Volume-1, Issue-2,August 2018

ANEKANT JOURNAL OF HUMANITIES AND SOCIAL SCIENCES

WATER RESOURCE MANAGEMENT IN SATRA DISRTICT: A GEOGRAPHICAL PERSPECTIVE

Vijay H. Madane
Assistant Professor, Department of Geography,
T.C.College, Baramati, Dist. – Pune
(Maharashtra, India.)-413102
Email: vijumadane2014@gmail.com

ABSTRACT:

Water Resource Management is most important for fulfilling needs of therapidlygrowing population. On the other hand quantity of water has been decreasing.Water Resource Management is one of the solutions to the water scarcity problem.Water Resource Management is a method catching and holding rainwater at place, where it falls and making optimum use of water.Fromlastfew years state is facing scarcity of water due to uneven rainfall accompanied by mismanagement of water. The severityof problem is increasing day by day. It is a challenging task to supply water for the vast population along with agricultureand industrial area. We can deal with the problem of security only with vision and planning and proper management ofwater.In this paper an emphasis is given on the management of water especiallyinSataraDistrictdrought prone area in Maharashtra.

KEYWORDS: Drought, Uneven Rainfall, Flood, Irrigation, Management.

Now a days, Water Resource Management is most important for growing needs from domestic use, irrigation and industrial

sector. Today the population is growing rapidly and on the other hand quantity of water has been decreasing.Water Resource Management is one of the solutions to the water scarcity problem.Water Resource Management is a method catching and holding rain at place, where it falls and making optimum use of water. Water is the fundamental need of every living creature. It is a valuable national recourse so maximumutilization of available water resources and theirconservation is immensely important. The demand andsupply of water has to be taken into consideration forwater management. Rain is the primary source of water.Rain water is available from rivers, canals, tanks besidesunderground resources like wells and bore-wells.97 percent water is present in oceans while 2percent water isin ice-bergs and only 1percent water is available for livingbeings. Among this 1percent of water 70 percent water is utilized forfarming 25percent for industries and 5percent for household.India has 4percent of total water available in the worldand about 17percent population of the world resides in India.Approximately 113000 cubic k.m. of water is availablethrough rain water and snow-fall from which 72000 cubick.m. Water is evaporated.

ORIGIN OF THE RESEARCH PROBLEM:

In recent years, it seems that the pattern ofMonsoon is changing. There is a radical change in thepattern of arrival of monsoon and its journey across thenorthernregion.Formlast few years state is facing scarcity of water due to uneven rainfall

accompanied by mismanagement of water. The severityof problem is increasing day by day. It is a challenging task to supply water for the vast population along with agricultureand industrial area. We can deal with the problem of security only with vision and planning and proper management ofwater.In this paper an emphasis is given on the management of water especially inSatara District drought prone area in Maharashtra.

OBJECTIVES:

1) To study the management of water in the lightof uneven distribution of rainfall.

2) To identify the importance of water resources.

STUDY AREA:

The Satara district is situated in west part in Maharashtra state. This district consists eleven tahsils covering 1739 villages. The total area extent is of 10,480 sq. km. extending from 17°05' to 18°11' north latitudes and 73°33' to 74°54' east longitudes. This district is confined by Pune district to north, Solapur district to east, Sangli district to south andRatanagiri district and Raigad districts to west (Fig.1). It has very short boundary of Raigad district to the northwest. Although the boundaries are mainly administrative line along with several lines this considered with physical features.Satara district has typical landscapes due to variations in relief, climate and vegetation. The variation of relief ranges from the pinnacles and high plateau of the main Sahyadri range having heights over 1200 meters above mean sea level to the subdued basin of Nira river with an average height of about 600 meters above

mean sea level. The climate ranges from the rainiest in the Mahabaleshwar region which has an average annual rainfall of over 6000 mm to the driest in Man, Phaltan, Khandala and Khatavtahsils where the average annual rainfall is about 500 mm. Satara is predominately a rural district of the 23 inhabited places in the district, 1739 are villages and 15 towns including in theSatara district.

Fig.-1.

DATA AND METHODOLOGY:

The present work is exclusively based on secondary data. Such data is collected from District Reports, Statistical Abstracts and District Gazetteers for the year 2008-2014. The data wascollected from official web-site of Pune VedhshalatheInformation published in Newspapers and Magazines

wasalso obtained along with certain books. Besides this, some other published and unpublished records are also used for the collection from differentgovernment offices like district statistical department and tahsil level offices.

RAINFALL:

The climate of the district is on the whole is agreeable. The winter season is from December to about the middle of February followed by summer season which last up to May. June to September is the south-west monsoon season, whereas October and November constitute the post-monsoon season. The mean minimum temperature is 14.40℃ and mean maximum temperature is 36.8 ℃ at Satara town in the district.

