

Loss of Component of Sub-irrigation if Watertable is Lowered

When Ghulam Mohammad wrote his comments, the data on the amount of sub-irrigation was still preliminary.

Recently detailed studies [3] have been completed on sugarcane and cotton crops. The former can grow in high watertable and the later needs a deep water-table. These studies have shown that a considerable amount of the requirements of a crop is satisfied from the soil moisture if the watertable is high.

Pumping Saline Water and its Disposal

The Panel's suggestion to export 3.9 MAF of water with 4000 ppm to lower regions and to make arrangement ultimately to arrange for the disposal of about one MAF of water of 10000 ppm by surface evaporation also needs careful consideration. During three or four summer months from May to August, water is sufficient in rivers to mix 4 MAF (about 5,500 cusecs) of water and cause no harm to ultimate increase of salts but during the remaining 8 months, the river discharges are low and mixing this order of saline water will have serious problems.

Again, to evaporate about one MAF of water we need an exposed surface of about 270 square miles as in this region about 5 cusecs are evaporated from one square mile of the surface. The obvious course appears to be not to touch the saline water and to take such measures as to obtain the requirements without the mining of saline groundwater.

A Suggestion for the Solution of the Problem

The Panel has worked out that 58.8 MAF of water is to be made available at the fields. The present irrigation canal system diverts 48 MAF and makes available 24.3 MAF at the fields. The rest 34.5 MAF is to be pumped from the groundwater storage. This is to be made up of 20 MAF from seepage of canals and 14.5 MAF to be drawn from mining operation.

We know that during the 4 summer months from the beginning of May to the end of August, we have more river water supplies than we can utilize. Suppose we do not pump any groundwater during the 4 summer months. We can arrange our requirements from improved river diversion and further digging of canals. If we spread the pumping uniformly over the full year, then during the four summer months, we have to pump 11.2 MAF of water. During summer we have available water in our rivers. It needs arrangement to divert it on the land and during this period we can do without pumping. If we can succeed in this suggestion then we need only 23.3 MAF from groundwater for