

MONITORING, EVALUATION, LEARNING AND DOCUMENTATION (M, E, L & D) OF JALASIRI SCHEME UNDER SPECIAL DEVELOPMENT PLAN FOR THE YEAR 2010 - 11

Submitted to:
**The Commission
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EXECUTIVE SUMMARY

The Government of Karnataka announced a new scheme called "Jalasiri" under the special development plan for the year 2010-11 and the scheme envisages construction of Water Harvesting Structures in order to increase crop production in rural areas; to be implemented in 114 identified backward, more/ most backward talukas of the state.

The Watershed Development Department have constructed 1514 different water harvesting structures by incurring an expenditure of Rs 27.60 crores in all the 27 districts of the state during the year 2010-11.

With the view to measure the efficiency of Jalasiri scheme, the evaluation work has been assigned to M/s Indian Resources Information & Management Technologies Ltd (IN-RIMT) by the Watershed Development Department, Bangalore vide their office order No. Ja. Aa.E/Ja. Kru. Ni(Aa,U,Cha)/Jalasiri/Mou. Ma/Than-10/2011-12 dt. 01-02-2012. Accordingly, IN-RIMT has verified 233 water harvesting structures as against 231 constructed in Belgaum and Mysore divisions comprising 12 districts (7 & 5 districts respectively). The district wise WHS constructed, to be evaluated and the numbers physically verified is furnished in Annexure. Well experienced field evaluators have visited the sites and has verified 113 No. of Check dams, 37 Nala bunds, 69 Farm Ponds, 1 percolation tank and 14 Vented Dams, totaling to 233 water harvesting structures.

Interactions with the beneficiary farmers have revealed that they are happy with the scheme as these structures have helped in raising the levels of water in bore wells and open wells which in turn could provide protective irrigation at critical stage of the crop resulting in increased production, besides the water stored is used for cattle drinking , domestic purposes etc.

It is evident from the evaluation study that the overall performance of the water harvesting structures constructed are found to be good in general with excellent performance in Uttara Kannada district (100%), followed by Haveri (24%) and Hassan (10%). The grading on the whole is Good in 76% cases, Satisfactory in 16% cases and Average in 3% cases.

Though there is positive impact of these WHS, the benefit accrued could not be enumerated in totality, as this is the first year of completion followed by deficit rainfall. However, the prospective utility appears to be still brighter in the long run.

Chapter 3

3. The Findings

All the 231 structures selected by the Department for physical verification and evaluation have been inventoried as mentioned in the Work Order. These structures are spread over 12 districts of the state in two divisions viz., Mysore and Belgaum. While Belgaum division consists of 7 districts, Mysore division has 5 districts. The following table shows the number of structures inventoried in each district.

| Sr. No. | Name of the District | Total No. of Structures constructed | No. of Structures evaluated |
|-----------|-------------------------|-------------------------------------|-----------------------------|
| I | Belgaum Division | | |
| 1 | Belgaum | 47 | 19 |
| 2 | Bijapur | 94 | 38 |
| 3 | Bagalkot | 38 | 15 |
| 4 | Dharwad | 15 | 6 |
| 5 | Gadag | 21 | 8 |
| 6 | Haveri | 125 | 50 |
| 7 | Uttara Kannada | 27 | 11 |
| | Total | 367 | 147 |
| II | Mysore Division | | |
| 1 | Chikmagalur | 20 | 8 |
| 2 | Chamarajanagar | 42 | 17 |
| 3 | Hassan | 50 | 20 |
| 4 | Mandya | 46 | 21 |
| 5 | Mysore | 53 | 21 |
| | Total | 211 | 84 |
| | Grand Total | 578 | 231 |

The findings of the study are described in the following paragraphs -

1. Execution of work as per action plan:

As per action plan approved by the watershed Development Department, the various water harvesting structures were found executed

2. **Execution of work as per plan and estimate:**

The various Water Harvesting Structures such as check dam, Nala bunding, Farm Ponds, Percolation Tanks and Vented dams were found executed as per the plan and estimate sanctioned by concerned DWDO in general. Estimation of impounding capacity need to be reexamined

3. **Technical feasibility and suitability:**

Some more care/ guidance need to be given in deciding the structure suitable to the gully of halla and deciding the crest height. Also, catchment area need to be appropriately estimated looking to the cumulative catchment.

The nala banks at flank wall portion need to be strengthened. The flank wall end points are to be embedded into the banks, any open will be prone for loosening or likely damage.

4. **No. of SC/ST farmers benefited:**

It has been observed that the weaker sections of the society including SC/ ST farmers were found benefited and have increased their production. They need additional support like desilting of open wells, repair/ provide electrical connection, land development and some more WHS's in the same halla (after studying the technical feasibility).

5. **Increase in crop production(Agri-horti-silvi system)**

On account of the construction of WHS's the crop production is found increased to the extent of 5-10% in general, either through direct irrigation, protective irrigation, improvement in soil moisture regime. Besides the cropping intensity has increased making scope for cumulative area under irrigation

The increase in crop production is more in case of vented dams and farm ponds.

There is scope for bringing success stories about the impact of the scheme or individual works.

Visual change observed between treated and untreated locations/ sites.

