Study and Development of Manekpur Village

Prince Mediwala[1], Urvika Munoor[2], Amit Chauhan[3]

[1,2,3]Department of Civil Engineering, Laxmi Institute of Technology, Sarigam, Gujarat, India

`170860106008@laxmi.edu.in`[1],`170860106029@laxmi.edu.in`[2],`amitkumar.lit@laxmi.edu.in`[3]

Abstract—**Rural areas need drastic changes in areas like infrastructure, credit availability, literacy, poverty eradication, etc. The schemes that are already in place with the aim of rural development need a new outlook and proper updating. Accordingly, the government needs to act for the upliftment of rural India. The main objective of this paper is to give a design idea about the methodology and the development needed in the allocated village. For this particular project we have taken ―Manekpur‖ village, which is located in Valsad district of Gujarat state. We have done techno-economical survey and gap analysis for the village. From the survey we got to know about the conditions of existing government structure, sanitation structure, economical structure and so based on that survey we have given the design of various structure for the prosperity of the village and to make it one step more closure towards a smart village.**

Keywords—**Village development, Rurbanisation, Manekpur, Maroli, Sarigam, Social development, Socio-cultural development, Sustainable development, Physical development, Smart Village needs, Smart Village development**

I.   INTRODUCTION

The ―Vishwakarma Yojana 2020 – Phase VIII‖ concerns with rurbanisation of the village which leads to developing a rural village into a smart village along with urban facilities. It is a step towards rurbanization of villages by the Government of Gujarat handed over to GTU. The vision of Vishwakarma Yojana is to reduce and remove the rural-urban gap through infusion of urban patterns and services in rural systems to ensure provision of quality lifestyles and livelihood options while keeping the basic rural soul intact. By studying the village life with respect to delivery of basic needs, the main aim is to reimagine, redesign, rejuvenate and strengthen the community life. It provides the benefits of practical work experience to engineering students and they can apply their technical knowledge in the development of infrastructure in rural development. The project deals in two semesters, i. e., 7th and 8th semester. In 7th semester we have done work for part I which consists of Ideal Village (Maroli, Valsad, Gujarat), Smart Village (Sarigam, Gujarat, Valsad), Allocated Village (Manekpur, Valsad, Gujarat) details and their corresponding data.

As a part of designs for part I, we have given designs of following structures like, Rainwater Harvesting Plant as a sustainable design, Public Toilet as a physical design, Post-Office as a social design, Community Hall as a socio-cultural design, Bank with ATM facility as smart design and Gram Panchayat as a heritage design.

II.   PROJECT METHODOLOGY

➢ Introduction to VISHWAKARMA YOJANA
➢ Literature Reviews
➢ To Do Techno-Economical Survey
  • Ideal Village – Maroli
  • Allocated Village – Manekpur
  • Smart Village – Sarigam
➢ Meeting with respective village's Sarpanch or Talati
  • Maroli – LatabenMarolikar
  • Manekpur – Kundaben Davaria
  • Sarigam – HansabenKombhaya
➢ Collection of data of Physical, Social, Socio-Cultural and other available facilities in the village
➢ Gap Analysis
➢ Finding the problems in the existing facilities
➢ Designing the proposals for physical and sustainable development
➢ Giving proposal of the facilities that are required for the development of the village
➢ Final DEVELOPMENT PLANS

III.   IDEAL VILLAGE – MAROLI

A Maroli is a village located in the Valsad district in the state of Gujarat, India. Its coordinates are 20.2979° N, 72. 7578° E. It is located 50 KM towards South from District headquarters Valsad and 405 KM from State capital Gandhinagar. It's pin-code is 396130 and its postal head office is Dhodipada. The nearby villages from which Maroli can be approached are: Kalgam (3 KM), Sarai (4 KM), Mamakwada (5 KM), Seronda (5 KM), Fansa (5 KM), etc.

