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Land degradation in savanna environments - assessments, dynamics and implications

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Land degradation is a human-induced process deteriorating ecosystem functioning and services including soil fertility or biological productivity and, usually, it is accompanied by a loss of biodiversity. Land degradation causes on-site and off-site damages like a profound change or removal of vegetation cover and soil erosion on one hand as well as flooding of receiving streams and siltation of reservoirs on the other hand. Thus, land degradation poses a threat to a number of Sustainable Development Goals (SDG) including foremost sustainable life on land and under water, the provision of clean water and eventually the eradication of poverty and hunger on Earth.

Often, land cover change is a valid indicator of land degradation providing the opportunity to take advantage of the increasing geometrically and temporally high-resolution remote sensing capabilities to identify and monitor land degradation. However, especially in semi-arid regions like savanna environments, globally driven inter-annual and decadal climate variations cause as well profound land cover dynamics which might be mistaken for land degradation.

Assessing and combating land degradation has already a long scientific, socio-economic and political history. Based on this, the aim of this session is to explore the wide range of methodological approaches to assess land degradation, its dynamics over all spatial and temporal scales as well as the implications for society and the interaction with the different spheres of the Earth including the anthroposphere, atmosphere, biosphere, hydrosphere and pedosphere. Contributions to this session can be based on field work, remote sensing approaches or modelling exercises, they can also focus on specific physical and socio-economic aspects of land degradation like land management, land cover change or soil erosion or discuss land degradation in a broader societal context. The aim of this contribution is to provide a concise overview of the thematic framework, current activities, research questions and advancements.