



Integrated rural development for a better environment

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MORE THAN 80 per cent of people in India live in rural areas. People in villages prefer to migrate to urban areas in search of better living conditions. The component of migrants in cities of ten lakhs and above is over 50 per cent (Mehta, 1977). This is further resulting in the degradation of environmental quality in urban areas. It is necessary to improve conditions in villages so as to control this migration and attract people from urban areas to shift to rural areas.

There are attempts made to develop conditions in villages. Most of these are related to fulfill specific occasional demands of people living in villages. This is resulting in haphazard development of facilities in villages. Integrated development of villages, keeping local conditions in mind is necessary to improve the quality of life in rural areas. Environmental problems in villages arise basically due to (Bhatnagar, 1983)

- (i) Lack of sanitation
- (ii) Unclean and unwholesome drinking water supply
- (iii) Ill-designed habitats and kitchens and
- (iv) Living of animals and humans in close proximity.

The present paper covers salient aspects of integrated rural development with emphasis on improving the environmental quality.

Background data

Lack of information regarding the existing conditions in villages is one of the problems in planning integrated development. Though, planning new villages can provide better environment, it is not possible. Base maps of villages have to be prepared. These base maps shall depict all existing conditions and facilities. Based on the base maps, it is possible to prepare integrated development plans.

Socio-economic survey

Physical survey can provide base map of a village. Other aspects of the village can be ascertained through a socio-economic survey. A well designed questionnaire and its analysis, can give the planner a clear picture of the people living in the village. The questionnaire shall contain questions pertaining

- (a) General particulars
- (b) Literacy
- (c) Housing
- (d) Water supply
- (e) Sanitary facilities and conditions

- (f) Live stock and
- (g) Health & medical facilities.

Analysis of the response received can also give a picture of existing environmental conditions in the village.

Water supply

In many of our villages, wells are so badly sited that they are not only a source of water, but all too often a source of disease. Inadequately protected against unclean surroundings, impurities frequently seep into the well itself, polluting the water and making it a carrier of illness and disease.

The existence of water-borne diseases is related to quality of water. The open wells in many rural areas are grossly polluted. The water which appears to be clear in many cases is infested with harmful bacteria not visible to naked eye. In the recent past, many of the villages are provided with piped water supply schemes. However, for a quick and cheap solution of the problem, a hand pump tube well supply is the only answer.

In the integrated development plan, proposals for wholesome piped water supply scheme with implementation process in phases can be incorporated. Proposed distribution net work can be shown on a development plan superimposed on the base map.

Excreta disposal

Not many families in villages can afford individual latrines. Information regarding this can be gathered through the socio-economic survey. Most of the problems of sanitation in villages can be attributed to improper excreta disposal facility. Public latrines at suitable places separately for men and women, have to be planned in the first phase in the proposed integrated rural development plan. Location of these public latrines can be shown on the integrated development plan.

Human excreta is a source of infection. Proper disposal is important so that it does not constitute a threat to public health.

To start with, public latrines can be planned to avoid open defecation. Later, subsidised latrines with septic tanks can be planned for those who can afford.

Wastewater disposal

Increased water consumption results in an increase in wastewater quantity. This and handling of rainwater requires surface drainage facility in villages. Villagers can

be trained to use the spent up or sullage water in their kitchen gardens so that wastewater does not accumulate and create favourable condition for mosquito and fly breeding. The village lanes can be paved with suitable locally available materials and good drains on its side for proper drainage. Sullage water can also be drained into nearby field for irrigation purpose.

Solid waste management

Solid waste management is not considered seriously for rural areas. Integrated rural development should cover solid waste management also. Conservative rural people do prefer to dispose less amount of solid waste per capita per day. However, one can see along the narrow roads of villages, cans, rags, ash, bones, leavings of food and junk of every description. This results into an unsightly and smelly mess. Villagers have to be told that each house shall have a refuse bin-any type of cheap container, to collect the solid waste. The integrated development plan should cover the provision of street bins to collect solid waste at road corners. Village panchayat should arrange weekly collection of solid waste from street bins, transport and dispose in low lying areas by sanitary land fill method. Location of street bins and disposal site have to be shown on the integrated development plan.

