# Rurbanization: An Approach for Smart Village With a Case of Umbhel Village, Surat

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## Abstract

The concept of Rurbanization at regeneration and revitalization of both the physical as well as social environment in villages through a judicious and economic consumption of resources is the thought for betterment or the villages. It is designed to reduce and remove the rural-urban divide and to lead to process of rural transformation that is not exploitative. The aim of the project is to study the present status and techno-economic survey of villages in different districts of the state in terms of basic and public amenities, other infrastructural facilities for the need of people and to prepare a report on the expected socioeconomic growth of the area with consultation of the local revenue authorities, TDO and DDO, the leaders like the Sarpanch, the needs of the village has been to determine keeping in mind the population growth, growth of surrounding, Environmental Growth, Advancement in energy use and quality of life in the villages. Vishwakarma Yojana is an approach towards Rurbanisation, it has been proposed to provide the benefit of real world experience to engineering students and apply their technical knowledge in the planning, development and management of rural infrastructure facilities. Rurbanisation means urban facilities and amenities in rural area, developing village with help of rural soul and urban amenities. In this village on one hand some essential infrastructural facilities like Water Supply, Road Network and Electricity, primary school, secondary and higher secondary school etc. have been good and sufficient on the other hand lacking of infrastructural facilities like drainage, public toilet, and public garden.
**Keyword- Rurbanization, Techno-economic survey, Essential infrastructure facilities, Provision of public amenities**

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## I. INTRODUCTION

In the absence of adequate employment opportunities, the rural people are unable to generate enough wages to sustain their livelihood. As a result, 40% families, who earn less thanRs.11, 000 per annum are classified as poor even though government estimates is only 22%. Apart from lower income, rural people also suffer from shortage of clean drinking water, poor health care and illiteracy which adversely affect the quality of life. Sustainable rural development may be defined as the management and conservation of the rural resources base in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations.

The present strategy of rural development mainly focuses on provision of basic amenities and infrastructure facilities through innovative program of wage and self-employment.

The Government's policy and program have laid emphasis on poverty alleviation, generation of employment and income opportunities and provision of infrastructure and basic facilities to meet the needs of rural poor. By this Vishwakarma yojana project government want technical solution of the problem of villages at the engineering point of view.

In this project the problem are solved by the engineering students. So, the government gets very accurate solution of the existing problems in villages.

## II. METHODOLOGY

GTU under which the project of Vishwakarma yojana allocated to students. Project contents are study of objective which was then followed by the literature review and visit of village to get current scenario of village. Then data receive from responsible person of village dwellers as well as committee member. After that techno economic survey under which the visit of ideal village was done. Under the scheme Umbhel village were allocated to our group by university. In first visit collected some basic information and data took photographs. After that the techno economic survey was done. In that social, socio-economical and physical information & data were noted, with the co-corporation of Sarpanch, Talati, village dwellers, principal, and doctors. The data were then analyzed and detailed study of requirement, suggestion and recommendation were carried out depending on infrastructure planning, social planning, physical planning and renewable resources technique. And after calculating gap analysis found that some infrastructure facilities were not available like toilet blocks, bus stop, and Underground sump.

*A. Study Objectives*

The study objectives are as follows:

- To collect the basic data of village.
- To understand the current scenario of infrastructure through techno-economic survey.
- To analyze the current rural development scenario through GAP analysis.
- To give the suggestions and recommendations for sustainable development.

## III. STUDY AREA

Umbhel is the village in Kamrej Taluka in Surat district of Gujarat state. It is located 15.4 km towards East from district headquarters Surat. 11 km from Kamrej. 269 km from the state of capital Gndhinagar. As per 2011 census, district has a population of 4853 with almost equal number of males and female population nearly same. Umbhel village has an average literacy rate of 73.33%.

Umbhel is the district of the Gujarat state and is situated between the latitude: 21.1899 and longitude: 72.968. It has geographical area of 834ha. Out of which 80% is agricultural land i.e,797 ha. Only Umbhel village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Umbhel village was 73.33% compared to 78.03% of Gujarat. In Umbhel Male literacy stands at 8.42% while female literacy rate was 68.10%.


(Source: google map)

Fig. 1: Location of Umbhel

*A. Data Collection*

Data collection carried out in two stages:

- Primary data collection
- Secondary data collection

*1) Primary Data Collection*

The primary survey was conducted to identify the various basic and general problems of village dwellers by communicate and interacting them and enquire about their basic needs, facilities required for this village, their problems and issues of the Umbhel village which they seen in daily life. They were asked to suggest the possible and desirable solutions for these problems as well as other infrastructural facilities they would like to have in their village.

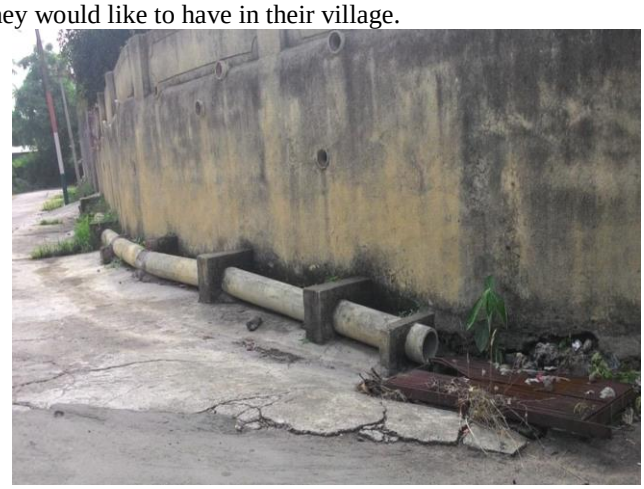

Fig. 2: Close Drainage System.

