

# Watershed Management through Social Mapping - a means of Community Participation

Dr.Mrs.S.S.kulkarni<sup>1</sup>,

Principal, Rajaram Bapu Inst. of Technology, Sakharale, Sangli, Maharashtra State

Mrs.V.A.Swami<sup>2</sup>,

Associate Prof. Civil Engineering Dept. KIT's college of Engg., Kolhapur, Maharashtra State

Mrs.S.S.Borchate<sup>3</sup>,

Assistant Prof. Civil Engineering Dept. KIT's college of Engg., Kolhapur, Maharashtra State

Mr. A.B.Sawant<sup>4</sup>,

Assistant Prof. Civil Engineering Dept. KIT's college of Engg., Kolhapur, Maharashtra State

## ABSTRACT

As a growing need of time, today each and every person has to participate in watershed management programmes. Nearly 70% of total population of india is rural having agriculture as the main occupation. Hence at least for rural community every member has to take progressive steps in water conservation.

As a part of our last year students, we selected different areas for watershed development, surveyed them, analyzed the data and finalized the proposals. But it was observed in all the projects that due to non-participation of local people there, the proposals remained only on papers, so we decided to develop social contacts with the local people along with carrying out socio-economic survey of the area in the best possible way.

Along with community participation, it was decided that the proposals must be easily acceptable and adoptable by the local people, so that they would not have to depend upon the Government's financial assistance. These proposals include:

1. Simple technical constructions such as bunds on streams and around the farms, contour trenches on sloping lands, terracing etc.
2. Agronomical measures such as strip cropping, crop rotation, economical irrigation practices etc.
3. Clearing the wells and water bodies from silt, improving the village ponds etc.
4. Recharging ground water artificially by rain water harvesting etc.

We are sure that the farmers will afford these schemes and will be encouraged as these conservation measures, if implemented, will result in their better prospects in future.

**KEYWORDS:** Water conservation, Contour trenches, watershed development, Village pond, Social mapping

## **INTRODUCTION:**

Sant Tukadoji Maharaj gives the following message:

“Create awareness in the villages, make them wake up and nip the internal difference and discriminations in the bud. Light the lamp of rural development to have a bright future.”

India receives on the lands, rains of 350 MHam. annually. Apart from this, a vast network of rivers, ponds and various other water resources contribute to the supply of water. But hardly 15 % of this water is tapped and the rest flows down to the seas. In spite of few efforts of the water works department, that include a shift from traditional water conservation and distribution methods to new water storing techniques, it has failed in achieving its goals. In contrast to this, are the age old water management systems that are community based and dependant entirely on the tradition, wisdom, technical skills, foresight and experience. They are sustainable and eco-friendly.

Rural development through watershed management must become a powerful instrument of national regeneration and for this the village people have to work together with the firm conviction “Our village is one family.” Whatever affects one family or the whole village is shared by all inhabitants and hence all must put their shoulder to the wheel of security the welfare of the whole community. The government officials also then offer many development schemes and the village gets the sweet fruits of the progress.

First identify the priority needs of the people. People’s cooperation in the development is very important and it is available for projects that fulfill their immediate needs. Everyone naturally thinks first about what he is going to gain from the project. As individual projects start yielding direct benefits to the people, they start participating enthusiastically. The discussions with voluntary social service organizations or with the Government officials also give valuable information about various techniques or schemes available for further growth and increase the scope of the project.

In watershed management, people’s awareness, participation and response is of utmost importance in improving the economy of farmers. In the words of Schumacher, people are the primary and ultimate source of any wealth. If they are left out by self styled experts and high headed planners, then nothing can ever yield fruits.” On the basis of food intake and basic needs, the Government has fixed the poverty line, which is constantly revised with inflation. Watershed management is meant for growing biomass, the pipeline for prosperity of the people for bridging the gap between poverty line and per capita income. In achieving this objective, the people’s part is awareness, participation and response.

## **AWARENESS:**

It is taken for granted that only people are not aware of a particular project. They are to be made aware by government machinery. Unfortunately, the machinery comprising of people in small numbers, itself is ignorant of the concept and detail. On top of it, officers’ nature and vested interests complicate the simple act of communicating information for bringing awareness to large numbers. The other points of interest in awareness are through understanding of all aspects of the subject, modification of the same suiting to the region and locality vis-à-vis the local peoples’ wishes, tastes and background and simple communication with patience, interest and sincerity to achieve the purpose of making them understand.