The rainfall analysis for the period 1901 to 2005 revels that the normal annual rainfall over the district varies from 473 to about 6209 mm. In the eastern part of the district around Mhasawad (Man Tahsil) and PhaltanTahsil it is minimum and increases toward the west and reaches maximum around Mahabaleshwar. However, probability of occurrence of normal rainfall is maximum (50 to 55percent) in the south eastern part around Man, Vaduj, PusesavaliandKarad. While the probability of receiving excess rainfall (i.e. 25 percent or more) varies from 9percent to 30percent. It is minimum around Mhaswad (9percent) and maximum aroundPusesavali (30percent). The study also reveals that entire north eastern and south western part of district comprising almost entire Khandala, Phaltan, Khatav, Man Tahsils and part of Koregaon and KaradTahsils which experienced drought for more

than 20percent of the years can be categorized as "drought area". The average rainfall data for the period (2008-2014) are represented table-1

No.	Taluka	Avg. Rainfall (As per IMD)	2008 Actual Rainfall	2009 Actual Rainfall	2010 Actual Rainfall	2011 Actual Rainfall	2012 Actual Rainfall	2013 Actual Rainfall	2014 Actual Rainfall
1	Satara	908.8	722.5	909.1	1011.2	777.6	686.0	1182.8	1034.2
2	Jawli	1603.0	1502.0	1448.1	1530.1	1737.2	1258.8	1787.0	1638.2
3	Koregaon	642.6	537.4	761.1	904.2	497.4	360.6	596.0	470.1
4	Karad	632.1	807.9	731.0	872.8	593.6	550.6	569.5	663.1
5	Patan	1733.0	1251.0	1179.1	1511.2	1804.6	1574.4	1510.3	1525.5
6	Phaltan	382.0	339.0	835.0	1028.4	342.2	267.1	469.0	300.7
7	Man	442.8	433.1	787.0	761.5	225.8	269.0	407.2	383.2
8	Khatav	415.0	374.2	879.7	814.6	373.1	273.4	574.9	552.2
9	Wai	710.3	797.0	905.2	1029.0	873.2	650.1	881.4	674.0
10	Mahableshwar	2223.0	5660.4	4203.0	4244.0	6456.8	3908.7	3812.0	5650.9
11	Khandala	416.0	439.8	562.8	662.3	733.8	451.0	633.2	485.7
	District Average	918.9	1169.5	1200.1	1306.3	1283.2	931.8	1129.4	1216.2

Table-1: Water Resource Available InSatara District (Rainfall)

Annual Rainfall in Satara District (2008-2014)

(Source: Website: Satara.nic.in)

The monsoon period starts in the month of June with the maximum precipitation in Julyand August.

*Average rainfall of Satara District is 918.8 mm although there are large differences in theamount of precipitation over various parts of the district.

*The Sahyadri hill ranges -chiefly in Mahabaleshwartahsil -in the western extremity receivemore than 6000 mm. Patan and Jawalitahsils also have rainfall in excess of 2000 mm.

*Moving eastwards the rainfall amount drops to less than 900 mm in the tahsils ofKoregaon, Karad, Satara and less than 600 mm in the tahsils of Man, Khatav, PhaltanandKhandala

Table-2: Water Resource Available InSatara District (River)

No.	**Name of the Dam**	**Storage capacity inThousand Cubic Meters**	**Name ofthe River**	**Taluka**
1	Koyna	2797400	Koyna	Patan
2	Dhom	79400	Krushna	Karad
3	Kanher	65180	Venna	Satara
4	Mahu Hatgeghr	6623	Kudali	Wai
5	Tarli	2072	Tarli	Karad
6	Veer	266 mil.m3	Nira	Khandala
7	Urmodi	1283	Urmodi	Satara
8	Wang Marathw adi	Ongoing Project	Wang	Patan

(Source: Website: Satara.nic.in)

WATER RESOURCE MANAGEMENT:

Water shortagesare getting worse as surface water source are not utilizedcarefullyand as aquifers are depleted. Water conservation is the most effective means of increasing fresh water supply.Rational use of water resource by reduced use, recycling, reuse in activities like irrigation, industrial processes and domestic use can be easily implemented.

WATER CONSERVATION MEASURES:

*Retention of rainwater from surface through construction of reservoirs, tanks.

* For ground water recharge, construction of check dams, percolation tanks etc.

* For agriculture water management use of liftirrigation, drip and sprinklers for irrigation.

