

LIFT IRRIGATION SCHEMES –ADVANTAGES

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ABSTRACT

Irrigated agriculture yields more crops as compared to dry cultivation. There are two methods of irrigation - 1) Flow irrigation or Gravity irrigation 2) Lift irrigation. Gravity irrigation is cheaper, commands large ayacut and is more efficient. On the other hand lift irrigation schemes command small ayacut, require huge current and are feasible where large surface flows are available. Already flow irrigation schemes are completed, lift irrigation schemes are to be taken up. Surface flows are available in Krishna and Godavari rivers and these waters have to be lifted to upland areas using high capacity pump sets. Reservoirs are to be constructed in the upland areas to store pumped water and supply to fields through pipes under gravity. Srisailem project left canal (Madhava Reddy canal) is lift irrigation scheme in Telangana state which irrigates 1.00 lakh hectares.

Keywords: Introduction, Design methods, components and adoption methods.

I. INTRODUCTION

Agriculture is done through rainfall (dry land agriculture). Intermittant irrigation (irrigated dry crops) and wet irrigation (paddy crop). Crop yields are more in wet irrigation and decrease in case of irrigated dry and dry cropping patterns. Water requirement also varies in all these three cases. More water is needed for wet crops and less water for irrigated dry crops (maize, cotton, groundnut, horticulture). Dry crops do not require any irrigation. Rainfall is sufficient for dry crops like jowar, bajra, maize, cotton, fodder etc.)

Water for irrigation is available in rivers, streams and tanks. This is termed as surface water. In addition, groundwater is used through open wells, bore wells, tube wells, filter points etc. There is large utilization of surface water (75%) and groundwater in Telangana state (60 %). Few areas in Mahabubnagar, Rangareddy, Nalgonda, Medak, Warangal districts are suffering for want of sufficient rainfall and non availability of irrigation projects nearby. These are drought prone areas. In order to provide irrigation to all the drought prone areas, lift irrigation schemes are being planned from Krishna and Godavari rivers.

II. DESIGN OF LIFT IRRIGATION SCHEME

In Nalgonda district, Srisailem left bank canal is constructed to lift water from Srisailem project for an ayacut of 1.00 lakh hectares.

Srisailem water has to flow through tunnel which is time taking. Alternatively, water is temporarily drawn from foreshore of Nagarjunasagar dam.

Water is drawn from foreshore into a deep well and pumped to a canal using turbine pumps. The water is used to fill up irrigation tanks. Bore wells under the tanks get recharged and supply water to the ayacut under tanks.

When there is inflow into tanks due to rainfall, lift irrigation supplies will be stopped or reduced. Lifting height is 50 meters and flow rate is 50 cumecs in kharif for irrigated dry crops. The farmers are growing paddy crop. Four numbers of 1000 HP pumps are installed of which two pumps are used as stand by.

This scheme is working satisfactorily since 1983 using 26.22 TMC of water. Electrical consumption is 20 megawatts for kharif.

III. COMPONENTS OF LIFT IRRIGATION

In some of the villages where water conservation structures were already done, Pani Panchayat carried out lift irrigation schemes to provide water to the fields at higher level. In this work, the distribution part is important.

IV. NATURE AND PURPOSE OF THE TECHNIQUE

Input of water is important from the agricultural point of view. Some times in some places water can't be provided to the fields as the level of the field is higher than that the source of water. In this case water is required to be lifted at a convenient higher spot from which it can be supplied to the fields under command. Pani Panchayat has completed about 52 lift irrigation schemes in Purandhar Taluka and around, irrigating about 1232 hect. in all. For lifting of water some energy is required for pump operation. It may be electric power or diesel. There are many methods of lift irrigation schemes depending upon the type of mechanism to lift the water. In old days water was lifted with the help of a person or a pair of bullocks which was mainly for an individual need. But now a day's schemes for large areas and group of farmers are necessary.

Water can be lifted from wells, rivers, irrigation tanks etc. and conveyed through pipes made of cement, steel, PVC etc.

Lift irrigation schemes done by Pani Panchayat are with a principle that water is a natural common property. Every person in the village has a right to use it. In all schemes of Pani Panchayat water is shared equitably on the basis of 0.2 hect. per person and 1.0 hect. per family.

V. WHO WILL ADOPT THIS TECHNIQUE?

The farmers whose fields are situated at higher level but have a source of water nearby can adopt this technique.

VI. WHY THIS TECHNIQUE SHOULD BE ADOPTED

The fields which are at higher level and for which water by flow irrigation will not possible, have no other alternative but the lift irrigation scheme.

In different villages of Pani Panchayat local NGOs with the help of local people were engaged in implementation of lift irrigation schemes. People contributed their free labour and about 20% cost of the scheme. People are doing all these things only because they are realized that with a little input of water their agriculture can stabilize and they will get water whenever they require. Drinking water problem is also solved concurrently.

VII. HOW TO ADOPT THE TECHNIQUE

Adoption of this technique is not quite simple. Its Planning, designing and execution are to be done through knowledgeable and technical person. Participation of beneficiaries is quite necessary and if labor component is done by them, saving in cost to the extent of 20% is possible. The remaining amount can be had either through government as a subsidy or as a loan from the banks, repayable in 10 to 15 years.

VIII. RESULTS AFTER ADOPTION OF A TECHNIQUE

The results of the lift irrigation scheme are:

1. Increase in food production and thereby increase in income level as the land turns into irrigated land.
2. Removal of drought conditions and no problem of drinking water.
3. Stabilized agriculture as water is available whenever it is required.

IX. PROBLEMS IN ADOPTION

It is not easy to convince the farmers to adopt a technique of lift irrigation scheme. The cost of the scheme is very high. For individual benefit a farmer will move heaven and earth. But for a group of farmers, his approach is not that friendly and cooperative.

X. SOLUTION TO THE PROBLEM

It is the awareness that will solve the problem. An individual person can't bear the cost of the scheme. He has to co-operate with others for his benefits.

Pani Panchayat could pursue the people in this manner. After completion of the completion of lift irrigation scheme, beneficiaries come together once in a month for taking certain decisions. This enhances the community spirit.

XI. KEY FACTORS IN SUCCESS

Factors contributing success can be listed as below:

1. Participation of villagers in each and every stage of implementation of the program.
2. Some financial assistance to the villagers from state government advances from the bank.
3. This work is not labor oriented. But when the scheme is completed and brought in operation, it will provide gainful employment to all the persons coming under the preview of the scheme.
4. Whole work is done considering village as a unit, as some part of the village does not receive benefits of other soil and water conservation works.
5. Otherwise, adopting by one person or rich families who are having a strong determination also this scheme is get success.

XII. CONCLUSIONS

Lift irrigation is costlier as compared to gravity irrigation. Upland areas can be irrigated using river flows down below without constructing large dams. Land is required only for reservoir in the upland area and for small barrage in the river. Electricity consumption is costlier. Drinking water is being supplied to Hyderabad city from



above lift irrigation scheme. Success of this scheme depends upon availability of flows in the river in rainy season at least.

On Godavari River, a gigantic lift irrigation scheme called Kaleshwaram lift irrigation scheme is contemplated to irrigate about 10 lakh hectares in Karimnagar, Medak, Warangal districts.

By using of these schemes lot of crop should be generated and our country economic is also improved.

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