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Page 125

The nearby cities from which Maroli can be approached are: Umbergaon, Vapi, Daman and Diu, Amli, Dadra Nagar Haveli, etc. It is located near the border of the Valsad district and Palghar district. Palghar district is in south direction towards this place. It is near to the Maharashtra State Border and it is near to Arabian sea so there's a chance of humidity in the monsoon weather.

A. Demographic Details

Census Parameter (2011)	Census Data
Total Population	15678
Male Population	8029
Female Population	7649
Total Households	3081
Total Literacy Rate	11378
Total Working Population	5560

B. Geographic Details

Description	Information
Coordinates of Village	21.0239°N, 72.8886°E
Total Area (in ha)	1072.46
Residential Area (in ha)	3.00
Forest Area (in ha)	4.43
Irrigative Area (in ha)	576.73
Non-Irrigative Area (in ha)	445.99
Vacant Land Area (in ha)	12.30
Water bodies	3 Nos. of Pond
Nearest Town	Umbergaon (CT)

C. SWOT Analysis

S – Strength
• Good Connectivity to Village
• C. C. T. V. Camera Facility
• Traffic Regulation Board on Roads
• Education Facilities
• Irrigation Activities
• Fishing Activities
• Sufficient Water
• 24*7 Electricity

O – Opportunity
• Re-Use of Waste
• Use of Modern Technology
• Better Educational Systems
• Weekly Seminars in Schools

W – Weakness
• Free Wi-Fi Connection
• Banking Facilities
• Drainage System
• Lack of Maternity Hospital

T – Threats
• Waste Disposal
• Migration of People
• Slow Development

IV. SMART VILLAGE – SARIGAM

The smart village' is a model in which, the energy acts a catalyst for a range of development outcomes. If managed correctly, the technology would lead a rapid improvement in health care, nutrition, education, and economic security. Villagers could thus have the opportunity to capture many of the benefits of urban life while returning value aspects of rural life and ensuring balanced development at a national level.

International Conference on Emerging Trends in Engineering and Technology (ICETET21), Laxmi Institute of Technology, Sarigam, Gujarat

Page 126

Smart villages serve as complementary engines of economic growth to smart cities producing goods and services for local rural markets as well as high value added agricultural and rural industry products for both national and international markets. One of the key enablers of these development benefits in smart villages are sustainable electricity supplies and the availability of clean and efficient appliances for cooking.

Sarigam is a Village in Umbergaon Taluka in Valsad District of Gujarat State, India. It is located 44 km towards South from District headquarters Valsad.384 km from State capital Gandhinagar. Sarigam Pin code is 396155 and postal head office is Sarigam. Karanj (3 km) , Sarai (4 km), Bhilad (4 km), Malav (5 km), Angam (5 km) are the nearby Villages to Sarigam. Sarigam is surrounded by Vapi Taluka towards North,Dadra Nagar Haveli Taluka towards East, Daman Taluka towards North, Talasari Taluka towards South, Umbergaon, Vapi, Daman and Diu, Amli are the nearby Cities to Sarigam.This Place is in the border of the Valsad District and Thane District. Thane District Talasari is South towards this place . It is near to the Maharashtra State Border. It is near to Arabian sea. There is a chance of humidity in the weather.

A. Demographic Details

Census Parameter (2011)	Census Data
Total Population	19903
Male Population	10943
Female Population	8960
Total Households	4647
Total Literacy Rate	86.92%
Total Working Population	97.69%

B. Geographic Details

Description	Information
Coordinates of Village	20.27801°N 72.84171°E
Total Area (in ha)	1312
Residential Area (in ha)	400
Forest Area (in ha)	317
Irrigative Area (in ha)	200
Industrial Land Area (in ha)	395
Nearest Railway Station	Bhilad Railway Station

C. Reason of choosing Sarigam as Smart Village

Smart Village – Sarigam
• Education (At higher level)
• Water Supply
• Sanitation
• Smart Agriculture
• Road Infrastructure
• Disaster Management Cell

