

detail. By 1970, the entire flow of the Sutlej, Beas and Ravi Rivers (designated as the Eastern Rivers in the Indus Water Treaty) will be diverted by India and there will be no period of high run off in these rivers. No saline tubewell waters can, therefore, be returned into the Sutlej and Ravi Rivers.

The same would be the condition of Chenab and Jhelum Rivers after a few years. According to Mr. S. S. Kirmani, Chief Engineer, Indus Basin Projects, West Pakistan WAPDA, "After the completion of the Indus Project, most of the flows of the Jhelum and Chenab Rivers will be fully used in the existing irrigation system and for the replacement of the irrigation uses on the Eastern Rivers" [11, p. 247]. The Chenab and Jhelum Rivers will have a surplus of only 2 to 3 MAF which will consist of erratic and infrequent flood peaks of only a few days duration.

No drainage tubewell waters from any part of the Punjab can therefore be returned to any river during the "period of high run off" because there will be no period of high run off after 1975. If canal capacity is increased and more river water is diverted on to lands as suggested earlier in this paper, there may not be any period of high run off after 1970.

The Indus is the only river in which some 35 MAF will continue to flow to the sea during the period of high run off but topography does not permit drains in any area in the Punjab part of the Indus Plain to outfall to the Indus River. Drainage waters from the lower part of the Bahawalpur and Sind could be returned to the Indus during the period of high run off, but that would damage the agriculture in Lower Sind, slowly but certainly. As pointed out by Dr. Eaton (p. 382), the longevity of 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. Alexander Karpov has pointed out there are millions of acres in North Africa and Western Asia where great cultures once flourished. At present nothing is left but sand dunes, salt marshes and eroded landscapes [10, p. 227]. The proposals of Panel members and of Tipton and Kalmbach would similarly convert the Indus Valley agricultural areas into barren salty lands.

The Panel members have also proposed disposal of saline pumped waters into desert lagoons. This is possible for Bahawalpur and parts of Sind, but unfortunately there are no desert lagoons in the Rechna and Chaj Doabs where large quantities of pumped waters from the highly saline groundwater areas of these doabs could be disposed off. The conclusion is therefore inescapable that there is no place for disposal of pumped water from the highly saline groundwater areas in the Punjab. These must remain where they are. Salt from the upper 7 to 10