International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 10 Issue 1, Jan-Feb 2026 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Vishwakarma Yojna: An Approach Towards Rurbanisation for Sampa Village Panchmahal, Gujarat

Rana Vraj H.[1], Rathod Sandip Kumar R.[2], Prof. D. J. Panchal[3], Prof. (Dr.) P. M. Shah[4]

[1,2]Student, [3]Lecturer, [4]HOD,
[1,2,3,4]Civil Engineering Department, Govt. Polytechnic Godhra/GTU, Gujarat, India

ABSTRACT

The Vishwakarma Yojana aims to enhance knowledge and contribute to the improvement of villages by providing sustainable solutions while preserving the soul of rural life. Under this scheme, villages are surveyed to identify existing infrastructure, basic facilities, and areas for improvement. The goal is to urbanize villages in a way that ensures peace of mind for residents by offering essential amenities without disrupting their traditional lifestyle.

As part of this initiative, Sampa village in Godhra Taluka, Panchmahal District, Gujarat, was studied to assess its current situation and compare it to the vision of an ideal village. Through this project, technical knowledge was applied practically, enabling a deeper understanding of rural challenges and opportunities. Sampa village is located approximately 15 kilometers from the district headquarters, Godhra, and has a population of 11,235 as per the 2011 Census. The primary occupation of the residents includes agriculture and labor.

The village has several basic facilities, such as primary and secondary schools, Anganwadi centers, and milk production businesses. About 70-80% of the roads are constructed with bitumen, while the remaining are gravel roads. Electricity is available 24/7, supplied by MGVCL (Madhya Gujarat Vij Company LTD). However, there is a need for further development in terms of infrastructure and public facilities.

Based on the survey and feedback from villagers, proposed developments for Sampa include the construction of an elevated water tank, a community hall, public toilets, a Sarpanch or Talati office, and a skill development center. These projects aim to improve living standards, reduce migration, and ensure the holistic development of the village while fostering a balance between modernization and cultural preservation.

How to cite this paper: Rana Vraj H. | Rathod Sandip Kumar R. | Prof. D. J. Panchal | Prof. (Dr.) P. M. Shah "Vishwakarma Yojna: An Approach Towards Rurbanisation for Sampa Village Panchmahal, Gujarat" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-1, February 2026, pp.1183-1193, URL: www.ijtsrd.com/papers/ijtsrd100186.pdf

IJTSRD100186

KEYWORDS: *Rural development, Urbanization, Reduce migration, Infrastructure facilities, Road development.*

1. INTRODUCTION

Sampa Village is situated in Godhra Taluka of Panchmahal District in Gujarat. The village covers a total area of around 1767.72 hectares and, as per the 2011 Census, has a population of 11,235 people. Sampa serves as a gram panchayat and is located about 15 kilometers from Godhra town, which is the nearest center for major economic and educational activities.

While the village has basic infrastructure such as roads, schools, and electricity, there is still a need for improvements in public facilities, safety, and community development. The literacy rate of Sampa is around 58.63%, indicating the need to promote better educational facilities. Also, the absence of some essential services like a nearby police post, proper library, and a formal entrance to the village affects the overall quality of life.

Through the Vishwakarma Yojana, our team aims to suggest infrastructure developments that will enhance the safety, education, connectivity, and pride of the villagers. The proposed designs focus on creating a welcoming entrance gate, building a well-equipped

library, establishing a police chowki, and improving existing basic amenities to help Sampa grow into a smarter, more sustainable village.

Village details:

Village Name: Sampa
Taluka: Godhra
District: Panchmahal
Pin Code: 389001
State: Gujarat
Population: 11235 (As Per Census 2011)
Households: 1961
Nearest Town: Godhra
Nearest Rail-way station: Godhra (15km)
Nearest Airport: Vadodara

FIG. 1 LOCATION OF THE STUDY

2. NEED OF THE STUDY

- Sampa Village requires better infrastructure to match the growing needs of its population.
- Essential facilities like pucca houses, healthcare centers (PHC), a proper community hall, library, entrance gate, and police chowki are needed for daily convenience and security.
- Improvement in basic services like transportation, education, and healthcare is necessary for overall village growth.
- There is a need to create better social, economic, and communication opportunities within the village itself.
- Introducing modern, sustainable solutions will help villagers lead safer, healthier, and more comfortable lives without depending on nearby towns.

