



## ROLE OF JALYUKT SHIVAR ABHIYAN IN DROUGHT ERADICATION OF FIVE VILLAGES IN VAIJAPUR DIST. AURANGABAD (MS) INDIA

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### AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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### ABSTRACT

Drought conditions have often hit the agricultural sector due to inconsistencies in rainfall. Hundreds of villages in Marathwada, Central Maharashtra and Vidarbha have been facing drought for the last several years. The Government of Maharashtra announced an ambitious scheme called "Jalayukta Shivar Abhiyan" in 2014 with the objective to increase the water availability at the local level and making drought free Maharashtra in year 2019 through soil and water conservation. The present scheme has been implemented in Vaijapur tehsil. The purpose of the study is to find out the impact of JSA on the irrigation capacity and ground water level as well as in drought eradication. The data has been collected from 70 respondents through survey questionnaires. The result shows, 100% respondents agreed that the JSA is useful to overcome on drought. 97.9% respondents agreed that this scheme has solved the problem of drinking water. 85.4% respondents says that, the scheme has benefited for both (rabi and kharif) seasons. 91.42% respondents said this scheme has increased the irrigated land. 82.85% respondents agreed that the annual income of the farmers has increased. 82.85% respondents said expenditure on water supply through tanker has decreased. 75.71% respondents shared that JSA has helped to the stop migration for employment. 75.71% respondents agreed that the campaign has increased the use of toilets in the villages. The study concluded that due to JSA the water storage capacity, ground water level, agricultural productivity, farmers' annual income and use of toilets, has been increased as well as, the migration of labour and cost of water supply has decreased in that villages. The study suggest that, for the all-round, development of the villages, it is not only important to increase water storage capacity and water conservation works, but also tree plantation, animal husbandry, water management, ban on felling tree and grazing etc. are necessary.

**Keywords:** Water management; agricultural production; drought severity; migration; employment.

### 1. INTRODUCTION

Water is a natural resource called water or life. Because the evolution of living things depends on the

availability of water. Particularly, the rural economy and water availability are closely linked. If the rainfall is less or more than required, it will increase the problem of farmers, agricultural labourers and the

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government. There is a regional disparity in natural rainfall and water availabilities. The considering Maharashtra, there is a big difference between rainy days and rainfall in different parts of the state. For example, "Konkan receives 84 days, Vidarbha 45 days, central Maharashtra 40 days and Marathwada have only 37 days at annual." [1]. Drought conditions have often hit the agricultural sector. Eg. when JSA was launched 23,811 villages of 26 districts in Maharashtra were declared drought-hit. So to make Maharashtra drought free, the state government announced an ambitious scheme called 'Jalayukta Shivar Abhiyan'(JSA) on December 5, 2014. The JSA focuses on maximizing the storage of rainwater in rural areas through construction of dams and lakes, emphasis on deepening and widening of chain cement nala, removal of silt from available reservoirs, construction and repair of KT Ware dams, repair of seepage ponds, irrigation ponds and recharge of resources like wells and bore wells etc. The main objective of the scheme was to provide water security to 5,000 villages in every year and 25,000 villages in the five years from 2015 to 2019 by creating a decentralized system of water conservation and water management at the local level, especially in areas where water scarcity is high.

## 2. RESEARCH PROBLEM

About 82% of the total cultivable geographical area of the state is rain fed and 52% is drought prone or low rainfall. Because of this situation the hundreds of villages in Marathwada, Central Maharashtra and Vidarbha have been facing like drought situations for last several years. So the Government of Maharashtra try to improve the development of rural people and overall rural living standards along with the development of the agricultural sector through, water conservation and water management. Aurangabad district has an average annual rainfall (775 mm) less than other districts in Marathwada. As Vaijapur taluka is a rain fed taluka, the annual rainfall is 502 mm. Therefore, some parts of this taluka experiencing continuous drought-like conditions. During 2016 to 2020 JSA has been implemented in many villages of Vaijapur tehsil but we have selected only five villages namely Palkhed, Karanjaon, Dhondalgaon, Hadas Pimpalgaon and Sudamwadi in which the JSA work has been done the most. The present research paper have an attempt to explore which type of changes occurring at above five villages.