The points of importance as to awareness in watershed management are:

- Benefits in the approach
- Appropriate technology generation
- Technology transfer
- imparting the awareness through stress on physical demonstration

## **PARTICIPATION:**

People consist of villagers, farmers and common men. They are the participants, beneficiaries and promoters of any development activity. All are concerned with the peoples' participation for prosperity. The success of community participation depends upon group discussions, working together and united efforts. For becoming part of the project, they should be enlightened through leaflets, visual aids and demonstrations. All the endeavors should be directed bearing in mind the following points of importance:

- Not to be self centered and to act in the common interest.
- Community participation and co-operation helps in the long run.
- Science should reach common man.
- Growing and preserving greenery is essential.
- Soil conservation preserves the soil nutrients.
- Water management improves economy.
- Simple practices in energy prolong water supply.
- Watershed management is a helpful means for greenery management.
- Reuse and recycle.
- Benefits of independent village economy
- To avoid imitation and to develop simple but appropriate technology

## **RESPONSE:**

Response to an activity from rural public depends upon the modus operandi in establishing the rapport, convincing the elders and rural leaders the appropriateness of technology and reaching the farmer in his own language, physical demonstration, exhibiting results, showing economical benefits and making arrangements for finances, implementation and marketing.

Motivation is another important aspect in getting response. It is all a combination of efforts, social and technical skills, performance, rewards, satisfaction and reaching the farmer at his level as to enhance returns and their value. The know-how should be passed on in local language with credit for equipment and working capital, input deliveries, output off take, training and local entrepreneurial leadership. The beneficiaries should themselves play an active role all along lest the participation peters out with time. The efforts are multi-institutional involving Government and Voluntary agencies, banks, marketing organizations, management institutions and urban poor.

## **APPLICATION:**

There are different ways for having better community participation. We can have informal discussion with the people and also some formal meeting if required. We must get mixed with local people so that it will be easy for them to give the information. Getting filled the questionnaire from all the people is also one of the best methods. Similarly, door to door visit will also help the people to have trust in us. Social mapping is also one of the best techniques for better community participation.

## **SOCIAL MAPPING:**

Social mapping is also the best technique for better community participation. This technique is very much useful in getting correct and maximum information about a particular area in the village. All people in that area are invited at the community centre of the village – most preferably, the temple, at their convenient time i.e. in the evening. A free informal discussion is required in this meeting. An informal map of the area is drawn by the project leader either on the paper or even on the soil below, where they have a meeting. The plan is to be drawn by the local people only from the information available with them in the meeting. While drawing the plan the discussion must go on regarding the problems existing in the area if any, also. Due to such informal discussion, the people in the meeting feel very free and give the information promptly. Such an informal meeting develops the social relationship between the people and the project leaders. They co-operate the leaders fully. In this technique, the old age people of that village are the key persons; as they are the most experienced. They know the existing problems properly. Similarly in the same meeting, the project leader can get the

maximum information regarding the measures taken by the ancient people on the problems in the villages in the ancient days. This information, the leaders can get from these old persons only.

We, along with our students selected Shivapur village in Kudal Taluka (Konkan Region) for its watershed development. Though the village is situated in Konkan region, which has heavy rains in rainy season, after the month of February, water does not become available for the purpose of agriculture. For this area, we prepared a questionnaire and got it filled by the villagers and thus the data was collected for preliminary study.

#### **QUESTIONNAIRE USED FOR SOCIO-ECONOMIC SURVEY:**

We carried out the socio-economic survey by using following questionnaire:

1. Name:
2. Address:
3. Occupation:
4. Monthly income:
5. Other family members, their occupation and education:
6. Migration of any family member, if yes, why?
7. Village population:
8. Own farm? If yes, how much?
9. Own wells? Own bore wells?
10. No. of bore wells in village:
11. Own animals? How many?
12. Drinking water sources?
13. Crop grown in the farm:
14. Major problem in the village:
15. Farm water resources:
16. Any such scheme started earlier or not?

