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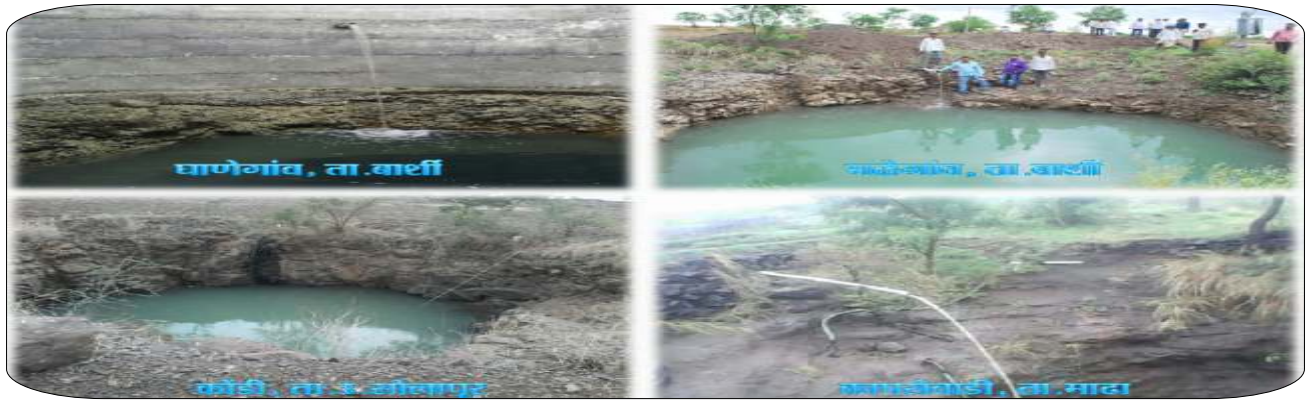
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IMPACT OF WATER RESOURCES ON ECONOMIC DEVELOPMENT IN SOLAPUR DISTRICT



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ABSTRACT

Water is most valuable resource of the nature; every living being has been derived from the water. Hence, the water is most essential element for the existence of life, since, without water human being cannot survive for a longer period of time. It is used in various ways and it is vital to all kind of life. Water is not only a biological necessity but it is of great importance for social and economic activities. Water is supreme elements of nature, even more valuable than gold. Water resource is much freely and easily available and has manifold role in day to day life. Water is used for drinking and domestic purposes, such as for irrigation, power generation, cooling and washing of the machines as a means of transportation and recreation and in industrial sector. Water although, is free and easily available as a natural resource has now, become an economic commodity.

KEYWORDS : Water resource, social and economic activities, drinking and domestic

INTRODUCTION

Air, Water and Shelter are basic needs of life on the earth. Out of this, water and air are very important for life on the earth. Not only this, but present existence is also only due to availability of water and air. To keep the life in existence in future, these two factors should be available in clear, pure form and in sufficient quantity.

At present, human being is the most supreme creature on the earth, who has kept himself in existence by using other living and non living resources. With existence he is increasing his number very fast by encroaching and vanishing the resources. Due to this the resources are declining very fast. Water is one of them, and is a movable substance and its chemical composition is H₂O. It exists in solid, liquid and gases forms. For human being, it is required frequently. Hence, it should be sufficient in

quantity and at the same time, it should be clean and pure. Impure and dirty water is harmful to living beings. According to Indian standard 50 liters clean and pure water is required per day per person. Water is movable substance and it is found in three forms of solid, liquid, and vapour. Solid and gases form are not very much useful in day to day life. A liquid form is one of the important characters of water, is that, it cannot vanish but transferred from one form to another.

