

ISSUES AND REALTIES OF WATERSHED MANAGEMENT IN SATARA DISTRICT

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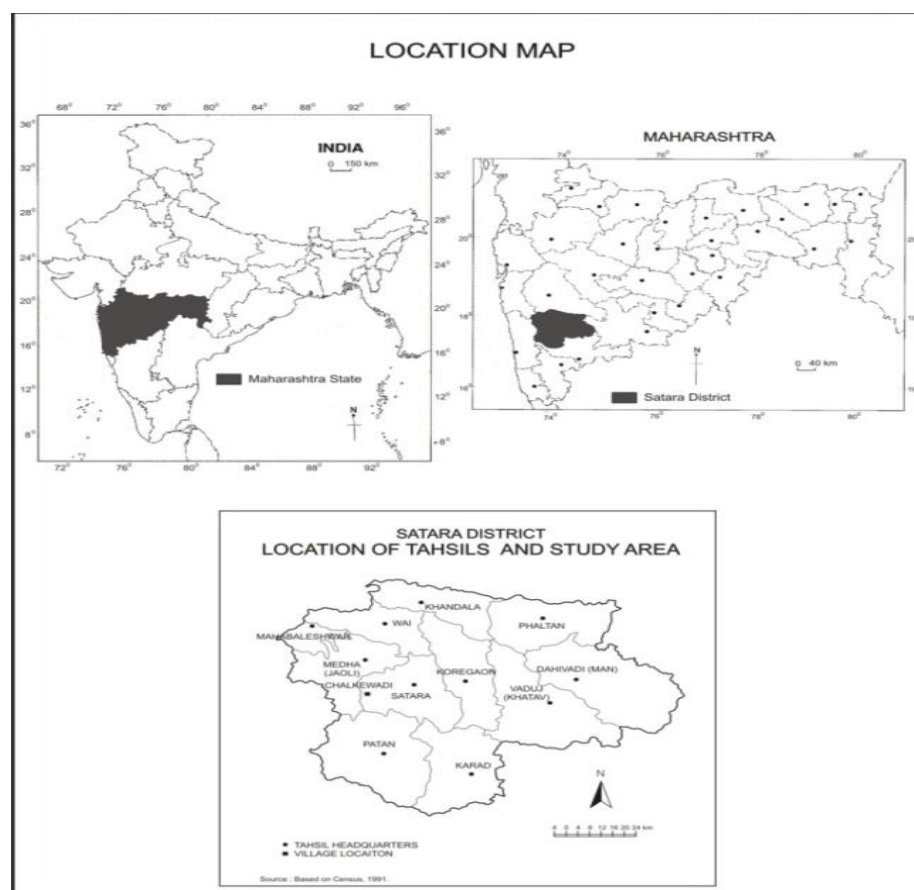
INTRODUCTION

Watershed management is the study of the relevant characteristics of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal, and human communities within a watershed boundary. Features of a watershed that agencies seek to manage include water supply, water quality, drainage, storm water runoff, water rights, and the overall planning and utilization of watersheds. Landowners, land use agencies, storm water management experts, environmental specialists, water use surveyors and communities all play an integral part in watershed management.

STUDY AREA

Satara district is one of the five districts of Western Maharashtra area of the State. It is situated in the western part of the State and lies between north latitudes $17^{\circ} 05''$ and $18^{\circ} 11'$ and east longitude $73^{\circ} 33'$ and $74^{\circ} 54'$.

The total area of the district is 10480 sq. km. The district is bounded in the north by Pune district on the east by Solapur district, on the south by Sangli district and on the west by Ratnagiri district of Konkan region of state. Sahayadri hills of western ghat forms the western boundary, while Nira River forms the northern boundary of the district. For administrative convenience, the district is divided in 11 talukas. It has total Population 27,96,906 as per 2011



census and Population density is 266.77 /km² (690.9 /sq mi) persons/sq. km. The district has 15 towns administratively there are 11 talukas namely as satara, patan, karad, wai, Khandala, mahableshwar, Javoli, man , khatav, Phaltan, koregaion,, 1739 villages, 11 Panchayat Samitis, 1488 Gram Panchayats and 8 Nagar Parishads. Sex ratio is 995 .As per land use details (2000-01), the district has an area of 10480 sq. km. out of which 1375 sq. km. is occupied by forests. The hill chain of Western Ghat has been recognized as one of the world's biodiversity hotspots, i.e. a region of rich biodiversity threatened with destruction

DATABASE

The present study will be depending on primary as well as secondary data. Primary data will be collected through the questionnaire. For the purpose villagers will be choose by stratified random sampling, and photographs, video shooting will be collected for the better understanding of the study region.

Secondary data will be collected through the related reference books, magazines, published, unpublished thesis, journals, and published Govt. Report, District Census, hand book, Newspapers, Other media reports. and relegated websites.

METHODOLOGY

The present study is based on the collection of data, hospitals and extensive field survey by the statistically tabulated, interviews, questoinrrie, method some mathematical processing will be carried out and the inferences may arrive. There is no definite method to apply to such study but statistical method, cartographic techniques. Concentration ratio, impact method will be used wherever necessary different terms and observations' used in the texts have been defined and explained in glossary at the end.

