

Study and Development of Existing Village near Surat

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Abstract- Mahatma Gandhi's concept of rural development revolves around creating "Smart Villages" for transforming needs and accessible to all. The village may be regarded as reformed. where the roads are clean, there is a fixed place for evacuation, the Water supply, Electricity, Health care, Transportation system, Education, etc. The technology could be used to improve the quality and delivery of other services such as health and education, which in turn contributes to sustainable development. Similarly, the use of renewable energy, apart from meeting energy needs, also contributes towards environmental sustainability. Smart village has concept of proper use of natural sources, manpower, and implements in quality of life in rural development area.

Index Terms- Smart Village, Drainage system, Rural Development, Water supply.

I. INTRODUCTION

This is to improve water quality by creating a wetland to intercept and treat run-off that currently discharges direct to a watercourse or freshwater drain.

To prepare a plan which must include a map of the relevant fields / stading identifying the location of the rural sustainable drainage system feature. For rural sustainable drainage system features accepting run-off from a stading, the plan must include a calculation of the size of the rural sustainable drainage system feature(s) including the amount of runoff draining to it (treatment volume). And also produce a diffuse pollution stading assessment.

This includes the use of subsurface and surface drainage systems. Secondly, surface drainage methods involve the use of grass waterways, swales and ditches to remove standing water and convey storm water runoff to a suitable outlet. The use of both surface and subsurface drainage methods together is the best way to correct poor drainage conditions.

There are many questions and misconceptions about drainage such as: who is responsible for improving drainage, who regulates what landowners can do on their own property, as well as the rights and wrongs about installing and maintaining artificial drainage systems. The legality of drainage work often arises, especially in the case of feuding neighbors.

Simply stated, all water should enter and leave your property at the same point, and at the same rate, as it did prior to any construction or disturbance, and it should do so in a manner that does not damage to neighboring properties.

Concept of smart villages is improving the quality of life of rural people. We define smart village as services of which are delivered to its residence and businesses in an effective and efficient manner. Development different facilities such as transportation, water supply, drainage system and affinity of people towards the locality or city. [1]

Hence Rural Development which is concerned with economic growth and social justice, improvement in the living standard of the rural people by providing adequate and quality social services and minimum basic needs becomes essential. In fact, rural development is the product of interaction between various physical, technological, economic, socio-cultural, institutional. [2]

Drainage system: Some time ago drainage system is constructed but they only half constructed so they not be complete and people can't use the drainage system.

Before 10 years ago poor drainage system are constructed but some reasons they not complete like politics and corruption. The people not aware by the drainage system so not be success past drainage system.

The monsoon season can be village are very phase to high flood effect so drainage system is constructed then problem will be solving. The rain water is easily drain out by the drainage system. Summer season are

people using the high amount of water then waste water amount will be more so people can drain out this water in open space then the village are polluted and also increase the amount of disease.



Fig.1. Location of Village

In this Kosad village there are about 88,224[2011] people are living. so, it can some problems about the pollution some people are agree and some are not agree related over project.

The village Kosad is located Near Surat City & Amroli Awas. Distance between Kosad Gam and Surat Railway Station is 8km.

Location of Kosad:

By road: Kosad is 9 kilometers (5.6 mi) from Udhana and 8 kilometers (5.0 mi) from Surat.

By air: Nearest airport is Surat which is 21 kilometers (13 mi) from Kosad.

Our project village located in Gujarat state in Surat district.

9km away from Surat Railway Station.

Latitude and longitude of village given below.

Latitude – 20.99107, Longitude – 73.06248

2. LITRATURE REVIEW

Dr. V. S. Rajamanya, Prof. A. Deshmukh et. al. (2016), they studied project report deals with study and development of village as a smart village. We define smart village as bundle of services of which are delivered to its residence and businesses in an effective and efficient manner. “Smart Village” is that modern energy access acts as a catalyst for development in education, health, security, environment that in turns support further improvement in energy access. In this report we focus on Drainage System to build happy society. We

making smart village by taking smart decisions using smart technologies and services.

The basic concept of smart village is to collect community efforts and strength of people from various streams and integrate it with information technology to provide benefits to the rural community. According to Mahatma Gandhi’s philosophy and thoughts smart village project provides, “Global means to the local needs.” [1]

Abdelavam S., et. Al. (2015). they studied Agricultural Drainage needs to reclaim its rightful position as an indispensable element in the integrated management of land and water. An integrated approach to drainage can be developed by means of systematic mapping of the functions of natural resources systems (goods and services) and the values attributed to these functions by people. This mapping allows the exploration of the implications of particular drainage interventions. In that sense an analytical tool for understanding a drainage situation is proposed. The process dimension of the functions and values evaluation and assessment is participatory planning, modeled on co-management approaches to natural resources management.

This provides a framework for discussion and negotiation of trade-offs related to the different functions and values related to drainage. In that sense the approach is a communication, planning and decision-making tool. The tool is called DRAINFRAME, which stands for Drainage Integrated Analytical Framework. The implementation of an integrated approach posits challenges for the governance, management and finance of drainage, as well as for research and design of drainage infrastructure and operation. Both have to be rethought from the perspective of multi-functionality. [6]

Objective:

To observe the existing condition of drainage system of the road.

To find out the problems which are responsible for inefficient drainage system.

To fix up the problems and find out the solution.

To provide efficient drainage network system.

