

Effects of Jalyukt Shivar Yojana

Prof. Burungale.A.A.¹

Shinde Vishwajeet D.², Khatake Manoj A.³, Ranvare Vishal B.⁴, Dhole Avdhut G.⁵

¹ Assistant Professor, Civil Engineering, SPPU Pune, Maharashtra, India

² Student, Civil Engineering, SPPU Pune, Maharashtra, India

³ Student, Civil Engineering, SPPU Pune, Maharashtra, India

⁴ Student, Civil Engineering, SPPU Pune, Maharashtra, India

⁵ Student, Civil Engineering, SPPU Pune, Maharashtra, India

ABSTRACT

Water is important because it is essential to life on the earth. It is one of the most important natural resources and is vital for the Agricultural and Economical development. In Maharashtra state nearly 82% area of state falls in Rain-fed sector and 50% area is drought prone, uncertain, insufficient and irregular rainfall pattern adversely affects Agriculture. Drought occurs frequently resulting shortage of water for drinking and irrigation. In view of this, the present paper based on secondary data intends, The state government's project 'Jalyukta Shivar Abhiyan' on January 26, 2015 setting targeting 25 lakh hectares of land under irrigation in three phases between 2015 to 2018. To look into the a long term measures to mitigate drought with help of integration and convergence of various schemes implemented by various departments and pulling funds from all resources like Central, State, NGO, People's participation etc. under the programme, Micro-irrigation system would be encouraged for proficient use of water, hence increased the irrigation area. It is found that due to Jalyukta Shivar Abhiyan rainfall run-off, soil erosion declined and recharge of ground water level and water storage capacity also increased under irrigation area. Improving productivity and socio- economic condition of farmers.

Keyword : - Jalyukta shivar yojana, pani foundation , water conservation.

1. Introduction

Water is a natural resource which supports life. It must be used properly. But on practical basis the proper management and planning of water resource is not done properly. Because of which there is huge water crises. Maharashtra government has launched a new programme named 'Jalyukta Shivar Abhiyan' to make Maharashtra a drought-free state by 2019. The programme aims to make 5000 villages free of water scarcity every year.

Under the programme, micro-irrigation systems would be encouraged for proficient use of water, hence increasing the irrigated area. Government will be initially allocating Rs 1,000 crore for the scheme. Moreover, all the existing water conservation schemes will be now accumulated under this scheme. With several parts of Maharashtra still reeling under the drought, the state government has launched the scheme to combat increasing number of suicide by the farmers of the state. Maharashtra is a drought prone area, especially its region of Vidarbha and Marathwada. In 2014, Vidarbha was deficit by 14 per cent, while Marathwada was deficit by 42 per cent, putting both the regions in the category of drought.

Incidents of farmers' suicide have become very common in these regions. High dependency on Monsoon rain is the biggest factor behind farmers taking this extreme step. According to an English Daily, 986 cases of farmers suicide were reported from Maharashtra in 2014. In 2013, there were 11, 744 farmer suicides reported across the country out of which nearly 27% highest for any state was from Maharashtra. the main reason to suicide is water scarcity, and loan, if this programme goes smoothly and result oriented, farmers from much hit area would be benefitted, and it shall increase the water level of villages which has lowered to 1000 ft. some places in maharashtra.

1.1 Use of water in India:

Rainfall is a basic resource for all the forms of water in semi arid tropics of India. Though the annual average rainfall of the country is 1200 mm, it varies in both space and time affecting the availability of water for different sectors. India uses 80% of the available water in agriculture keeping the remaining 20% for drinking, industry and energy sectors. The growing population puts tremendous pressure on the water resources. The annual per capita water availability has decreased from 5000 m³ in 1950 to 1300 m³ in 2010 and projected to decrease further to below 1000 m³ by 2025. Added to this, the country may face climate change in future predicting more frequent floods, droughts, extreme events of rainfall etc. with increased temperature. The food grain production in India is contributed by irrigated and rainfed areas by 60% and 40% respectively. Irrigated areas have reached plateau in the yield but rainfed areas are considered to offer future scope for increasing food production. Rainfed area with 55% net cultivated area contribute 40% of food grains and support 60% of livestock population. Most of the pulse and oil seeds production (80%) comes from rainfed areas. Rainfed areas suffer from severe land degradation and poor socio economic base of farmers