Water formed by combination of two hydrogen ions and one oxygen ion from atmosphere or where they are present in ionic form. Earth receives water from precipitation which may be in the form of rain or snow fall. Almost, 97.41 percent water on the earth is concentrated in seas and oceans, which is salty and not directly useful for domestic, agriculture and industrial purposes. About 0.99 percent of water is in the form of ice which is found in cold regions of North, South Poles and highest peaks of mountains on the continents. It is solid form of water which is not directly useful for human activities, about 1.40 percent of rainwater percolates in the ground and becomes ground water, which is also not easily made available to use for human activities and only 0.20 percent of water which is on the surface of earth is available for all types of human activities and also for other living beings, like plants and animals on the earth. This shows that even though, there is huge amount of water on the earth but only a very small quantity of 0.2 percent of it, is available for all types of lives on the earth as compare to the demand of increasing population. This available water is very less. Hence, it is very essential to use water economically and also, it should be used completely without disturbing its physical and chemical composition.

Significance of water resources:-

Water is in fact, the life source in biosphere on the planet earth. The earth has abundant water resources in all three forms of solid, liquid and gases. The absence of water in other planets is the chief cause for no life. Water is being used for overall development in different parts of the world.

Classification of water resource:-

Water resources of the earth are divisible in to two distinct categories as given under:

I) Surface water resources. II) Ground water resources.

Each of these categories is a part of earth water circulatory system, called as the hydrological cycle and is ultimately derived from precipitation (rainfall, snowfall, and water vapor). These categories are independent and frequently, the loss of one is the gain of other. Hence, it is more appropriate and essential to discuss separately the nature of the surface water and ground water separately.

Selection of the topic and study area:-

In view of the preceding discussion, the area which were not inhabited by man, started getting due attention by man. Most of the scholars of the world are studying the world from every discipline in order to maximum utilization of the resources. They may be physical scientists, social scientists, Economists, mathematicians, astrologers, metrologist and anthropologist or even geographers. Man is the central point of the all studies 'The Impact of Water Resources on Socio-Economic Development in Solapur District' is an attempt to understand the role of water resources in social and economic development of solapur district. Now the study has been carried out of the Solapur district in relation to the impact of water resource on the socio-economic development so far from the point of view of the social science. The selection of the topic entitled 'The Impact of Water Resources on Socio-Economic Development is not very arbitrary, since, the district of Solapur' has not been attempted to analysis the impact of water resource on the social and economical development. The district of Solapur is an

important part of Maharashtra passing through transformation stage. The impact made by Ujani dam of Bhima river in recent time is of vital importance as it is reflected in agriculture and industrial sector.

Hypotheses:-

Hypotheses are the statements to be tested in order to find out the authenticity in the area under study. Hypotheses asserts or derives something. Hypotheses is adopted tentatively to explain certain facts or the relationship between facts and to guide in the investigation of others. Hypotheses are the preposition which has not been tested yet.

1. The region under study belongs to drought prone area of Maharashtra; hence the agriculture production and land use pattern is adversely affected.
2. The population distribution, population and growth of literacy, occupation are also adversely affected by the availability of water resources in the Solapur district.
3. The growth of agriculture production is not keeping pace with the growth of population.
4. The industrial sector is poor due to the scarcity of water resource of physical, social, economic and political scenarios are also responsible for low development.

Objectives:-

Once, the hypotheses are formulated, the direction of the research is prepared. Objectives in fact, are the goals to be achieved by the researcher in order to understand the nature of the problem associated with the area of investigation. It is, at the very outset, necessary to formulate certain objectives, because, without objectives, no research can be fulfilled and completed.

1. To find out the proportion of the land under different uses.
2. To find out the agriculture land under different crops.
3. To find out proportion of irrigated land and non-irrigated land in Solapur district.
4. To analyze the overall characteristics of population, distribution, density and growth pattern in Solapur district.

Sources of the data and information:-

The data and information are the basic requirement for a research work. The analysis of research problem is based on the data and information, collected by the researcher himself. The data and information are the basis for analysis of any problem in a study area. The types of data and information differ in authenticity, which in turn influence the result and findings emerging from the analysis. If, the data is not correct and authentic, the results may not be derived accurately.

Methodology:-

Different methods and techniques are the basic tools for the analysis of a research. The data and information collected from the different sources are processed in the percentage and the proportions, were put in the table form. This data and information was represented through various statistical techniques and cartographic method in graphs, choropleth map isopleths map.

