

PERSPECTIVES ON SOIL PROTECTION IN THE MEDITERRANEAN

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ABSTRACT

The actual cycle of soil degradation in the sloping Mediterranean area has deep root in the past colonization of the sloping land, firstly in the search of defensible and healthy areas and, afterward, for agricultural and pastoral exploitation of an increasing population.

Such a situation is completely changed in the last decades. In disadvantaged Mediterranean agricultural areas, as elsewhere, a decrease and ageing of rural population has occurred, followed by partial abandonment of agricultural and pastoral activities.

The main causes of actual accelerated soil degradation can be summarized as follows: 1) crop specialization and/or decreasing of long-term forage crop in the rotations; 2) reduction and concentration of animal husbandry, determining the reduction, if not complete abandonment, of the traditional organic farming (based in FYM) on a single farm basis; 3) integral mechanization of crop farming, with the following consequences: a) increasing up-and-down ploughing of the soil for arable crop cultivation; b) increasing up-and-down deep ripping for implanting tree crops, yearly tilled up-and-down afterward for annual weeds control; c) overall reduction of mechanical measures for water management and erosion control, such as contour ditches, underground drainage, terraces, etc.; d) enlargement of the cultivation units on slope, to make easy the use of large machinery; e) increase of soil compaction due to machinery traffic; 4) increase of fires for cereal crop straw and stubble disposal, for pastures renovation and for more or less casual forest fires; 5) uncared and/or lack of maintenance of structural and infrastructural elements of the landscape:

Some of them are mechanical (levelling and/or modelling slopes; adopting storm water channel, contour ditches or contour road (terracing); underground stabilizing drainage; ploughing and tilling on the contour, etc.); some other are agrobiological (long duration forage crops in the rotation, controlled grass-sod in tree perennial crops; zero or minimum-tillage, mulching, cover crop, residue management in arable land; steered reconsolidation of arable land by reforestation, grass-sodding, forage shrub plantation; forest management and fire control in forest land; management of pasture land avoiding overgrazing and recurring to pasture amelioration practices and rotational grazing.

Soil conservation programmes on a watershed basis seem the adequate strategy by adopting, case by case, appropriate combination of the practices listed above. If and when such a strategy would be adopted, we are confident that, not only the on-site soil degradation would be abated, but also a virtuous way may begin for the recovery of an environment that was overexploited and degraded for a long time

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