Linking Sustainable Land Management (SLM) and Climate Change(CC): Processes, Policies and Actions

Sponsor: UNCCD

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It was emphasized that the three Rio conventions—addressing desertification, climate change and biodiversity loss—were interlinked in a biophysical way. Synergies between SLM and CC existed – such as in agriculture, land use and carbon sequestration - but were often neglected in national policies. There was thus a need for applying a systems approach by: a) finding synergies with other key areas; b) relating SLM to global development agendas; and c) identifying practical interventions in terms of laws and institutions; strategies and policies; knowledge and research; and technologies.

GEF was the largest source of funding for developing countries for SLM practices. The current GEF-4 allocated around $1 billion for climate change, $1 billion for biodiversity and around $250 million for land management. In this regard, the importance of creating a synergy was emphasized, as it would have enabled achieving more results with the same resources.

The biophysical principles of SLM and its relation to CC were also discussed. It has been demonstrated that dedicating land to biofuels actually increased carbon emissions, and lead also to increases in food and fertilizers prices. Agriculture without mineral fertilizers maintained soil organic carbon (SOC) levels, and advanced agriculture had important climate change footprint. Production of ammonia needed for fertilizers, for example, consumed 3.35% of world natural gas production. Most agricultural soils have lost 60 to >75% (20 – 80 Mg ha^{-1}) of their original SOC. The soil organic matter (SOM) played a critical role in maintaining soil fertility. As a case in point, the use of charcoal from pyrolysis plants in revitalizing land was discussed in detail. In one case study (Terra Preta, Brazil), charcoal and ceramics was added to transform infertile soil into fertile one. Soil organic matter was critical for reflected in maintaining soil quality through maintenance and improvement of water and nutrient holding capacity, as well as for playing the role of a carbon sink.