

**CHAPTER-V**  
**SUMMARY AND CONCLUSIONS**

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Watershed Development has been conceived basically as a strategy for protecting the livelihoods of the people inhabiting the fragile ecosystems experiencing soil erosion and moisture stress. The aim has been to ensure the availability of drinking water, fuel-wood and fodder and raise income and employment for farmers and land-less labourers through improvements in agricultural production and productivity. Efficient and sustainable use of natural resources is necessary for economic development, especially in resource poor countries. Water security is crucial for food and ecological security. Such a water security through watershed development may ensure equity and sustainability.

Recognizing the importance of watershed development projects, Yerala Projects Society (NGO) has implemented three watershed development projects on two different rivulets in Khanapur taluka of Sangli district of Maharashtra State. Total 36 KT weirs have been constructed on two streams adjoining Bhalvani, Panchshilnagar, Kalambi, and Shirgaon villages. The aim of Yerala Projects Society behind the implementation of watershed development was to bring about improvement in the socio-economic conditions of the farmers in the project area and to ensure environmental protection. The programme

also aimed at meeting the needs of drinking water as well as the water for agriculture purposes of the villages, which came under in the project area.

### **The Research Problem and Methodology:**

The aim of the present study was to understand the role of Yerala Projects Society in watershed development and to examine the impact of watershed development programme on the beneficiaries.

The following were set out as the objectives for the present study:

1. To understand the Yerala Projects Society in terms of its objectives, policies, and programmes.
2. To assess the contribution of the Yerala Projects Society in implementation of watershed development projects.
3. To examine the impact of watershed development projects on selected beneficiaries.

The rural area adjoining Kamalapur village in Khanapur (Vita) Taluka of Sangli District (Maharashtra) where Yerala Projects Society has implemented watershed development projects constitutes the study area of the present study.

For the purpose of the present study, 10 per cent (100 out of 402) of the beneficiary families have been selected with the help of purposive sampling technique to examine the impact of watershed development projects on beneficiary families. Interview schedule and personal

observation were the techniques used for collection of data. Primary data were collected from the officials of Yerala Projects Society and beneficiary families and secondary data were collected from the office documents in the Yerala Projects Society, Books, Journals etc. The codifiable and quantifiable data were processed on computer made available in the Department of Sociology, Shivaji University, Kolhapur and the computer out-put was used for analysis and interpretation of data.

The report is divided in 5 chapters viz. 1. Introduction, 2. Review of Literature and Methodology, 3. Role of Yerala Projects Society in Watershed Development Projects, 4. Impact of Watershed Development Projects, and 5. Summary and Conclusions.

**About Yerala Projects Society:**

The seed of the organization, i. e. Yerala Projects Society, was sown in 1972, the year when the operating area (Kamalapur Area) was facing severe drought. A team of volunteers from Sangli joined the villagers to form a group to take up drought relief work. With the help of doner agency, this group made sincere efforts to help affected families. The relief work continued for 3 years. As the condition improved, the relief operation was phased out. In this process the implementing group gained confidence that they together can take up constructive work to improve the condition of the poor and needy

villagers in the operational area. After assessing own potential, the group decided to take up rural development work. Then the organization was formally registered in 1976. The initial image of the organization was like a donor or somebody who has come as a helper or savior. This image was slowly changed and the organization gave more emphasis on the developmental activities. From 1994, after smooth changeover in management, sustainable development became the motto of the organization. During 25 years, the organization internally developed certain characteristics of its own, reflecting the organisations' philosophy, professionalism, work culture and value system.

Initiatives in Watershed Development Projects constitute the major activity of Yerala Projects Society in the area of ecology. When enquired about the Society's objectives for undertaking watershed development programme, the officials of the society told following objectives:

1. To bring a large area of uncultivated land under cultivation by providing irrigation facilities with help of watershed development projects and to improve the socio-economic conditions of the farmers.
2. To increase the employment opportunities and to reduce the migration of the people from that region.
3. To help them to initiate the dairying as a secondary occupation.