3. OBJECTIVES OF THE STUDY

- To bridge the gap between rural and urban infrastructure by introducing essential modern facilities in Sampa Village.
- To ensure villagers have easy access to clean water, proper roads, irrigation systems, education, healthcare, transportation, and communication services.
- To suggest improvements like a proper house plan, upgraded community hall, well-equipped PHC, entrance gate, library, and police chowki for better living standards.
- To promote sustainable progress in the village through innovative, practical, and resource-efficient solutions.
- To enhance the quality of life for villagers by focusing on self-sufficiency, better connectivity, and social development.

4. STYDY AREA

The study area for this project encompasses the village of Sampa, located in Godhra Taluka, within the Panchmahal District of Gujarat, India. Sampa is a rural village with a population of approximately 11,235 people and covers a total area of 1,767.72 hectares. Situated about 15 kilometers from Godhra, the nearest urban center.

Sampa is predominantly an agricultural community, with farming as the primary economic activity. The village is governed by a Gram Panchayat, which is responsible for local administration, community welfare, and development initiatives.

The study area will focus on various aspects of Sampa's development, including socio-economic conditions, infrastructure, education, healthcare, sanitation, and the overall quality of life for its residents. The scope of the study will include data collection on demographic trends, local economic activities, access to public services, and current development challenges.

FIG. 2 SAMPA VILLAGE

5. LITERATURE REVIEW

When we look at rural and urban areas, it's not just about infrastructure, it's about lifestyle, opportunities, and access to basic needs. Cities often have better roads, schools, hospitals, and job options. That's why many people from villages migrate to urban areas in search of a better life. But rural areas are just as important. they're where most of our food, raw materials, and even cultural roots come from.

According to the 2011 Census, about 68.84% of India's population lives in rural areas. In Gujarat, this figure is about 57.4%, which clearly shows how crucial village development is if we truly want balanced progress.

However, rural areas still face several major issues lack of proper education and healthcare, limited job opportunities, poor infrastructure, and inadequate water and sanitation systems. To tackle these challenges, the government has launched various schemes such as:

- MGNREGA for rural employment
- PMGSY for building all-weather roads
- PMAY-G for housing
- Swachh Bharat Abhiyan for sanitation
- Along with Digital India, Jal Jeevan Mission, and DDUGJY for water and electricity access

6. METHODOLOGY

FIG. 3 STUDY METHODOLOGY

7. SCOPE OF THE STUDY

The scope of this study focuses on assessing the various aspects of Sampa village to identify areas of improvement and opportunities for development. The study will cover the following areas

Infrastructure Assessment: The study will evaluate the existing infrastructure, including roads, sanitation, water supply, healthcare, and education facilities, to understand the current status and identify gaps for future development.

Economic Activities and Occupation: The study will explore the dominant economic activities in the village, including agriculture, employment in industries, and labor force participation. This will help in understanding the economic structure and proposing strategies for economic growth.

Social and Community Development: The study will examine the social structure, including gender equality, community engagement, and social welfare programs, to assess how well the community is integrated and empowered.

Environmental Sustainability: The study will look into the sustainable practices being followed in the village, including waste management, irrigation practices, and renewable energy usage, to propose solutions for enhancing environmental sustainability.

Health and Education: The study will assess the availability and quality of healthcare and education facilities to determine the needs for improvement and access to better services for the villagers.

Village Governance and Administration: The study will focus on the governance model, the role of the Gram Panchayat, and the implementation of various government schemes to improve the overall administration of the village.

Opportunities for Future Growth: The study will also identify opportunities for future growth and development, such as the potential for introducing new industries, improving infrastructure, and enhancing social services to ensure the village's sustainable development.

