Dryland agriculture and dryland farming are terms that are universally used but are often poorly understood and defined. In many cases, dryland farming and rainfed farming are used interchangeably but they are vastly different. Combined, they supply 60% of the world’s food production. Since the 1970s, however, most of the increase in food production—more than three-quarters—has resulted from increases in yield, mainly as a result of the Green Revolution (FAO, 2000a). The Green Revolution focused largely on irrigated lands or areas where precipitation was favorable. Irrigated areas increased from 139 Mha in 1961 to 263 Mha in 1996 (Brown et al., 1999). Expansion of irrigation area peaked in the mid-1970s at 2.3% per year, but slowed to about 1.4% per year during the decade of the 1990s (Brown et al., 1999). The irrigated area in developing countries in 1996 was some 94 million hectares, nearly double what it was in 1962 (FAO, 2000a). As irrigation expansion slows, crop production in rainfed regions must increase if food production is to keep up with population increases (FAO, 2000a).

Rainfed farming includes dryland farming, but dryland farming is generally defined as agriculture in regions where lack of moisture limits crop and/or pasture production to part of the year. It has been estimated that insufficient soil water limits crop production in approximately three quarters of the world’s arable soils, and is the over-riding factor responsible for low yields in the seasonally dry and semiarid areas. The dryland portions of rainfed regions will have to play a greater role in providing food and fiber in the future. Before looking more specifically at definitions of dryland agriculture, it is important to understand the extent and location of dryland areas.