which means that about 69% of the population is of the rural people in Uttar Pradesh. Agriculture is the main source of income for the people of Uttar Pradesh and the transport infrastructure for them makes it easy to get markets for their production with better prices, lowers the costs of inputs, facilitates easy access to finance and credit. In the state like Uttar Pradesh, Government continuously work for the rural infrastructure that increases the agricultural productivity and reduces the poverty at the same time. Government is also aware of the fact that for the growth and development of economy there is a need for the adequate availability of the infrastructure facilities but **Governments face the stern budgetary constraints**. Thus, it is important to make a bridge between the infrastructure and poverty reduction and well-being with reference to Uttar Pradesh where the large majority of rural people reside.

Literature Review

The current analysis of Rural Infrastructure is focused on previous studies and references that have been published in the form of articles in magazines, books and research papers in journals. It has been noted that the successful schemes of infrastructure on a commercial basis has established of reliable revenue sources that has given providers more financial autonomy. It is a very well-known fact that an increase in the services provided to the rural people will result in the overall improvement of society on one side by enriching the people with updated market information and providing the latest technological developmental news and organizations on another side by creating more market opportunities for them and adjustment of the market prices, I.T. services need to be developed in reference to the present rural infrastructure. It has been said that rural roads are the wealth of a nation. They are the tool for social and economic development. Rural roads link communities and their agricultural fields to the main transport system and markets. When rural roads are improved, it reduces transportation costs and encourages marketing. This results in increased productivity, crop diversification, and increased profitability. The relationship between agricultural productivity and infrastructure development provides insights into understanding the main drivers of agricultural productivity using land productivity as the dependent variable. Rural Development Department is implementing a number of programmes/schemes in rural areas with an aim to reduce poverty, increase the assets among the families belonging to the lowest income category, reduce involuntary unemployment & underemployment to negligible levels, improve access of the poor to social services and infrastructure development of rural areas. A 2016 study in Uttar Pradesh has thrown light on achieving enhanced production and productivity in rural areas, to bring about a greater socio-economic equity, to bring about a special balance in social and economic development, improvement in the ecological environment so that it may be conducive to growth and happiness. There is a positive relationship between the infrastructure, poverty and well-being of the rural people. The aim of Poverty alleviation and well-being of the rural people of Uttar Pradesh can be achieved by the proper development of Infrastructure in the state. It includes availability of primary Schools and Health Care Centre in all the villages of the state, supporting farmers in terms of subsidies, discounts, provision of credits and finance, availability of water supply and sewage disposal, telecommunication, roads, dams, power etc. Rural Infrastructure Development using a geospatial technique in the Chandauli district and the findings revealed that different sectors of infrastructure link with one another and the development of one have speeded another one. It was also observed that GIS with its unique features of Satellite-Derived Bathymetry (SDB) can be used effectively as a capacity-building tool and technique by stakeholders especially the government for the overall development of the rural area in general and infrastructure in general. There is no doubt that the quality education can help in achieving the goal of eradication of social evils. The dwindling literacy rates in rural India, especially for females, are a major matter of concern. Also, there is a need for land and technical reforms. Modern technologies like organic farming should be incorporated to improve outputs and profits. The people should be given access to easy credit and loans by improving the banking system in rural areas.

Need of the Study

Several changes has been witnessed in rural development in India assuming a new and perspectives as a consequence. But a review of these initiatives on the country's economy and physical infrastructures like education, water supply and road connectivity brings out the few challenges in transforming rural areas into Smart Villages. In this connection, there is a need to study the role of the Government of India in providing clean drinking water, medical care, education, sanitation, etc.

Objectives of the Study

The primary objective of the study is to understand the role of rural development schemes in India. The secondary objective includes to show the working of the Self-Help Group (SHG), modernization of education, construction work undertaken, measures taken to safeguard women's health, etc. Also, to identify the problems and make suggestions regarding the development of the rural people.

