Executive Summary

Research study on Reducing Conveyance Losses in Irrigation System by providing pipeline for water distribution – A case study of Waghad Project

1.0 Introduction:

The availability of water per capita or per unit of land is reducing day-by-day. The available water resource is going to be inadequate in future because of increasing population, increase in demand of water for various purposes etc. There are limitations on harnessing and utilizing the natural water resources. Hence in addition to impounding water, various means of water conservation should also be thought of to increase availability. There are number of ways through which water can be saved. There are two major enemies, which reduce availability of water for actual use. These are:

(1) Evaporation losses,

(2) Conveyance losses.

Substantial quantity of water is lost through these two sources.

Major share of water is used for irrigation purposes (about 80%) through storages and conveyance system. Generally open channel conveyance system is used to convey water from the source to the field. Substantial losses take place through the conveyance system. These can be saved by different methods. With this objective a research study for quantification of saving in conveyance losses from canal system was taken up. A case of Waghad Irrigation Project is taken up for this study. The title of the research study is as given below:

"Research study on Reducing Conveyance Losses in Irrigation System by providing pipeline for water distribution – A case study of Waghad Project"

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2.0 Objectives:

i) To develop preliminary design of pipelines for Main Canal / Distributory and Minor.

ii) To quantify possible reduction in conveyance losses by providing pipeline instead of open channels for Main Canal / Distributory and Minor or in combination

iii) To study cost economics of piped distribution system.

It has been reported by the Waghad Project Authorities that the losses in the conveyance system which is unlined are as given below:

Main Canal	-	60%
Distributory & Minor	-	15%

This indicates that ¾ quantity of water released from the source is lost in transit. These losses can be minimized and substantial quantity of water can be saved if open channel system is replaced by pipeline fully or partly. Data required for the study has been collected from Palkhed Irrigation Division, Nashik and based on this data the design of pipeline has been done.

(3) Study Area:

Waghad Project has been selected for this study because it's storage is located relatively at higher elevation and command is at lower elevation thereby possibility of getting sufficient head for economizing pipe size. Similarly if the proposal works out to be feasible the Project Level Association of WUAs may invest in it as the whole project has been taken over by the Project Level Association of WUAs for management (Index plan of the project is enclosed).

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