### 2.1 Research Objectives

The main objective of this research paper is to find out what changes have taken place at the village level

due to JSA in five villages of Vaijapur taluka. The following objectives have been set for.

- 1) To study the impact of JSA on the irrigation capacity and ground water level.
- 2) To study the role of JSA in drought eradication.

## 3. REVIEW OF LITERATURE

1. P.A. Vedpathak and P. A. Hangargekar [2] studied the correlation between Jalyukt Shivar abhiyan and land using pattern, irrigation potential and productivity of different crops at five villages (Mandava, Mamdapur, Yelda, Moha and Bodhegaon) of Ambajogai block district Beed of Marathwada region. In this article they noted that because of JSA increase in the availability of drinking water, level of ground water, area under irrigation and social and economic standard of people as well as reduce in migration.
2. Nikita Nanaware and wrudkar Abhijit [3] studied the impact of JSA on drought eradication in Anpatwadi village of Koregaon Taluka of Satara District. In this article they noted that, due to JSA the ground water level has increased as well as reduces in runoff and changes in cropping pattern. The reduction of runoff resulted in soil moisture retention.
3. Kolekar and Tapase et al. [4] "noted that JSA has become a people's movement in Maharashtra, and it is proving to be useful for irrigation and enhancement of groundwater level. Its implementation in other parts of country will be helpful to overcome permanently drought and water scarcity problems."
4. Sanade VM et al. [5] has conclude that at Sonavade village the problem regarding the scarcity of water in dry period is resolved but the problem of drinking water is not completely resolved by JSA. Further they noted the farmers' reported because of JSA the changes in cropping pattern, increases in yield, storage capacity of runoff and water level in the well has increased. Thus, farmers are able to provide protective irrigation to kharif crops.
5. Kiran Jadhav, Deepali Kulkarni [6] pointed that, due to implementation of JSA the ground water level, irrigation, cash crop, agricultural productivity, milk production and additional employment generation has increased as well as the overall life status of rural people has changed.
6. Chandrashekhar B. Pawar et al. [7] examined the impact of kadwanchi watershed programme on Kadwanchi village of Jalna district. They

noted that after implementation of the watershed programme in Kadwanchi village, the land holding, land use pattern, livestock, crop yield, area under cotton and wheat, horticulture and gross income of rural people has increased. They concluded that, watershed is powerful tool for socio-economic development of village.

7. N. Nagraj and et al. [8] has noted that because of Sujala Watershed project, in Kolar district of Karnataka 75 % failed bore wells are rejuvenated, the yield of bore wells were increased by 21 % and the productivity of crops has enhanced through protective irrigation. Which improving farmers' (small and marginal) income.
8. According to Water Conservation Department of the Government of Maharashtra, "The ground water level, area under crop in both the seasons, the production of agricultural crops, income and standard of living of farmers, safe irrigation facility for Kharif and Rabi season crops and cash crops has increased in the places where the work done by JSA" [9].

#### 4. METHODOLOGY

The present article tries to examine the impact of JSA on drought conditions, peoples' attitude towards this campaign and life expectancy of the local people. For this purpose a case study of five villages in Vaijapur Taluka (Aurangabad District) has been done. The

respondents selected through purposive sampling method. With the help of a survey questionnaire data has been collected from 70 respondents, fourteen of each villages. The other useful study material were downloaded from respective websites, news published in local newspaper and information booklets. The farmer's family from five villages are the universe of study.

#### 4.1 Study Variables

This study is based on the causal relationship between an independent variable and dependent variable. Here, JSA is considered as independent variables, while rural water management, agricultural productivity, drought severity, water supply costs and rural social change are considered as dependent variables.

#### 4.2 Data Analysis

Table 1. Shows the agencies who provide the fund for implementation of JSA. 74.28 % respondents said that the state government has provided funds for this scheme. 30% respondents Pani Foundation has provided funds for this work. 17.14% respondents agree that central government has provided funds for this scheme. 67.14% respondents suggest that Non-Governmental Organizations (NGOs) has provided assistance for this scheme. 24.28% said that relief funds are generated through local (public) contribution. 8.57% respondents shared that they have received funds from CISR fund.