Methodology

The Village has been selected based on Convenience Sampling. For the purpose of the study primary data is collected by field survey, interview, and observation. There are 215 houses in the village from which 158 samples were selected. These were the maximum number of people approached. Complete questionnaires were 158, the rest were either incomplete or didn't provide any information.

Study Area: Village Shala

Shala is a small Village/hamlet in Shamsabad Block in Agra District of Uttar Pradesh State, India. It comes under Thana Shankar Dwari Panchayat. It belongs to Agra Division. It is located 22 KM South of the District headquarters in Agra. 332 KM from State capital Lucknow Shala is surrounded by BarauliAhir Block towards North Saiyan Block and towards west Agra Block towards North, Fatehabad Block towards East. Shamsabad, Agra, Rajakhera, Agra, and Fatehabad are the nearby Cities of Shala.

This Place is on the border of the Agra District and Dholpur District. Dholpur District Rajakhera is South of this place. It is near the Rajasthan State Border.

Hindi is the Local Language here. The people of this village belong to Scheduled Caste and Other Backward Caste. These people are farmers and are engaged in growing varieties of vegetables and fruits. The villagers follow Hinduism with localized traditional rituals.

Results and Discussion

- **Level of Social Infrastructure**

Education and Health are very important sectors for equitable human development and sustainable as well as inclusive economic growth for India. They are the two pillars of social infrastructure that promote the mental and physical health of rural masses.

- **Educational Facilities**

Education is the mirror to society and is the seed as well as the flower of socio-economic development. It helps in transforming human beings from ignorance to enlightenment and also a nation from underdevelopment to faster development. In the village of Shala, there is a total of 2 schools as shown in the table. The first school has 5 teachers while another school has 2 teachers. There is also a private school near the village, Mata Vaishno Devi Inter college. About 50% of students of the village join this school after completing 8th grade at an upper primary state government school. On enquiring it was found that post-pandemic there was an increase in 25-30 students enrolled in both the state government schools increased reasons being the shutdown of private schools and the decline of family income. Also, it has been observed that there is a rising student enrollment one of the major reasons being the scheme of Mid-day Meals.

Both schools have co-education and the strength of girls and boys are more or less equal. It has been observed that under the scheme NIPUN Bharat reading and learning skills of students have improved. Now 3/5 students can read the English and Hindi textbooks clearly while earlier it was only 1 out of 5 children can read.

As per UDISE data of 2022-2023, the school does not have computer equipment. There is neither a smart TV nor a projector screen that restricts students from innovative learning. Though phone is used for teaching through apps like DIKSHA and Read Along for pedagogical purpose. Both schools do not have internet facilities and teachers bear the connectivity problem while using personal mobile data.

Table 1: Schools at Village Shala

SI No.	Name of School	Level	Supported by
1.	Primary School	Lower to V standard	State Government
2.	Upper Primary School	Class VI to VIII standard	State Government

Based on Primary Survey done by the author



Fig.1: Students having Mid-Day Meal

- **Health Facilities**

The quality of life depends on an important input which is Health. Both health and development interact with each other. A good health condition of the people ensures the economic development in a positive way. Considering the village under study there is one Public Health Centre (PHC) situated at a distance of 2 km from the village where all facilities are available. The condition of this PHC is fine. This is good for immediate access during medical illness but for serious conditions villages have to travel long distances to the district hospital which is around 22km from the village. Villagers also use a private hospital which is about 8km and has basic amenities. On surveying, it was also found that Health camps are organized two times a year for students of both schools in which full body check-up is done. Moreover, every week students are given Albendazole Tablet- 400mg and folic acid Tablets to cure Iron deficiency. With regards to maternity and newborn children care there is only one ASHA worker whose work profile range from healthy delivery care to polio drops and vaccination of newborns.

- **Socio-Economic Life**

People of Shala Village belong to Scheduled Caste. The villagers follow Hinduism. Both women and man work in the agriculture field of potatoes, and other vegetables for their livelihood. While the majority of households are engaged in agriculture few families migrated to cities nearby to work in a factory.

