

COMPARATIVE STUDY OF
HORIZONTAL AND VERTICAL DRAINAGE PROJECTS
WITH SPECIAL EMPHASIS TO ECONOMICAL ASPECTS

BY

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ABSTRACT

Large scale vertical drainage projects were initiated in Pakistan to control waterlogging and salinity during 1960s. When these projects were being planned, very little attempts were made to search alternate solutions for the wide spread problem of waterlogging and salinity. During 1970s some efforts were made to control rising water table by tile drainage which is generally considered more costly than vertical drainage.

A comparative study of Salinity Control and Reclamation Project-1 (SCARP-1) and East Khairpur Tile Drainage (EKTD) project was carried out. Twenty five years operational data of SCARP-1 was collected whereas the data EKTD project was projected for 25 years from the existing records. Internal rate of return (IRR) of the both projects were calculated. Results show that the IRR of SCARP-1 is 6 percent whereas it is 13 percent for the East Khairpur Tile Drainage Project. These results reflect that tile drainage project is economical as compared to vertical drainage project.

The effect of vertical and horizontal drainage projects on water quality and soil salinity were also studied. Pre-project and post-project comparison of the two projects show that there is no significant improvement in the water quality of SCARP-1 rather it has deteriorated. On the other hand in the tile drainage project there is improvement in water quality. The soil salinity status was also compared which showed that the EKTD project is more effective to control soil salinity.