Another important and valuable solid waste generated in the rural areas is the animal dung. Proximity of dung collection and disposal, to habitated dwellings is considered as the main reason for the odourous village environment.

Much of the nitrogen, phosphorous and potassium content of animal dung is lost when it is piled in an unpaved yard and exposed to sun, wind and rain. A manure pit can prevent this waste of useful fertilising material so necessary to our land today.

A community gobar gas plant for each village can be planned as a part of integrated development plan. A central place for locating the gobar gas plant can be earmarked for each village. The Government of India provides subsidy for installing gobar gas plants (Sagar, 1978).

Village roads

Village produce such as fruit, vegetables, milk and eggs, perishes before it can be marketed, because it cannot be transported quickly enough. Medical attendance cannot reach the village in time, nor can educational services be organised for want of good roads.

Existing village roads are zigzag, dusty, without outlets for drainage water. Many houses can be approached only by walk after jumping over many stagnant water pools, drainage, rotten cowdung and garbage.

Though roads are not directly involved in environmental quality, they form a very important part of rural development. The integrated rural development plan should involve well planned and connected roads. This

may require some modification of the existing configuration of houses. Facilities like water distribution, electricity, drainage, arboriculture, telephone lines require a fixed pattern of roads. The proposed integrated development plan must incorporate good road facility.

Rural housing

A typical house in rural areas has only one-room. It serves as living-room, kitchen and bedroom. Frequently, domestic animals are allowed inside.

Better housing at less cost is planned for villages by National Buildings Organisation (1984). Typical dwelling unit with 20 square metres area within a site of 80 square metres is suggested as the most suitable. Subsidised housing along with suitable bank loans can make villagers to look for decent housing.

The air pollution in villages arises due to the use of fuels such as wood, coal and cowdung cakes and the incineration of waste biological materials. The habitats and kitchens are badly designed in villages with poor air circulation (Bhatnagar, 1983).

Provision for a typical house for the particular village should be made in the integrated development plan. Use of locally available building materials should be recommended. Smokeless chulas for cooking purpose should be proposed. Rural women are generally found suffering from respiratory diseases. These women can be saved from such diseases by installing smokeless chulas in kitchens.

In spite of plenty of air available in rural environment, villagers do not have ventilated dwellings. As a first step, existing houses can be altered for better ventilation. Such details should be incorporated in the development plan.

Other amenities

Rural environment also depends on proper incorporation of other amenities like health centre, school, community hall and playground. Village life can be attractive, if all these facilities are also made available. These well planned amenities, properly located with reference to the total village, can make village life worth migrating from towns and cities. The integrated development plan should contain these facilities with proposed locations.

Implementation

The integrated development plan shall essentially consist of existing conditions shown on a map and a proposed final integrated development plan superimposed on it. The integrated development proposals can also be made in three stages. Stage 1 development shall consist of immediate remedial measures like chlorinating existing water sources, digging drains etc. The second stage shall consist of all essential items except amenities like school, community hall and playground. The third and final stage shall consist of a complete development plan. This

division of development plan will help in implementation with reference to financial feasibility.

A number of integrated development plans are prepared for villages in Gujarat and Andhra Pradesh states in India under the guidance of the author. Local self governing agencies, in many cases do not have an idea as to where there is shortage for a particular facility. Lot of time is lost in identifying the right village as background or existing conditions in villages are not readily available. Further, preparing proposals of the local governmental organisations will take considerable amount of time. The two shortages can be taken care of, by the integrated development plans proposed in the present paper. These plans can be readily used for getting funds from the Government. As a part of curricular activity, students of Civil Engineering at undergraduate level are very suit-

able for preparing the integrated development plans of different villages in their region. Such plans, when implemented can provide better environment in villages.

References

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