Review of the literature:-

Agrawal (1997), the founder of the center of science and environment, spearheaded the 'Jal Swaraj' campaign, conceptualized and dieted Dying wisdom, that explore the tremendous potential of India's traditional water harvesting systems and making water everybody's business, that document's technologies that are being practiced even today by communities in various parts of the country.

Bansil (1998), in his book "water management in India" has highlighted the ancient water harvesting system in India. Gurfar and Shukla, (1998) in the book "Water Resources, Environment and the People," stated that the problem of water crisis cannot be solved without people participation and efforts should be made to get every citizen involved at the different water conservation schemes, Misra (1994) has written two books on traditional teak management in India and various traditional water harvesting systems in Rajasthan titled in Hind'Aaj Bhi khare hai talab' and Rajasthan Ki Rajat Boonde".

Background of the region:-

It is most important and appropriate to understand different backgrounds of the region under study. These backgrounds of the region such as Physical, Historical, Social, Economic and Political influence, the scenario of the region concerned. Man can change and modify the physical landscape into cultural with his expertise as he desires for his comfort. In view of this, it is most essential to give an account of each background in order to make clear overall picture of the region under study. At the very outset, it is most suitable and appropriate to understand different backgrounds of the region under study, since these backgrounds have a great bearing upon each other and one influences the other largely. From the historical events, man can learn a lot and may implement his experiences for future oriented plans for the various kinds of developments. To a certain extent, political factors also play a very important role in the changing the face of the region. Man can implement various policies and programs by establishing of different projects for improvement of social and economic conditions of the region. In this way, the physical landscape may be changed into social and economic landscape such as converting forest area into agricultural land and arresting the river water into artificial reservoirs, bringing a tremendous change in the region. In view of this, it is most essential to give an account of each background in order to make clear overall picture of the region to interpret various aspects of the region.

Assesment of water resources in Solapur district:-

Water is an essential commodity to mankind and it is a most important input in socio-economic development of a country. Hence, over all progress is closely linked with the development and management of water resources. The purpose of a water balance study is to determine, if an area's water supplies are adequate to meet current and projected water demands. The study is essentially, like assessing water resources, determine how much water is being deposited in an area and how much is being withdrawn as well as available for future use. Water budgeting allows for planning and management of water resources in a sustainable manner.



Ujjani dam in solapur district:-

Ujjani dam was constructed for irrigation, water supply and power generation schemes. It lies in Solapur district which is a drought prone area. This makes Ujjani a socially and economically significant project for the Solapur district. In the present study, reservoir sedimentation for Ujjani reservoir is assessed for monitoring purpose. In drought prone areas the crops are adversely affected. Such areas in Solapur district are found in the tahsils Karmala, Madha, Barshi, South Solapur Akkalkot N.Solapur and Sangola. Dam waters is not useful through the different means in such region, hence, for the benefit in 1995 the irrigation purposes particularly for kharip purpose constructed Ujjani Dam.

Levels of economic development in Solapur district:-

The subject matter of economic like that of other social and natural sciences has been going through changes during the last few decades. The traditionally held view, that economic deals with distribution of the means and resources on the earth is a challenge faced by contemporarily economists. Advances in technology and scientific methods, have provided more accurate data and information about the various features of the resources landscape, and this inturn has provided the economists, an opportunity to search for the explanation about the patterns of distribution of physical, economic, socio-cultural and biological elements and the relationship among them. Thus, starting for quantitative description, the study of economic, now makes use of quantitative data in distribution analysis and interpretation of the special patterns and variations in socio-economic, biological and geographic elements.

The measurement of association among the different elements of the resources and differences of the spatial patterns, require the application of appropriate techniques. Social scientists are familiar with the techniques of mapping and tabular analysis of data, even then the explanation of the patterns of distribution and trends to be described the features observed. Where the explanation is provided, is likely to be based on a subjective judgment, for example given the maps of the distribution of rainfall and proportion of the area under irrigation to total geographical area may be compared, this pattern usually found in area of high rainfall. The richness of natural vegetation is influenced by the number of factors such as physical, socio-economic and biological factors have great bearing upon it. The theoretical aspects of any phenomena occurring over the surface of the earth may not sometimes give very authentic information, but when it is proved on scientific ground, then the facts and results become quite clear.

