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Village Sanitation System for Village

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Abstract: Sanitation is important of few years development goals which covers the important aspects of management of human excreta, domestic and industrial wastewater and hazardous substances .Hence, this project focuses on a selected rural area to plan a suitable water supply scheme in accordance with their demands and requirements. It hasnt be feasible to cover all villages with piped water supply because of various constraints such as Scattered and inaccessible nature of villages, Nonavailability of nearby water sources. The project also covered planning of facilities to maintain better sanitation and beautification of surrounding .Water is important and precious as it fulfils the basic necessity of life. It is necessary that the water used must be good and free from unwanted impurities or harmful toxic chemical compounds or bacteria More than 80 % of Indian population lives in rural areas, but only few of them have some form of potable water supply. It hasn't be feasible to cover all villages with piped water supply because of various constraints such as Scattered and inaccessible nature of villages, Non- availability of nearby water sources.

I. INTRODUCTION

The highest proportion of deaths as well as the highest absolute numbers occurs in countries with high mortality patterns, such as in Africa and parts of South-East Asia. Most diarrheal deaths in the world (88%) are caused by unsafe water, sanitation or hygiene. Every year, 1.5 million children die due to diarrhea caused by the combined effects of inadequate sanitation, unsafe water supply, and poor personal s hygiene .There are two major indicators to measure the progress of India- one is drinking water supply and the other is sanitation. major indicator –sanitation. The focus of this article will be on the indicator which is on problematic side i.e. sanitation. One source of insanitary condition in rural areas is the drainage of waste water from bathing and cooking areas of dwellings over the kutch roads and lanes having inadequate slopes. The situation is further aggravated due to the movements of carts and animals which result in the creation of pot holes and ditches that gets filled up with dirty stagnant water. The mosquitoes and flies find good breeding centres in these places and spread diseases.

Some of the village roads are brick paved with drains for waste water disposal. But these have not served the required purpose due to improper slopes, insufficient maintenance and unpredictable flow of water. Rural dwellings having their own source of water supply like hand pumps discharge more water on the streets. Furthermore, the agricultural waste and domestic refuse collect in drains obstructing the flow of water and ultimately, all these things appear on the streets.

A. Sanitation

The word 'sanitation' is to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal (WHO). The waste products of a society including the human excreta had been collected, carried and disposed of manually to a safe point of disposal by the sweepers since time immemorial.

The most dangerous practice of open defecation is the highest in rural areas and is almost five times higher than urban areas. In developing countries like India, this system is been established in all communities but still many rural areas are not equipped with these facilities since the municipal sewer connection lines are not extended to villages Improperly managing latrines and night soil causes pungent smells which may continue to pollute the surroundings. Hence a minimum provision for sanitation facility in rural areas is necessary to overcome health hazards and environmental pollution.

B. Rural Area Sanitation

People in rural areas use toilets inside house, defecate in open fields or use community toilets. In our tradition it is mentioned that a small ditch should be used for defecation and covered by the nearby soil after the use. That way it worked as manure after decomposition and houses were well away from the excreta. After so many efforts of many Civil Society Organisations (CSOs), Government agencies and Educational institutions, people began to adopt practise of using toilets. But mere using toilets, is not so simple that it can International Journal of Advance Engineering and Research Development (IJAERD) Technophilia-2018.,Volume 5, Special Issue 04, Feb.-2018. solve the problem of poor sanitation. There are various technical and behavioural aspects involved with it. We will closely examine these under the points below.

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II. OBJECTIVES

A. To gain a practical knowledge about the selection of source, supply of good quality water & its effective maintenance.
B. To study the sanitation facilities available and emerge new ways to maintain sanitation for development of hygienic area.
C. Development of the Nation is not only based on the infrastructure development, but also the water supply and sanitation facilities. In addition to these the proposal includes; Individual Toilets for every house are planned and designed. Sewage to be disposed on farm crops by proper channelling is planned.

III. METHODOLOGY

A. Preliminary study on various villages and to investigate about water supply and sanitation problems existing in those areas.
B. Selection of a suitable rural area for the study of available water supply and sanitation facilities.
C. Complete study of the existing water supply facilities in the area and the water demand is to be analysed. .
D. Complete study on existing sanitation facilities in the area and to identify problems associated with sanitation.
E. Planning of suitable sanitation scheme in the area so as to provide a better living standard in terms of public health and also environmental protection.

IV. IMPROPER EXCRETA MANAGEMENT

A. Ground Water Contamination

Domestic water and waste water of toilets creates risk of ground water contamination if technical care is not taken. This may pollute water of hand pumps, wells and tube wells on which major proportion of population live up on .E.g. Water logged areas having high water table, must have elevated toilets. This contamination may occur poor drainage. Nitrate, Phosphate, Chloride some of the common contaminants of ground water due to poor sanitation. International Journal of Advance Engineering and Research Development (IJAERD) Technophilia-2018.,Volume 5, Special Issue 04, Feb.-2018.

B. Drinking Water Pollution

Piped drinking waters are also at risk where proper drainage system is not available. Leakage in drainage water pollutes the piped drinking water when both pipes run congruently.

