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A Success Story of Jalyukta Shivar Campaign at Darphal TQ. & Dist. Osmanabad

Inamdar S.R.
Department of Civil Engineering, KSGB'S BIGCE, Solapur, India

Abstract: ***Maharashtra has always faced droughts. The drought has persisted for four consecutive years and has affected drinking water security (Potable water) and crop production and productivity severely all over the Maharashtra state. Therefore, need arises to launch a sceme which makes solutions for all above mentioned problem. That's why Government of maharashtra has launched a new programme named 'Jalyukta shivar Campaign'. This makes Maharashtra from water scarce to water sufficient including all rural areas. ThisJYS campaign aims to make 5000 villages free of water scarcity every year. In this scheme, main objecive is to percolate grounwater more and more. That's why, government of maharashtra tries to create believe in minds of farmer is 'every drop of rainwater is owned by me and it should percolate in my land'. If this followed by the farmers then we can easily state that we can achive goals of an camapaign. Same is here followed by villagers of Darphal they followed all the times objectives of JYS Campaign & that's why they have achieve their targets of JYS Campaign Osmanabad is one of the districts of marathwada region of Maharashtra state, India. Darphal is a village in Osmanabad Villagers follow al lthe instructions of krishi sahayyak that's why they achieve success in JYS campaign also we know that public awareness is of so much important. Because public participation is our second objective of JYS. it is found that, public was properly encouraged in this village if follwed objectives. if this sceme is efficiently followed by all the states of India then really water shortage becomes past thing not only for Maharashtra but for India.***

Keywords: Drought, Jalyukta Shivar Campaign, Water Scarcity, Public participation.

Jalyukta Shivar Campaign 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 'JALYUKTA SHIVAR ABHYAN(CAMPAIGN) in Darphal Dist. Osamanabad to make Maharashtra drought-free state by 2019.JYS Campaign involves deepening and widening of streams, construction of cement and earthen stop dams, work on lakes and digging of farm ponds. JYS 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 past!

I. INTRODUCTION

Case study of Jalyukta shivar Yojana in Osmanabad district at Darphal Village. Fieldwork is the key process to understand ground scenario in a better way and that is why the theoretical and practical perspectives are different in their dimensions. Our field work was arranged in OSMANABAD district at Darphal village. It is an administrative district in Marathwada region of Maharashtra. From the point of disasters and hazards this particular district is mainly prone to Drought condition. And the district routinely experiencing scarcity of water

(Drought) with an interval of some years. The reasons behind these types of conditions in the region can be manmade as well as natural.

Some of the studies reasoned sugarcane cultivation for drought in this area. Because already the area is suffering from limited water and sugarcane cultivation consumes more water which again affect the ground water table of the region. But it is not only the reason behind drought in Osmanabad district because still the district is facing drought even after reducing the sugarcane cultivation under "BEYOND SUGARCANE" campaign from 43,000 hector to 10,000 hectare. So the other practices plus low rainfall is also responsible for drought in the region.

One of the most important natural resources which are extremely crucial for our daily life is water. There are the two types of sources of this essential resource viz. surface water and ground water. Maharashtra, the second largest state in India, both in area as well as in population, has very limited assured irrigation.

Considering drought-like situation occurring frequently in the state, Jalyukta Shivar Campaign is being taken up under 'water for all - drought-free Maharashtra 2019'.Capacity and around 84% of its agricultural land is rain fed. Around 159 lakhs hectares of area is

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drought-prone Water Conservation Program is one of the very important programs, the Govt. of Maharashtra has decided to implement with a view to improve the lifestyle of the people in rural areas and thereby achieve the rural development. 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. Almost 82% area in the state is dry land while 52% area is drought-prone.

There are 188 Talukas (2234 villages) where groundwater level dropped for more than 2 meter and drought situation were declared in 19059 villages from 22 districts in the year 2014-15.

