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Smart Village – A Case Study Of Pimpalgaon Malvi Village

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***Abstract*—India, a developing country and we all Indians are trying to make it a develop country. But not a single factor will make it so. Smart cities are one of those factors. While everybody is busy dealing with smart cities, we forgot that we have villages too. So, we also need to make our villages smart. Maharashtra government is trying to make its villages better. They are launching various schemes for the same. Now, it is the responsibility of Gram Panchayts to get them applied effectively and within a short period of time. As a result, village growth will take place indirectly resulting in growth of state as well as country. In this particular project we are about to deal with the Pimpalgaon Malvi village. Though some basic amenities like electricity, clean drinking water, road network, e – learning is available but the village is still lack of sewage water disposal, solid waste management, rain water harvesting, biogas plants, energy conservation, bus stop, street lights etc. So by applying these factors we can make the village smart.**

Keywords—smart village, gram panchayat, sewage, solid waste, biogas, energy conservation

I. INTRODUCTION

Growth of any country is mainly dependent upon people living in it. About 68.84% people live in different 640867 villages. This is very major number. So, for the growth/development of the country these villages and this population plays a vital role. Many of the villages are still very behind from the rest of the world. It is because of unavailability of some basic as well as some advanced amenities/facilities. These amenities include clean drinking water, electricity, drainage network, sewage disposal, solid waste management, education, rain water harvesting, energy conservation, transportation system, recreational facilities, modern technology and agricultural facilities along with good infrastructure. Unavailability of above mentioned factors won't make a village a smart village. Resulting to this no progress of the country will be there.

So, it is necessary to develop such amenities over there. On the other hand, people living in villages migrate to the nearby cities because of the insufficient amenities. They also deserve a good lifestyle and a healthy environment as like people living in cities. This project is going to focus on such ideas which will take the village towards growth.

II. LITERATURE SURVEY

Bhagya Niranjanbhai, Prof. Rinni Shah (**2017**)- The author describes the implementations of various community and welfare schemes of rural development such as E-GRAM YOJANA, NIRMAL GUJRAT MISSION 2012, SANSAD ADARSH GRAM YOJANA(SAGY) etc. In this paper they concluded that the provision of facilities like drinkable water & infrastructure development which includes bus station & road network are the primary facilities considered during development of smart village.

John Holmes, Meredith Thomas (2015) – As stated in this paper nearly 1.3 billion people across the globe remain without access to electricity today and will fill find it challenging to achieve parity of development so required to provide renewable energy source for their growth. Hence this model of sustainable development has the potential to significantly improve the lives of village communities worldwide and help ensure a sustainable future for everyone.

Nishant Maloo et al (2014) – Roads and transportation is one of the most neglected sectors of planning in rural areas. This paper is first in a series to aid Grampanchayts in preparation of their own roads and transportation infrastructure pin order to aid the gram panchayat in preparing these plans, several experiments have been carried out in the sectors including water, sanitation and solid waste for establishing procedures for planning.

Patel Diptesh K et al (2017) – A dream village will provide long term social, economic and environmental welfare activity for village community. A dream village will ensure proper sanitation facility, good education, better infrastructure, clean drinking water, health facilities, environment protection, resources use, efficiency, water management, renewable energy etc. This paper guides to provide some suitable facilities and planning of different building components to develop a Bakrol village like school, community hall, biogas plant, recreation of lake, irrigation facilities etc.

Rutuja Somvanshi et al (2016) – In India majority of the population still lives in villages. A lot of work needs to be done in making the villages clean. There are different aspects of clean village such as: water supply, sanitation, indoor air quality solid waste management and renewable energy etc. After applying all the services and technique the overall problems of Javalgaon village are reduced. Due to this the cultural, social, economic, environmental, educational, living standard and overall status of village increases. Because of that village become self-dependent & contributes towards the development of nation.

Sarv Siksha Abhiyan – Pioneered by former Prime Minister Atal Bihari Vajpayee, the Sarv Siksha Abhiyan was launched in 2000. It is an attempt to provide an opportunity to all children between 6 and 14 years of age to get free education which is also a basic fundamental right. The state and the central government share the expenses of this project.

