These water supplies are to be obtained by river diversions of 103 MAF at the canal heads and by pumping 36 MAF from tubewells. Only 72 MAF of the river diversions actually reach the water courses; the remainder is lost by seepage and by non-beneficial evapotranspiration. It is assumed that seepage into the ground from link and irrigation canals, water courses, and farm fields will balance the volume of water pumped. About 13 MAF of the diversions at canal heads are to be made possible by enlarging the canal system. All of the pumped water and nearly two-thirds of the canal water are to be used in the Northern Zone, with the result that about three-fourths of the total water supply is to be concentrated there.

In Table II we have computed from Harza's data the water budget by months. This table gives the interesting result that through careful coordination of tubewell and canal supplies it is possible, without enlarging the canals, to increase the beneficially usable river diversions during the *kharif* season by about the same amount as Harza calculates could be accomplished by canal enlargement.

Comparison of Different Budgets

In Table III, we have shown a comparison of the Harza "Programme" budget with that given in the Panel Report and with a budget for the Northern Zone computed from data given by Ghulam Mohammad[4]. The chief difference between our budget and Harza's is that ours was not based on crop requirements but on an estimate of the supplies that could be made available fairly quickly and with total expenditures much lower than those ultimately needed. We assumed construction of Tarbela and Mangla Dams to hold 12 MAF of live storage, and of a widespread grid of tubewells. These would be used to recover all possible recharge and to mine the aquifer in the Northern Zone down to a depth of about 100 feet. Another major difference is that we allocated much more water to the Southern Zone, both from canals and from tubewells. Finally, we attempted to work out a budget which would closely approach the ultimate potentialities of the river supplies in the Indus Plain, on the premise that the most rapid possible approach to the ultimate water potential offers the greatest opportunities for agricultural development and for economic and social progress. This premise receives some justification from the cost-benefit analysis of two alternative design schemes for the Northern Zone given in Chapter 7 of the Panel Report [1]. The first design involved the mining of the entire aquifer to a depth of 100 feet and provision of a firm water supply to 16.4 million acres under intensive cultivation. In the second design, the ultimate depth of the watertable was set at 50 feet; water would be pumped only at a rate sufficient to recover seepage losses in the distribution system and recharge from rivers and rain.