Recommendations for Development: Based on the findings, the study will provide recommendations to improve the living conditions, economic opportunities, and governance in the village, helping the community move toward a more prosperous and sustainable future.

8. VILLAGE GAP ANALYSIS

VILLAGE GAP Analysis-FOR PHASE-XII

Village Facilities	Population	Village Name:	SAMPA	District: PANCHMAHAL	
		Existing Available Infrastructure Adequate / Inadequate	Required as per Norms	Ideal / Smart Vilage / Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	Adequate		Adequate	0
Primary School	Each Per 2500 population	Adequate		Adequate	0
Secondary School	Per 7,500 population	Inadequate		Adequate	0
Higher Secondary School	Per 15,000 Population	Inadequate	1	Adequate	1
College	Per 125,000 Population	Inadequate		Inadequate	0
Tech. Training Institute	Per 100000 Population	Inadequate		Inadequate	0
Agriculture Research Centre	Per 100000 Population	Inadequate		Inadequate	0
Skill Development Center	Per 100000 Population	Inadequate		Inadequate	0

Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health	Each Village	Adequate		Adequate	0
Primary Health & Child Health Center	Per 20,000 population	Inadequate		Adequate	0
Child Welfare and Maternity Home	Per 10,000 population	Inadequate	1	Adequate	1
Multispeciality Hospital	Per 100000 Population	Inadequate		Inadequate	0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets &kutcha house)	Inadequate	1	Adequate	1
Physical Infrastructure Facilities					
Transportation					
Pucca Village Approach Road	Each village	Adequate		Adequate	0
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Inadequate	1	Adequate	1
Drinking Water (Minimum 70 lpcd)		Adequate		Adequate	0
Over Head Tank	1/3 of Total Demand	Adequate		Adequate	0
U/G Sump	2/3 of Total Demand	Inadequate	1	Adequate	1
Drainage Network - Open		Inadequate		Inadequate	0
Drainage Network - Cover		Inadequate		Inadequate	0
Waste Management System		Inadequate		Inadequate	0
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	Inadequate		Adequate	1
community hall and Public Library	Per 15000 Population	Inadequate	1	Adequate	1
Cremation Ground	Per 20,000 population	Inadequate	1	Adequate	1
Post Office	Per 10,000 population	Adequate		Adequate	0
Gram Panchayat Building	Each individual/group panchayat	Adequate		Adequate	0
APMC	Per 100000 Population	Inadequate		Inadequate	0
Fire Station	Per 100000 Population	Inadequate		Inadequate	0
Public Garden	Per village	Inadequate		Inadequate	1
Police post	Per 40,000Population	Inadequate		Inadequate	1
Shopping Mall	Per 10000 Population	Inadequate		Inadequate	0
Electrical Design					
Electricity Network					
Electricity	**Per 10000 Population**	**Adequate**		**Adequate**	**0**
Pole	**Per 10000 Population**	**Adequate**		**Adequate**	**0**
Wiring	**Per 10000 Population**	**Adequate**		**Adequate**	**0**
Any Other	**Per 10000 Population**	**Inadequate**		**Adequate**	**0**
	Capacity Needs for electricity development				**0**

9. DATA COLLECTION

To truly understand the needs of Sampa village, we adopted a hands-on and community-centered approach. We began with field visits to observe the village's infrastructure, natural environment and public facilities. These visits allowed us to assess roads, sanitation systems, water supply, educational institutions and healthcare centers directly.

We conducted face-to-face interviews and focus group discussions with various community members including farmers, women, youth, elders and local authorities like the Sarpanch and Talati. This helped us gain insights not just from statistics but from real-life experiences of the villagers.

Our data collection didn't stop there. We analyzed existing government records, census data and reports to validate and strengthen our field findings. We also used a SWOT analysis framework to identify the village's strengths, weaknesses, opportunities and threats.