1.2 Objective

Considering drought-like situation occurring frequently in the state, Jalyukta Shivar

campaign is being taken up under 'water for all - drought-free Maharashtra 2019':

1. Harvesting maximum rainwater in the surrounding of village itself. Increasing level of groundwater.
2. Increasing area under irrigation in the state - Increasing assured water for farming and efficiency of water usage.
3. Guaranteeing availability of sufficient water for all in the state - Increasing water
4. Extracting sludge from existing water sources through public participation and increasing water storage of water sources.
5. Encouraging tree plantation and planting trees.

2. Literature Review

GOVERNMENT DATA - In the state of Maharashtra, inconsistency of rains in the very times of crop growth and discontinuity of rains create drought-like situation and agriculture field is heavily impacted. Considering irrigation facilities in the state, factors mainly challenging development of state are - limited irrigation facility (according to report of water and irrigation committee, even if entire irrigation capacity is utilized, 44% area will remain dryland, large coverage of drought-prone area (159 Lacs Hectare which means 52% of cultivable area, large proportion of poor and downgraded land (42.20%), increasing uncertainty in the agricultural field due to uneven, unpredictable, and intermittent rainfall. For last four decades, heavy ups and downs have been observed in the production of crops on dryland in the state. Less availability of water is a major factor responsible for this situation. To make water available for assured farming and for drinking, solutions under water conservation if strategically designed and implemented in integrated manner with coordination of all departments, provision for drinking water and protected irrigation for crops can be definitely made.

1. Pachkore & Prabat 2017[1] studied that JYS is the Government of Maharashtra's program to provide water for all and make villages scarcity-free. Maharashtra has been Organized by Indian Institute of Technology Roorkee and National Institute of Hydrology, Roorkee during February 26-28, 2020 witnessing increasing agricultural and drinking water stress in recent years. Maharashtra government has launched a new program named 'Jalyukta Shivar Abhiyan (Campaign)' in a bid to make Maharashtra a drought-free state by 2019. The JYS proposes a framework for village level water balance calculation which includes estimation of crop-water requirements, drinking water stress etc. JYS promotes an integration and coordination between various government agencies and program during planning and implementation levels and stresses on people's participation as one of the key objectives. The program aims to make 5000 villages free of water scarcity every year.

2. Mr. Potekaret U.P. & Pawar 2017 [2] concluded that water is important because it is essential to life on the earth. It is one of the most important natural resources and is vital for the Agricultural and economic development.

In Maharashtra state nearly 82% area of state falls in Rain-fed sector and 50% area is drought prone, uncertain, insufficient and irregular rainfall pattern adversely affects Agriculture. Drought occurs frequently resulting shortage of water for drinking and irrigation. In view of this, the present paper based on secondary data intends, the state Government's project 'Jalyukta Shivar Abhiyan' on January 26, 2015 setting targeting 25lakh hectares of land under irrigation in three phases between 2015 to 2018. To look into the long term measures to mitigate drought with help of integration and convergence of various schemes implemented by various departments and pulling funds from all resources like Central, State, NGO, People's participation etc. under the programme, Micro-irrigation system would be encouraged for proficient use of water, hence increased the irrigation area.

3. Mr. Khillare N.J. 2017 [3] studied that Jalyukt Shivar (JSA) Campaign is a flagship programme of Government of Maharashtra, aims to bring water empowerment to the drought-affected villages to make Maharashtra Drought Free by the year 2019. This Campaign is first of its kind organized action plan wherein many departments are collectively & collaboratively working towards a common goal i.e., 'Water for All'. The Campaign is mainly a combination of various pre-existing schemes related to water conservation but with certain fine tuning. The targets in the first phase of JYS Campaign, which were having a time frame of a year, could not be achieved even after two years. The Government of Maharashtra has initiated several measures to expedite the campaign but these initiatives have only focused on reducing cycle time of stage.