This 'Jalyukta Shivar' campaign needs to be implemented in these locations on priority. Also, provisions should be made to ensure water scarcity situation is not created in future in the remaining part of the state. Therefore, government is authorizing implementation of 'Jalyukta Shivar' campaign in all districts of the state, in order to permanently overcome drought situation by convergence of funds approved for schemes under various departments and through MREGS/MLA/MP Fund/District-level Fund/Non-governmental Organizations/CSR and public participation. 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

II. OBJECTIVES OF JYS CAMPAIGN

Flagship program of The Government of Maharashtra to make 5000 Villages Water Scarcity Free every year.

A. To arrest maximum runoff in the village area.
B. To create Decentralized water bodies.
C. To increase the Groundwater Level in Drought areas.
D. To create new structure of water conservations.
E. Rejuvenation of the water storage capacity of various existing structure like village Tank, Percolation CNB through repairs and renovations.
F. To increase storage capacity of water bodies by removing silt through people's Participations.
G. To sensitize the concept of water Budgeting.
H. To encourage Tree Plantation.
I. To create awareness and encourage people of efficient use of water for farming.

Our main focus was to study DARPHAL village which falls under Osmanabad district. Our field work in this particular village has helped us to understand how the village is affected by drought and village system functions against it. The village DARPHAL was experiencing drought since last 4 years and only this year there was some rain which has recharged the ground water table. Because of this people are able to use that water efficiently but what if drought lasts for long duration of time. That is why some mitigation measures have to be set against drought.

As the village is adopted by one local political leader Mr. AdityaJi who is well educated civil engineer and has done a good work under the widening and deepening of RADHAGAVI River (JALAYUKT SHIVAR). Due to his effort the people of the village has got some relief from drought this year. But this is not enough to fight drought unless and until the people participation is not there. I can understand the importance of

III. IMPLEMENTATION OF JYS CAMPAIGN

The overall implementation is coordinated by the District Superintending Agricultural Officer (DSAO), the taluka level staff under him, and other departments such as Ground water survey department agency (GSDA), Forest, Minor Irrigation–Zilla Parishad (MI ZP), Minor Irrigation – Water conservation (MI WC), Rural Water Supply (RWS) and Social Forest.

A Government of Maharashtra has targeted to make 5,000 critical villages drought free .Technology and Development Solutions Cell (TDSC), at Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology Bombay (IITB) is empanelled for conducting a third-party evaluation of the Jalyukta Shivar Abhiyan in Maharashtra. Government of Maharashtra was thinking of preparing organized action plan to make 'water for all - drought-free Maharashtra and to permanently overcome drought situation and implementing 'Jalyukta Shivar' (waterful surrounding) campaign to increase water availability.

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IV. DATA AND METHODS

A. Selection of villages at taluka level based on - DW scarcity, drought-affected, GW over-exploited
B. Preparation of base-line survey and village plan
C. Determining water balance and matching demand-supply
D. rainfall within village boundary runoff generated.
E. Water impounded within village - supply
F. Water requirement - a) Drinking b) Crop water - demand
G. Compute surplus/deficit and accordingly plan new structures
H. Technical and administrative approval
I. This plan has to be approved in Gram Sabha and needs to be prepared by coordinated effort from all concerned departments
J. Integration at taluka and district levels

By, adopting this step by step procedure, we can easily choose villages which are really needful to implement the scheme jalyukta shivar campaign. That's why Government has prepared an organized action plan to make ' water for all-drought –free Maharashtra and to permanently overcome drought situation and implementing ' Jalyukya shivar' (water full surrounding) Campaign to increase water availability.

V. GROUND WATER STATUS IN MAHARASHTRA

In Maharashtra, out of total of 1531 watersheds, 76 have been categorized as overexploited, four as critical and 100 have been categorized as semi-critical, as per March 2011 assessment made by Central Ground Water Board, Government of India.