FIG. 4 VILLAGE SURVEY / VILLAGE INTERACTION DETAILS WITH SARPANCH

➢ PRIMARY SURVEY DETAILS

As part of the Vishwakarma Yojana initiative, a detailed primary survey was conducted in Sampa village to gather real-time, on-ground information. This survey aimed to understand not only the infrastructure but also the day-to-day challenges faced by the villagers. we interacted directly with local residents and the Sarpanch to ensure that our findings were community-driven and accurate.

We assessed different aspects of the village such as population, occupation, education, healthcare, and availability of basic amenities. The village has a population of around 11,235, with a large number engaged in agriculture and manual labor. During the survey, it was observed that while primary and secondary schools are available, higher education still requires students to travel to nearby towns like Godhra.

In terms of healthcare, a primary health center exists, but for specialized treatments, villagers often have to travel outside. Roads and electricity were mostly in place, but internal roads and drainage systems required improvements. Access to drinking water was adequate, though occasional shortages were reported.

The survey also highlighted the need for new facilities such as a community hall, elevated water tank, public toilets, and a skill development center.

10. AWARANESS ACTIVITY

As part of our village outreach under Vishwakarma Yojana, we conducted a cleaning and plantation drive at a school in Sampa village. Our aim was to spread awareness about cleanliness and environmental care among students and the local community.

We cleaned the school premises and planted trees with the help of students, encouraging them to take pride in their surroundings. This small effort helped create a positive impact and inspired villagers, especially the youth, to stay connected with nature and cleanliness.

FIG. 5 CLEANING

FIG. 6 PLANTATION

11. SUSTAINABLE PLANNIG PROPOSAL

While working on the development plan for Sampa village under the Vishwakarma Yojana, our core goal was to create a sustainable and future-ready rural ecosystem. The village faced multiple challenges such as lack of advanced healthcare, poor housing quality, inadequate infrastructure, and limited public amenities. We approached this not just from a technical point of view but with a strong emphasis on long-term usability, eco-friendliness and community inclusion.

Our planning was guided by three key principles: functionality, sustainability, and affordability. Instead of just suggesting new construction, we focused on improving existing infrastructure, optimizing natural resources, and introducing modern technology suited for rural settings.

- **STEP-WISE BREAKDOWN OF OUR PROPOSAL**

1. **Observation and Needs Identification**

- The **Primary Health Center** lacked equipment and skilled staff.
- The **Community Hall** existed but lacked basic facilities (lighting, ventilation, furniture).
- Many homes were still **kutcha houses**, without sanitation or durable construction.

2. **Gap Analysis**

- We conducted a detailed analysis comparing available infrastructure with government norms and ideal village standards. The gap was significant in areas like education, drainage, housing, healthcare, and energy solutions.

3. **Recommended Proposals**

- **Primary Health Center Upgrade:** Equipped with modern diagnostic tools, emergency facilities, and adequate staffing. Also includes a dedicated space for health camps.
- **Community Hall Renovation:** Added multipurpose usage with furniture, proper ventilation, lighting, and AV equipment to host meetings and trainings.
- **Sustainable Housing Plan:** Transition from kutcha to pucca homes with sanitation, good ventilation, and integration of solar panels and rainwater harvesting.

4. **Civil and Electrical Design Proposals**

We designed detailed layout plans using AutoCAD and created cost estimates. Some of the proposed infrastructure includes:

- **House Plans** with eco-materials
- **Entrance Gate** as a symbolic and secure entry point
- **Village Library** for digital and academic access
- **Police Station** for safety and law enforcement
- **Biomass Power Plant** as a renewable energy source
- **Solar-Powered Agricultural Robot** to aid local farming
- **Smart Grid System** for energy-efficient power distribution

5. **Sustainability Focus**

- Use of **green building materials**
- Integration of **solar energy** and **biomass systems**
- Emphasis on **rainwater harvesting**, waste management, and energy-efficient appliances

