THESIS

EXPLORATORY FIELD STUDY OF FARMERS IRRIGATION PRACTICES IN SELECTED FIELDS

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ABSTRACT

This exploratory research work was undertaken to study actual irrigation practices practised by farmers and to assess the difficulties they face. Six farms were selected along two watercourses situated at different reaches of Fordwah Distributary. The farmer's attitude about the existing warabandi schedule and their perspective about ground water use was noted. Farmer's were interviewed periodically to obtain insights on their irrigation and agronomic practices.

The discharge at each field (bunded unit) was estimated after deducting seepage losses during conveyance using a simple spreadsheet computer model for assessing losses in different reaches of the watercourse. The water front advance and infiltration rate in selected bunded units were carefully monitored. The advance function parameters were calculated by using regression analysis. The infiltration rate of each selected field was monitored upto 240 minutes after the irrigated water reached the tail end of the field in order to determine the infiltration characteristics.

Results indicated that the infiltration function decreases with successive irrigation events as water more rapidly advanced along the field. The smaller particles in soil of the field or the clayey particles in colloidal state transported by canal water entrapped the capillary tubes and blocked some pores of soil in each irrigation event. This reduced the

infiltration rate ; also decreased the depth of application as the advance phase was completed more rapidly and the field was irrigated in shorter time period.

This study is an initial research effort preceding more detailed engineering studies that will follow. It is recommended to improve the discharge measurement by calibrated instrument at each farm and field level. The degree of discharge variability should be measured by using hydrodynamic model. It is also suggested that heavy plastic material should be put along the bunds to study the infiltration characteristics. Further recommendations are also made for soil moisture and water balance studies.

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