

POLICY BRIEF 01

Effective Mechanized Rainwater Harvesting: Coping with climate change implications in the Jordanian *Badia*

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In the two communities of Mharib and AlMajidyia micro-catchment water harvesting techniques, like contour ridges and furrows, runoff strips and bunds were designed and established. Vallerani machine, a plow with a hydraulic arm for intermittent pit excavation along the natural contour of the slope, was used for excavating furrows. Scientific research led to a low-cost Contour Laser Guiding (CLG) system, based on GPS guidance technology, which was adapted and implemented to the Vallerani unit. The main beneficiaries are the herders and rural communities of marginal lands where sheep and goats are the main source of income for better livelihoods.

Technologies for improved rainwater management in Jordan

In a project on Community-Based Optimization of the Management of Scarce Water Resources in Agriculture in West Asia and North Africa, which started in 2004 with funding support from Arab Fund for Economic and Social Development (AFESD), International

Fund for Agricultural Development (IFAD) and OPEC Fund for International Development (OFID), ICARDA established several benchmark research sites in different agroecosystems including Jordan Badia for the implementation of integrated watershed management approach. GIS-based land suitability analysis was performed to integrate biophysical and socioeconomic factors into a comprehensive site characterization map.

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For the sustainability of the project, communities were actively engaged and they agreed not to graze the newly planted shrub for at least two years after planting, a time needed for the establishment of drought tolerant *Atriplex* species as a source of fodder shrubs. This system reduced the pressure on rangelands and also provided sources of nutritious feed from the drought tolerant *Atriplex* species.

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The integrated approach that was used in the Badia recovery to sustain plant cover and conserve soil from degradation has resulted in community resilience to harsh environment and to the severe effects of climate change. The use of mechanized Vallerani system has allowed the implementation of rainwater harvesting package at a large scale.

The main beneficiaries are the herders and rural communities of marginal lands where sheep and goats are the main source of income for better livelihoods. This system has enabled them to grow fodder shrubs and reduce pressure on rangelands for livestock grazing in areas where rainwater is not enough to support