12. DESIGN PROPOSAL

1. HOUSE PLAN

FIG.7 3D HOUSE PLAN

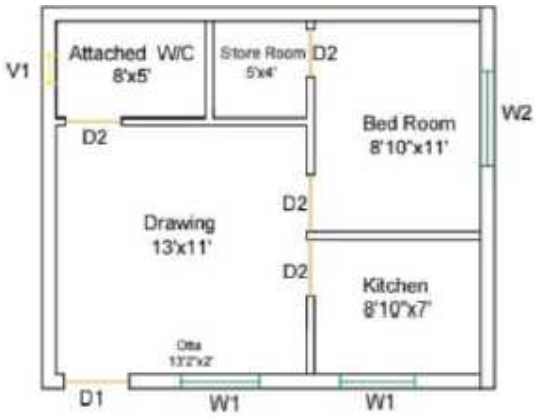

FIG.8 2D HOUSE PLAN

2. COMMUNITY HALL

FIG.9 3D COMMUNITY HALL

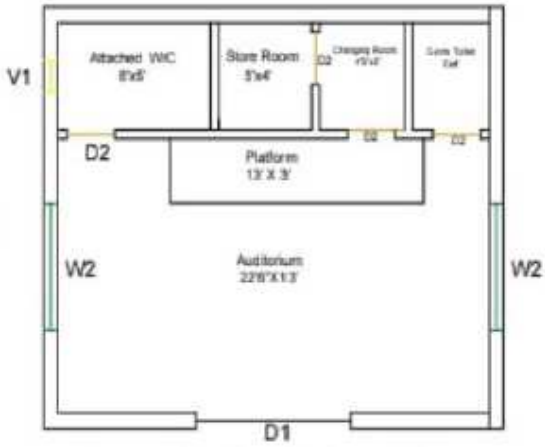

FIG.10 2D COMMUNITY HALL

3. PRIMARY HELTHCARE CENTER

FIG.11 3D PRIMARY HEALTHCARE

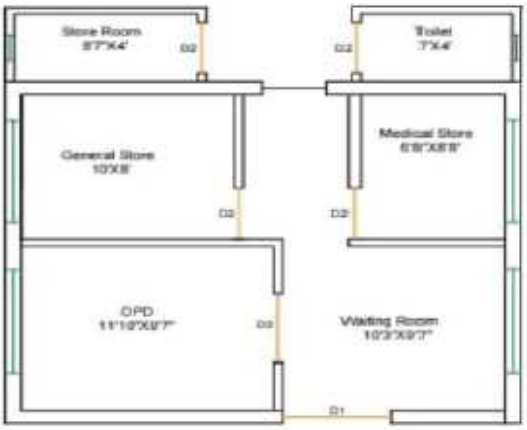

FIG.12 2D PRIMARY HEALTHCARE

4. VILLAGE ENTRANCE GATE

FIG.13 3D VILLAGE ENTRANCE GATE

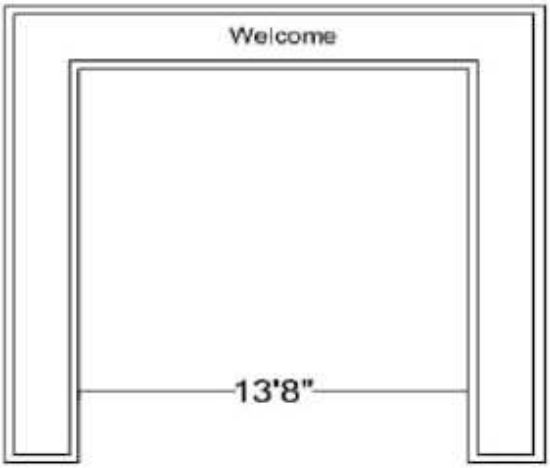

FIG.14 2D VILLAGE ENTRANCE GATE

5. LIBRARY

FIG.15 3D LIBRARY

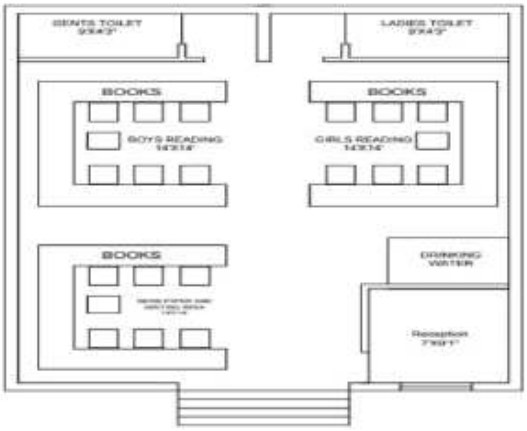

FIG.16 2D LIBRARY

6. POLICE CHOWKI

FIG.17 3D POLICE CHOWKI

FIG.18 2D POLICE CHOWKI

13. BENEFITS TO THE VILLAGERS

The development activities conducted under the Vishwakarma Yojana in Sampa village have created a wide range of real, tangible, and long-term benefits for the community. The project was not just about construction and planning it was about empowering people, improving daily life, and laying the foundation for a better future.

1. **Better Infrastructure:** Improved roads, drainage, and public spaces made movement easier and reduced problems during rains.
2. **Healthcare Access:** Upgraded Primary Health Center ensures quicker treatment and better health services close to home.
3. **Support for Education:** The proposed library and digital learning spaces will boost literacy and help students prepare for their future.
4. **Increased Safety:** A new police station will help maintain law and order, making the village feel safer.
5. **Employment Opportunities:** Skill development centers and training programs aim to reduce unemployment and stop migration to cities.
6. **Use of Clean Energy:** Solar lights and biogas initiatives promote eco-friendly energy and reduce electricity costs.
7. **Boost in Agriculture:** Better irrigation and farming solutions will improve crop yields and increase farmers' income.
8. **Cleaner Environment:** Plantation drives and sanitation awareness have improved cleanliness and made the village greener.
9. **Community Involvement:** Villagers were involved in every step, creating a strong sense of ownership and pride.
10. **Better Living Standards:** All these improvements together make the village more liveable, reducing migration and supporting a happier life.

14. CONCLUSION

Working on the Vishwakarma Yojana project for Sampa village has been a truly eye-opening experience for both us as students and for the community involved. This initiative was more than just an academic assignment; it was a real-world

