

The earth's land surface is 13.2×10^9 ha, but only 7×10^9 ha of this is arable, of which only 1.5×10^9 ha is currently cultivated (Massoud 1981). The rapid conversion into barren land through salinity/sodicity has negatively affected the environment and has substantially altered natural resources in a number of countries. The largest area of the world's saline soils occurs in the arid and semi-arid regions (Massoud 1974; Ponnamperna 1984), where evapotranspiration exceeds precipitation. One billion hectares of the 13.2×10^9 hectares of the land is, thus, covered with saline and/or sodic soils, and between 25% and 30% of irrigated lands are salt-affected and essentially commercially unproductive. The countries affected by salinization are predominantly located in arid and semi-arid regions, where continued irrigation with low quality groundwater has taken place. These degraded soils occur principally in the hot arid and semi-arid regions, although they have also been recorded in Polar Regions (Buringh 1979). Older estimates (Szabolcs 1989) described 10% of the total arable land as being affected by salinity and sodicity, with the effects extending to over 100 countries in all continents. Worldwide, some ten million hectares of irrigated land is abandoned annually because of salinization, sodication and waterlogging (Szabolcs 1989). Of the cultivated lands, about 0.34×10^9 ha (23%) are saline and 0.56×10^9 ha (37%) are sodic. Low rainfall has also contributed to the expansion of salt-affected soils.