

A study of Drought situation in Marathwada: It's Causes and Measures

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Abstract - Marathwada is known as one of the most backward and drought-prone areas in Maharashtra. Marathwada has an area of 64811 sq km, which extends from eight districts such as Aurangabad, Osmanabad, Jalna, Nanded, Beed, Latur and Hingoli. The main objectives of the study are to understand the present drought situation in Marathwada., causes of drought, Suggest permanent solution to the drought in Marathwada. Generally, there are two types of drought dry drought and wet drought. In Marathwada, it is always the dry drought. Drought is caused by two main reasons, One of the reasons is natural and second is man-made. Marathwada drought is less natural and more man-made. If Government takes appropriate measures and peoples must respond well then it is possible to overcome the drought.

Keywords — Drought, water shortage, marathwada

I. INTRODUCTION

Marathwada is known as one of the most backward and drought-prone areas in Maharashtra. Marathwada has an area of 64811 sq km, which extends from eight districts such as Aurangabad, Osmanabad, Jalna, Nanded, Beed, Latur and Hingoli. In the pre-independence period, Nizam rule Hyderabad in Marathwada. The liberation struggle of Marathwada was fought and it was liberated on September 17, 1948. From November 1, 1956, the Marathwada division was added to the Bombay State and since 1st May 1960 it has been made a revenue department of Maharashtra which is known as Aurangabad revenue department.

Agriculture is the main occupation of people's in Marathwada region. Except for the city of Aurangabad and Nanded, there is not much industries development. Few Industries are set up, their condition is also pathetic today. Many industries are closing down while some are counting the last days.

II. TOPIC OF STUDY AND IT'S IMPORTANCE

As the subject of drought situation in Marathwada is selected in the annual session of Marathwada Economics Council. Therefore, I have chosen the topic " A study of Drought situation in Marathwada: It's Causes and Measures" for the research. Marathwada and drought becomes correlation. Drought in Marathwada is fixed for every two year. Drought is such a situation when there is a time of severe shortage or unavailability of water and food. In other words it can be said that "Reduced availability of water is a drought". such situation is often created in Marathwada. Drought can be of few months or even years.

It affect the human beings as well as animals in the region also. Therefore, we try to reduce the impact of drought and decided to study all the subjects in this topic.

III. OBJECTIVES OF THE STUDY

The three main objectives of the study are as follows:

- 1.To Study the present drought situation in Marathwada.
- 2.To study the causes of drought in Marathwada.
- 3.Suggest permanent solution to the drought in Marathwada.

The following research methodology is used to achieve the objectives of the study.

Research Methodology:

Secondary tools have been selected to study the results, causes, and remedies of Marathwada drought conditions. Collecting and analyzing the information through the Meteorological Department of the Government of India, the information about various departments of the Government of Maharashtra, social and economic survey report of different districts, various government circulars, newspapers, websites and magazines.

IV. PRESENT STATUS OF DROUGHT IN MARATHWADA

Nearly 30 percent of Marathwada region comes under Rainfall. The dryland farming system is about 90% and dry cultivation is the main means of livelihood. The irrigation facility is inadequate since the eyes of the farmers of Marathwada are always turned towards the sky. Rainfall from the Arabian Sea is good in Central Maharashtra, but it

weakens till reaches Marathwada. The low-pressure area created in the Bay of Bengal gives rain to Orissa, Chhattisgarh, Madhya Pradesh or Vidarbha, but it does not have much effect in Marathwada. Also, seasonal action like Western speed and axial lines of monsoon can not reach other areas in Marathwada. As a result of this, decreases in rainfall and often leads to drought conditions in marathwada.

Drought criteria:

Some criteria have been set by the government to declare drought in some areas. Earlier, by the end of August to declare drought sowing was expected to decrease by 33.33%, while 50 % sowing was expected for severe drought. Similarly, after the end of December for rabi crops, 50 percent reduction in sowing was declared as drought. This year however, there has been a change in these criteria. The new state government has brought some relaxation. Now, Kharif sowing decrease by 15% compare to the average in August, when drought and 25% fall and severe drought is declared. This is the rule applied for rabbi season. In order to declare drought in new quarters, it has been agreed to declare drought only by considering only three indicator showing the worst of the four, conditions of the plant's status indicators, Soil Humidity Index and Water Index.

Government of Maharashtra Government Resolution No. SCY-2018 / Pr. No. According to 189/7/7 dated 31st October 2018, 151 talukas of 26 districts of Maharashtra have declared drought. It's details are shown in the following table.

