

Perceiving and managing soil erosion by farmers in Kashmir, Pakistan

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Abstract

Mountain agriculture is the wide spread and vital integrated farming enterprise throughout Azad Jammun and Kashmir. Soil erosion is the most serious mechanism of land degradation on arable lands. Very little efforts have been identified paid on soil and water conservation measure on farm lands with most activities concentrated on grain production.

The aims of the current study were to identify and describe the traditional and introduced soil conservation practices in relation to soil conservation and the socio-economic constraints to their implications. The study also aimed at suggesting alternatives for natural resource uses with special emphasis on soil conservation for sustainable agriculture development.

Generally, the socio-economic factors like illiteracy, poverty, small land holdings and unreliable farm income dominate the determination of farmer's perception, interest and attitudes towards soil management. Unpredictable climatic conditions and the relief are the vital factors among the crop production constraints. Low yields are the out-comes of depleted soils, insufficient crop rotation practices, high cropping intensities, the prevailing, agronomic practices and insufficient animal manure available at the farm fields.

The environment of central highlands of agro-ecological zones II and III, being relatively densely populated, has been identified as highly fragile and prone to degradation due to alarming human impacts. The same areas are being marked as the origins of soil erosion dominating in on-site and off-site downhill impacts recorded at the catchment areas. Intensive cultivation of slope lands and the over-grazed range lands come under the direct influences of erratic rainfalls.

The study identified main traditional soil and water conservation practices as tree plantations, terracing, Att-Bandi, Watt-Bandi, Karah making, drainage ditches, construction of loose stone protection walls against terrace heads and the land levelling. These practices were although effective objectively, however, were not practised enough in all the parcels of farm land because of lack of proper financial resources.

The soil conservation activities mainly includes tree plantations, engineering works like gully plugging in the water-sheds, the construction of wire-crates (gabions) and loose stone walls against the slipping land masses, as diversion/distribution/protection walls constructed across the stream flows, terracing and land levelling. Limited development funds, political/administrative and socio-economic constraints have been identified in the establishment and effectiveness of these practices.

The study also concludes with a needed research program to quantify the magnitude of active soil erosion, the inter-relationships among essential causative parameters, the importance of land use and land capability classifications, cropping systems and devising their preventive or corrective measures.

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