V. ALLOCATED VILLAGE – MANEKPUR

According to Census 2011 information data, the location code/village code of Manekpur village is 523660. The village Manekpur is located in the Tehsil of Umbergaon taluka of Valsad district in Gujarat state of India, situated at 25 km far away from the sub-district headquarters of Umbergaon and 45 km away from district headquarters of Valsad. As per statistics of 2009, Manekpur is also now a Gram Panchayat. The total geographical area of the village is 464.71 ha. Manekpur has a total population of 2,919 people according to 2011 census. There are about 589 houses in the village itself. Umbergaon, Vapi, Daman and Diu, Silvassa are the nearby Cities to Manekpur. Vapi is the nearest town to the Manekpur which is approximately 20 kms away. Khattalwada (3 km), Ahu (4 km), Mamakwada (4 km), Sarai (4 km), Tumb (5 km) are the nearby Villages to Manekpur. Manekpur is surrounded by Talasari Taluka towards South, Vapi Taluka towards North, Dadra Nagar Haveli Taluka towards East, Daman Taluka towards North. This place is near the border of the Valsad (Gujarat) district and Palghar (Maharashtra) district. It is near to the Maharashtra State Border. It is near to Arabian sea so, there it has is a climate of humidity in it.

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Page 127

A. Demographic Details

Description	Census 2011 Data
Village Name	Manekpur
Tehsil Name	Umbergaon
District Name	Valsad
State Name	GUJARAT
Total Population	2919
Total Area	465 (Hectares)
Total No of House Holds	589
Total Male Population	1465
Total Female Population	1454
0-6 Age group Total Population	401
0-6 Age group Male Population	217
0-6 Age group Female Population	184
Total Person Literates	1578
Total Male Literates	915
Total Male Literates	663
Total Person Illiterates	1341
Total Male Illiterates	550
Total Male Illiterates	791
Scheduled Cast Persons	32
Scheduled Cast Males	20
Scheduled Cast Females	12
Scheduled Tribe Persons	1301
Scheduled Tribe Males	1286
Scheduled Tribe Females	1301

B. Geographic Details

Description	Data
Village Name	Manekpur
Gram Panchayat Name	MANEKPUR
CD Block Name	Umbergaon
Tehsil Name	Umbergaon
Reference Year	2009
Sub District HQ Name	UMBERGAON
Sub District HQ Distance	25 Km
District HQ Name	VALSAD
District HQ Distance	45 Km

Nearest Town	VAPI
Nearest Town Distance	20 Km
Pin code	396120
Map Coordinates	20.2480959°N, 72.7954159°E

D. Infrastructure Details

Facilities	Available (Yes/No)
Water tank	Yes
Drainage	No
Approach Road	Yes
Main Road	Yes
Railway Station	No
Bus Station	No
24*7 Electricity	Yes
Sanitation	No
Government Hospital	Yes
Higher Secondary Edu.	Yes
College	No
Community Hall	No
Post-Office	Yes (Need Improvement)
Gram Panchayat	Yes (Need Improvement)
Renewable Infrastructure	No

VI.   PROPOSED DESIGNS OF VILLAGE

A. Need of Designs

1) From Rainwater Harvesting Plant

- They can get rid of water scarcity problem in summer.
- Can use stored water for irrigation needs.
- Can store water in borewells so that the borewells stay recharged every time.

2) From Public Toilet

- They can be beneficial for sanitation facilities.
- They can use their private as well as public.
- Outsiders can locate and do their sanitation activities easily.

3) From Post-Office

- Village will have its own post, so they won't need to go each and every time to nearest Sanjan sub-branch post office.
- It will create a job opportunity for youth of village too.

4) From Community Hall

- It will be beneficial to those people who do not have land for doing any program in which mass gathering is required
- It will be helpful too to the government authorities where they can put up various kinds of meetings as well.

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Page 128

5) From Bank

- The villagers will get an ease to withdraw and deposit their money.
- They won't have to go travel long distance for their money.