4. To take steps to improve and preserve fertility of land for longtime.
5. To make them to be able to consume nutritious food items which can improve their health standards.
6. To increase the enrolment of children in schools specially girls.
7. To increase the employment opportunities especially for the land-less labourers and help them to raise their income.
8. To prevent or reduce the soil erosion and moisture stress.
9. To ensure sustainable use of available water and land resources in the region.
10. To ensure development without environmental degradation, in other words, to ensure eco-friendly development.

With these objectives, the Yerala Projects Society decided to construct the check dams on the two different rivulets, which were flowing near Kamalapur area.

First, they met the farmers and convinced the importance of watershed development projects. In the beginning, the response of the farmers was very poor. However, the volunteers of Yerala Projects Society worked very hard to convince people about the future benefits of the programme. After some months, when people realised the importance of the programme, they started giving positive response.

The volunteers of Yerala Projects Society decided 36 locations on two rivulets for constructing the “Bandharas” for storage of water. They

made an appeal to the local people to participate in this work. Slowly, farmers joined the Yerala Projects Society volunteers in construction work. Farmers helped the construction of Bandharas by providing required stones and sand while the society provided the required cement. The society also provided foodgrains and money to farmers as remuneration for participating in the construction work. The Yerala Projects Society volunteers and farmers together constructed total 36 Bandharas within a period of two years. These Bandharas are located in the adjoining areas of Bhalavani, Panchshilnagar, Kalambi and Dhavaleshwar villages in Khanapur (Vita) Taluka in Sangli District. After construction of K.T. Weirs, farmers were fully satisfied with the work of Yerala Projects Society in the project area.

Yerala Projects Society is also promoting Housing, Agriculture, Animal Husbandry, Family Development, various other promotional activities, training and various income generation activities.

### **Major Findings:**

This study came out with following major findings with regard to the impact of watershed development projects on the beneficiaries and the ecological conditions in the study area.

#### **1. Availability of Drinking Water:**

Before implementation of watershed development projects, there was scarcity of drinking water. Now, after implementation of watershed

development projects there is no scarcity of drinking water in the villages in the project area.

## **2. Availability of water for Agriculture:**

Before implementation of watershed development projects, water for agriculture was available to some farmers and that too for upto 7 to 8 months. The water scarcity was becoming more pronounced in February, march, April and May every year. Now, after implementation of watershed development projects, water for agriculture has become available for 675 total beneficiaries and now it is available for 10 to 11 months in a year. Thus, due to implementation of watershed development projects there is increase in availability of water. As a result, farmers are in a position to cultivate cash crops.

## **3. Change in Cropping Pattern:**

Crops cultivated by the sample beneficiaries in their land before they started receiving the water from watershed development projects revealed the following: Majority (38 percent) of the farmers' land was not under cultivation before watershed development projects. Mataki, Tur, Jawar and Bajari – these were the major crops being cultivated by the farmers before they started receiving the water from watershed development projects, the frequency distribution of the responses reveal. Some farmers were also cultivating Wheat, Harabhara and Groundnut before watershed development projects.



The study of crops being cultivated by the sample beneficiaries in their land after they started receiving the water from watershed development projects has revealed the following trends of change:

- 1) It is important to note that, land which was not under cultivation before the implementation of watershed development projects (in case of 38 farmers), have been brought under cultivation after watershed development projects.
- 2) Wheat, Soyabin, Harabhara and Sugarcane – these are the major crops being cultivated by the farmers after they started receiving the water from watershed development projects, the frequency distribution of the responses reveal.
- 3) Some farmers continue to cultivate Jawar after watershed development projects.

The data reveals a remarkable change in the respective positions of crops. Among the major crops the highest decline was in case of Jawar (87 percent). On the other hand, crops, which recorded increase, include Sugarcane (46 percent) and Soybean (71 percent).