6. Additional area brought under irrigation:

In some cases additional area is found brought under irrigation especially under nala bunds, vented dams and farm ponds. However, cropping intensity has been found considerably increased (to the extent of 10-25%) especially under Nala bunds and check dams due to increased recharge of bore wells. The vented dams have provided scope for taking up second crop of paddy in high rainfall regions. the farm ponds have benefitted individual farmers to take up vegetable production along with commercial crops.

7. Increase in water levels I borewells and open wells:

As per opinion survey/ interaction with beneficiaries and farming community, it has been found that there is increase in water levels of bore wells and open wells to some extent only because of scanty rainfall during 2011-12. It is felt that after 2-3 monsoons coupled with normal rainfall, there is all likelihood of increase in water levels of bore wells and open wells.

8. Drought proofing results:

The WHS constructed under "Jalasiri" are spread across the districts and talukas and even in remote areas. Even during scanty rainfall, the harvested/ impounded rainwater used for giving protective irrigation, spraying of PP chemicals, raising nursery, cattle drinking and other domestic purposes.

9. Reduction of labour migration:

As per the interaction with field staff, it has been found that skilled and unskilled workers were given employment for 15-20 persons for a period of 20-25 days and thus generated employment to the extent of about 300 man days per structure of normal size. The man days generated in more under nala bund/ percolation tank compared to check dam/ vented dams. The employment generation under Farm pond is found to be 160 man days. However, labour migration is very little as the works are not continuous.

10. Incremental income:

As per interaction with beneficiaries and farmers, the scheme has benefitted considerable number of various sections as they are very happy.

It is early to assess the actual incremental income since only one season has been completed and due to scanty rainfall in majority of the districts, adequate rainfall of sufficient duration is required for effective infiltration into the soils and ground water recharge. At present the scheme has benefitted for providing drinking water for cattle/ sheep to the extent of 5-10 days to 3 months besides helping the farmers for raising nursery and spraying of PP chemicals.

Lessons learnt:

1. Scheme helped to take up water harvesting structures even in remote and solitary locations.
2. Deprived class of farming community benefitted much.
3. SC/ST farming community exclusively benefitted in some cases, they need additional support like repair of open wells, land development, providing Horticultural & forest grafts/ seedlings.
4. Field functionaries need orientation trainings about designing and estimation of WHS and also calculating the storage capacity and fixing the crest height. They also need to be highlighted about the Do's and Don't's in planning and execution especially for new staff from other schemes.
5. Construction of body wall with two steps need to be avoided as against three steps recommended for easy cross over/ to reach other side.
6. Curing with water for masonry work need to be considered as very important aspect, otherwise longevity of the structure gets reduced.
7. One step on the body wall kept above nala bank level which has no significance.
8. For wider gullies earthen embankments (MPT) are ideal than check dams.
9. Nala bed slope is also an ideal factor for deciding the structure and designing the structure and location of construction.
10. Local flora development above the WHS may be considered.

Grading/ Performance rating:

This is one of the methods through which the work performance / performance components have been judged in terms of pertinent standard criterion. The ratings are assigned depending on their attained merits. The key parameters used to judge and assign ratings are efficiency, effectiveness, relevance, impact and sustainability of programme activities performed. As per data/ results, the performance of the water harvesting structures is presented as under:

| Sl. No | District | Ratings in percentage | | | | |
|-------------------------|----------------|-----------------------|------------------|---------------------------|---------------------|--------------------------|
| | | Grade-I Excellent | Grade-II Good | Grade-III Satisfactory | Grade-IV Average | Grade-V Below average |
| BELGAUM DIVISION | | | | | | |
| 1 | Belgaum | 5 | 89 | | 6 | |
| 2 | Bijapur | 5 | 76 | 16 | 3 | |
| 3 | Bagalkot | | 36 | 64 | | |
| 4 | Dharwar | | 100 | | | |
| 5 | Gadag | | 25 | 75 | | |
| 6 | Haveri | 24 | 36 | 34 | 6 | |
| 7 | U. Kannada | 100 | | | | |
| MYSORE DIVISION | | | | | | |
| 8 | Chickmagalur | | 88 | 12 | | |
| 9 | Chamarajanagar | 6 | 88 | 6 | | |
| 10 | Hassan | 10 | 75 | 15 | | |
| 11 | Mandya | 6 | 67 | 28 | | |
| 12 | Mysore | 6 | 56 | 38 | | |

It is evident from the evaluation study that the overall performance of the water harvesting structures constructed are found to be good in general with excellent performance in Uttara Kannada district (100%), followed by Haveri (24%) and Hassan (10%). The grading on the whole is Good in 76% cases, Satisfactory in 16% cases and Average in 3% cases.

The district wise and structure wise details are presented in the annexure enclosed.

Chapter 4

4 Recommendations

1. Nala banks of the WHS constructed need to be strengthened/ fortified with grasses. Additional funds may be provided for this, otherwise, the flank walls is likely to get damaged in the event of excess rainfall.
2. Desilting of silted-up WHS may be taken up either through motivation of by providing funds.
3. The head mazadoors, skilled and unskilled workers may be recognized/ encouraged by providing platform to make them understand the aims/ objectives of WHS's/ Department. They may be encouraged / educated about the free insurance coverage for landless households/ works mooted by Govt. of India, LIC, Govt. of Karnataka like Aam Admi Bima Yojane, which is under implementation in the State.
4. Provision need to be made for maintenance of the structures and beneficiaries need to be educated/ motivated.
5. There is a need of a single agency / authority to be assigned with the task of approval of the location of WHS, otherwise the loses will be more.