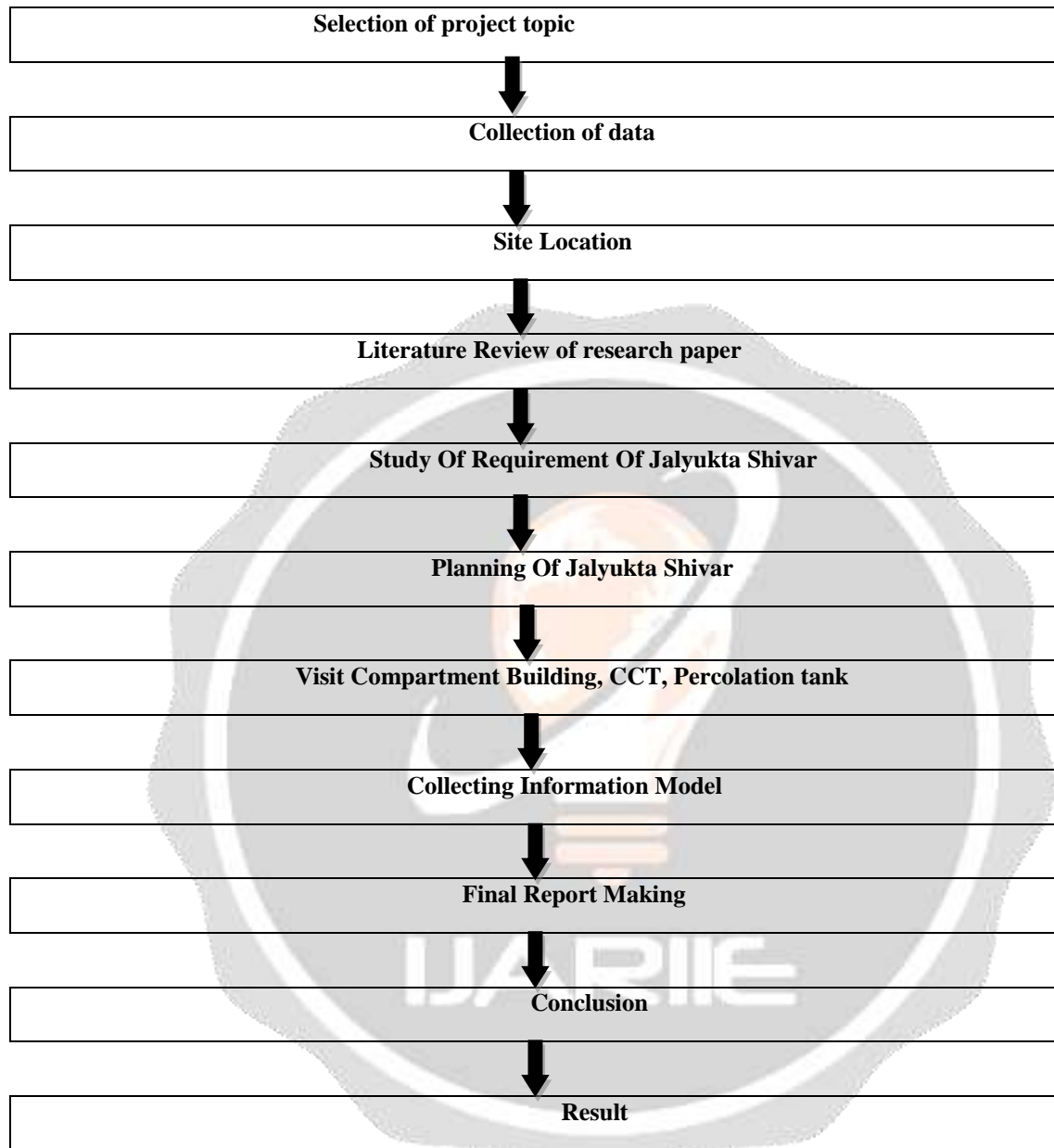
4). Gautam, R.S. Bana 2019 (4)- In this paper authors discuss the drought is temporary reduction in water or moisture availability significantly below the normal amount for a specific period. Drought is categorized into meteorological drought, hydrological drought, agricultural drought and socio-economic drought

5) Sachin Tiwale, Amit Deshmukh (2018)- The paper analyses the Manjara River Rejuvenation work implemented in Latur (Maharashtra) under the leadership of Art of Living and RSS JankalyanSamiti in the summer of 2016. The study analyses the contribution of the project towards its intended purpose and proves that the rejuvenation of Manjarariver has not contributed even a single drop to the drinking water supply of Latur city, making all the efforts futile.