- Per capita income and percentage of area under forest.
- Per capita income and percentage of area under cultivation.
- Per capita income and percentage of irrigated land.
- Per capita income and percentage of urban population.
- The per capita income and the density of population.
- Per capita income and literacy rate.
- The per capita income and the density of population.
- Per capita income and literacy rate.
- Per capita income and percentage of workers in manufacturing.
- Per capita income and road length per 100 square kilometers.
- Per capita income and percentage of rural population.
- Per capita income and percentage of agriculture labors.
- Per capita income and rainfall.

- Per capita income and percentage of scheduled cast population.
- Per capita income and percentage of scheduled tribe population.
- Per capita income and percentage of area under grazing.
- Per capita income and number of cattles.
- Per capita income and number of villages.
- Per capita income and number of sheeps and goats.
- Per capita income and number of saw mills.
- Per capita income and average height from sea level.

Factors influencing the water resources availability in Solapur district:-

Water is in fact, the life source in biosphere on the planet earth. The earth has abundant water resources in all three forms of solid, liquid and gases. The absence of water in other planets is the chief cause for no life. Water is being used for overall development in different parts of the world. It is evident that since the beginning of the human race on the earth, man settled in areas of the source of abundant water supply. Most of the river valleys like Nile, Indus, Ganga, Ho-Hang-Ho and Brahmaputra as a result of great significance of river waters, people started worshipping them in India. In India, the Gangs, Yamuna Doab region is one of the most fertile land and capable of supporting a large population. In modern period, the use of water in industrial sector is of great importance. The agricultural sector initially depended upon the availability of water for irrigation purpose. Earlier, water fallen on the surface, was wasted in the form of runoff in to the sea and ocean. A major amount of water was used, for the purpose of drinking, washing and recreation. But due to the advancement in the technology, man has started arresting water in reservoir, lake, tanks, through making dams and multipurpose projects across the rivers. From preceding discussion it is evidence that water is most valuable resource of the nature. The United State of America Geological survey estimated, the total amount of water on the earth is 5 to 6 Million Cubic, Miles or 480 Million Cubic Kilometers, which is equal to 144000 million tons. In other words, the total water of the earth may be put in a container having 1500 cubic miles, it is well known facts that about 71 percent area of the earth are cover with water resources and 29 percent area is covered by land masses. It has been calculated that all the water of the planet earth is distributed roughly as follows- 1) Ocean water is 97.1 percent 2) Glacial ice caps 2.1 percent 3) Underground water is 0.6 percent 4) Inland water of rivers and lakes is 0.2 percent making together hundred percent water of the earth.

Suggestion/ recommendation:-

1. In order to redrawn the quality of soil/ land. The cultivators are advised to take crops by changing rotation.
2. Incomplete irrigational scheme like (well, nala, bhanth, percolation tank, canal, etc.) should be compiled and irrigation area should be increased accordingly.
3. To keep in mind the erratic nature of monsoon and unpredictable nature, the agriculturist are advised to change the crop patterns accordingly.
4. Though there are, availabilities for irrigation for agriculture, majority of farmers are still engaged in the traditional method for farming. Which is essential to change in present situation.
5. The sprinkler system and drip irrigation are two modern irrigation methods, even though nearby river many farmers are using traditional old methods, not only, wasting much water but also make land more saline. Hence, farmers should change these old methods of irrigation.
6. The south Solapur tahsil, the agriculture production should be enhanced the increase in irrigated

land is essential. For this purpose government should provide agriculture loan or quite low rate of interest.

7. On the basis of interview of the farmers it has been, concluded that the awareness for socio-economic development among the farmers has become quite useful.

8. In case of implementation of suggestion and recommendation by the farmers of the Solapur district, the agricultural production, will be sustainly enhanced. Which will be sustainly reflected in the improvement of their social and economic conditions of the people.

9. This is low standard of living of the people will be increased in Solapur district.

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