

**RAIN WATER HARVESTING AND MANAGEMENT OF SMALL DAMS
IN MEDITERRANEAN AREAS (NORTH AFRICA AND MIDDLE EAST)**

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Following the example of countries to the north of the Mediterranean, those of North Africa and the Middle East have initiated a policy of small dam construction. The objectives of this type of water resources management essentially fall into two different and at times contradictory categories: soil and water conservation and management and economic and social development:

- Erosion control, protection of the downstream infrastructure, in particular protection of large dams against rapid sedimentation;
- Integrated rural development through the provision of a scarce but vital renewable resource: equitable distribution of water to rural areas while limiting disruption to the social order, massive land expropriation and the displacement of infrastructures or people.

Using the results of multi-disciplinary research carried out in two countries in North Africa (Morocco and Tunisia), and two in the Middle East (Lebanon and Syria) the present article endeavors to show the role of small dams in the mobilization and management of water and soil resources in the semi-arid Mediterranean zones. It first outlines the context in which the projects are being implemented to an ever-increasing extent in the countries studied. As the culture of land development is different in each country, the construction of small dams has followed different directions and objectives. The first common feature is the political will to further develop this type of conservation project in the years to come. The objective of protecting large dams is more widespread in North Africa than in the Middle East. The fisheries aspect is completely absent in Tunisia.

Possible ways of protecting the conservation works and structures were studied using a model for the estimation and simulation of sediment transport and

yields. This provided a better understanding of the erosion and siltation phenomena.

The issues involved in integrated development around hill reservoirs are closely linked to the sustainability of the resource. The types of crop and of agricultural development must be adapted to the life expectancy of the dam and to the frequency of its dry periods. The recharge of the water table in the valley improves the potential for development.

The environmental impacts of these structures are linked to the quality of the water and the maintenance of its supply. These impacts are positive, and the principal risk is dike failure.

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ABSTRACTS

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