

# Impact Assessment of Jalyukt Shivar Abhiyan for Three Villages

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**Abstract** - Maharashtra has constantly confronted dry seasons. The dry spell has endured for four back to back years and has influenced drinking water security and harvest creation and profitability seriously everywhere throughout the Maharashtra state. Maharashtra government has propelled a program named Jalyukt Shivar Abhiyan (JSA) to make Maharashtra a dry season free state by 2019. In this investigation, fundamental point of the investigation is to visit JSA work, including stream developing and broadening, Concrete nala bund, farm pond, well recharge, compartment bunding and so forth and gather the information according to evaluation technique given in GR(Government Resolution) - 2014 water protection office. Is found that water level of wells in vicinity of project area increased up to 2-3 m and considerable reduction in migration of people, no. of tanker feeding than previous years decreased by 90 % considerably. Increase in cultivable area up to 87% and crop production increased by 30-50 %.

**Key Words:** Impact Assessment, Jalyukt Shivar Yojana (JSY), JSA Structures, JSA beneficiary.

## 1. INTRODUCTION

Maharashtra, the second largest state in India, both in population well as in area, has very limited assured irrigation considering drought-like situation occurring frequently in the state Maharashtra government has launched a new program named Jalyukt Shivar Yojana to make Maharashtra a drought-free state up to 2019. (Nikita & Khadake, 2019)

It is learned that the Osmanabad district has a varied climatic condition wherein taluka like Tuljapur, Kalamb, Bhum-Paranda-Washi, Lohara, and Umarga are highly drought prompt. So, it was decided to consider one of the taluka, Umarga as a case study for the present work wherein the Jalyukt Shivar program is implemented. Accordingly, the geographical and various other parameters are explained. The present work is undertaken with a view to studying the impact of various projects under JSA. Yenegur, Kaddora and kalnimbala villages as representations of Umarga tahsil, where they are constructed, by visiting the sites and carrying the field survey in the form of a questionnaire.

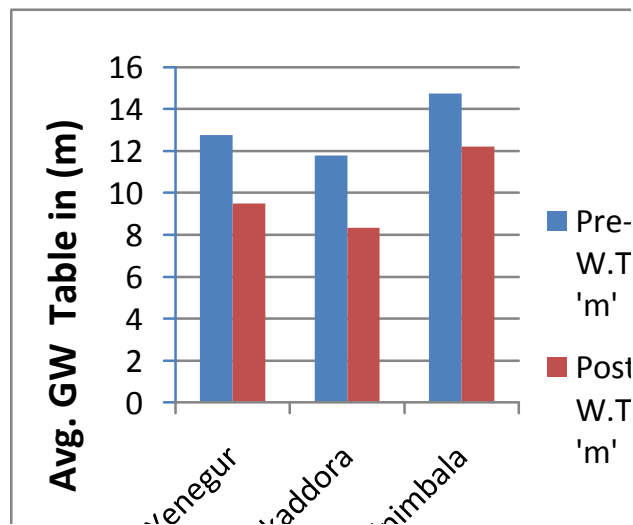
## 2. LITERATURE SURVEY

In 2017, R. T. Pachkor, et.al, [1] studied a case study of Pusad region in Maharashtra which is on the assessment of works

under the Jalyukt Shivar Campaign. In 2019, Ms. Nikita Nanaware, Dr. N.V.Khadake [2] were studied the impact of JSA works. A Case Study of Ranzani Village Tal-Pandharpur, Solapur District, Maharashtra. the author concluded, Approximately 96% of the total area is cultivable through JSA works. Due to JSA, Rabi crops are taken in some lands, which results in maximum crop yield. In 2017, Potekar U. P. et.al, [3] had studied Jalyukt Shivar Abhiyan and Micro-irrigation in Maharashtra. In this study that due to Jalyukt Shivar Abhiyan the Improvement into efficiency and financial state of farmers. In the year 2017 Mr. Khillare N. J.[4] studied analysis of delays in work under the Jalyukt Shivar campaign. The author concludes that a significant segment of the venture process duration is being consumed by undertaking inception, detailing, and endorsement stages than the real development stage.

## 3. METHODOLOGY

To study the JSA DPR and understand whole JSA process. To assess the location and quality of works done under JSA. The on-field assessment is intervention-centered. All the soil and water conservation work need to be visited in the village and need to be geo-tagged. The quality of works needs to be assessed (dimensions, construction quality, engineering appropriateness, location suitability, adherence to watershed principles etc. The assessment of works on above criteria needs to be done by simple measurements, primary investigation, visual inspection and farmer/resident interviews. To understand the impact of works. Along with the quality check, to assess the utility of the work done and benefits accrued. The benefits can be in terms of increased groundwater availability or reduction in soil erosion or increase in farm incomes. This needs to be assessed through visual inspection and stakeholdres interviews. To pay special attention to areas which were not addressed and solution for the same.(Sanade et al., 2019).The impact of water conservation works of "Jalyukt Shivar Abhiyan" at Yenegur, Kaddora and Kalnimbala villages was studied with respect to land use pattern, irrigation potential and productivity of different crops of the village. The data was collected by using standard survey format (questionnaire) during personal interview method in the village. This data was compared with previous data to assess the impact of soil and water conservation structures on irrigation and crop productivity.



(Source: Department Of Agriculture, Government of Maharashtra.)

