

(see Map 1.2), the average annual rainfall is more than 26 inches.(1) In northern Mianwali, at the foot of the Salt Range, and in Shahpur, Gujranwala, and Lahore, the annual precipitation does not much exceed 18 inches. It diminished substantially as one proceeds to the south in Bari, Rechna, and Thal Doabs and in Former Bahawalpur. Roughly four-fifths of the area of irrigation agriculture in the Former Punjab has an average annual rainfall of 12 inches or less.

In the northern part of the Former Sind, the average annual rainfall is less than five inches, and this is concentrated mainly in July and August. Annual precipitation increases toward the Southwest as the tropical coast-land is approached, to about 10 inches.

Average Seasonal Rainfall

The customary growing season for winter (Rabi) crops extends from October 17 through March 31. Map 1.3 shows the average rainfall. None of the Former Punjab under canal irrigation experiences, on the average, rainfall over five inches; Former Bahawalpur and southern Former Punjab receive two inches or less; and the central part of Former Sind less than one inch.

Map 1.4 displays the isohyetal pattern during the summer (Kharif) growing period, extending from April 1 through October 15. Since this is the rainy season, the pattern of distribution is similar to the average annual rainfall. South of the foothills of the Himalayas and the Salt Range the highest values run between 18 and 22 inches. Four-fifths of the canal-irrigated area in the Former Punjab receive less than 12 inches. In southern Muzaffargarh, Multan, and Former Bahawalpur, the summer average is less than five inches, and in northern Former Sind, less than four inches. Central and southern Former Sind receive slightly more than six inches.

Effective Precipitation.

The amount of rainfall, its rate, and the duration of fall determine whether precipitation will percolate deeply into the soil or be lost through surface runoff and evaporation. These factors can be utilized in estimating the "effective precipitation"—effective in the sense of availability for consumptive

(1) "Average Rainfall in various Sub-Periods in Inches" Indus Basin Working Party, Set No. 15 (Pakistan), Study II-3 to II-7, Statement A(6).