List of drought-affected talukas of Kharif 2018

Sr. No.	District	Drought-affected Talukas	Medium affected Talukas	Total Talukas
1	Aurangabad	Aurangabad, Gangapur, Khultabad, Paithan, Phulambri, Sillod, Soygaon, Vaijapur, Kannad	Nil	09
2	Beed	Beed, Aashti, Dharur, Gevrai, Majalgaon, Shirur(Kasar), Vadvani, Ambajogai, Kej, Parali, Patoda	Nil	11
3	Jalna	Ambad, Badnapur, Bhokardan, Ghansawangi, Jafrabad, Jalna, Partur	Nil	07
4	Nanded	Mukhed, Deglur	Umari	03
5	Osmanabad	Lohara, Kalam, Osmanabad, Paranda, Tuljapur, Vashi, Bhoom	Nil	07
6	Parbhani	Manvat, Pathari, Sonpeth, Palam, Parbhani, Selu	Nil	06
7	Hingoli	Hingoli, Sengaon	Kalamnuri	03
8	Latur	Nil	Shirur Anantpal	01

Source: Government Resolution, Number, SCY-2018 / Q.

No. 8 9/7 - 7 dated 31st October 2018

Government has declared drought in 151 talukas of 26 districts of Maharashtra. Among them, 112 talukas have declared severe drought and 39 talukas have been declared as medium drought.

Out of 76 talukas of Marathwada 47 talukas have been declared as drought by the government. Out of these, 44 talukas have declared severe drought and 03 talukas have declared medium drought. Out of all the eight district of Marathwada, drought has been declared in all the talukas of Aurangabad and Beed district. After that Jalna and Osmanabad district comes. Latur and Nanded districts are experiencing fewer droughts. Considering the various divisions of the Maharashtra State, it seems that the Marathwada region is facing the worst drought.

Out of 8553 villages in 76 talukas of Marathwada, 6823 villeges means 80% of villeges have been affected by drought. There was only shortage of food grains in 1972, but now there is more shortage of water and fodder than food grains. Aurangabad, Beed and Jalna districts of Marathwada have a dense drought that the wells have reached the bottom in the rainy season. There is no fodder for animals. One pendi of kadba, which was generally priced at Rs 10, is now being sold for Rs 60. Due to scarcity of water the people of the village are migrating to big cities. Many farmers are committing suicide due to such worst situation.

Except the govt. decision dated 31 oct 2018, Due to the increase in the density of drought in Maharashtra in addition to the earlier 151 drought talukas, where the revenue board in other tehsils found less than 75 percent rainfall drought has been declared in 268 revenue boards. (Government Resolution No.-SCY-2018 / No. 89 /M/ -7 dated November 06, 2018) In this, 2 of the Mantha talkuas in Jalna district of Marathwada, 42 in Latur district, 14 from Nanded district, 8 from Parbhani and 2 from Hingoli district, a total of 68 revenue boards have been declared drought.

V. REASON OF DROUGHT IN MARATHWADA:

Generally, there are two types of drought dry drought and wet drought. In Marathwada, it is always the dry drought. Drought is caused by two main reasons, One of the reasons is natural and second is man-made. The uncertainty of rainfall is the natural phenomenon, due to climate change, rainfall decreases or increase in monsoons or uneven distribution of rain. Drought is the result of this. These factors come in natural elements.

1. Result of Rainfall - More than 30 percent of Marathwada region comes under less Rainfall. Due to this, there is very little rainfall in such areas and the issue of drought.

2. Less rainfall - Marathwada has very less rainfall than

other regions. The average rainfall of Marathwada is 821.6 mm whereas 949 mm is of total Maharashtra. In Konkan and Goa area it is 3000 mm.

Yearwise distribution of Rainfall in Marathwada (mm)

Sr No.	Year	Actual Rain	Sr No.	Year	Actual Rain
1	2009	687.5	6	2014	548.9
2	2010	1039.4	7	2015	532.9
3	2011	684.7	8	2016	824.8
4	2012	538.2	9	2017	755.6
5	2013	887.9	10	2018	500.94

Source: India Metrological Department

The above figures shows that, in the last ten years only in 2010,2013 and 2016 the average rainfall was more compared to the average rainfall. In seven years less rainfall was there in marathwada compared to normal rainfall. As a result of that there was constant drought in Marathwada. Due to the decrease in rainfall, ground level in Marathwada has also decreased by 4 to 6 meters. In the current year 2018, lowest rainfall is recoded over the past several decades. It reflects from the next table.

Rainfall in the various districts of Marathwada (in mm) Statistics of 14 Oct. 2018

Sr.No	District	Actual Rainfall	Percentage on the actual annual average
1	Aurangabad	360.08	53.31
2	Jalana	424.66	61.70
3	Parbhani	482.51	62.29
4	Hingoli	671.98	75.27
5	Nanded	773.31	80.93
6	Beed	334.04	50.13
7	Latur	514.76	64.30
8	Osmanabad	445.22	57.31
	Division Average	500.94	64.31

Source: No.2018 / M / s / Rain / Kawi - Divisional Commissioner Office, Aurangabad, 14th October 2018

The lowest rainfall is recorded in year 2018. Therefore, this year, except for the exceptional talukas of Marathwada, the situation of drought arises. As a result of low rainfall, Marathwada’s water situation has become very serious. This notified from the following statistics.