3. METHODOLOGY

Numerous water conservation works were executed throughout the state of Maharashtra under the aegis of JSA. Main focus of these water conservation works to provide proper solution to the local problems of water scarcity for irrigation, drinking and other purposes. Action plan for water conservation works was prepared at village level for water harvesting and replenishment of groundwater by implementing these works comprehensively through coordination of all the concerned departments and other stakeholders. After completion of the works in the village, it has to undergo a third party assessment for the completed works as per the guidelines prepared by the Indian Institute of Technology (IIT), Mumbai and submit a water compliance report to the District Administration. In present study, the water conservation works carried out under JSA in three villages in Purandar taluka in Pune district and few works carried on the basis of Shirpur Pattern in Dhule district were assessed for identifying the strengths and weaknesses of JSA and knowing the scale of community participation in these works and appropriate measures are suggested for the shortcomings observed in the planning and implementation of these works. It was planned to undertake various water conservation works under one umbrella of JSA with Water Conservation Department as a pilot and comprising of other Government Departments, Voluntary/Non-Govt. Organisations (NGOs) like Paani Foundation, Tata Trust, etc, donations under CSR fund by companies and most important is people's contribution through community participation.

3.1 flow chart



FARM BUND

3.1.1 Introduction:

Being one of the most often used [precipitation harvesting](#) methods in agriculture, the main purpose of bunds is to slow down and filter run-off water from rainfall and hence reduce [soil degradation](#). As the water flow is decelerated, higher amounts can infiltrate in the soil, leading to increased soil moisture. Furthermore, water is spread more evenly, which can prevent gully formation. Bunds are basically the opposite of [field trenches](#), where slots and trenches are excavated to stop, store and infiltrate floodwater and surface run-off.

3.1.2. Contour Bunds:

Contour bunds can either be made of stones or soil (sometimes in variation with crop remains). They are constructed along a contour in order to best slow the water flowing down the slope, which increases the *green water* pool of the soil and prevents erosion. There should always be several *bunds* next to each other, whereas the distance between them depends on the slope and the soil type of the field: the steeper the ground, the closer the *bunds*. *Contour bunds* can be used for both yearly field crops as well as the planting of trees. Their use is widespread throughout *Africa*. In northwestern *Somalia*, *contour bunds* have reportedly increased yields of sorghum by up to 80%.



GABION STRUCTURE

3.1.3. Description:

Gabions are rectangular baskets fabricated from a hexagonal mesh of heavily galvanized steel wire. The baskets are filled with rock and stacked atop one another to form a gravity type wall. Gabions depend mainly on the interlocking of the individual stones and rocks within the wire mesh for internal stability, and their mass or weight to resist hydraulic and earth forces. Gabions are a porous type of structure that can sometimes be vegetated. Gabions are considered to be a “hard” structural solution that has minimal habitat and aesthetic value.

The structure made from the dubber and wire mesh, across the nala bed.

Suitable, simple and less expensive for the sites where, it is not possible to provide soil bunds due to non availability of proper location for the weir and cement bunds due to pukka foundation problem.

Recharge to nearby well though percolation of stored water in the nala bed.



LOOSE BOULDER STRUCTURES AND RIVER DEEPENED:

3.1.4. Loose boulder structure:

A Loose boulder check dam is a small barrier constructed of rock, gravel bags, Sand bags, fiber rolls, or reusable products, placed across a constructed swale or drainage ditch. These check dams reduce the effective slope of the

channel, there by reducing the velocity of flowing water, allowing sediment to settle and reducing erosion and can provide a 'drought-proof' water supply (from ground water). Groundwater recharge collects water during wet season for use in dry season, when demand is highest.