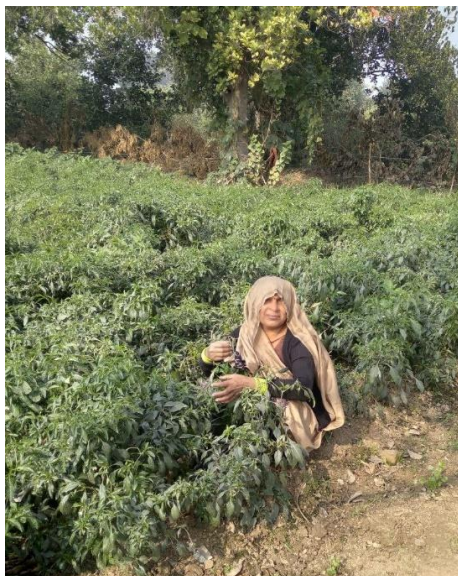


Fig. 2: Women working in the field of Green Chilies

- **Level of Economic Infrastructure**

Transport, communication and financial facilities form the base of economic infrastructure and are directly linked with the economic progress of a region. Both transport and communication facilities are complementary to each other and the progress of one accelerates the development of other. Together these facilities promote economic development and reduce socio-economic disparities in the region.

- **Transport Facilities**

The rural roads network system acts as an engine of rural development. The development of rural roads bring connectivity among different areas in close contact and thus promotes interaction between villages and towns.

- **Internal Road Connectivity:** The village has an all-weather road constructed under the scheme PM Gram Sadak Yojna. The total length of the road is approximately 6.35 km as per primary estimates. Most of the village area has blacktopping on the road while there are also kutchra roads that connect the pucca road to agriculture farms. Repairs and maintenance work of road is done from time to time. The construction and repair work is done by MGNREGA workers.



Fig. 3: Pucca Road that Connects Schools with main Road

- **External Road Connectivity:** The village is also connected with the long narrow main pucca road that ultimately connects to the National Highway 3 (NH3). It is approximately 4km as per PwD estimates. Public transport is available in the form of Auto and Tempo to reach NH3. The other means of transport is personal vehicles while using motorcycle and bicycle are highly used. This road is maintained by PwD.



Fig 4: Main Road Connecting the Village to NH3

• **Communication Facilities**

The availability of efficient, and cost-effective communication facilities not only promotes the socio-economic development of a region but also accelerates its growth and development. The village has different modes of communication such as post office (PO), mobiles, Television (T.V), and radio. The village does not have single Public call offices (PCO). It has one PO at Karondana Kala which is approximately 1km as per primary estimates. Mobile plays an important role in the bridging gap between rural and urban. Internet penetration in the village has given access to different activities ranging from education to marketing agriculture products. Television is another medium of information in the village. These are connected with Tata sky and Airtel DTH operators. The observation revealed that people generally watch TV for national news and for leisure purposes by the households at their convenience. However, international and business-related programs are hardly seen in the villages. Also, it was found that significant programs on health, agriculture, and human rights have limited influence on these villagers as very few are aware of these programs. The program PM-WANI is not yet implemented in the village.

