

## **Pilot Study of Jalyukta Shivar Abhiyan Prashant Awsarmal**

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**Abstract:** Maharashtra has always faced droughts. The drought has persisted for four consecutive years and has affected drinking water security and crop production and productivity severely all over the Maharashtra state. Maharashtra government has launched a new program named JalyuktShivar Abhiyan to make Maharashtra a drought-free state by 2019. The JSA proposes a framework for village level water balance calculation which includes estimation of crop-water requirements, drinking water stress etc. JSA 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. This transformation has been possible with concentrated efforts towards developing watersheds, improving ground water levels, de-silting and decentralizing water sources and increasing the area under irrigation. In this study we have select the Aurangabad district. The main aim of the study is to determine the quality of CNB's located in Aurangabad district.

**Keywords:** Cement Nalla Bund, Jalyukt Shivar Abhiyan

### **1. Introduction**

#### **1.1 The Project Jalyukt Shivar Abhiyan (JSA)**

Jalyukt Shivar Abhiyan Water for All is one of the flagships programmes of the Maharashtra state launched in December 2014 on campaign mode to make Maharashtra a drought free state by year 2019. The State Government has aimed at making 5000 viilages in the state drought free in five years period. JSA is also aimed to harvest rainwater within the village boundaries, thereby increasing ground water levels.

#### **Scope of JSA**

This programme has been implemented as a campaign through government departments, voluntary organizations, public participation and funds available with private businessmen (CSR), to ensure nonoccurrence of drought in future in the state.

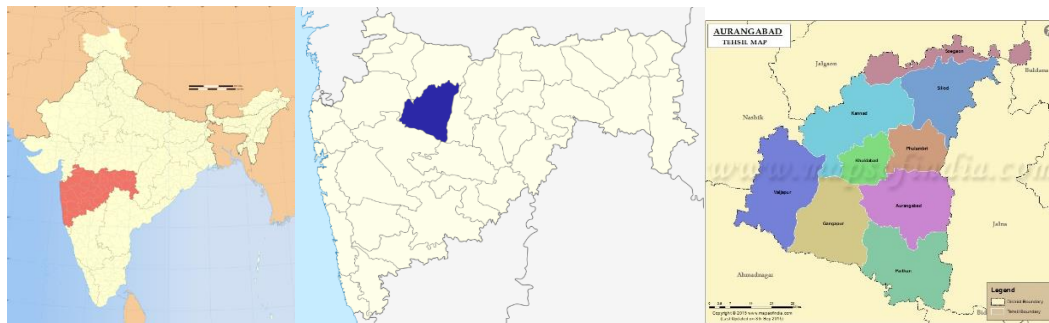
#### **Objectives of project**

- 1 To determine the Quality of structure.
- 2 Performing preliminary inspection of the structure.
- 3 Visual inspection to highlight critical area.
- 4 Performance of NDT test.
- 5 Finding actual strength of the structure.
- 6 Suggesting remedial measures.

#### **1.2 District Profile of Aurangabad**

Aurangabad district is the most important district of Marathwada region in the Maharashtra state. This district is situated at the center of the Maharashtra state and known as the gateway of Marathwada. The Aurangabad District's total area is 10,100 Sq. km. Out of which 141.1 Sq. Km

is Urban area and 99,587 Sq. Km is Rural Area. The Aurangabad district's North Longitude (Degree) is 19 and 20 and East Longitude (Degree) is 74 to 76. Administratively, the district is divided into 9 blocks with district head quarter at Aurangabad. The district comprises of 861 Gram Panchayats working towards rural development activities of the district. The total numbers of villages are 1341.



INDIA

MAHARASHTRA

AURANGABAD DISTRICT

Figure 1: Location Map

## CEMENT NALLA BUND



Figure 2: Cement Nalla Bunds

Cement nalla bunds are constructed across small streams having gentle slope and feasible both in hard rock as well as alluvial formations. The water stored in these structures is mostly confined to stream course and the height is normally less than 2m. These are designed base on stream width and excess water is allowed to flow over the wall. In order to avoid scouring from excess run off, water cushions are provided at downstream side. To harness the maximum run off in the stream, series of such check dams can be constructed to have recharge on regional scale.

## 2. Literature Review

1. **Pachkore & Prabat 2017<sup>[1]</sup>** studied that JYS is the Government of Maharashtra's program to provide water for all and make villages scarcity-free. Maharashtra has been

witnessing increasing agricultural and drinking water stress in recent years. Maharashtra government has launched a new program named 'Jalyukt 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. The scheme aimed at solving water woes of draught- prone regions is already a hit with farmers as many villages are inching towards becoming water-sufficient. This transformation has been possible with concentrated efforts towards developing water sheds, improving ground water levels, de-silting and decentralizing water sources and increasing the area under irrigation. The project involves deepening and widening of streams, construction of cement and earthen stop dams, work on lakes and digging of farm ponds. After completion of irrigation projects in next two years, 50% area will be under irrigation. For the rest 50%, rainwater harvesting and decentralizing water sources are the only options to solve the issue of water scarcity. The JSA is a successor of many earlier watershed programs which have already been implemented, and some of which are ongoing, such as the IWMP. With unique initiative like Jalyukta Shivar, water scarcity will surely be a thing of the past.

