
S1-07 Kamech, a long-term observatory of critical zone in interaction with land management and the presence of a small dam in North Africa.

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Résumé

The Kamech catchment (263 ha) located on Cap Bon in Tunisia, belongs to the "Observatoire Méditerranéen de l'Environnement et des Ressources en Eau" (OMERE) since 2005. In the context of global change, this observatory focuses on Mediterranean cultivated hydrosystems. It is an intermediate hydrological context with arid and temperate environments, and is therefore subject to a wide range of hydrological processes, from intense droughts to extreme floods. It is a social context where human actions are millennia old, and which is currently undergoing considerable changes linked to a rapid increase in population: intensification of agricultural production in favourable terroirs and increase of hydro-agricultural or environmental conservation developments.

The use of the observations acquired in this observatory is line with four main scientific objectives:

- To analyse the impact of land use, land management and water-agricultural infrastructures on the hydrological cycle and sediment transport (quantity and quality).
- To evaluate the respective dynamics and intensities of sheet and gully erosion in relation to the anthropic pressure.
- To analyse the medium and long term evolution mechanisms of water quality in response to a change in polluting pressure by organic xenobiotics used in agriculture.
- To develop a generic distributed hydrologic modelling structure for cultivated environments that allows simulation of the impacts of land use and development scenarios in cultivated environments on one hand and of climate change in the other hand.

The Kamech catchment has been monitored for water balance and erosion since 1994. The monitoring of atmospheric flows, surface conditions, cultural practices, carbon flows and diffuse pollution have been implemented in turn. An experimental device includes four automatic hydrological stations at nested scales (plot, gully, micro-catchment, catchment), a small dam used as a sediment trap, three rain gauges, eleven rain gauges, two complete agro-climatological stations, a flow measurement tower, 12 piezometers. Land management and

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crop rotations are monitored on the ground on test plots and generalized by UAV or satellite images. All data and metadata are put online and already used for some 50 publications in peer-reviewed journals, 12 PhD theses and some 30 master's theses.

Mots-Clés: hydrology, evapotranspiration, erosion, small dam, land management, pesticides, critical zone, Tunisia, Mediterranean.