

Climate, Land Use, and Conflict in Northern Africa

MPI-M/CliSAP Workshop on Climate, Land Use, and Conflict in Northern Africa; Lübeck, Germany, 22–25 September 2014



A field lies ready for planting in the Sahel region of West Africa. Photo: Thinkstock; fi ondavi

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Northern Africa, and the Sahel in particular, are highly vulnerable to climate change, due to strong exposure to increasing temperature, precipitation variability, and population growth. A major link between climate and humans in this region is land use and associated land cover change, mainly where subsistence farming prevails. But how strongly do climate change and land use change affect each other? To what extent are climate-induced water, food, and wood shortages associated with land degradation, migration, and conflict?

Some 60 natural scientists, sociologists, economists, and peace researchers from various

institutes, as well as participants from governmental and nongovernmental organizations from a dozen countries, met to address these questions. Twenty brief impulse presentations and seventeen poster contributions, together with in-depth discussions in focused sessions and a concluding panel, covered the nexus of climate change, land use, and conflict in Northern Africa.

Talks on climate change highlighted that the near-surface atmosphere over the Sahara has warmed at 3 times the rate of the global mean in the past 30 years, most likely triggered by increasing fossil fuel emissions. Climate models that predict the dynamics of vegetation change reveal some greening that extends into the Sahara in the coming decades. The underlying processes and the time horizon differ, however, among models.

New evidence was presented for the strong connection of the large-scale Sahel greening or the recent decline in burnt area with precipitation variability. However, besides climate, local land use decisions as well as global drivers such as land grabbing were shown to affect land use and, thus, vegetation change.

In the discussion, it was pointed out that the sensitivity of climate to land use change was found to be highly scale dependent. Two presentations explicitly showed that the response of climate to land use change appears to be weak in comparison with the overall effects global warming imposes on the Sahel. Hence, one important conclusion of the workshop is that any effort in modeling the interaction between climate, land use, and conflict can treat climate change as external forcing.

Several speakers presented cases where the interplay of land use and climate change tends to aggravate existing conflicts between resource users, in particular between farmers and herders in eastern parts of the region. Clear messages are complicated by the diverse consequences of temperature and precipitation changes, which affect multiple pathways in the nexus of water, food, energy, and migration in climate hot spots of Northern Africa. Other conflict factors, including political instability, economic crisis, marginalization, and land use policies, are likely more essential drivers of conflict but are not independent of climate change.

Participants in the panel discussion highlighted the role of vulnerability and adaptive capacity, as well as governance and institutional mechanisms, to contain security risks and strengthen cooperation. They emphasized the benefits of this interdisciplinary exchange, which needs to be continued.

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