**Table 1. Funding Agency for JSA**

Sr.No.	Characteristics	Frequency	Percentage
1	State Govt.	52	74.28
2	Central Govt.	12	17.14
3	Pani Foundation	21	30
4	Contribution of People	17	24.28
5	NGO	47	67.14
6	CISR Fund	6	8.57
	Total	70	100

*Source: field survey*

**Table 2. Means for public awareness**

Sr.No.	Characteristics	Frequency	Percentage
1	Gram Sabha	66	94.28
2	Rally	16	22.85
3	Drum biting	26	37.14
4	Volunteers Association/ Mandal	8	11.42
5	Distribute leaflets	12	17.14
6	Mobile	20	28.57
7	others	9	12.85
	Total	70	100

*Source: field survey*

**Table 3. Changes made in the village due to JSA**

Sr. No.	Characteristics	Frequency	Percentage
1	New reservoirs were created	59	84.28
2	Increase in irrigated area	64	91.42
3	Increase in agricultural production per hectare	44	62.85
4	Increase in ground water level	61	87.14
5	Increase in farmer's income	58	82.85
6	Water famine in the village was reduced	48	68.57
7	Water availability increased	40	57.14
8	Decrease in expenditure on Water supply	58	82.85
9	Increased perennial employment for labour	42	60
10	Increase in fodder availability	56	80
11	Decrease in Migration	53	75.71
12	Increased use of toilet	53	75.71
13	None of these	10	14.28
	Total	70	100

Source: field survey

Table 2 shows the way they have used as a means for public awareness about JSA. 94.28 % respondents said that the gramsabha is useful means for public awareness. 37.14% respondent noted that drum biting is useful. 28.57% said mobile phone is useful. 22.85% respondents suggest that public rally is useful. 17.14% respondents noted that distribution of leaflets is useful. 12.85% said other medium is useful whereas 11.42% respondents agree that volunteers association is useful.

From the Table 3 it can be seen that 84.28% respondents suggested that new water reservoirs have been created in the villages by JSA. 91.42% respondents said this scheme has increased the irrigated area at village level. 62.85% respondents agree that the per hectare agricultural production has increased. 87.14% respondents suggest that the ground water storage has increased. 82.85% respondents acknowledged that the annual income of the farmers has increased. According to 57.14% respondents, the ground water level in village has increased. 68.57% respondents agreed that the water scarcity in the village has reduced. 82.85% respondents said that, the water supply through tanker

has been stopped. 60% respondents suggest that, JSA has created optimum employment at village. 75.71% respondents shared that JSA has helped to the stop migration for employment. 80% respondents said that fodder for cattle was available at the village. 75.71% respondents agreed that the campaign has increased the use of toilets in the villages. Whereas 14.28% respondents noted that there is no change in the villages due to JSA.

The Table 2 shows which activity are carried out by villagers for the eradication of drought. The data indicates there are no planning about the domestic water consumption. Lack of plan to produce low water crops, to bann on production of perennial irrigated crops and . There are no restrictions on the extraction of excess groundwater. 27.3% respondents noted that the villagers have emphasized on maximum use of drip irrigation. 36.4% respondents suggested that the villagers have started tree plantation and forest conservation but the ground reality is different. The villagers have not taken up the task of water conservation and storage. Villagers do not seem to have a plan on how to use enough water for agriculture.

**Table 4. Nature of action plan for drought eradication**

Sr. No.	Characteristics	Frequency	Percentage
1	Domestic Water Use Management	NA	NA
2	Low water crop production	NA	NA
3	Prohibition on production of perennial irrigated crops	NA	NA
4	Restrictions on additional groundwater abstraction	NA	NA
5	Use of Micro Irrigation	06	27.3
6	Tree Planting and Forest Conservation	08	36.4
7	Water Conservation	NA	NA
8	Adequate water use plan for agriculture	NA	NA
	Total	22	100

Source: field survey

## 5. RESULTS AND DISCUSSION

After the observation of JSA work which are carried out at five villages of Vaijapur tehsil we have some findings there are followings.