Sansad Adarsh Gram Yojana - It is a rural development project launched in 2014 by the government of India in which each Member of Parliament will take the responsibility of three villages and look after the personal, human, social, environmental and economic development of the villages. This would substantially improve the standard of living as well as the quality of life in the villages. No funding have been provided to this project as funding can be raised through existing schemes.

III. NEED AND SCOPE OF STUDY

The need of study is to meet the basic requirements of the people living in the village so that they can live in the good and healthy environment. For this purpose the data of the village has been collected on the basis of water facilities, drainage, transportation, education, primary health care, public toilets, energy conservation and other amenities. These amenities can be fulfilled with the help of government schemes.

Scope of this project is to convert an ordinary village into a smart village by providing or improving facilities so that the standard of living can be improved. This will be done under the campaign of smart village and various government schemes. This leads to development of village and thus the nation.

Fig. 1 Components of Smart Village

A. *Requirements of smart village*

- Transportation facilities
- Safe drinking water
- Solid and liquid waste management
- Renewable energy sources
- Rain water harvesting
- Energy conservation
- Smart security
- Bank facilities
- Educational facilities
- Women empowerment
- E-Governance
- Use of modern technology
- Agricultural facilities

IV. DATA COLLECTION OF PIMPALGAON MALVI VILLAGE

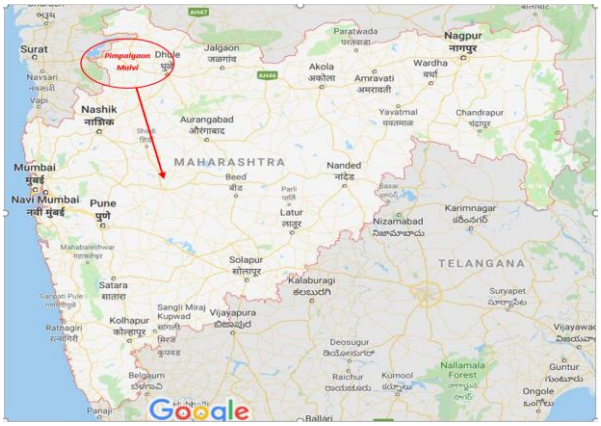

Fig. 2 Location of Pimpalgaon Malvi in Maharashtra

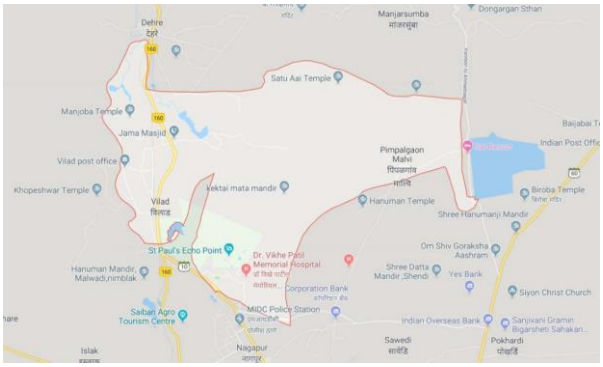

Fig. 3 Map of Pimpalgaon Malvi

Pimpalgaon Malvi village is located in Ahmednagar district of Maharashtra state. It has an area of 2730 Hectares. It is about 12km towards north from district headquarters Ahmednagar. Pimpalgaon Malvi Pin Code is 414601 and postal head office is Jeur.

Dongargaon (4 KM), Manjarsumba (4 KM), Wadgaon Gupta (5 KM), Shendi (7 KM) are the nearby villages to Pimpalgaon Malvi.

It has a population of about 6100 and number of houses are 1132 among which female population is 48%. Village literacy rate is 69.4% and the female literacy rate is 30.6%.