*Reclining of waste water after proper treatment, rainwater harvesting, conservation of natural

*Wetlands, recharging ground water, watershed management, reduction in water pollution.

RECOMMENDATIONS:

The rivers in Maharashtra are becoming more andmore dull and polluted day by day. The rivers are rapidlydying because of the pollution, the vast wood cutting, and thedissertation of earth and too much withdrawal of sand from them. In cities it is seen that the canals and small rivers andlakes are intentionally and intensively damaged. The banks of the rivers are severly damaged. At the fountain rivers are pure and unpolluted butas they flow towards cities they become a major cause of diseases like colera, etc. the bio-pulluted garbage occurs in the rivers KrushnaandKoainanearkaradlives of Indian people are becoming narrow and rapidly dying from last 500 to 600 years. In 2050, it is predicted that 8percent to 10percent water saturation will be lessened and upto 500 billion cubic meter of water will be under scarcity.

1) Indian scientists should study deeply the existence of rivers generated in mountain.

2) Govt. should take steps for conservation of rivers; it will help to control floods these rivers are so important because they can produce 1 lakh kilo watt of electricity by whichsome states of the country would be enlightened.

3) Rain water is to be stored in such way so that underground water level can increase and rate ofevaporation can be minimized.

4) Prohibiting cluster of wells in one area as well as deep digging of wells

5) Water pollution has to be minimized by preventing mixing of drainage water in thehouseholdsand chemicals and other effluents in the water.

6) Join river project should be introduced by the central govt. of India.

7) Small irrigation schemes are very much advantages because it save the money and time ofconstruction.

8) The proper planning of watershed managementis nee deed, prohibition of water flow, itspercolation should be done for saving water.

9) Number of methods should be applying forconservation of water, like Tube well recharge, Nalabunding, Construction of dams.

10) In addition to the development of water resourcesawareness among society shouldbe created.

CONCLUSIONS:-

One of the biggest concerns for our water-based resources in the future is the sustainability of the current and even future water resource allocationaswater becomes scarcer, the importance of how

it is managed grows vastly. Finding a balance between what is needed by humans and what is needed in the environment is an important step in the sustainability of water resources. Attempts to create sustainable freshwater systems have been seen on a national level in countries such as India and such commitment to the environment could set a model for the rest of the world.

The field of water resources management will have to continue to adapt to the current and future issues facing the allocation of water. With the growing uncertainties of global climate change and the long term impacts of management actions, the decision-making will be even more difficult. It is likely that ongoing climate change will lead to situations that have not been encountered. As a result, new management strategies will have to be implemented in order to avoid setbacks in the allocation of water resources.

REFERENCES:

1. USGS - Earth's water distribution
2. Fry, Carolyn The Impact of Climate Change: The World's Greatest Challenge in the Twenty-first Century 2008, New Holland Publishers Ltd
3. Grafton, Q. R., and Hussey, K. (2011). Water Resources. New York: Cambridge University Press.
4. Molden, D. (Ed). *Water for food, Water for life is A Comprehensive Assessment of Water Management in Agriculture.*Earthscan/IWMI, 2007.
5. The World Bank, 2006 *"Reengaging in Agricultural Water Management: Challenges and Options". pp. 4–5. Retrieved 2011-10-30.*
6. Chartres, C. and Varma, S. *Out of water. From Abundance to Scarcity and How to Solve the World's Water Problems* FT Press (USA), 2010

7. *"GES knowledgebase". Global Economic Symposium. Retrieved 2016-02-16.*
8. *Howard, K.W.F (2003). Intensive Use of Groundwater:: Challenges and Opportunities. A.A. Balkema Publishers.*
9. *Mund, Jan-Peter. "Capacities for Megacities coping with water scarcity" (PDF). UN-Water Decade Programme on Capacity Development. Retrieved 2014-02-17.*
10. Ilic, S., Drechsel, P., Amoah, P. and LeJeune, J. Chapter 12, Applying the Multiple-Barrier Approach for Microbial Risk Reduction in the Post-Harvest Sector of Wastewater-Irrigated Vegetables
11. Walmsly, N., and Pearce, G. (2010). Towards Sustainable Water Resources Management: Bringing the Strategic Approach up-to-date. Irrigation and Drainage Systems, 24(3/4), 191-203.
12. Govt. of Maharashtra, Department of Statistics, (2008-2014) : Socio-Economic Review and DistrictStatistical Abstract of Satara District.
13. www.maharashtra.gov.in
14. www.nature.org –nature conservation
15. Website : - Satara.nic.in
16. Prashant.Y.Phadnis(2012) Management of Water Resource in Drought Prone Area ,Proceeding of International Conference SWRDM-2012