

## Availability and Distribution of Water in Maharashtra State

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### Abstract:

*Among the different component of natural environment, water is the most important component. Water is very important factor which is necessary for all living things. As well as water is a basic resource on the earth for all living organisms including mankind and for development and survival of plant community. This water 97 per cent has been locked in ocean as a saltwater, 2 per cent has been arrested by ice sheets and glaciers, 1 per cent fresh water present on the earth. This fresh water is various sources such as underground water and surface water. Amongst than underground water source such as springs, dug wells, tube wells are the prime sources which can supply water in dry season also. The surface water is found in rivers, streams, lakes, seas and ocean. The study region is known as the core part of drought prone area of the state. As the region comes under rain shadow area, rainfall throughout the year is scanty and its distribution both spatial and temporal is not uniform. Due to the erratic nature of monsoon, presence of poor, low quality of soil and traditionally poor peasantry has led to the agriculture practice at subsistence level. The scarcity of water both surface and ground put limits for the development of irrigation facility in the region. The aim of present research paper is availability and distribution of water in Maharashtra state. The entire investigation is based on secondary sources of data. The secondary data obtained from census handbook of India, Government of Maharashtra, Economic Survey of Maharashtra and Various Books to related water resource. Collected data is processed and presented in the forms of tabular and graphical. It is concluded that the highest water is available in Konkan division (66394 Mcum) in the state. Followed by Pune division (39127 Mcum), Nagpur division (29046 Mcum), Nashik division (23804 Mcum), Aurangabad division (23664 Mcum) and Amaravati division (13933 Mcum) respectively.*

**Keywords:** Water, Water availability, Surface water, Ground water etc.

### Introduction:

**W**ater is a supreme product of a nature and which remains a lifeline of every living organism on the surface of the earth. We can find water in various places on surface of the earth, interior of the earth, in the atmosphere around the earth. This water on the surface of the earth also found in various forms e.g. solid, liquid and in the forms of vapours etc. major source of this water is rainfall. As well as water is one of the most precious natural resources and a key element in the socio-economic development of a country. The significance of the water resource in regional economic development hardly needs to be emphasized. A person can live without food for a month, but it cannot live for a week without water. As well as animals require more water than human beings. Animals may live without food for more than 100 days but may die without

water within 5-10 day. Water is used for variety of purposes. However drinking is the main use of water in the world. As well as there are various uses of water by agriculture, industry, electricity, domestic requirement etc.

### Objectives:

The main objective of the present research work is to have detailed study the availability and distribution of water in Maharashtra state.

### Data Base And Methodology:

Present study is based on secondary data. The secondary data is obtained from census of India, Government of Maharashtra, Economic Survey of Maharashtra, State census handbook, State Gazetteers, State statistical department and socio-economic review, Agriculture department government of Maharashtra state and Various Books to related water resource. Collected data is processed and presented in the forms of tabular and graphical.

**Study Area:**

Maharashtra State is one of the important Western and Central state in India. However Maharashtra is located in the Deccan region of India. The state Maharashtra lies between 15°44' North to North 22°6' latitude and 72°36' East to 80° 54' East longitude (fig. 2.1). The study area is situated Deccan plateau. The area is demarcated by Satpura Range on the North and Arabian sea on the West. The State is surrounded by Goa and Karnataka States in South, Andhra Pradesh in Southeast, Gujarat, Dadra and Nagar Haveli and Madhya Pradesh in North, Chhattisgarh in east and Arabian Sea in west. The state is one of the most important states of India, both in terms of area and population. Maharashtra state is the third largest state (in area) in India after Rajasthan and Madhya Pradesh. Maharashtra state covers an area of 307713 Sq. km. In the state Ahmednagar (17413 Sq. Km) is the largest district in area and the smallest is Mumbai City (67.7 Sq. Km) tahsil. The state extends about 800 km from East to West and about 720 km from North to South. As well as Maharashtra has coastline of 720 km. Maharashtra state is the second largest state (in population) in India after Uttar Pradesh.

The total population of the state is 112372972 as per 2011 census. Thane is the largest district in terms of population (11054131) and constitutes about 9.84 per cent of total population of the state. However Sindhudurg is the smallest district with population 848868 which is barely 0.8 per cent of state. Mumbai is the capital of Maharashtra state. Nagpur is second capital as well as winter capital of Maharashtra state. There are 36 districts having specified divided by six administrative divisions in Maharashtra state. Entirely in the Godavari, Krishna, Tapi, Narmada and Bhima river basins which is a part of the state.

