SEMII-ARID AND ARID REGIONS

Conservation Needs and Technology on Agricultural Land

The 11 contiguous Western States are classified as arid or semiarid (C.W. Thornthwaite, 1941, Atlas of Climatic Types in the United States, 1900-1939), except for parts of California, Oregon, and Washington. While the eastern parts of the Great Plains States are classified as either moist or dry subhumid, these areas experience many of the same adverse climatic extremes as the drier areas west of the 96th meridian. The arid and semiarid regions (17 Western States) are usually short of water for crop production without irrigation. Water deficits limit plant growth and crop yield to some extent almost every year.

Water deficits are not uniform or predictable from year-to-year. Crop yields are highly uncertain and substantial between-year variations in farm income are inherent to these arid and semiarid regions. A number of strategies have been devised and implemented which abate some of this uncertainty. Crop varieties have been developed which are more drought resistant; tillage machines and cultivation practices which conserve soil water are used. The crop-fallow practice reduces yield variability by storing some soil water for use in the subsequent year. Much of the nation’s grain is produced in the vast semiarid dryland region of the