In the study area of Yenegur, Kaddora and Kalnimbala village wells which are located in the zone of influence of the water conservation structures were selected for ground water level monitoring. Data on the water level in the wells were monitored fortnightly from the June 2018 to May 2019. The information regarding the water levels in wells before village

development was collected from Office of Tata Institute of social science, Tuljapur Dist. Osmanabad. The water levels of selected well before and after development of JSA works were compared for assessing the impact of water conservation structures on ground water recharge.

Table -1: Details of structures constructed under Jalyukt Shivar Yojana in project area

Sr no.	Type of treatment	Unit	Yenegur	Kaddora	Kalnimbala		Bottom	0.5"
1	Compartment bunding	ha	653	169.22	1177.96	1	Compartment bunding	0.5"
2	Cement Nala Bund	No.	7	2	5	2	Cement Nala Bund	
3	Deep CCT	ha	351	204.29	250	3	Deep CCT	
4	LBS	No.	250	200	250	4	LBS	
5	DOHA	No.	35	9	14			
6	WADT	No.	200	50	50			
7	Farm pond	No.	9	5	1			
8	Recharge shaft	No.	24	15	12			
9	Sprinkler	No.	50	8	31			
10	Drip	No.	45	4	16			
11	Repairing of old water harvesting structures (KT WEIR)	No.	3	1	0			
12	Earthen nala bund	No.	9	2	5			

(Source: Department of Agriculture, Government of Maharashtra.)

**Compartment Bunding** means entire field is divided into small compartments with pre determined size to retain the rainwater where it falls and arrest soil erosion. In Yenegur, Kaddora and kalnimbala compartment bunding is implements over a 653 ha, 169 ha, 1177 ha respectively. **Cement Nala Bund (CNB)** is a bund/obstruction across the nala or stream constructed by using cement concrete to obstruct and store the flowing water. In Yenegur, Kaddora and kalnimbala 7, 2, 5 CNB constructed respectively. **Contour trenching** is an agricultural technique that can be easily

applied in arid areas to allow for water, and soil conservation, and to increase agricultural production. In Yenegur, Kaddora and kalnimbala contour trenching is executed over a 351 ha, 204.29 ha, 250 ha respectively **Farm Ponds** is the most effective water harvesting structure but Indian farmers do not put it to regular use. Farm pond is of small size depression mode for collection of surface runoff and the collected water will be used in scarcity time. These farm ponds are helpful for ground water recharge, if a dug well or a bore well is located near such a farm pond. In

Yenegur, Kaddora and kalnimbala 9,5,1 constructed respectively. **Recharge Shaft** is artificial recharge to ground water aims at augmentation of ground water reservoir by

modifying the natural movement of surface water utilizing suitable civil construction techniques. In Yenegur, Kaddora and kalnimbala 24, 15, 12 constructed respectively

**Table -1: Details of kharif, Rabi and Summer seasonal crop area, yield and production.**

Name of villages.	Season	Pre project		Post project		Bottom	0.5"
		Area (ha)	Total Production (MT)	Area (ha)	Total Production (MT)		
Yenegur	Kharif	1037	251	1433	925	1	0.5"
	Rabi	440	227	685	553	2	0.5"
	Summer Seasonal Crop	75	49	195	220	3	0.5"
						4	0.5"
Kaddora	DOHA	493	128	660	493		
	WADT	299	165	370	299		
	Farm pond	43	26	80	91		
Kalnimbala	Recharge shaft	537	134	1433	925		
	Sprinkler	390	184	685	553		
	Drip	40	24	105	139		

(Source: Department of Agriculture, Government of Maharashtra.)

Due to water conservation treatment, the soil moisture remains longer as the groundwater level increases. Therefore, productivity is increased by affecting the productivity of natural crops. In Yenegur, Rs.2.55cr, Kaddora Rs. 0.93cr, Kalnimbala Rs.0.97cr, village total amount was sanctioned through government under this scheme out of which 1.32Cr, 0.62Cr, 0.68Cr amount utilized over various works executed successfully under JSA in the three villages.

#### 4. Results and discussions

The initial water level water levels of Yenegur, Kaddora, and Kalnimbala are 12.15m, 11.80m; 14.75m which are increased after JSA works up to 9.50m, 8.35m, 12.20 m respectively. Farmers reported increase in yields due to JSA activities. Some farmers reported cropping pattern change due to JSA works. The average crop yield of kharif season in these three villages was 171 MT. After the implementation of Jalyukt Shivar Abhiyan, the yield kharif crop increased to 380 MT.

#### 5. CONCLUSION

It is concluded from the above work, there is an increase in agricultural productivity by 30 to 50 % than in previous years after the implementation of JSA. The water intervention structures play a key role by staying water for some time and allow sufficient time for water to percolate into the ground. Therefore, an increase in the groundwater table in the project area in a measurable indicator of the success of the Jalyukt Shivar campaign. It is observed that approximately 87% of the total area is cultivable through JSA works than previous years. There is increase in soil moisture content due to contour bunding helping in crop yield. It was

found that during the implementation of Jalyukt Shivar Campaign's earthen nala bunding, K.T. weirs employment has been generated. Reduction in tanker by 90 percent. Result of JSA in Agricultural productivity also fodder production increased due to this milk production also increased.

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## BIOGRAPHIES



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