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Erosion and Land Degradation in Mediterranean areas as a adaptive response to Mediterranean agriiculture

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The motivation for this session is the statement or claim that Mediterranean areas are sensitive to erosion and desertification. One result of the LEDDRA Approach, which is applying the Complex Adaptive (CAS)paradigm at study sites in Mediterranean Spain, Greece and Italy is that there is just a single socio-environmental system in which land degradation is being caused by the actions of people and the Mediterranean soils have co-eveolved with people under the influence of fire and grazing. They are therefore resilient, and this was demonstrated by Naveh and Thornes. Also the Medalus field sites showed very low rates of erosion. With examples from different Mediterranean landscapes, it is considered that Mediterranean landscapes went through an initial phase of being sensitive to erosion which ended up with the original soils before ploughing or deforestation, being eroded from most of the areas, In some places these are found.
LEDDRA
The Leddra approach is to consider different states which are separated by transitions. The first state is that of the deforestaion and destruction of the forest that took place 6000 10000 years ago, in the Eastern and Northern Mediterranean, and 2000 to 4,000 years ago in large areas of the Western Mediterranean, and 100 to 400 years ago in California. Australia, New Zealand and Chile.
The second state involves appropriating and settling the land from indigenous people and introducing cattle and sheep and Mediterranean crops. The current state of desertification is one in which erosion occurs because of the use of specific cultivation methods and subsidies for irrigating and producing crops outside of their range. In the Mediterranean landscape State, such as found near Santiago in Chile and in Crete, society gains many cultural benefits from grazing. However, the consequences of this are that the whole ecosystem is maintained in an arid state, so that areas in Crete receiving 800-1100 mm rainfall have a semi arid vegetation, instead of the Cedars they once had. Much of the rainfall in Crete is lost as an asset to evaporation or it runs off and does not infiltrate to become groundwater.
The conclusion is that the cause of Mediterranean desertification is not at all related to erosion. Erosion is a problem of the non sustainable practices that destroy damage biodiversity and compact and transform the soil. This has nothing to do with climate because it happens everywhere. The Ermes project suggested that erosion is greatest where the annual rainfall is about 300 -400 mm because of the influence of salt and the dispersion of clay.