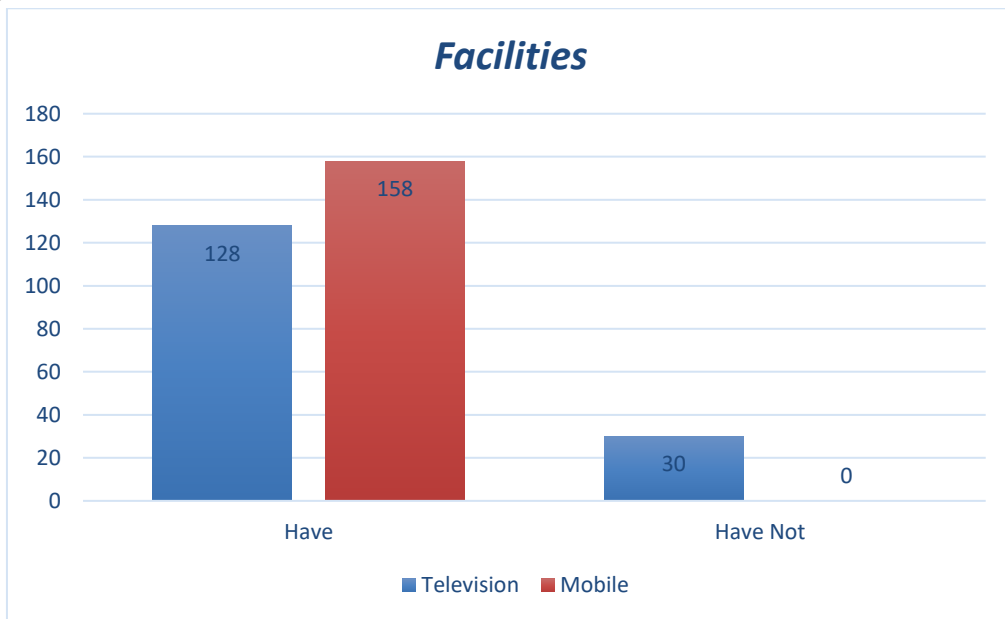


Chart 2

- **Financial Facilities**

Financial institutions provide easy credit access to rural people as per their norms and deposit their savings. Rural credit performs a multiagency system that comprises of commercial banks, regional rural banks, indigenous money lenders, and SHGs. The Village has two main sources of taking credit. First is Gramin banks and the Second source is Self Help Groups (SHGs). The observation reveals that although there is no bank situated in the village there is Gramin Bank at Kurra about 1km from the village. Also, the village has a total of 7 SHGs with 10 members in each group. Women deposit their savings of 100Rs in a month and then lend to the most needful person in a group. The findings reveal that women prefer taking loans from the SHGs due to the low-interest rate which is Rs 2 per 100 Rs and is payable at convenience. The meetings of SHGs are held every Monday. The purpose cited for taking loans were personal reasons, marriage or agriculture loans. Hence, it can be concluded that there are easy credit facilities available in the village and nobody is deprived of the credit facilities.

- **Level of other infrastructure**

- **Electricity Facilities**

Electricity plays act as a catalyst by triggering off rural development, and further an adequate power infrastructure which is necessary for the agriculture sector by maximizing the use of underground water for irrigation. Besides these, it further provides facilities of modern living such as house and street lighting, fans, and also gives a sense of urbanism in rural life. The village was electrified in the year 2009 but on asking it was found that though 93% of the house has electricity connection but 7% still does not has electricity connection. There are no street lights in the village and the free electricity provided by the government is mainly used for cooking food on heaters, lighting bulbs, fans, washing machines, coolers and maximum use is in running tube wells. The village do not have single solar panels till now.

