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REVIEW WATERSHED MANAGEMENT IN VILLAGE AREA

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Abstract : *Watershed management plays a vital role in reducing soil erosion and water conservation. Several districts in coastal Maharashtra face the perennial problem of water shortage despite of getting heavy rains during the monsoons. Lack of water is a particularly acute problem during the months after the monsoon season. Raigad is one such district, where a number of villages and hamlets inhabited by Adivasi's or tribal's face acute water shortage leads to many health and socio-economic problems. Also because of lack of knowledge at village level causes the water scarcity. This study aim to cater the water scarcity by implementing watershed management practices.*

Watershed is not only the hydrological unit but it is also related with the socio-political-ecological factors which plays crucial role in determining food, social, and economical security and provides life support services to rural people of any country. Watershed is land surface bounded by a divide which contributes runoff to a common point. Watershed management basically involves management of land surface and vegetation so as to conserve and utilize maximum water that falls on the area of watershed and also conserve the soil for long term benefits to the farmer and his society.

Keywords *- Watershed, Water Scarcity, Perennial, Soil Erosion, Watershed, Watershed Management Approaches, Watershed Development Programs, History of Watershed Development, Objectives, Components of Watershed, Community, Agricultural.*

INTRODUCTION

Most generally, a watershed can be defined as a body of soil with definite boundaries around it, above it, and below it. In other words, it is a land surface (body of soil) bounded by a divide which contributes runoff to a common point. A positive water accretion to its upper boundary is in the form of precipitation and a negative accretion is in the form of evaporation.

Watershed is the hydro-geological unit of area from which the rain water drains through a single outlet. When rain falls on the mountains, it flows down through sum all streams. Many such streams join to form bigger streams, which i n turn join to form rivulets, which join to form rivers and so on. The entire area which supplies water to a stream or rivulet or a river at a particular point in its flow is called the watershed or catchment area or drainage basin of that particular point. The top of the watershed is called h ill or ridge portion. The ridge-line partitions one watershed from another, or can be said to be the boundary of the watershed.

Watershed management involves management of the land surface and vegetation so as to conserve and utilize the water that falls on the watershed, and to conserve the soil for immediate and long-term benefits to the farmer, his community and society. As such, watershed management is not new to India. Why this is necessary is because the people in the village do not know how to build and how long it will last and it needs to be delivered. Temporary construct the Structure and then they suffer a lot of issue If they get all the information in this regard, they can benefit a lot Due to the temporary construction of such structures, they do not last long, they are very weak and the people of the village are not well informed about it, so they face a lot difficulties.

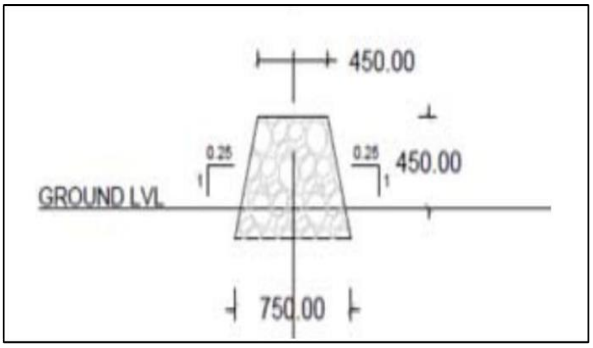
LITERATURE REVIEW

1. Ready, V.R. (2021) in their research paper "The methodology used in the case study and involved assessing the all participation and performance of two watershed development projects in India.[1]
2. Mr. R. Arnad (2019) in their research paper “This research paper's methodology involves analysing land use, rainfall data, and river cross-sections [2]
3. Abel Kaburi (2014) in their research paper "They collected and analysed data to understand the topographical characteristics, land cover changes, and human impacts in the area. [3]
4. Mr. Chetan B. Bansode (2018) case study in Malshiras focused on site selection, soil and water conservation structures, water quality testing, and rural watershed development [4]
5. Mr. Shivraj Patil (2020) in their research paper “study highlighted the importance of participation, transparency, equity, and resource management for the success of watershed development programs. [5]