Fig. 3: Drainage Condition In Umbhel

Fig. 4 & 5: Public Toilet Block

*2) Secondary Data Collection*

Secondary data collection includes techno-economic survey. In this survey, we have filled up total 10 survey forms which were filled by Sarpanch, Talati, village dwellers, principal of primary schools, anganwadi workers, panchayat workers, etc. In this survey, we have collected information regarding to geographical data, demographical data, village conditions such as road conditions, school and anganwadies conditions, etc and facilities available in village like, water supply facilities, irrigation facilities, health centre facilities, sanitation facilities, electricity, transportation facilities, etc. and collected all the information of the outgoings, upcoming project and running projects.

## IV. GAP ANALYSIS

Gap analysis is the systematic method by which the gap of required and existing facilities or amenities can be made.
The data collected from village through visits and survey beside with data achieved from various offices is compared with standard norms for infrastructural facilities based on population.

| *NO* | *FACILITIES* | *PLANNING COMISSION/ UDPFI NORMS* | *VILLAGE NAME:* | | *UMBHEL* |
|---|---|---|---|---|---|
| | | | *POPULATION* | | |
| | | | *EXISTING* | *REQUIRED AS PER NORMS* | *GAP* |
| *1* | *EDUCATIONAL* | | | | |
| | *Anganwadi* | *Each Village – 1* | *5* | *5* | *0* |
| | *Primary school* | *Each village – 1* | *1* | *1* | *0* |
| *2.* | *Medical facility* | | | | |
| | *Govt/Panchayat Dispensary or Sub PHC or Health Centre* | *Each village – 1* | *1* | *1* | *0* |

| | | | | | |
|---|---|---|---|---|---|
| | *PHC & CHC* | *Per 20000 population – 1* | *0* | *0* | *0* |
| | *Child Welfare and Maternity Home* | *Per 10000 population – 1* | *0* | *0* | *0* |
| | *Hospital* | *Per 100000 Population – 1* | *0* | *0* | *0* |
| *3* | *Transportation* | | | | |
| | *Pucca Village Approach Road* | *Each village – 1* | *Adequate* | | |
| | *Bus/Auto Stand Provision* | *All Villages connected by PT(ST Bus or Auto) – 1* | *1* | *1* | *0* |
| *4* | *Drinking water* | | | | |
| | *Water Facilities* | | *Inadequate* | | |
| | *Over Head Tank* | *1/3 of Total Demand* | *Adequate* | | |
| | *U/G Sump* | *2/3 of Total Demand* | | *Not available* | |
| *5.* | *Public latrines* | *Each Village – 1* | *1 (inadequate)* | *6* | *5* |
| *6.* | *Cremation Ground* | *Per 20,000 population – 1* | *1* | *1* | *0* |
| *7.* | *Post office* | *Per 10,000 population – 1* | *1* | *0* | *-1* |
| *8.* | *Gram Panchayat Building* | *Each individual/group panchayat – 1* | *1* | *1* | *0* |
| *9.* | *Fire Station* | *Per 100000 Population – 1* | *0* | *0* | *0* |
| *10.* | *Police Station* | *Per 15000 Population – 1* | *1* | *0* | *-1* |
| *11.* | *Community hall* | *Per 10000 population – 1* | *1* | *1* | *0* |

*Table 1: Gap Analysis*

In village, there are five anganwadies and as per UDPFI Norms there should be five anganwadies. Hence, there is no additional requirement of anganwadies. Also there are no additional requirements of primary school, government/panchayat dispensary, community hall, etc. There is only one public latrine blocks, as per UDPFI Norms there should be around six latrine blocks so the gap is five. Hence the additional requirement of toilet block is five. In village population is below 10,000 so that no requirements of PHC & CHC, Child Welfare and Maternity Home, Hospital, Cremation Ground, Fire Station, etc.

## V. RECOMMENDATION AND SUGGESTIONS

By the survey which we had conducted in 7th semester, we have finalized some problems in village and solve by repair the physical infrastructure as Anganwadi building and bio-gas plant as a renewable energy resource.
By providing these facilities to village we can improve the living standard of village people. The migration will be decreases, the education standard will be increases, and growth of country will be increases.
In next semester we will design Public toilet blocks with rain water harvesting and beautification of pond which is at side of NH 8.and WBM road in internal streets.

### *A. Recommendations*

- Proper maintenance of solid waste management
- Maintenance Public latrine blocks
- Rectification of pond

By gap analysis based on planning commission and UDPFI Norms. From the gap analysis following physical, social, and renewable source of energy amenities have proposed as the primary requirements of the village.

### *B. Suggestions*

- Public latrine blocks should be provided.
- The open drainage lines affect the health of villagers.
- Rain water harvesting system for government buildings.
- Repair and maintenance of anganwadi at tower faliya is required
- Proper and well maintained roads are very much needed in the village. The existing roads also require repair because they are in very bad situations.

### *C. For Sustainable Structure*

| *Sr. No.* | *Structure* | *Suggestions* |
|---|---|---|
| *1* | *Community Bio gas plant* | *Design* |
| *2* | *Underground sump* | *Design* |
| *3* | *Rain water harvesting* | *Design* |

*D. For Existing Public Infrastructure*

| *Sr. No.* | *Structure* | *Suggestions* |
|---|---|---|
| *1* | *Anganwadi* | *Repair and maintenance* |
| *2* | *Primary school* | *Redesign* |
| *3* | *Water supply system & treatment pant* | *Repair and maintenance* |
| *4* | *Bus stand* | *Repair and maintenance* |
| *5* | *Toilet blocks* | *Repair and maintenance* |
| *6* | *Primary Health centre* | *Repair and maintenance* |

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