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Soil erosion and land degradation in the Highlands of Jordan

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The Highlands of Jordan has a Mediterranean type of climate characterized by hot dry summers and cold wet winters. Unsustainable land use practices, recurrent droughts and climate change are the main causes of land degradation in the Highlands area of Jordan. Unsustainable land use practices include improper plowing, inappropriate rotations, inadequate or inexistent management of plant residues, overgrazing of natural vegetation, forest cutting, land fragmentation and over-pumping of groundwater. In addition, Jordan's rapid population growth (2.8% per year) is exerting considerable pressure upon its limited arable land through uncontrolled and random urbanization activities.

Water erosion is the most widespread Land degradation type in the country. It greatly increases on slopes where the vegetation cover is (seasonally) reduced. It is further aggravated by a loss of soil structure and reduced infiltration rates. Wind erosion occurs most frequently in the arid and semi-arid portions of the southern Highlands, especially in areas with sandy or loamy soils. Rangeland degradation is the second most widespread land degradation type that is driven by overgrazing. The impact of overgrazing on the vegetation is evident from the excessive uprooting of the green matter (grass and bushes), leading to reduced seeding, reduced regeneration, and the consequent loss of plant cover which make the soil more susceptible to water and wind erosion.

It is estimated that about 41 percent of Jordan's total land area is characterized as degraded of which 22 percent of the total land mass is classified as moderately degraded and agricultural productivity is greatly reduced. Observed aspects of land degradation include the recession of forest areas, high rate of erosion by water (formation of rills and gullies), expansion of urbanized area, reduction in soil organic matter and soil structure deterioration.

Implementation of soil erosion control measures such as contour cultivation, terracing, management of crop residues, and stonewalls construction helped in reducing erosion.