METHODOLOGY

Impact of watershed management on local agriculture (irrigation systems, crop yields). Exploring sustainable farming practices (agroforestry, rainwater harvesting). Evaluation of the relationship between water resources and agriculture sustainability. Development and management of water resources for domestic, agricultural, and livestock needs. Efficient water use and conservation strategies (check dams, percolation tanks). Community-based water-sharing systems and equitable distribution of water resources. Impact of watershed management on local ecosystems, including forests and wildlife. Studying the role of natural vegetation in stabilizing the watershed. Conservation of local flora and fauna, and the role of biodiversity in watershed health.

Temporary Construction



Stone Bond

Following steps were followed for implementing techniques:

1. Selection of Site for implementing watershed techniques.

2. By personal interviews of the local people, we analyse the problems faced by the villagers regarding water shortage.

3. Collection of the data of site condition and surrounding area.

4. Preparation of contour map of selected site.

5. Profile levelling is used to select the water outlets.

6. Constructing the suitable structures on water outlet points.

7. Preparation of the estimates of structures proposed.

Site Location

We provided the village we selected with proper information and also provided information about Cement Nala Bandhara (CNB) and they implemented it accordingly. In this way, they will implement it in rural areas as soon as we give them the information.

The following equation is used to calculate the Water Demand.

ADWD=(225∗P)+(225∗P∗.10)

POPULATION	ADWD
Males 249	**61627.5**
Females 311	**76972.5**
Total DWD	**1,38,600**

We first visited the village we had chosen, then we got complete information about the population there and their water needs, and then we suggested a route to build a dam that would be suitable for that location so that the next village would not face water shortage.

Project Location

- Panghare (Rajapur)
- Chundal
- Onie
- Kusbe (KanKavli)

Understanding the impact of climate variability on watersheds (droughts, floods). Building resilience to climate change through adaptive watershed management practices. Role of watersheds in carbon sequestration and mitigation of climate effects. Role of local communities in the management and decision-making process. Capacity building and education on watershed conservation for village residents. Policy analysis 15 and local governance structures supporting watershed management. Economic benefits of effective watershed management (e.g., increased agricultural productivity, better water access). Assessing social impacts such as improved livelihoods and health through better water quality and availability. Employment generation and poverty alleviation through watershed-related activities.

Community Participation and Awareness

Objective: Ensure local community involvement and ownership. Conduct village-level awareness campaigns to inform people about the importance of watershed management. Form a village watershed committee with representatives from all sections of the community (farmers, women, elders, etc.). Promote participatory planning through meetings and discussions to address local needs and solutions. .

Agricultural and Livelihood Support

Objective: Enhance agricultural productivity and sustainable livelihoods. Promote water-efficient farming techniques, including crop diversification and mulching. Introduce drought-resistant crop varieties suited to local conditions. Support integrated farming systems that combine crops, livestock, and agroforestry. Provide technical support and training on modern farming techniques and market linkages. Develop non-farm income-generating activities such as handicrafts, agro-processing, or small-scale industries.

Monitoring and Evaluation

Objective: Track progress and make necessary adjustments. Develop indicators for measuring improvements in soil quality, water availability, vegetation cover, and crop yields. Engage the local community in monitoring processes using simple tools and methods. Conduct periodic evaluations of the watershed management interventions to assess their impact on water conservation, erosion control, and livelihoods. Adjust the plan based on feedback and emerging challenges to ensure sustainability.

CONCLUSION

When we visited rural areas, we found that the local people there did not have much knowledge about new technologies, so we tried to spread as much information as possible there, and they benefited a lot from it, To provide Proper Guidance and Technica Build Structure in Village Area. Collect Data and all information To Develop Rural Areas in The Region with Clear Plans for Improving the Economy of The Regions. Enhance agricultural productivity and sustainable livelihoods. Improvement Infrastructure Watershed Area to Avoid Shortage of Water Viably in the Region especially in the post monsoon.

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