The main objective of this project to keep the city clean, safety and healthy

3. METHODOLOGY

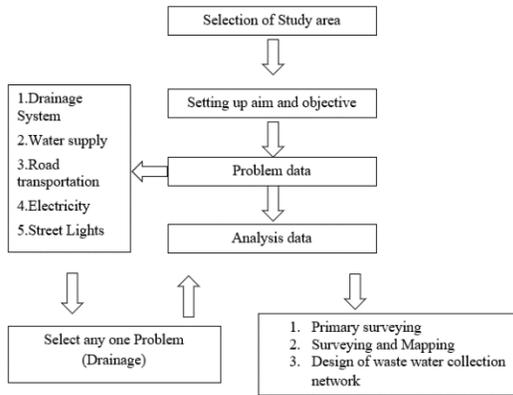


Fig. 2 flow chart of methodology

3.1 Implementation Strategy

Implementation is followed by the methodology. First of we will do the primary survey on the village about population, no of houses in village like that. Then after surveying and mapping of the village. After all data will be collect then the village divided in zone. All work done then the design of waste water collection network so village make a clean.

3.2 Design of Waste Water Collection Network

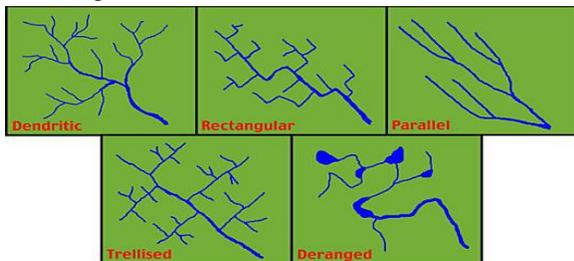


Fig.3 Pattern Use in Village

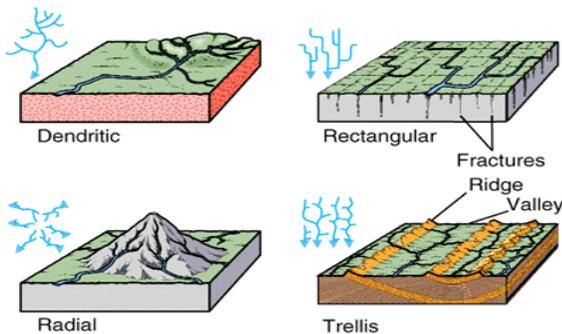


Fig. 4. Pattern use in village

Waste Water drainage systems are ordinary designed to adequately satisfy the waste water collection requirement for a combination of domestic, commercial purpose.

The performance of a waste water collection system can be judged on the basis of the gravity available in the system for a specific rate of flow.

The waste water collection system consists of a network of pipes without - let tank, for transporting water from the house to the sewage treatment plant. then passed to village river.

one type of Waste water collection system.

Gravity System

A rainwater collection and storage system is comprised of many components. Rainwater collection system can be roughly separated into two types – those where water runs by gravity to the cistern and those where the water runs by gravity to a surge/pump tank and is then pumped to the cistern.



Fig.5. Drain out waste water

4. RESULT ANALYSIS

Data Collection of Village

Table 5.1 Population & Water Uses Data

Sr. No	Year	Population	Water uses per Person/ day(liter)
1	1981	5226	155
2	1991	8004	155
3	2001	28663	155

Waste Water Calculation

Generated waste water = population* water uses

1) In year 1981

$$\text{Waste water generated} = 5226 * 155 = 810,030 \text{ liters}$$

2) In year 1991

$$\text{Waste water generated} = 8004 * 155 = 1,240,620 \text{ liters}$$

3) In year 2001

Waste water generated = $2\ 8663 \times 155$
 = 4,442,765 liters

4) In year 2011

Waste water generated = 88224×155
 = 13,674,720 liters

Approximate Cost of Drainage System

1. excavation: -there is done by local worker done.
2. placing of pipe: - pipe will purchasing by nearest pipe company.
3. Brick masonry: -this will be done by the local worker.
4. land filling: - this will be done by the local worker and heavy equipment

The approximate cost calculation of per one-meter cube.

Table 5.2. Cost of the Drainage System

Sr. No.	Particular of Items of work	Unit	Rate per m ³ in Rs.	Total Cost in Rs.
1	Excavation	m ³	85	85
2	Pacing of pipe	m	180	180
3	Brick masonry	m ³	3200	3200
4	Land filling	m ³	950	950

5. CONCLUSION

6.

Rural development strategies are a critical component of an inclusive growth strategy for Kosad. Developing a modern rural development strategy for poverty reduction in kosad.

It will be design drainage system fulfill the good serviceability and also to create awareness between villagers. we are observing many drainage problems in kosad village, so that to suggest placing pipe line, underground drainage, manhole, open channel, sewer, etc.,

In transportation system Improve Global Road Safety: setting regional and national road traffic reduction targets.

Runoff water is the main problem, especially where cities have to rely on their ownr road surface for the fresh water provision.

Surface water suffers everywhere mainly from eutrophication, caused by the lack of sewage treatment plants in the streams leaving the urban areas.

Reduction of electricity demand through the use of more efficient equipment will mean a reduction in the burning of fuel for the generation of electricity, thereby minimizing the emission of pollutants into the atmosphere.

6. ACKNOWLEDGMENT

We wish to express our sincere thanks and gratitude to our guide Ms. Rashmita Thummar for her affectionate guidance as well as for his morale boosting encouragement with worthy suggestions and support.

We will be falling in our duty, if we do not offer our gratitude towards our faculty members of Civil Engineering department who helped us time to time to understand our topic and the various related areas.

We are also thankful to our head of the Department Mr. Kamal Padihar for precious guidance on project as well as on report and for providing all facilities in lab that we needed to accomplish this project.

Last but not least, Acknowledgement will not be over without mentioning a word of thanks to all our friends & colleagues who helped us directly or indirectly in all the way through our project preparation.

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