

in elevation between the Indus River and the affected areas. Water tables were probably quite high, even before irrigation began, and, in most places, the underground water has a high salt content. Although a lowering of the water table can probably be induced by pumping from tube wells over a sufficiently large area, this would not, in general, have the advantage, which is so readily attainable over most of the Punjab, of increasing the irrigation water supply. In most areas, expensive conveyance channels will have to be constructed to enable disposal of the pumped water in the Indus River.

Total areas of waterlogged and severely saline land

By adding the figures given in the above pages, we arrive at a total of about 6.5 million acres of actually or potentially culturable lands in the Indus Plain that are seriously affected by waterlogging and/or high soil salinity. This is a fourth of the average gross sown areas during the past decade. There is little question that in several million additional acres the soil salt contents are too high to allow optimum crop production. On the other hand, a fraction of the saline and waterlogged area has never been cultivated, and a smaller fraction is not cultivated at present.

Over three million acres, or half of the affected land, is in Former Sind, and its total area is equivalent to half the total gross area sown in this region. But the area of cultivated land that is seriously affected cannot be more than two million acres, or a third of the gross sown area.

In Former Bahawalpur, the area of waterlogged and salinity damaged land is about 17 percent of the gross sown area, roughly the same as in the Former Punjab. In general, we may conclude that the area of damaged canal-irrigated and cultivated land is roughly 5 million acres, or about 18 percent of the gross sown area in the Indus Plain, and 22 percent of the canal-irrigated sown area.

Effects on Agricultural Production

It is difficult to obtain a quantitative measure of the effects that waterlogging and salinity have had to date on agricultural production. Tables 1.8 and 1.9 give average data over the decade from 1949 to 1959 on areas sown to different crops, yields, and crop values in the nine Punjab Districts with major canal irrigation. The percentage of waterlogged and saline land is low, averaging less than 10 percent of the cultivated area, in five of these Districts: Lyallpur, Shahpur, Lahore, Montgomery, and Multan. Their