**Availability of Surface Water:**

Water is an important resource for sustaining life and it is an important resource for almost all development plans. The surface and ground water are the important source of water. Rain water which flows to lakes, tanks, bunds, rivers etc. is called as surface water. There are large scale variations in the surface water from one district to another district as well as one region to another. The total surface water

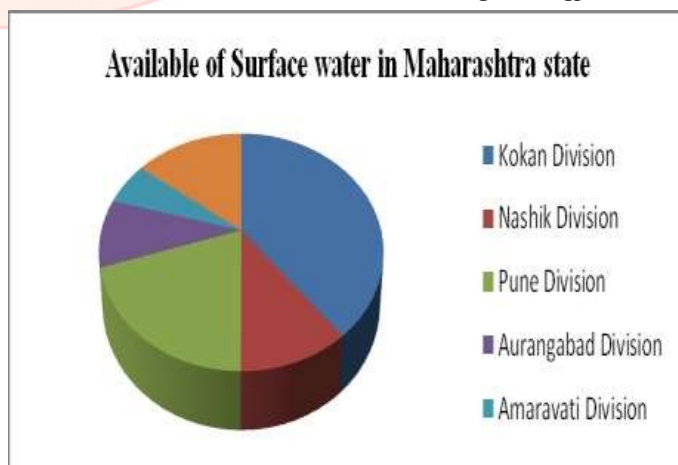
of Maharashtra state is 32148 Mcum does give a clear idea of nature of unevenness of surface water distribution as it varies from a minimum of 9813 Mcum in Amaravati division to 64501 Mcum in Konkan division. It means highest surface water is found in Konkan division (64501 Mcum), followed by Pune division (32696 Mcum), Nagpur division (24077 Mcum), Nashik division (17478 Mcum), Aurangabad division (15254 Mcum) and Amaravati division (9813 Mcum) respectively.

Table 1 Availability of Surface and Ground Water in Maharashtra state (Mcum)

| Region              | Availability of Surface Water (Mcum) | Availability (Mcum) | Availability of Total Water (Mcum) |
|---------------------|--------------------------------------|---------------------|------------------------------------|
| Kokan Division      | 64501                                | 1893                | 66394                              |
| Nashik Division     | 17478                                | 6325                | 23804                              |
| Pune Division       | 32696                                | 6431                | 39127                              |
| Aurangabad Division | 15254                                | 8410                | 23664                              |
| Amaravati Division  | 9813                                 | 4120                | 13933                              |
| Nagpur Division     | 24077                                | 4969                | 29046                              |
| <b>State</b>        | <b>163820</b>                        | <b>32148</b>        | <b>195968</b>                      |

Source: 1. Water Resource Department, Government of Maharashtra.

2. Ground Water Surveys and Development Agency, GoM &
3. Central Ground Water Board Region Nagpur, GoI.



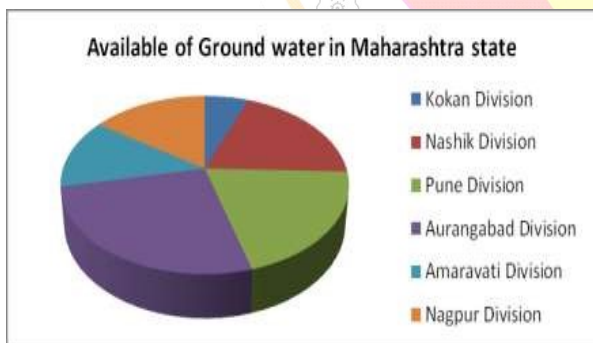
**Available of Underground Water:**

Availability of ground water in the State is limited because of the hard rock presence over 92 per cent of its area. Other factors which influence limitations in the availability of ground water are the peculiar physiography of the region and wide variations in the rainfall. The State's available of ground water is 32148 Mcum. The Stage of groundwater development for the State as whole is 53 per cent. This indicates that on an average 53 per cent of yearly replenishable groundwater is being used in the State. Out of 353 Talukas, 325 are categorized as Safe, 16 Semi-Critical, 2 Critical and 10 Over-Exploited.

