

Drylands, Aridification, and Land Governance in Latin America: A Regional Geospatial Perspective

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Author:

E. Nickl, M. Millones, B. Parmentier, S. Lucatello, and A. Trejo

Abstract

In this chapter, we evaluate whether drylands have expanded and become increasingly arid over time using geographic information systems (GIS) and climate data across 33 Latin American country boundaries and across two property regime types in Mexico. In all cases, we evaluate and identify changes using the United Nations Environment Programme (UNEP) Aridity Index (AI) that measures the annual ratio of potential evapotranspiration to precipitation. Annual fields of land surface precipitation and air temperature data are extracted from 1960 to 2017. We also compare aridity index summary statistics and trends between communal and non-communal land property regimes in Mexico as a proxy of communal environmental governance. Our results show that: (1) with some exceptions, most Latin American countries have experienced aridification from the 1961–1990 period to the 1991–2017 period, and the trend is for this pattern to continue; (2) in Mexico, communal lands experience slightly lower levels of aridification than non-communal lands. However, because the difference in aridity index values between periods is very small, the degree to which that difference is significant needs further research. If this difference were significant, it mean that communal land holders are at lower risk than non-communal land holders. At this point, however, we cannot claim that land regime practices have or have had any connection with the process of aridification itself.

Read the chapter in the book [Stewardship of Future Drylands and Climate Change in the Global South](#) [1].

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