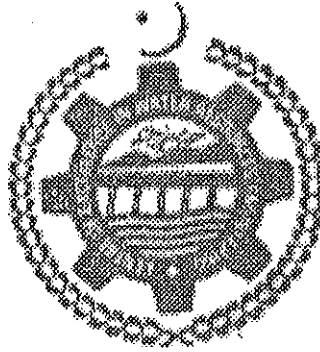


THESIS

**PERFORMANCE EVALUATION OF A FARMER-MANAGED
IRRIGATION SYSTEM**

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Submitted by:

**MUHAMMAD SALEEM POMEE
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ABSTRACT

Large irrigation systems in Pakistan were constructed to protect the region from famine and to open up new areas for settlement to generate income to the then Colonial British Government by the sale of crown waste lands. With the objective of maximizing the production per unit of surface water available, the water was spread thinly over as large an area as possible to achieve maximum social benefits from the distribution of available water resources. To limit human interference in the operation of the system, regulation points were minimised and the watercourses were provided with ungated outlets. In the recent past, research on the performance of these irrigation systems at primary and secondary levels by many researchers showed that the distribution of canal water is neither proportionate nor equitable anymore. This under performance is mainly attributed to neglected maintenance, poor operation & management and scarcity of surface water. The water scarcity manifests itself in adequacy, unreliability and inequity in distribution of surface water particularly for farmers at watercourse level. Poor cost recovery is considered one of the main reasons for the lack of funds available for proper operation and maintenance of the system.

Consequently, the concept of Participatory Irrigation Management (PIM) has been advocated in the country and management at secondary level has been recently handed over to the Farmers Organization (FOs) of selected distributaries at pilot scale.

This study was designed to evaluate the farmers managed distributary in Southern Punjab. Initial field measurements suggested that hydraulic aspects of the irrigation service provided by the FO management has been significantly improved and as a result

highly proportionate and equitable water distribution particularly to the tail-enders of the distributary was observed during the post-transfer scenario.

Due to effective FO management, farmers interventions to increase the outlet discharge by illegal means have been almost obsoleted. Furthermore resource mobilization and repair and maintenance condition of the distributary were significantly improved under FO management. As a result of these improvement imparted by the FO in system management, the extent of irrigated area has increased by 6 to 7% even under continuous drought like conditions prevailing in the country during recent years. Similarly cost-recovery from the irrigated area (on an average basis) has increased by an amount of 14% for Kharif season and 23% for Rabi growing seasons under the new management. Qualitative investigation incorporated during present study (to evaluate end user perception) also revealed that quality of management has been significantly improved under new managerial set up.

Thus experience from Hakra 4-R distributary has shown that even under undesirable natural circumstances, the Irrigation Management Transfer (IMT) was quite effective to achieve the main targets of the institutional reforms, launched in the country at pilot scale. Since on going water crisis demands that available limited water resources should be efficiently distributed and effectively utilized, therefore the potential of FO management may be an effective option to minimise the disasters from continued famine like conditions on the irrigated agriculture of Pakistan.