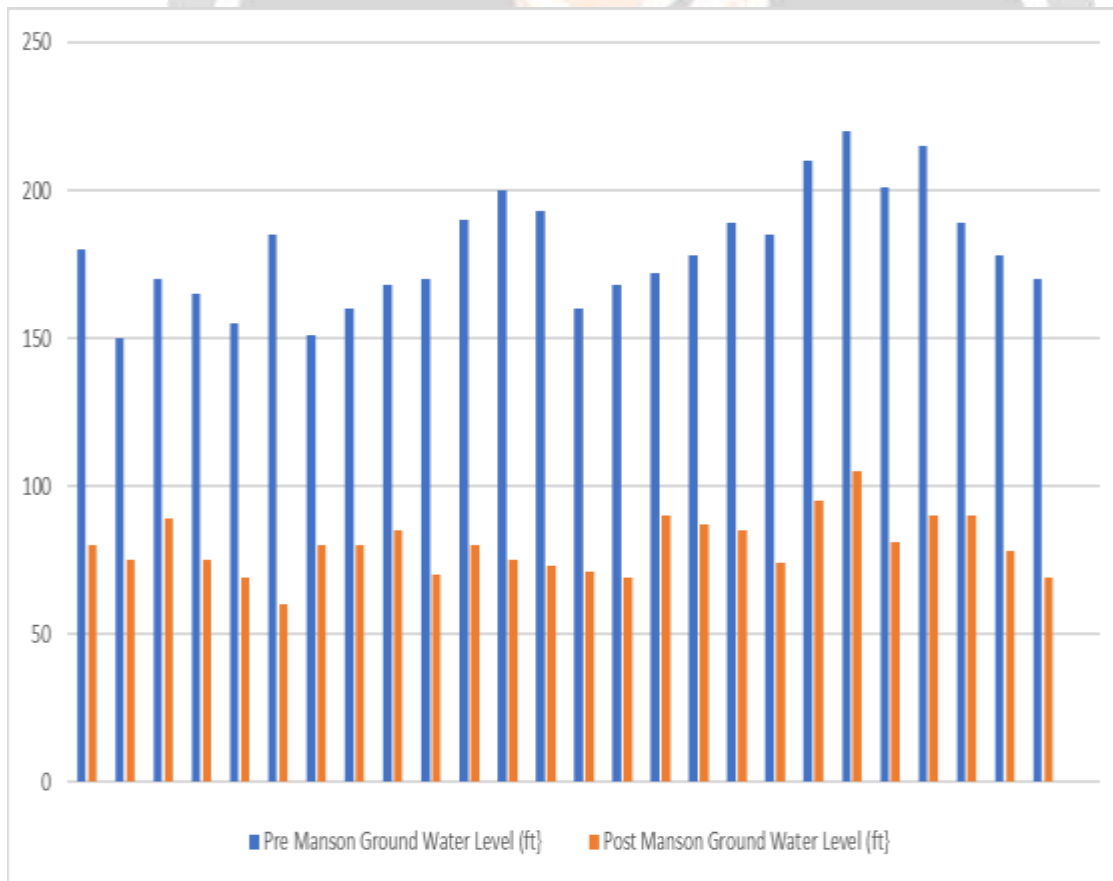
4. Results and Discussion

Pre And Post Ground Water Level Table

No. of Borewell Survey	Pre Mansun Ground Water Level (ft)	Post Mansun Ground Water Level (ft)	Total Increase Ground Water Level (ft)
1	180	80	100
2	150	75	75
3	170	89	81
4	165	75	90
5	155	69	86
6	185	60	125
7	151	80	71
8	160	80	80
9	168	85	83
10	170	70	100
11	190	80	110

12	200	75	125
13	193	73	120
14	160	71	89
15	168	69	99
16	172	90	82
17	178	87	91
18	189	85	104
19	185	74	111
20	210	95	115
21	220	105	112

Pre And Post Ground Water Level Graph



Result- Pre Manson-Ground Water Level and Post Manson Ground Water Level Increased By 70 to 125 Ft.

5. CONCLUSIONS

Jalyukta Shivar Abhiyan is one of the most popular development Programme implemented across the Maharashtra State. This Abhiyan has been directed towards the Promotion of overall economic and agricultural development. Improve Socio-Economic Status of the Farmers in the Drought-Prone area. Improvement of Environment Through Tree Plantation.

6. REFERENCES

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