C. Purpose Of Sanitation

1) The overall purposes of sanitation are to provide a healthy living environment for everyone ,to protect the natural resources (such as surface eater) and to provide safety,security and dignity for people when they defects or urinate .
2) We also have a human right to sanitation:in September 2010 ,the UN human rights council adopted resolution recognizing that the human right to water and sanitation are a part of the right to an adequate standard of living. Effective sanitation system provide barriers between excreta and humans in such a way as to break the disease transmission cycle.for eg:in the case of facal-borne diseases.

D. The Proposed System

1) Through a new network of main trunk sewers and secondary lines, the proposed system will manage the collection of sewage from residential areas for transmission to a sewage treatment plant in the Southeast side of the village.
2) Here the sewage will be treated and used for irrigation purposes on land earmarked for cultivation.
3) Additional considerations were also given to developing a system that does not require huge capital investment and high operating costs. It will also need to be operated, monitored and maintained by local people who can manage the system with little external help.

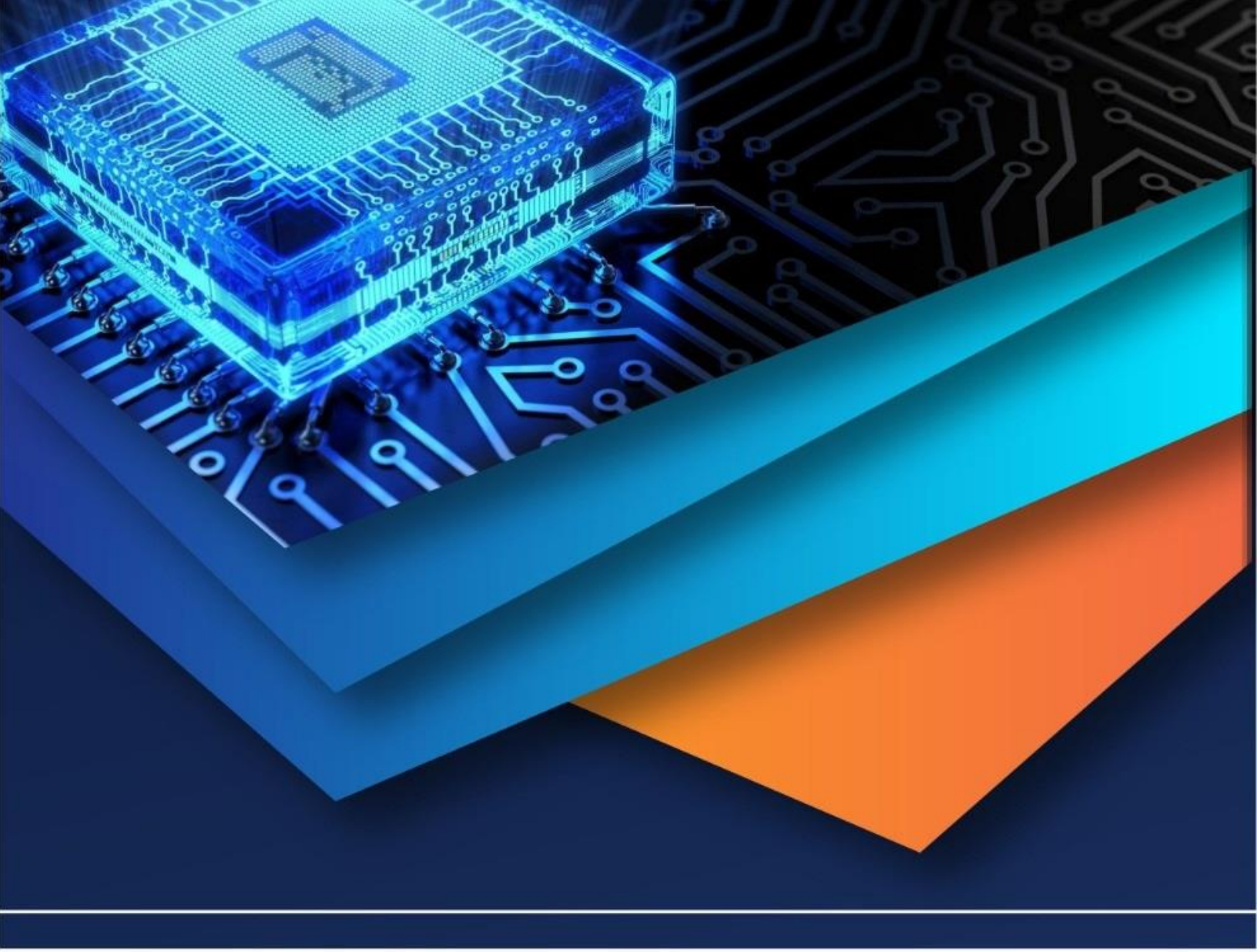
V. CONCLUSION

A. The quality of water was also assessed to ensure the safety of public health.
B. The water supply and sanitation scheme has been studied in the selected rural area.
C. Bore wells were the ultimate source of potable water in that particular area and overhead water tanks were designed as per Indian Standards, to meet the additional requirement of water demand calculated as per BIS
D. Sanitation facilities such as Sewage Management, Solid waste Management and Toilets were designed to be provided.

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