At the outset it would be important to realize that like we have field boundaries on the surface clearly demarcating the ownership over land resources, there is no such demarcation in ground water aquifers and there is probably no means to separate extraction of water through a tube well installed on one field from extracting water below the field of others. Normally one with more financial resources puts a deeper pipe to extract water and in this competition the ground water depletes fast. Without measures to replenish them, we are eating up our reserves, since ground water is the last resort for meeting the drinking water requirement. Unlike surface harvesting structures, it takes much more time to replenish. Groundwater is a long-term reservoir of the natural water cycle.

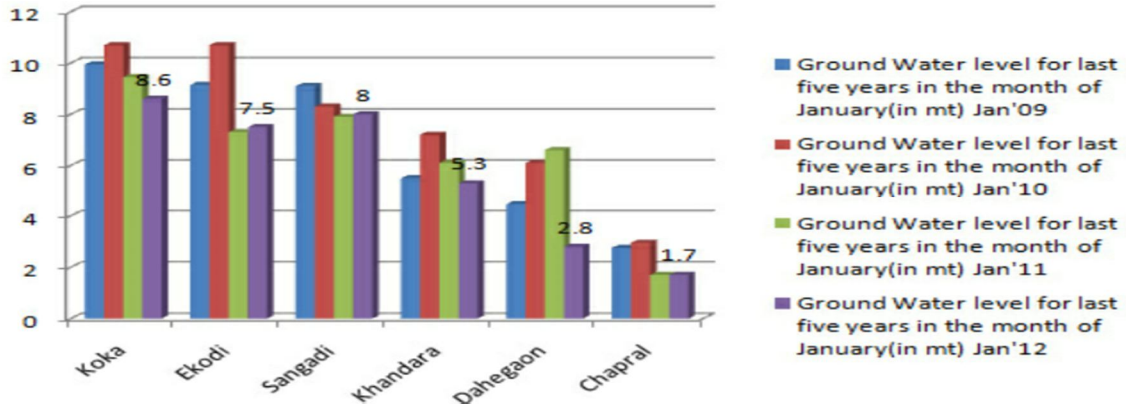


Figure 1 Ground Water Level in Various District of Maharashtra.

A. Ground Water

Infiltrating water is retained in the layers of the soil as soil moisture. The retention of water in soil depends on type of soils. Some soils retain more water whereas some less. Once the capacity of the soil is satisfied, water moves down into pores of the soil or rock till it is completely filled with water. The water in this
Zone (zone of saturation) is called ground water. Recharge and fluctuation in water level varies. Geological conditions determine the path, time and amount of groundwater recharge.

B. Water Table

Underground surface below which the ground is wholly saturated with water is groundwater level. The water table is the depth at which water is available. It depends on various factors.

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C. Groundwater Flow

Groundwater flows from high elevation to low elevation and from high pressure to low pressure. There are local, intermediate and regional groundwater flow systems. Groundwater residence times may range from ten to tens of thousands of years.

