

that the output of intermediate goods is sufficient to support the anticipated production of end-products but, at the same time, it would be fallacious to include the value of the intermediate goods in appraising the productivity of the economy. They are consumed by the economy just as surely as they are produced by it and the only value produced is that of the end-products.

In the economy under study, fodder and the services of bullocks are the most significant intermediate goods. For example, much of the fodder fed to livestock is a complementary by-product of the normal cropping pattern. Wheat straw, and sorghum stover are two of the main sources of feed. This dry fodder is supplemented by additional supplies of green fodder during most of the year as shown in Table 5.16. Because forage is considered a necessary input to livestock (except in a few local areas where it can be sold), it is not included in the value of agricultural production for the region. Bullocks, too, are not included, though other livestock products (meat and milk) make a substantial contribution to the value of Khairpur output.

Water, the last of the major inputs, is the most limiting resource of Khairpur. The analysis took, as given, the water supplies shown in Row 13 of Table 5.17. These supplies represent the mean monthly discharge of Khairpur Feeder West in acre-feet. For example, 69.9 thousand acre feet have been available historically during the month of October.

The monthly water requirements for an acre of each crop are shown also in the same table. Unfortunately there is inadequate information on the quantity of water farmers use per acre for each of the crops, and the coefficients given in Table 5.17 are derived from the Weather Bureau data shown in Appendix A. 1. These data represent the potential evapotranspiration during the different months of the year; however, they are thought to be a reasonable approximation of present irrigation practice in Khairpur. (7) The salinity of the canal water is low, and water much in excess of evapotranspiration is not required for leaching purposes, at least over the short term.

For example, cotton, oilseeds, and winter vegetables all require 0.43 acre feet of water per acre during the month of October. In fact, use of the Weather Bureau

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(7) The disagreement on water requirements for different crops mentioned earlier applies to Khairpur as well. The Khairpur analysis was completed also using the Blaney-Criddle water requirements (H. F. Blaney and W. D. Criddle, Irrigation Water Requirements for West Pakistan). Except for sugarcane and winter vegetables, the latter coefficients gave essentially the same results as the Weather Bureau data.