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Drivers of desertification and their impact

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An inventory was made of drivers of desertification and how they impact on the degradation process. The major drivers of desertification were analysed and compared between 16 sites around the globe. For each of these sites factors were scored with a perceived influence on desertification. Most of these factors, from the socio-cultural, environmental, and economic dimensions, appeared to be related to land management and planning and to (de-)population. They cause a number of temporary or permanent changes in the landscape, which, by themselves or in combination, lead to degradation of vegetation and soils. Most sites have several forms of land degradation occurring in and around their study area of which erosion by water is the dominant one. Other degradation types occurring in sites were: wind erosion, soil salinization, seawater intrusion in the groundwater, vegetation and biodiversity decline, groundwater depletion, decreased productivity/ carrying capacity, soil fertility decline, water logging and water pollution.
As a first step, data and information was gathered on policies, desertification status and processes and on socio-economic conditions. The DPSIR framework (Driving force, Pressure, State, Impact, Response) provides a structure for assessment of the impact of past measures on the status of the environment or to formulate effective measures. In analysing the data, the different data items were structured in and formulated to elements fitting the DPSIR chain. Then possible connections between these different aspects were analysed.
In our analysis nine major drivers were reported for the various sites, of which one was environmental, three drivers were related to land management, one driver was related to planning and policies, three drivers were related to socio-economic conditions, and one driver related to legal land status. Depending on the specific desertification process, factors may be positively or negatively related to desertification. The processes and associated pathways to desertification varied considerably.