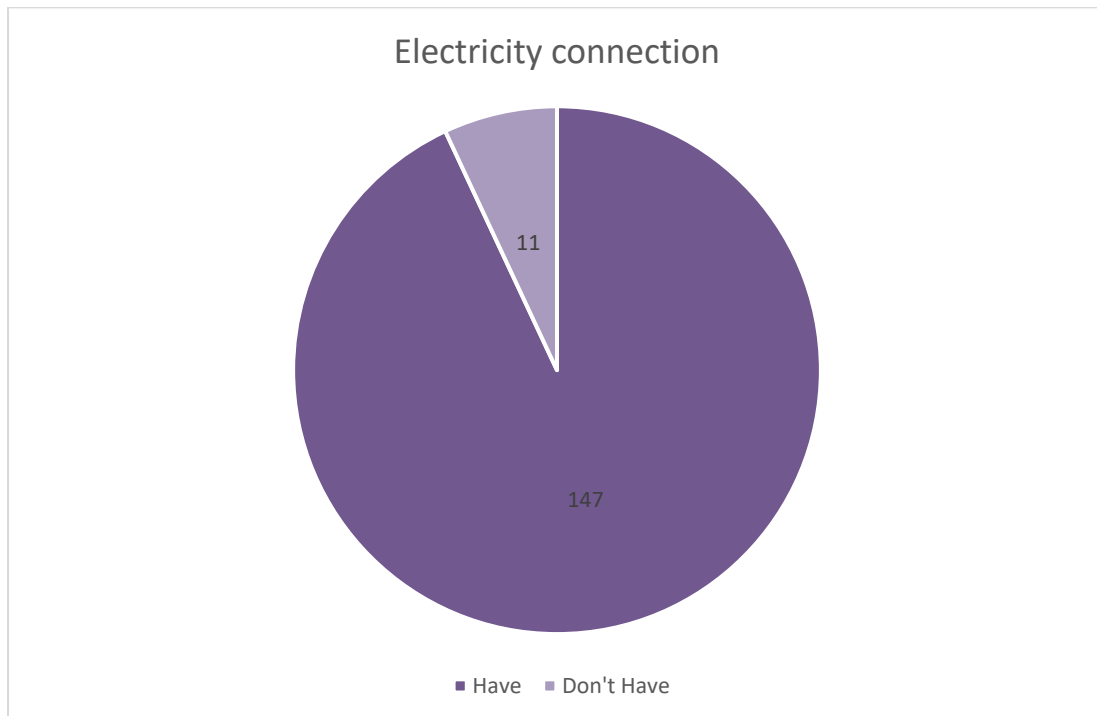


Chart 3

- **Storage Facilities**

Proper storage of surplus agriculture products determines the economic profit of rural farmers. In the village, there is no godown and all the farm produce is directly sent to mandi every day. Though crops like potatoes are stored in cold storage of 5000 tonnes which is situated at Kurrachitarpur around 2km from the village. The villagers told that fertilizers are not needed to store anywhere because they are spread directly in the field after being purchased from the market.

- **Irrigation Facilities**

Irrigation plays a key role in rural development by supporting agriculture with water as modern agriculture practices need insurance of adequate amounts of water to the field to grow crops all year round. The main source in the village is Private tube wells followed by canals. There are 5-6 private tube wells in the village used by small and marginal farmers which is an impressive situation but the intense usage of precious groundwater can make the situation worst. The villagers told that they are the beneficiaries of Pradhan Mantri Kisan Samman Nidhi. They receive ₹6000 annually in three installments of ₹2000. The money gets transferred directly to the bank accounts of the farmers every four months.



Fig 5: Irrigation through private tube well

- **Sanitation Facilities**

The benefits of improved hygiene and sanitation are well-documented and largely recognized as an effective strategy for the prevention of infection and controlling the transmission of pathogens. The importance of promoting appropriate sanitation and hygiene practices has also been endorsed by the United Nations (UN). It emphasized access to improved sanitation and good hygiene practices within the Sustainable Development Goals (SDG target 6), indicating that it is likely to achieve sustainable economic growth and a better future.

Sanitation in the village is not a major concern as "Swachh Bharat Abhiyan" played a major role in the construction of toilets. In interviewing people it was observed that people were happy getting toilets in their homes as it promotes a clean environment. For this major role was played by the incentive as provided under the Swachh Bharat Mission (Gramin) for the construction of Individual Household Latrines (IHHL). Though the study reveals that while 90% have basic toilet and sanitation facilities but these facilities are not available to 10% of households so the village can't be declared open defecation free.