A door to door visit of our students for getting filled this questionnaire made easy for us to have the proper information. We got the following information:

- Occupation: farming
- Monthly income (average): Rs.880/-
- Total population: 1140
- Total animals: 276
- Total agricultural land:270 Acres
- Public wells: 6 and private wells: 2
- No. of primary schools: 2
- No. of teachers: 5
- No. of students: Boys: 70, Girls: 81
- No. of secondary schools: 1
- No. of teachers: 2
- Government Dispensary: 1
- Bridges: 5
- No. of ropeways: 11
- Development works: Road(Zillha parishad and Gram Panchayat)
- Trees: Supari, Coconut, Bamboo, Karvand, Wildwood, Kajoo, Natural Forest Mango, Vet type of Bamboo, Rubber
- Watershed Area: 924.212Hactres
- No. of Villages: 1
- No. of Hamlets: 8

Due to this questionnaire, an excellent relationship was developed between villagers and us. According to socio-economic survey, it has been observed that all people are dependant on farming. The land available for each family is very less (i.e. from 1 – 3 acres). To satisfy annual food requirements they need to take a crop

thrice a year. But due to non-availability of water from February to May and also uncertainty in arrival of monsoon they are unable to take crop thrice a year and at present they take it only twice a year. This has led to low per capita income of people and hence poverty in the village. It was also observed that men and boys above the age 14 years migrate to metropolitan cities for job opportunities and improving their standard of living. So to satisfy above mentioned needs the watershed management is essential for Shivapur village.

Following structures were proposed for Shivapur Village:

1. Seven check dams at different places in water streams costing 868381.63 Rs.total and storing 8767.5 cum. of water.
2. Two large Konkan water ponds with dimensions 50m. X 50m. X 3m. each storing 410275 cum. each and costing Rs. 689134.06 total.
3. Water spring development structures near water spring on the upstream.

The structures were very simple in construction and the proposal was submitted to the Government for financing through one of the NGO's AVNI (Anna-Vastra-Niwara) in Kolhapur. A demonstration was given to the local people for the simple proposed structures such as rainwater harvesting bunds, terracing, Continuous Contour Trenching, Bunding and Planting. We are sure that the farmers for getting maximum benefits can take these measures.

As a part of survey, the students did subsurface investigations by Electric Resistivity Method. The sites for these investigations were chosen as per the farmers' needs. Some farmers needed to know the water table depths in their farms. Our students found the depths there by Electric Resistivity Method free of cost and thus established a good rapport with those farmers.

#### **FINDINGS:**

As a part of project of our last year students, we selected different areas for watershed development and are working since 1998 on such projects. In beginning, we selected a hilly area admeasuring 2.83 Ha. having slopes varying from 3% to 25%. According to the slopes we gave our proposals which were very simple as grass cultivation for severe slopes and cultivation with simple treatments such as strip cropping, contour cultivation, terracing with crop rotation for lesser slopes. Next year, due to insistence of local people from Gokul Shirgaon – a small village near Kolhapur, we surveyed 800 acres of land, analyzed the data and gave the proposals to the authorities there. Both the times, there was no response from the local people and the proposals remained on the paper only. So next time, we selected a small area admeasuring 2.5 Acres in our college campus and successfully had the contour trenches excavated by the college labours and had the plantations on these trenches by the students of project group themselves. Today the area is green with tall trees. By these experiences, we came to know that the success of watershed management projects depends mainly upon the community participation.

For having community participation, we must have social contacts with local people. We have to do the socio-economic survey of the area. Keeping this in mind, this time, we visited Shivapur village which is 35 kms.away from Kudal in Konkan Region. A door-to-door socio-economic survey was carried out by collecting information as per the questionnaire consisting the particulars such as name, address, occupation, monthly income, landholdings, drinking water sources etc.

#### **RESULT**

On the basis of the questionnaire, the information regarding settlements and their per capita income had been obtained. Also the details about animal stock, existing wells-public and private-, educational facilities, development works taken by Government Authorities etc. were collected. From this communication with the local people there, it became easy for us to find the existing problems of the people, due to which we could give the proposals. But again, here we failed in implementing the proposals as our site was far away from our station – Kolhapur. We could hardly visit the site only once and only for three days within a whole year. Hence it was decided that for better communication, we must develop the social relationship by visiting them frequently so that they will have trust in us and will cooperate us whole-heartedly.

## CONCLUSION

It is true that watershed management can rejuvenate the green cover only when realistic budgetary provision is made. But Government's machinery lacks the will in detail. It is high time to get out of horrible situation to increase the pace of progress for prosperity. The common man should get out of the rut with a will to cooperate and participate for a better future. As the Government schemes take too much time in getting impimented due to some reasons, we have to give more stress on collective efforts of local people by demonstrating the same to them. System Management, Team Work, Appreciation of new ideas though simple, respect for good old economical methods though elementary and understanding the value of hard work and integrated approach leads certainly to great success in watershed management. The Government Official also then offer many development schemes and the village gets the sweet fruits of progress.

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