

The publication of two reports (23) (24) in 1962 on the operation of tubewell projects in Rechna Doab (Project No. 1) provides an opportunity for the first comprehensive assessment of the efficacy of tubewells in lowering water tables. Tubewells have been installed in Rechna Doab in twelve units of various sizes over the period 1954-1962. Nearly complete data for the year 1961-1962 are available for all of the units. These are summarized in Table 7.3.

It should be emphasized that one year's record may not be typical of long-time operations. Factors such as annual precipitation, efficiencies of tubewell operation, acreages of crops planted during both seasons, and efficiency of use of the pumped water may not be representative. Yet, in the absence of longer records, these data for an area exceeding 1,200,000 acres served by more than 1700 tubewells provide a good indication of what can be anticipated in the operation of large-scale tubewell installations.

For analytical purposes the twelve tubewell units have been organized into three groups, as shown in Table 7.3. Group One tubewells are early installations, Group Two tubewells were installed during 1961, and Group Three tubewells were installed during 1962.

Group One Tubewells. These early tubewell installations served smaller areas than later units and often the wells failed to yield as much water as initially expected. For the four units combined, the water table declined only 0.73 foot for a unit pumpage of 1.41 feet of water over the gross area. Dividing these values yields a ratio of 0.52, indicating a decline in the water table of 0.52 foot for each foot of water pumped over the area. All of these values are markedly less than later tubewell installations. Differences can largely be attributed to reduced pumping rates and to smaller operating units. It is interesting to note that the water table in the Jaranwala Unit declined only 0.60 foot as compared with an average rate of 1.5 feet per year in the two previous years.

A matter of concern is the fact that the yield of tubewells in the Chuharkana Unit has decreased 26 percent in eight years, while wells in the Pindi Bhattian Unit lost 28 percent of their capacity in three years. Presumably these losses resulted from well designs and construction which

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(23) Directorate of Land Reclamation, Progress of reclamation in soil reclamation schemes of Project Number One (Rechna Doab), West Pakistan, 1962.

(24) WAPDA, Progress Report for the operation of tubewells under Salinity Control and Reclamation Project Number One for the period September, 1961, to September, 1962, West Pakistan, 1962.