1. 74.28% respondents said that the state government has provided funds for this scheme.
2. 67.14% respondents suggest that Non-Governmental Organizations (NGOs) has provided assistance for this scheme.
3. 94.28 % respondents said the Gramsabha is useful means for public awareness regarding implementation any scheme at village level.
4. 91.42% respondents said this scheme has increased the irrigated area at village level.
5. 87.14% respondents suggest that the water storage capacity has increased.
6. 84.28% respondents suggested that new water reservoirs have been created in the villages by JSA.
7. 82.85% respondents acknowledged that the annual income of the farmers has increased by JSA.
8. 82.85% respondents said that, the water supply through tanker has been stopped.
9. 80% respondents said that fodder for cattle was available in the village.
10. 75.71% respondents shared that JSA has helped to the stop migration for employment.
11. 75.71% respondents said that the uses of toilets has increased in the village.
12. 68.57% respondents agreed that the water scarcity in the village has reduced.
13. 60% respondents suggest that, JSA has created optimum employment opportunities at village.
14. According to 57.14% respondents, the ground water level has increased.
15. 97.9% respondents agree that this scheme has solved the problem of drinking water.
16. 100% respondents agreed that the JSA is useful to overcome on drought.
17. 85.4% respondents says this scheme has benefited for both (rabi and kharif) seasons.
18. 95.8% respondents said Maha Vikas Aghadi government has stopped the said scheme which is unfair.

## 6. SUMMARY AND CONCLUSIONS

The ground water recharging is more important. 'Because out of the total irrigated area in India around 60 % irrigation, 80 % of the domestic water supply in rural areas and over 50% in the urban areas are met through groundwater' [10]. So the Government of Maharashtra announced an ambitious scheme called Jalyukat Shivar Abhiyan in 2014 with the objective to

address water issues by creating a decentralized system of water conservation and making Maharashtra drought free in the year 2019. Today, water conservation works are being carried out on a large scale in the state with the participation of Government of Maharashtra and various NGOs such as, Pani Panchayat, Vanarai, Jain Foundation, Yashwantrao Chavan Foundation, Nam Foundation, Pani Foundation and Art of Living. During the period of 2016-2017 to 2019- 2020 in five villages of Vaijapur tehsil the present scheme has been implemented. After implementation of the scheme the following changes have taken places in above villages, such as, the water storage capacity, ground water level, agricultural productivity, farmers' annual income and use of toilets, has been increased as well as, the migration of labour and cost of water supply has decreased in that villages. Although, the CAG stated that "Despite spending Rs. 9633.75 crore, the Abhiyan had little impact in achieving water neutrality and increasing ground water level". But the report water conservation department of the Government of Maharashtra and our findings are different. Our data shows that, the ground water level in this villages has been increased in this area.

Through water, soil and forest conservation, and restrictions on tree felling and grazing the villages namely Kadavanchi, Naigaon, Ralegansiddhi, Hivrebazar and Gavdewadi in Maharashtra have been developed. But in case of five villages of Vaijapur taluka they have only emphasizes on water storage and water conservation work and neglect to other important activity. For all-round development of village not only water storage is important, but also along with ban on grazing, ban on tree cutting, restriction on excess use of available water, ban on perennial water requiring, timetable of water use, preparation of water budget, use of micro-irrigation, restriction of excess water abstraction and removal of silt from water reservoirs are necessary. Because there is no other scheme to provide sustainable water in rural areas. The above measures are cannot be ruled out in these villages, the possibility of the villages becoming drought prone again in the future. If this scheme is effectively implemented in every village, it will not take long time to end water poverty and make a drought-free Maharashtra.

## 7. RECOMMENDATIONS

To permanent overcome on drought and for the development of villages, the following work needs to be undertaken.

1. Tree plantation and forest conservation.
2. Animal husbandry and pasture development.

3. Water generation and water conservation.
4. To plan optimum use of water for agriculture.
5. Strengthening of drinking water resources.
6. Formation of water users' association.
7. Planning for efficient use of available water.
8. Compulsion for cultivation of crops that require less water.
9. Ban on production of perennial water intensive crops.
10. Restrictions on excess groundwater withdrawal.
11. Enforcing the use of micro irrigation.
12. Using only wells instead of bore wells for irrigation purpose.

### CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

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### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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