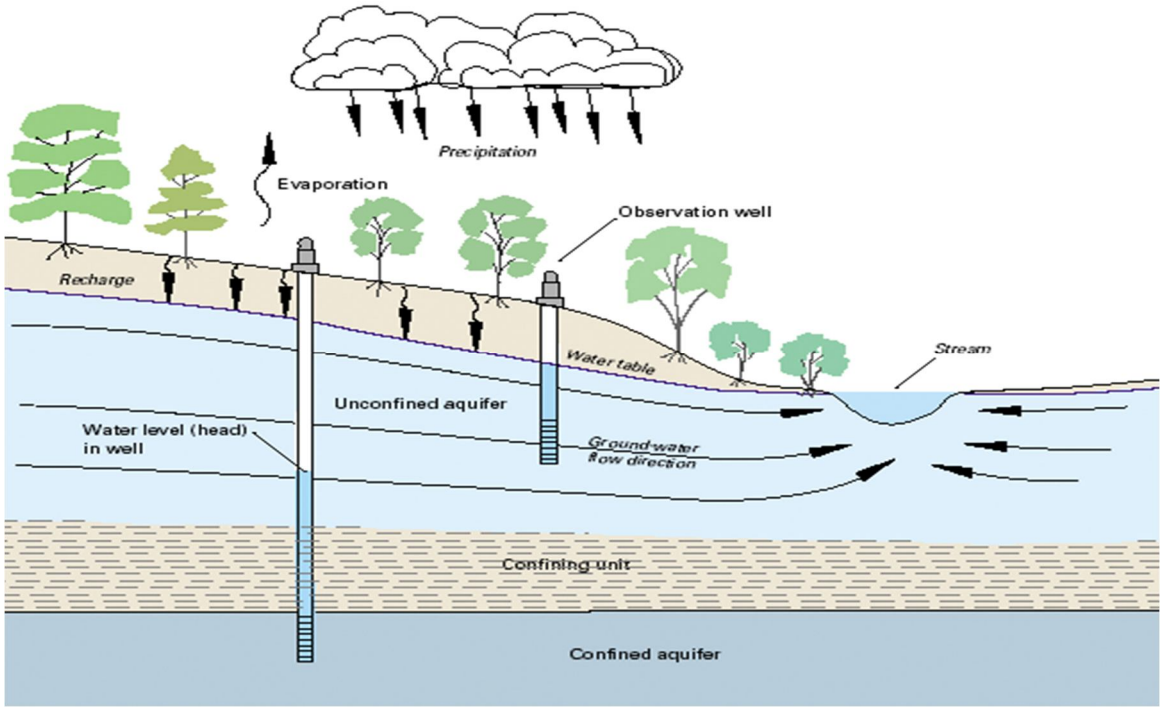


Figure 2 Ground water Flow.

D. Groundwater Recharge

Ground water recharge is the process whereby groundwater is replenished by water percolating into the groundwater system. Groundwater can be recharged from rainfall, surface storage structures through percolation. Recharge to unconfined aquifers occurs over a wide area directly above the aquifer. Recharge to confined aquifers occurs where the aquifer is exposed at the surface, or from leakage through confining layers. Various measures can be undertaken in a watershed development programme to artificially recharge ground water.

VI. DATA COLLECTION



Figure 3 Meeting of Villagers about Jalyukta Shivar Campaign at Darphal, tq Osmanabad

People awareness programme is properly conducted in this village also from field survey it is observed that, people (villagers) have knowledge about this JYS Campaign. That's why peoples are ready to give their contribution in JYS activities of Campaign.

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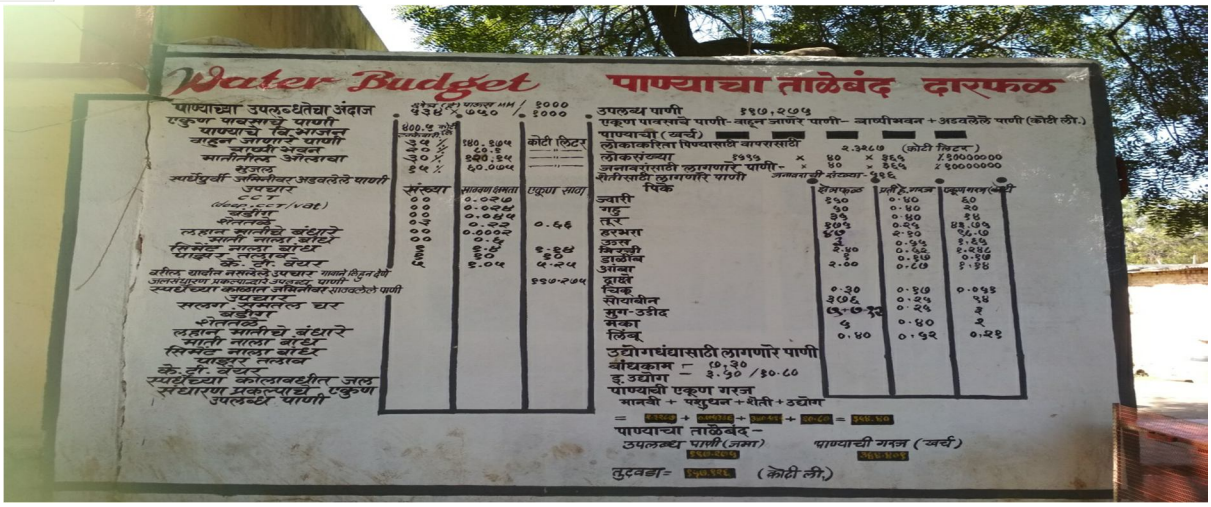


