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Land degradation causes and sustainable land management practices in southern Jordan

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Jordan is one of the world's most water-deficit countries with only about 4% of the total land area considered arable. As a consequence agricultural production is greatly constrained by limited natural resources. Therefore, a major challenge for the country is to promote the sustainable use of natural resources for agricultural purposes. This challenge is being made harder by the ongoing processes of degradation due to increased population pressure, which undermine any social and economic development gains.

In the southern plains of Jordan, sustainability of farming practices has worsened in the past three decades, exacerbating pressure on land and increasing land degradation processes. Non-sustainable land use practices include improper ploughing, inappropriate rotations, inadequate or inexistent management of plant residues, overgrazing of natural vegetation, random urbanization, land fragmentation and over-pumping of groundwater. The root cause is the high population growth which exerts excessive pressure on the natural resources to meet increased food and income demand.

The poorest farmers who are increasingly growing cereals on marginal areas. Wheat and barley are now grown with little to no rotation, with no nutrient replenishment, and at places avoiding even fallow. Small landholding sizes and topographic features of the area tend to oblige longitudinal mechanized tillage operations along the slopes. Overall, the constraints facing the deprived land users such as, poor access to technology, capital and organization are the factors that lead into unsustainable practices.

The main bottlenecks and barriers that hinder mainstreaming of sustainable land management in Jordan can be grouped into three main categories: (i) Knowledge, (ii) Institutional and Governance, and (iii) Economic and Financial.

In this case study, the key challenge was to create a knowledge base among local stakeholders – including planners, extension officers, NGO/community leaders, teachers, farm owners, and farm workers – to support the inclusion of sustainable land management while sustaining ecosystem services and livelihoods. Also, we demonstrated and focused on practical understanding of how to identify and address land degradation and on using sustainable land use practices – including soil and water conservation measures, conservation agriculture, and rangeland management- through combination of expert and participatory research and participatory planning.