6) From Gram Panchayat

- It will create an aesthetic look of village.
- Also, it would be creating job opportunities for people of the village.
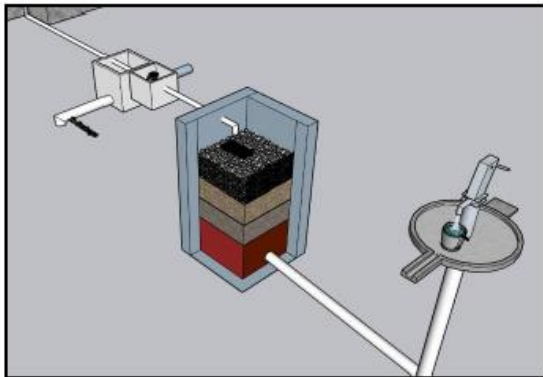
B. Proposed Designs

Fig 1. Proposed Design of Rainwater Harvesting Plant

Fig 2. Proposed Design of Public Toilet

Fig 3. Proposed Design of Gram Panchayat

Fig 4. Proposed Design of Post-Office

Fig 5. Proposed Design of Community Hall

Fig 6. Proposed Design of Bank with ATM

VII.   CONCLUSIONS

On the basis of whole report, the first thing we would like to conclude is that the Vishwakarma Yojana Phase VIII: An approach towards Rurbanisation, the name itself indicates the upliftment of any rural area into an urban sprawl. The project tends to improve the physical, social as well as social cultural aspects of a particular village by implementing and improvising various amenities in various forms with least amount of hindrance to the rural communalism.

After conducting the surveys of allocated, smart and ideal, we get to know that how the village is lacking in getting proper amenities which they should get as a prior commitment. Side by side the village interaction plays an important role and from that we got the ideas that what they need in the village apart from the norms.

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Page 129

We did a gap analysis by comparing the allocated Manekpur village with UDPFI/UDPRFI Norms and we came to know about the village gap, i.e., what is there and what is lacking.

We are proposing some designs based on our technoeconomic survey, interactions with villagers, mindsets of villagers and gap analysis of village for making it as an urban sprawled developed villa. Following are the structures which we have given in the report.

Type of Structure	Approximate Costing
Rainwater Harvesting Plant	₹ 1,03,225.55
Public Toilet	₹ 7,71,306
Post Office	₹ 17,43,087
Community Hall	₹ 28,59,714
Bank with ATM Facility	₹ 20,71,097
Gram Panchayat	₹ 11,33,484

REFERENCES

[1] Census department, Ministry of Home Affairs, Govt. of Indiawww.censusindia.gov.in

[2] Vishwakarma Yojana & its concept: http://www.vyojana.gtu.ac.in/

[3] Demographic and other data of the village: www.censusindia.gov.in https://www.census2011.co.in/

[4] For getting thorough data of the allocated village (Manekpur): https://etrace.in/census/village/manekpur-umbergaon-district-valsad-gujarat-523660

[5] For UDPRFI Guidelines https://www.google.com/url?sa=t&source=web&rct=j&url=http://mohua.gov.in/upload/uploadfiles/files/URDPFI%2520Guidelines%2520Vol%2520I.pdf&ved=2ahUKEwiYzdH1gsHsAhWWc30KHcqaCnIQFjAHegQIARAB&usg=AOvVaw1eyAe-ZRvxoD5NLc3mh1r5 https://www.google.com/url?sa=t&source=web&rct=j&url=http://mohua.gov.in/ https://www.researchgate.net/publication/342163996_STRATEGY_FOR_THE_DEVELOPMENT_OF_SMART_CITIES_Retrofitting_Redevelopment_Greenfield_Development_PAN_City_Development

[6] Urban Transportation System Book by R. P. Rethaliya

[7] For various details of Smart, Ideal & Allocated Village: http://www.onefivenine.com/india/villag/Valsad

International Conference on Emerging Trends in Engineering and Technology (ICETET21), Laxmi Institute of Technology, Sarigam, Gujarat

Page 130