Figure 4 Water Budget at Darphal, Tq. Osmanabad, Dist. Osmanabad.

From this photo we can understand that, How local Governing body tries to create public awareness about efficient use of water. From, water budget calculation villagers can make efficient utilization of water for drinking purpose, for farming, for construction & so on...

VII. RESULT AND DISCUSSION OF SUMMARY OF DARPHAL

Watershed management involves decision making about use of resources for many purposes, therefore a multi disciplinary approach is essential. Any civil structures require proper planning for its optimum efficiency. The cost and the benefit for local involved in it are so important that its proper planning and execution on an appropriate location is essential. Design and location of such structures needs lot of attention. Another important factor is the amount of water required calculated from daily consumption or crop requirement. Frequency, intensity and duration of rainfall along with surface conditions affect the water runoff. They should be estimated before designing the structures. In this Campaign important and only necessary formula and models have been discussed. Detailed analysis is necessary for constructing structures.

Losses due to storage of water are a nasty nuisance as it leads to wastage of water and damage of the structure. The commonest cause of water loss is seepage and can sometimes be so serious that it may completely drain the reservoir or stored water. In hot arid and semi arid regions the water loss from evaporation is substantial. Therefore type of loss in Maharashtra has to be taken care of while designing and constructing the structure is as follow:-

1) Evaporation loss

VIII. IMPACT OF JALYUKTA SHIVAR CAMPAIGN

A. Increase in Ground water level

The water intervention structures play a key role by staying water for some time and allow sufficient time for water to percolate into ground. Therefore, Increase in ground water table in drought prone area in measurable indicator of successful of Jalyukta shivar campaign.

B. Soil Erosion Reduction

The soil erosion was reduced more than 50% in the Jalyukta Shivar Campaign implanted area because of Compartment bunding, CCT and deep CCT and graded bund.

C. Run off Reduction

With regards to run-off reduction it was observed that the campaign is successful in achieving this goal. According to the Jalyukta shivar campaign beneficiaries this has been possible because of the contour bunding or field bunding which has also in checking the run-off rain water resulting in soil moisture retention.

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D. Land-use pattern

Better land-use pattern is one of the important objectives of Watershed Management with increase in availability of water in the watershed regions.

E. Cropping Pattern and Agriculture Productivity

Since water is essential for agricultural production, with available water intervention structure farmers are inclined to new cropping pattern and agricultural diversification.

F. Cropping Intensity

The change in cropping intensity is one of the major indicators to asses impact of the Jalyukta Shivar Campaign. Increase in residual moisture content due to contour bunding helping in crop growth and yield. Decrease in Soil Erosion and hence production of fertile top soil due to contour bunding.

G. Increase in agricultural productivity

Result of Jalyukta Shivar Campaign in Agricultural productivity also fodder production increased due to this milk production also increased.