Objectives of watershed management The different objectives of watershed management programs are:

- To protect, conserve and improve the land of watershed for more efficient and sustained production.
- To protect and enhance the water resource originating in the watershed.
- To check soil erosion and to reduce the effect of sediment yield on the watershed.
- To rehabilitate the deteriorating lands.
- To moderate the floods peaks at downstream areas.
- To increase infiltration of rainwater.
- To improve and increase the production of timbers, fodder and wild life resource.
- To enhance the ground water recharge, wherever applicable.
- To reduce the occurrence of floods and the resultant damage by adopting strategies for flood management.
- To provide standard quality of water by encouraging vegetation and waste disposal facilities.

DRAINAGE

Drainage is one of the most important components of physical environment which affect on every activity of man directly or indirectly. It also affects on the location, patterns and internal structure of settlements. An availability of water depends on the nature of drainage system and climate. The physical setting of Satara district shows a contrast of immense dimensions and reveals a variety of landscapes. The variations in the relief of Satara

district have influenced the drainage pattern also. Satara district has a compact size. The physiography of the district is responsible for separation of two important drainage systems in the region viz. Bhima basin and Krishana basin. Also there are four river basin in the district.

The Krishna drains the major portion to the south, the Yerala drains the mid-east portion also to the south, the Man drains the eastern parts to Join the Bhima river out side the district. From the point of view of the peninsular drainage, the entire district belongs to the larger drainage system of the Krishna river. The Krishna river is one of the three great rivers of southern India. Like the Godavari and the cavvery it flows across almost the entire breadth of the Peninsular from West to east and empties in the Bay of Bengal. The Krishna rises on the eastern part of the Mahabaleshwar. The Koyana, Yerala, Venna and Kudali are among the main tributaries of the Krishna river.

KRISHNA BASIN

Physically the district is divided into two divisions by the Mahadeo range. The western part of the district is comprising of eastern slopes of the main sahyadris along with all of its subsidiary spurs and valleys, except the Mahadeve range. Waters from the whole areas is drained in Krishna and its tributary feeders like kudali, Urmodi, Venna, Vasna, Yerla, Tarali. Thus river Krishna is the main and major drainage of satara district. Krishna, the major river has its source in the eastern slopes of Mahabaleshwar plateau at the height of about 1,500 metre. Krishna is one of the three great rivers of south India. Its total length is 260 kms and of it's about lie in Satara district. From its source at Mahabaleshwar, river Krishna runs eastward for about 24 kms. to reach town Wai. It receives Kudali from right, at about three kms. south of Panchwad. After meeting Kudali, the river continues to run south ward through the Satara sub-division and receives the Venna river near Mahuli. After meeting Venna, the Krishna curves to southeast. At Koregaon the Krishna receives the Vasna, from the left, near Mangalpur and then in extreme south of Satara sub – division it receives the Urmodi near Venegaon. In Karad tahsil the river runs nearly southwards. In this course it receives the Tarali near Umbraj and the Koyana near Karad. From Karad it flows for about 50 kms and then enters the limits of the Sangli district. Within Satara limits, river Krishna is useless for navigation because the Channel is too rocky and the streams too rapid. The banks are 8 to 10 metres high and generally earthy and broken. The river bed is sandy and rocky in some parts.

BHIMA BASIN

Though river Krishna forms the main drainage system of Satara district, the drainage is also shared by Bhima river system. Nira and Manganga rivers are the two chief tributaries of Bhima in Satara district. Nira rises in the Sahyadri range near Bhor in Poona district and from there it runs eastward to form the boundary between Pune and Satara district. The river has acquired great economic importance due to the Bhatghar and Vir dams from which on the right bank and left bank canals supply water to Phaltan and Khandala tahsils.

NEED OF WATERSHED MANAGEMENT

An integrated watershed management approach needs to be adopted and the soil and water conservation technologies and approaches need to be applied in field situations by the officer-trainees. The **Indian Institute of Soil and Water Conservation (IISWC)** director

Pravin Shinagare said this while addressing a multi-disciplinary team of 20 officers from Odisha at the conclusion of a five-day training programme on soil and water conservation training-cum-exposure visit at the institute on Friday. The trainees were sponsored by the Institute on Management of Agricultural Extension, Bhubaneswar.

Mishra spoke on the concept, philosophy, importance of conserving natural resources through integrated watershed management. He advised the participants to give more thought on this mechanism. Speaking on the occasion, Plant Science head OP Chaturvedi stressed on importance of work in close collaboration with people and different agencies and not in isolation. He said that common property resources should be protected, conserved and utilised with community participation for their common cause and development. The HRD and Social Science division head Lakhan Singh motivated the officers to use past experiences and relate with existing agro-ecosystems. He highlighted the various factors promoting and inhibiting people's participation watershed management. He said the commitment of villagers and officers towards watershed goal will make a difference in socio-economic transformation of people.

Watershed management practices in terms of purpose To increase infiltration To increase water holding capacity To prevent soil erosion Method and accomplishment In brief various control measures are:

1. Strip cropping
2. Pasture cropping
3. Grass land farming
4. Wood lands
5. Engineering measures (Structural practices)
6. Contour bonding
7. contour trenching
8. Terracing
9. Construction of earthen embankment
10. Construction of check dams
11. Construction of farm ponds
12. Construction of diversion
13. Gully controlling structure
14. Rock dam
15. Establishment of permanent grass and vegetation
16. Providing vegetative and stone barriers
17. Construction of silt tanks dentension

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