#### **4. Increase in Annual Income of Beneficiaries**

Before the implementation of watershed development projects, 21 per cent respondents were having annual income up Rs. 20,000/- i.e. their families may be treated as falling below poverty line. 50 per cent respondents were having annual income from agriculture within the

range of Rs. 20,000 to 50,000 and remaining 22 per cent respondents were having annual income from agriculture between Rs. 50,001 – 100000 whereas only few (7 per cent) respondents were having income for more than Rs.100000 per year. After implementation of watershed development projects, all the respondents whose income was upto Rs. 20000 have crossed that mark. An overwhelming majority (80 per cent) of the respondents were having income between Rs.20001 and 100000. 20 per cent respondents were having annual income from agriculture above Rs. 10000. Thus, due to implementation of watershed development projects there is increase in average annual income from agriculture in case of all the sample respondents.

#### 4. Use of Agricultural Produce:

Before implementation of watershed development projects, 88 percent respondents said that the agricultural produce was being used for domestic consumption as well as some part of it was also used to sell in the market. Now, after implementation of watershed development projects 72 percent respondents have said that they are mainly cultivating for sell in the market. However, 28 percent farmers said that they are producing mainly for their domestic consumption.

#### 6. Types of Seeds:

Before the implementation of watershed development projects, 68 percent farmers were mainly using traditional seeds. After

implementation of watershed development projects all farmers have started using modern seeds in their farm. Thus, due to the watershed development projects there is increasing tendency towards use of modern seeds.

#### **1. Types of Fertilizers:**

Before implementation of watershed development projects, 68 percent farmers were using mainly traditional fertilizers. Now, after implementation of watershed development projects all the farmers have started using modern chemical fertilizers in their farm.

#### **8. Use of Pesticides and Insecticides:**

Before implementation of watershed development projects, 93 percent farmers were not using pesticides and insecticides in their farm. Now, after implementation of watershed development projects, an overwhelming majority (84 percent) of the farmers have started using pesticides and insecticides in their farm.

#### **9. Number of Crops:**

Before implementation of watershed development projects all the farmers were cultivating two crops in a year. Now, after implementation of watershed development projects, some of the farmers have started cultivating three crops in the same piece of land in a year.

**10. Cultivation of Vegetables:**

Before implementation watershed development projects, very few farmers were cultivating vegetable in their farm. Now, after implementation of watershed development projects an overwhelming majority of (76%) of the farmers have reported that they are cultivating vegetables as inter-crops.

**11. Employment Generation:**

Before implementation of watershed development projects, 39 percent farmers were using hired labourers in their farm. Now, after implementation of watershed development projects an overwhelming majority (75 percent) of the farmers are using hired labourers in their farm. Thus, due to intensive cultivation there is also increase in employment. As a result, out migration of the people has been reduced in the project area.

**12. Dairying:**

Due to implementation of watershed development projects, availability of fodder for animals has increased. As a result, it has encouraged dairying as the secondary occupation.

**Impact on Ecology and Environment****13. Availability of Water:**

Due to implementation of watershed development projects, there has been increased availability of water for drinking and also for agriculture in the project area and it helps to reduce scarcity of water.

**14. Reduction in Soil Erosion and Moisture Stress:**

Before implementation of watershed development projects the villagers were experiencing soil erosion and moisture stress. Now, after construction of check dams on the rivulets by the Yerala Projects Society, there is check on the soil erosion and moisture stress.

**15. Augmentation in Ground Water:**

Due to implementation of watershed development projects there has been recharge in ground water in the project area. As a result, water table has increased, thereby making supplementary irrigation available to many farmers.

**16. Increase in Green Cover:**

As a result of availability of water, there is also increase in green cover in this area. Now, various types of trees have grown alongside the banks of the rivulets and water reservoirs in the project command areas. Thus, the increase in trees can be taken as a good indicator of eco-development in this area.

**17. Sustainable use of Land and Water Management:**

After implementation of watershed development projects, there has been sustainable use of land and water.

It is found that such schemes of watershed development would be a panacea for rural development, provided there is initiative by local NGOs, real co-operation and active participation of local people in the projects. Under such circumstances, watershed development and management becomes a key for sustainable development.

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