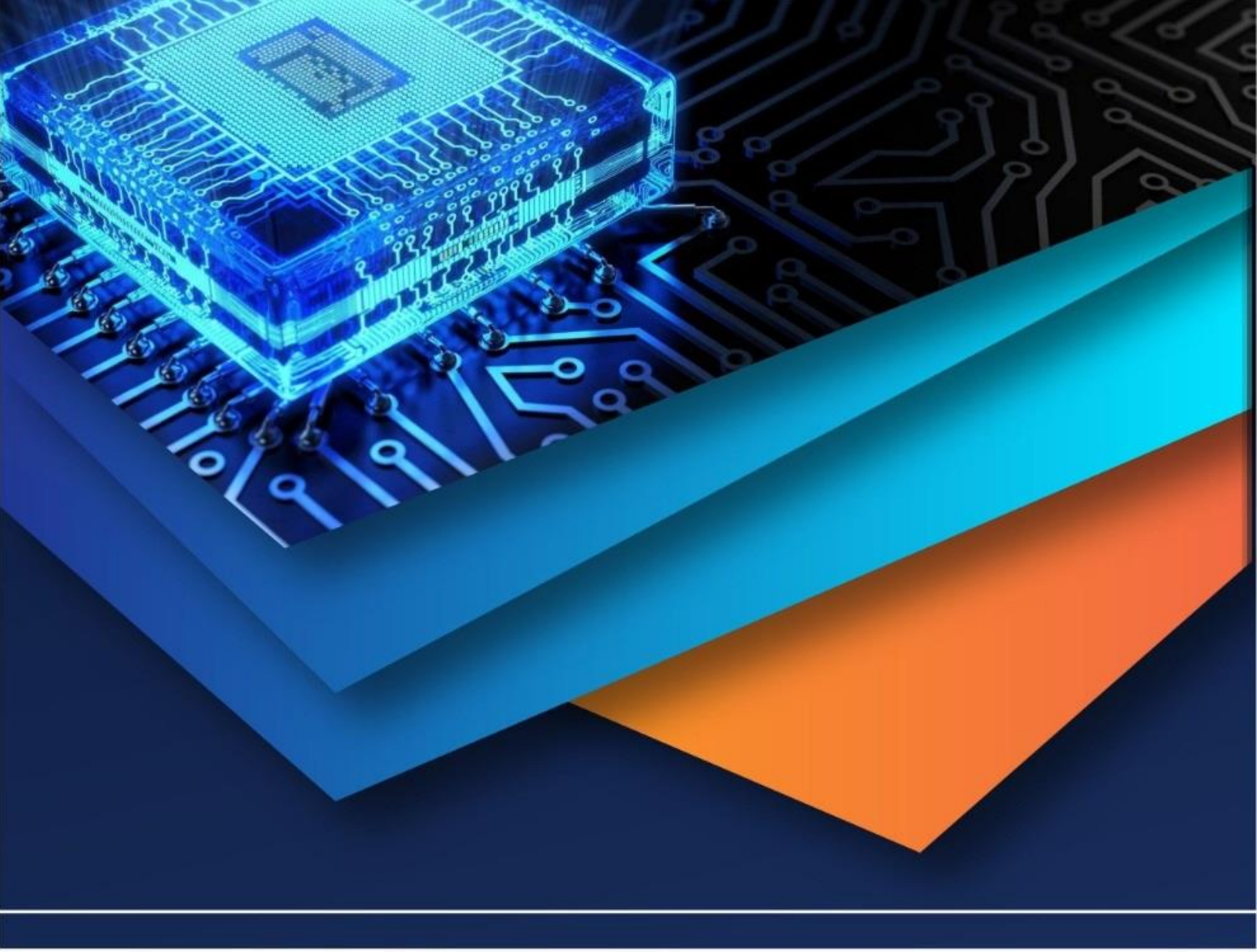
H. Employment Generation

According to the Watershed Guidelines, the under the study, additional employment is generated due to Jalyukta Shivar Campaign. It was reported that during the implementation of Jalyukta Shivar Campaign's Earthen nalla bunding, K.T. weirs employment have been generated.

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