opportunity to understand the challenges of rural India and apply practical solutions through engineering and teamwork.

Through our surveys, site visits, and continuous interaction with villagers, we were able to assess the actual needs and priorities of the people. Sampa village, with its mix of basic facilities and gaps in essential services, became a perfect canvas to demonstrate how sustainable development can be achieved without disturbing the rural soul.

We carefully identified the village's key problems from healthcare to education, from poor infrastructure to a lack of renewable energy usage. Based on these findings, we proposed realistic and budget-conscious solutions such as a community hall, upgraded health center, housing improvements, water tanks, library, police station, solar and biogas energy options, and more.

What made this project unique was the balance between tradition and innovation. Every solution we proposed aimed to improve quality of life while preserving the cultural and social structure of the village. We didn't just plan for the villagers we planned with them.

The outcomes of this project will not only improve the daily lives of Sampa's residents by providing better infrastructure, safety, education, and economic opportunities but will also serve as a replicable model for other villages in Gujarat and beyond.

In the end, this project wasn't just about buildings or designs it was about creating a vision of a rural India that is clean, connected, educated, self-reliant, and proud of its roots.

Acknowledgments

We extend our sincere appreciation to **Prof. Dr. P. M. Shah (HOD, Civil)**, and our dedicated faculty mentor **Prof. D. J. Panchal (Lecturer in Civil)** for his constant encouragement and expert guidance throughout this journey.

Lastly, a warm and special thanks to our **parents, family, and friends**, whose emotional support, patience, and encouragement were the true pillars behind the successful completion of this project.

REFERENCES

[1] https://censusindia.gov.in

[2] https://nrega.nic.in

[3] https://pmgsy.nic.in

[4] https://pmayg.nic.in

[5] https://swachhbharatmission.gov.in/sbmg/

[6] https://www.digitalindia.gov.in

[7] https://jaljeevanmission.gov.in

[8] https://www.ddugjy.gov.in

[9] https://www.gtu.ac.in/VishwakarmaYojna.asp

[10] https://rural.nic.in