There are large scale variations in the ground water distribution from one region to another. The Maharashtra state total available of ground water is 32148 Mcum, does give a clear idea of nature of unevenness of ground water as it varies from a minimum of 1893 Mcum in Konkan division to 8410 Mcum in Aurangabad division. It means highest ground water is found in Aurangabad division (8410 Mcum), followed by Pune division (6431 Mcum), Nashik division (6325 Mcum), Nagpur division (4969 Mcum) Amaravati division (4120 Mcum) and Konkan division (1893 Mcum) respectively.

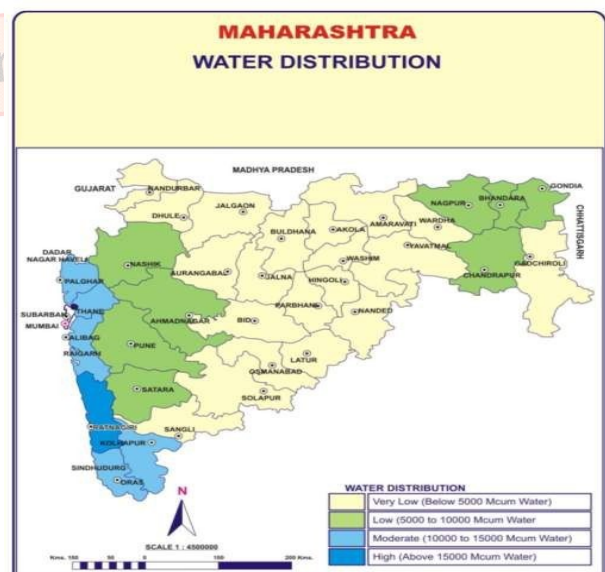
shows medium water area, whereas water above 15000 Mcum shows high water area. Very low water area was found in Wardha, Solapur, Sangli, Jalgaon, Dhule, Nandurbar, all district of Aurangabad and Amaravati division. While low water area was observed in Nagpur, Chandrapur, Bhandara, Gondiya, Ahmednagar, Nashik, Pune and Satara district. Medium water area was marked in Sindhudurg, Kolhapur, Raighad, Thane and Palghar, district, whereas high water area was occupied in Ratnagiri district.

It is observed that the amount of water high in Konkan, Nashik and Pune division in the state because this region is closely to the western coast of Maharashtra. So the amount of the rainfall is very high in these regions. In other hand the amount of water is very low in Madhya Maharashtra and Aurangabad division because the geographical disadvantages double up as the plains of Marathwada area spread more in the interior parts of peninsular India. The region has no major river flowing through it. The region is far from the western coast and eastern coast and the mountain regions of Western Ghats restrict all the weather conditions and vegetation very little for Marathwada. However the Konkan sub-division comprising of coastal districts and Western Ghats receive the heaviest rains. Rainfall decreases rapidly towards eastern slopes and plateau areas. It again increases towards east i.e. in the direction of Marathwada and Vidarbha and attains a maximum in the eastern parts of Vidarbha. Thus, the Madhya Maharashtra sub-division is the region of the lowest rainfall in the state.



**Distribution of Water:**

However the district wise distribution of water is uneven in the state and it varies from a minimum of 2418 Mcum in Wardha district to 20099 Mcum in Ratnagiri district. The distribution of water was worked out for each district and districts of the state are grouped into four different categories namely very low, low, medium and high. If the water is below 5000 Mcum shows very low water area. While the water between 5000 to 10000 Mcum shows low water area. Water between 10000 to 15000 Mcum



**Conclusion:**

Water is a supreme product of a nature and which remains a lifeline of every living organism on the surface of the earth. We can find water in various places on surface of the earth, interior of the earth, in the atmosphere around the earth. This water on the surface of the earth also found in various forms e.g. solid, liquid and in the forms of vapors etc. major source of this water is rainfall. As well as water is one of the most precious natural resources and a key element in the socio-economic development of a country. It is concluded that the highest water is available in Konkan division (66394 Mcum) in the state. Followed by Pune division (39127 Mcum), Nagpur division (29046 Mcum), Nashik division (23804 Mcum), Aurangabad division (23664 Mcum) and Amaravati division (13933 Mcum) respectively. It is observed that the amount of water high in Konkan, Nashik and Pune division. In other hand the amount of water is very low in Madhya Maharashtra and Aurangabad division.

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