



Desertification, Land Degradation and the restoration of soil functions

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Soil science and soil scientists have and are playing different roles in desertification. Research has shown that the main drivers of land degradation are unsustainable practices of agriculture and industry or of forest clearance. If we look at soil conservation and soil protection, this is mainly in the service of agriculture and development. The LEDDRA project is looking at different paradigms of land degradation that could be used to identify emergent benefits and constraints that could lead to people adopting and favouring activities that lead to the restoration of land and soil functions. The second part of the paper will discuss how soil process knowledge can be applied to restore the hydrological function of soils and produce economic benefits by reduced flooding and soil loss. The third part of the paper will introduce the Agriscape strategy which aims to improve the productivity of soils in different environments and settings by improving their moisture and temperature conditions. Finally, the opportunities for large scale geoengineering approaches will be proposed that include things such as altering the evaporative losses and restoring groundwater levels in arid areas. A global programme of soil and forest restoration could be undertaken restoring and creating terraces creating agricultural land and water, which has additional benefits to crops. The loss of the supporting functions of the earth could be impaired if there is no global governance of the land and water.