2. **Mr. Potekaret U.P. & Pawar 2017** <sup>[2]</sup> 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. It is found that due to Jalyukt Shivar Abhiyan rainfall run-off, soil erosion declined undercharge of ground water level and water storage capacity also increased under irrigation area. Improving productivity and socio- economic condition of farmers.
3. **Mr. Khillare N.J. 2017** <sup>[3]</sup> 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 particular stage. Also;

the government is only monitoring a construction phase of project cycle whereas delays in pre-construction activities are not being taken into account. The aim of this study is to optimize the cycle time by highlighting all such areas where substantial delays are occurring and proposing measures to reduce such delays thereby reducing the overall project cycle time for the JYS works. For data collection interview method and field visit approach has been adopted. From the collected data, project cycle time has been developed which is then compared with case studies, to highlight the delaying events. Results from case studies showed that major portion of project cycle time is being consumed by project initiation, formulation, and approval phases than actual construction phase.

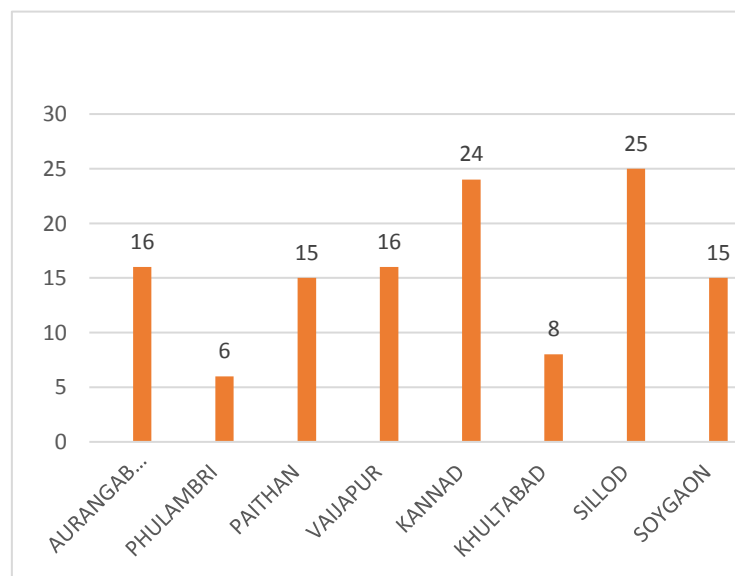


Figure 3. Work Sanctioned as per talukas in year 2017-18

### 3. Rebound Hammer Test (NDT)

The rebound hammer test measures the elastic rebound of concrete and is primarily used for estimation of concrete strength and for comparative investigation.

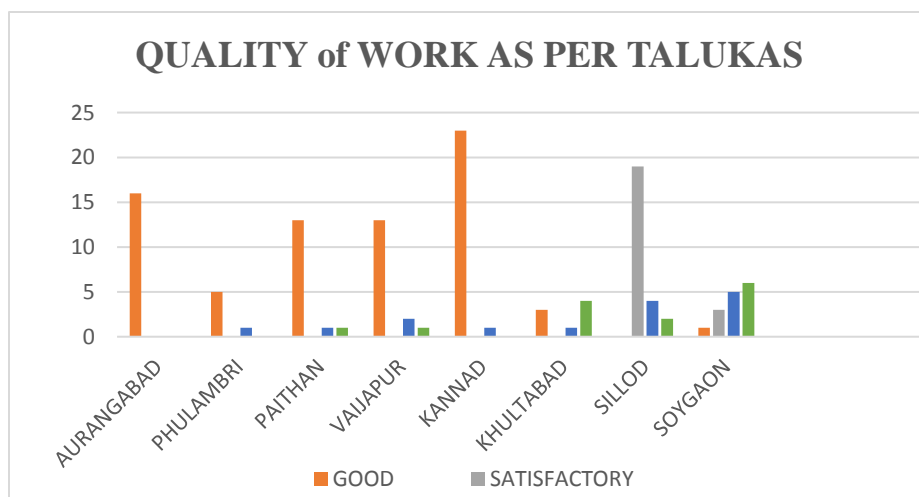
We have used the rebound hammer test for assessing the quality of structure.



Figure 4: Rebound Hammer

#### 4. Conclusions

1. There are 16 structures constructed in Aurangabad taluka which are good in condition.
2. In Phulambri, there are 6 structures constructed from which 1 is poor and other 5 are good in condition.
3. In Paithan, there are 16 structures were sanctioned from which from which 1 structure is to be constructed and other 15 are constructed. Among 15 structures 1 is poor in condition and other are in good condition.
4. In Vaijapur there are 17 structures were sanctioned from which 1 structure is to be constructed and 2 are poor in condition and other 14 are good in condition.
5. In Kannad there are 24 structures were sanctioned from which 1 is poor in condition and other 23 are good in condition.
6. In Khultabad there are 8 structures were sanctioned from which 4 structure is to be constructed and 1 is poor in condition and other 3 are good in condition.
7. In Sillod there are 25 structures were sanctioned from which 2 structure are to be constructed and 4 are poor in condition and other 19 are satisfactory in condition.
8. In Soygaon there are 15 structures were sanctioned from which 6 structure is to be constructed and 5 are poor in condition and other 1 is good in condition.



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**Site Visit Photos**