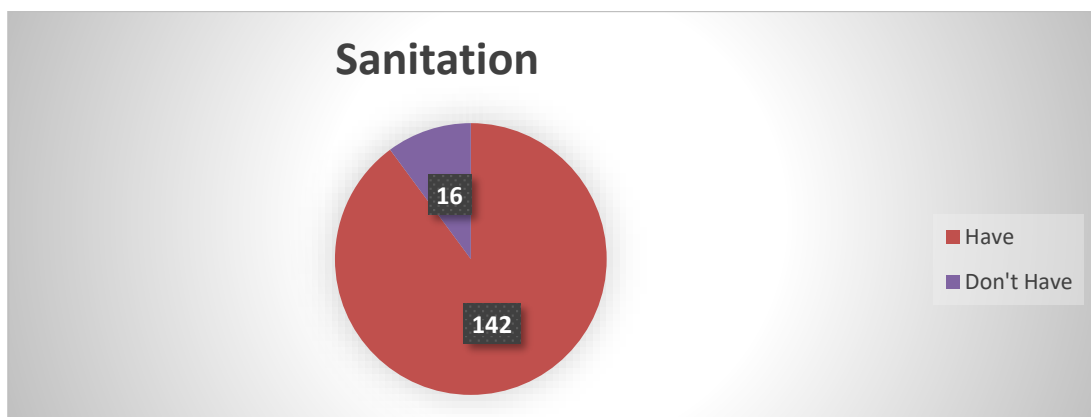


Chart 4

- Cooking Condition**

In India, cooking is one of the chores that capture most of the time in women's day to day life. Women in rural India do not get time to look beyond these chores and hardly get time for some other productive work. Many families continue to use traditional cooking fuels, namely, crop waste, firewood, cow-dung cake, and charcoal. Therefore, it becomes essential to address the access problems by initiating a new start to encourage LPG as a clean environmentally fuel.

The condition of **cooking** is not up to the mark. Even after the launch of PM Ujjwala Yojana since May 2016,98% of families continue to use traditional cooking fuels, namely, crop waste, firewood, and cow-dung cake. Only 2% use LPG gas cylinder for cooking. On asking reason cited were - being habitual, affordability, and lack of home delivery. An improvement is also needed to create awareness among women for related health issues. Also, regular engagement with the women in villages by the local panchayat, Non-governmental organizations, and communal-based organizations is vital.

- Drinking Water**

Drinking water quality is one of the greatest factors affecting human health. However, drinking water quality in many countries, especially in developing countries is not desirable and poor drinking water quality has induced many waterborne diseases. The condition of **drinking water connection** is quite satisfactory. The status of tap water supply in homes under Jal Jeevan Mission is progressive. 58% of households have reported that they have a samar facility at their home, and 8% have running taps connected to a village water tank.