Status of water in Marathwada (Record of 26 Oct. 2018)

Project	Percentage
Big Projects	31.5
Medium Projects	20.47
Small Projects	19.56
Bonds on Godavari	47.61
Bonds on Terana And Manjra	13.75
Total	27.66

Source: Maharashtra Times, 1 Nov. 2018

The above table shows that, there is less than 50% water

storage in all water Projects of Marathwada. it is 27.66% (average) which is insufficient to satisfy the thirst of Marathwada. It is very difficult to get water for drinking in the month of April - May. Similarly, the level of ground water has decreased by 5 to 6 meters. Therefore, it is difficult to get water from the well, but the Boer is also not sure of having water. Due to all these causes drought will increase.

3. Global warming: In recent times the issue of global warming is raising day by day. World is facing the same issue and due to that there were several changes in the rainfall also. Uneven rainfall is also outcome of global warming.

VI. MAN-MADE CAUSES OF DROUGHT

As drought caused by natural reasons, there are several man made issue also

1. Decrease in level of groundwater – Wells in Marathwada has fallen dry in the winter of 2018. In the last five years the average ground water level decrease was 1 to 5 meters. It has gone down to 10 meters this year. On one hand, the dam has fallen down to 20 percent and on the other hand the water level of the earth is declining drastically. Due to this, the intensity of drought will increase further.

2. Use of wrong methods in agricultural irrigation- In Marathwada, water is supplied with pat method in the farm. Water from the dam is also released from the pat. As a result, only 30 percent of the water is used. Therefore, it is necessary to increase the use of drip and sprinkle irrigation.

3. Waste water management - Taps are not imposed on many people's homes. Due to the many leakages in water pipeline, it is wasted in more quantity than the usage.

4. Lack of rain water harvesting - In Marathwada, there is already a less rainfall. Water needs to stored/ harvested, but due to lack of awareness, water is drained in the house or farm and there is a drought.

5. Yield Method and Pumping Water - The sugar factories have recently flourished in Marathwada. It result in huge planting of sugar cane. Sugar cane requires more and perennial water. Drip irrigation is also not used. Sometime although rainfall is good still suffer from drought.

6. Tree's trunk - 33 percent forest cover is essential for the balance of nature. In Marathwada the forest area is only 3%. Due to drought, more forests are reduced and due to the reduction of forest, more droughts occur. Marathwada has been found in such a bad trail. The trees help in pulling the cloud.

7. Neglection of rulers – The rulers needs the strong will to prevent drought in Marathwada. But, they ignore their department for selfish ends. There was a lot of injustice on

Marathwada in the distribution of water in Maharashtra. Irrigation projects are not too much, it results in drought.

8. Huge sand production – The work of sand supply across the entire Maharashtra has started from Marathwada. So the water reservoirs are decreasing and there is a severe water shortage.

9. Increasing pollution - Increasing quantity of tree trunk, increasing vehicles, increasing use of freezers, factories, forest fire, etc. Due to these reasons, pollution is increasing and it affects the environment by increase in temperature and decrease in rainfall.

Due to this and many such reasons, there are droughts. It results in destruction of mankind.

VIII. CONCLUSION

Marathwada drought is less natural and more man-made. If Government takes appropriate measures and peoples must respond well then it is possible to overcome the drought.

Measures for Drought in Marathwada:

Government takes efforts for speedy development of region and also to reduce the draught situation. Along with government's effort the awareness amongst people is also very important.

1. Marathwada special cabinet meeting Aurangabad - On October 4, 2016, a meeting was held in Aurangabad for development of Marathwada and made some important decisions for the milk project's in Jalna and Parbhani districts costing 2341.67 crores. 2210.59 carries for Nandur Madhamesh Project, Water Conservation Commissioner ate at aurangabad, Seed Park in Jalna area, 100 percent state sponsored irrigation scheme.

2. Various concessions for drought relief: After the government declares the drought, some measures will be taken such as discounts on land revenue, bank loan repayment suspension, relaxation in electricity bill for agricultural pumps, drinking water tankers, concession in student fees, and free bus travel for students, etc.

3. Tree Planting - If tree are planted on all borders of fields and on street borders and on landslides, the risk of global warming will be reduced and tree will help to rain by pulling clouds. Also, care should be taken that trees will not be axed.

4. Water Harvesting – Strengthen of farm borders, it is necessary to increase the water level by blocking water by making small ponds. Rain water in cities should be harvested.

5. Water storage will increase due to the stoppage of sand.

6. Fewer water-needed crops should be cultivated.

7. Preventing pollution.

8. Avoid water leakages in water supply system within city.

9. Jail Swarajya Yojana should be implemented effectively.

10. Awareness about water amongst people.

If we take such measures Drought in Marathwada can be reduced.

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