

Under ideal practice, saline drainages should discharge into the sea or into natural closed lakes or large land depressions. Horizontal drainage systems of large scale are expensive and, as noted in the reports cited, they seriously interfere with water-distributary systems.

The lands of Pakistan tend to be flat and for that reason, the drainage canals would have to be of large capacity and often augmented by pumping to obtain the necessary discharges. Also to accommodate the necessary depths of field drains, the public canals would have to be deep.

As has been repeatedly noted by others, Pakistan has a great surplus of arable land in relation to its water supply. It is now apparent that the distributary system was designed to serve more land than could be cropped at any one time. It seems possible, if not probable, that the planners hoped thereby to at least slow down the rate of rise of the watertables, and thereby to postpone waterlogging. Over vast areas waterlogging has now become acute.

With the great excess of arable land, the writer believes that the cultivated acreages could appropriately be cut back to approach the land that can be served by canal or good-quality groundwaters. With such cut backs, there will be continuously idle lands that can be converted to evaporation flats—areas which are surrounded by low dikes or areas upon which the saline drainages can be spread by networks of furrows.

In the light of the effects of canal seepage and rainfall on rising watertables, in addition to the necessary leaching to remove existing salinity and to continuously remove the salts deposited in soils with irrigation, it is possible to estimate the required areas of the on-farm evaporation flats in relation to the area of the land irrigated. With knowledge of evaporation rates, leaching requirements, rainfall, and surface runoffs, such estimates become quite simple.

Under the evaporation-flat system, the farmer himself would install the field drains (tiles or ditches) and the disposal ditches leading to his evaporation flat. Since the field and connecting drains should be installed to depths of upward to seven feet or more, small on-farm deep collecting sumps are necessary for the accumulation of the day-to-day drainage. Pumps, whether power or Persian wheel, are necessary for the discharge of drainage effluents from the sumps onto the evaporation flats.

The installation of on-farm evaporation flats is, of course, not an ideal substitute for country-wide drainage systems. But the method, as an alternative, is regarded by the writer as one of much promise under the existing