❖ Sarpanch – Mr. S. G. Zine
Village Development Officer – Mr. D. R. Shelke

❖ Government Schemes Applied

- Pradhanmantri Aawas Yojana (14 number of Gharkul applied in the year 2016-2017)
- Ramai Aawas Yojana(12 and 9 number of Gharkul applied in 2016-2017 year and 2017-2018year)
- Shabari Aawas Yojana(7 number of Gharkul applied in the year 2016-2017)
- Pardhi Aawas Yojana
- Jalswaraj Yojana(2018-2019)
- Pradhanmantri Gramsadak Yojana

❖ Awards Received

- Tantamukt Gaon (2015-2016)
- Hagandarimukt Gaon (2016-20170

A. ***Amenities Available***

- Drinking water facility
  Clean drinking water is available in the village. It has two ESR having capacity 80000 litres and 50000 litres. Village gets the water by Burhan Nagar Water Scheme.

Fig. 3 Elevated Storage Reservoir

- Primary health centre
  There is availability of primary health centre in the village.

Fig. 4 Primary health centre

- Primary and secondary education
  There is primary school which has E-learning facility available in it. Also, the village has secondary and higher secondary school

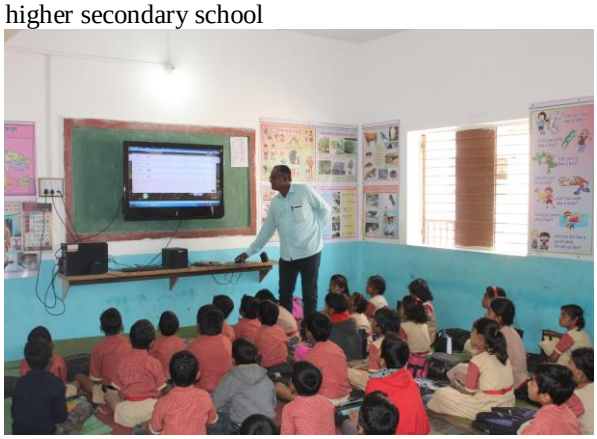

Fig. 5 E-Learning

- Cooperative banks & Patsanstha

Fig. 6 Bank

- Worth ship places
  The village has various temples like Ram temple, Hanuman temple, Savata Mali temple and a church naming Fatima Church along with a Mosque

Fig. 7 Hanuman Temple

- Agricultural facilities

Advanced equipment and machineries are being used by farmers in this village. Some farmers have also installed sprinkler irrigation and drip irrigation.

B. Amenities Unavailable

- Poor drainage condition
  Though there is a network of drainage but it is not working. As we can see in the picture water logging problem can be seen.

Fig. 8 water logged area

- Solid waste disposal
  No solid waste management can be seen. People throw the domestic as well as other waste in open land which creates odour problem and bad environment

Fig. 8 Waste thrown in open ground

- Sewage disposal
  No treatment is given to the sewage water. It is just allow to let go without any treatment which again leads to cause of bad environment. .

Fig. 9 Outlet of sewer

- Damaged handpumps

Fig. 10 Damaged Handpump

- Rain water harvesting
  No Rain Water Harvesting in the village had been seen. There is need to provide RWH to harvest the water.

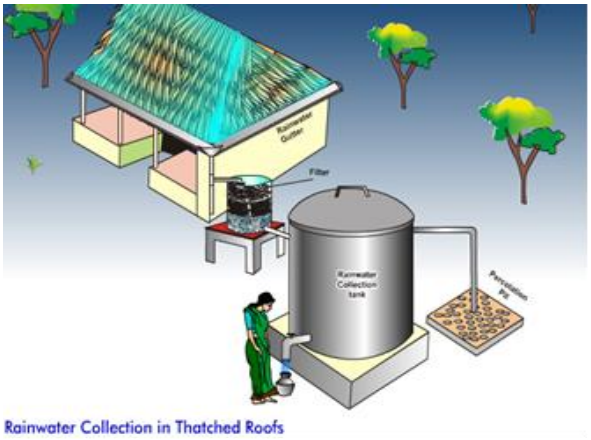

Fig. 10 Rain Water Harvesting

- Energy conservation
  It is concluded with the conservation of energy by providing biogas plants, solar street light.

Fig.11 solar street light

- E-Governance
- Transportation facilities

- Mini Bus facility

Fig, 12 Mini Bus

- Smart security(CCTV camera)

Fig. 13 CCTV

- Internet (Wi-Fi) facility

Fig. 14 Wi-Fi

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