

is developed. History has repeatedly demonstrated that a permanent agriculture requires that the salts added to irrigated lands be balanced by a commensurate salt removal. The mere fact, however, that a "salt balance" is achieved may be meaningless if the balance exists only after the lands are too saline for a self-supporting agriculture. Drainage facilities should be established before, rather than after, an agriculture is impoverished.

One automatically cringes at the thought of discharging saline drainages into the canals and rivers that are supporting downstream agricultures. The destruction of old agricultures to promote new ones can provide no mental comfort. The longevity of an agriculture which supports many millions of people should be viewed in terms of centuries rather than on the basis of an expedient which may suffice for only a limited number of years.

The *Report on Land and Water Development in the Indus Plain* [8] and the Panel's paper estimate that with recycling of the groundwater to supply additional irrigation water and at the same time prevent a further increase in waterlogging, the groundwaters will, with 10 to 50 years of pumping, have become too saline for further use.

The reports further recognize that the quality of the groundwaters underlying the Indus Plain are uneven: "... pools of poor quality water are interspersed among the good." By the data presented for the Northern Plain, only one-third of the groundwater contains less than 500 ppm of total salt. A total of 38 per cent contains more than 1000 ppm of salt. The reports recognize that a disastrous infiltration of bad waters into the good will occur if the elevations of the good waters are reduced by pumping below the elevations of the bad. In other words, the idea is accepted that both the bad and good waters must be simultaneously pumped but the statement on how the bad waters should be disposed of is not very specific. It is suggested only that the bad waters might be discharged into lagoons or returned to the rivers during flood periods.

Two questions are raised by these proposals, particularly since the areas of bad waters will progressively expand during the 10 to 50 year periods of pumping until all waters are salinized. When the good waters are exhausted, Pakistan will again be dependent on canal waters. Neither the present nor future bad waters which require pumping will necessarily be adjacent to the rivers. The canals for distributing irrigation waters were designed for distribution only and it would appear to require much planning and construction of new drainage works to carry away the discharges of widely scattered wells pumped only to protect the quality of the pools having good water. The problem of disposing of the saline groundwaters is recognized as one which will become