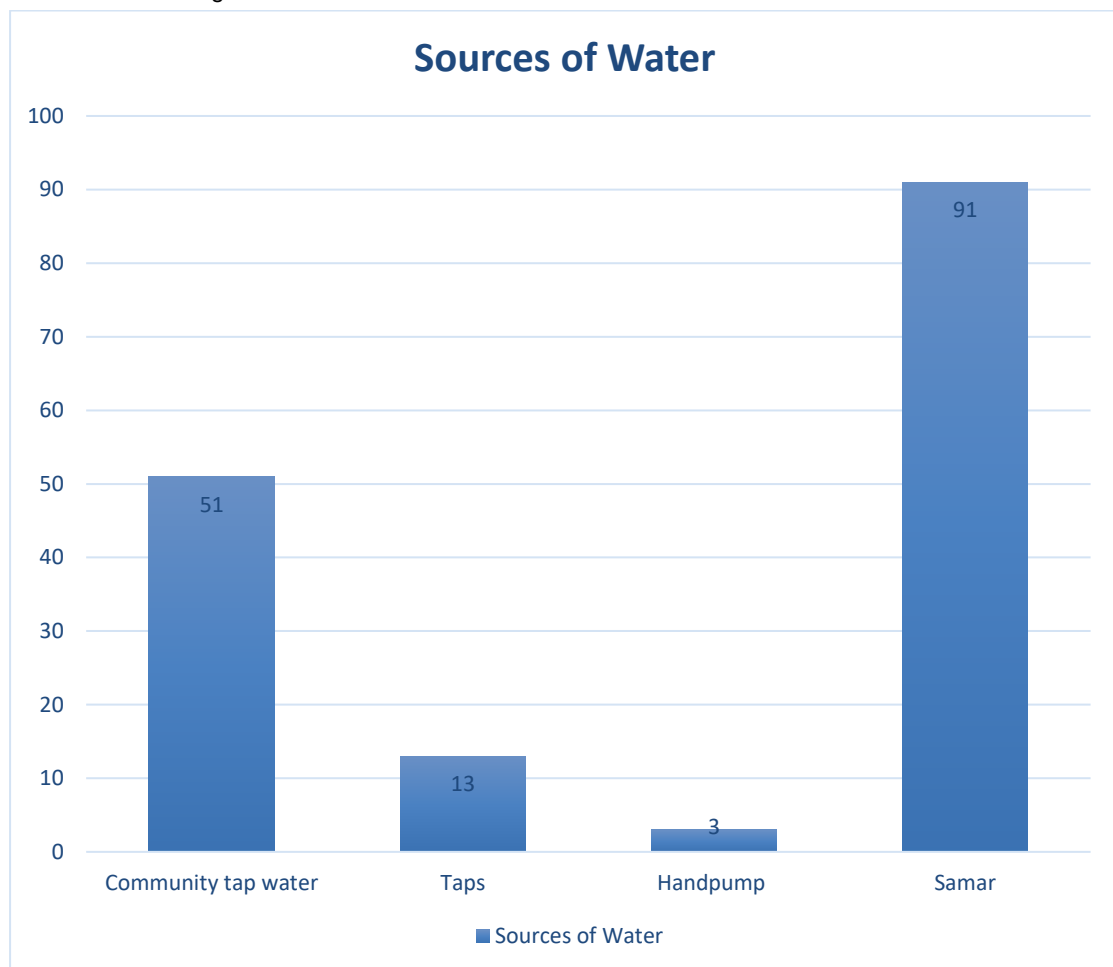


Chart 5



Fig. 6: Community tap water in the Village

- **Housing Facilities**

The issue of housing is one of the most important elements in rural spaces and it is a symbol of human interactions with their natural environment. It is formed according to the time-place conditions during years and is an indication of the type of activities in the economic, and socio-cultural attitudes of the villagers. Almost all families live in a pucca house with basic amenities available. Though few families live in a kutchra house. The pucca house constructed was at people's own expense. Therefore, the scheme of PM Awas Yojna has not benefitted the people in this village.



Fig 7: Kutcha House

Suggestions

The present research has a few suggestions based on the data analysis and personal observation of the village. These are as follows:-

- The government must address the problems of poor people in village who are unable to get the full benefit of schemes due to a lack of awareness, poor technology access or mediators demanding money to register them. The annual survey by the respective department will be an encouraging step to implement schemes hindrance free.
- With regards to SHGs depositing savings and giving loans to the needy is a good practice, but women in the groups must be trained in other activities to widen their source of income. Activities like tailoring, pottery crafts can be undertaken.
- For larger adoption of LPG, there is a need to emphasize on encouraging domestic awareness about the benefits of LPG use and the disadvantage of using traditional fuels. Government must focus on addressing the issues of affordability and lack of timely delivery so that the scheme of PM Ujjwala Yojana can be implemented properly.
- Lastly, proper information and data management with the Pradhan of the Village can encourage other researchers to learn about the village and spread the message for the help of further rural infrastructure development.

Conclusion

According to Prof. Harvey Leibenstein, to achieve the transition from a state of backwardness to a more developed state certain critical minimum effort is necessary by growth agents. The study reveals that this growth agent is the government. The people of this village are beneficiaries of many schemes. This profoundly impacts improving the living standards of people in the village. It is evident from the data that every house has mobile sets and 81% have TV sets. Also, 90% have toilets in their house. This is the bright side of the story.

But the other side of the picture is not so good. 10% still don't have toilet facilities in their dwelling units and a majority of women don't use gas while cooking. Thus, a long way has to go to improve the quality of life at the village level because the absence of these basic amenities to the households ultimately adversely affected the health front of the families.

Moreover, it can be said that by creating more awareness, the village has the potential to become an example of a 'SMART VILLAGE'.

Limitations

- The current research took a sample of 158 families only in the village out of 215 families. So, there is a scope left to do broad research with more data.
- Few parameters such as Adult Literacy rate, registered members of Ayushman Bharat, etc are still left due to no data availability. Future research can be done based on these parameters in the village.

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