Tropentag, September 16-18, 2026, hybrid conference

"Towards multi-functional agro-ecosystems
promoting climate resilient futures"

From diagnosis to action: A bibliometric assessment of land degradation neutrality research and the gap in soil and land management solutions (2013–2026)

Jyothilakshmi Pradeep[1], Praveen Koovalamkadu Velayudhan[2], Stanishkar Thevaruparambil Sunil[3], Jamaludheen A[2], Deepak Kumar Tomar[2]

[1] *University of Hohenheim, Agricultural Economics, Germany*
[2] *ICAR-Indian Agricultural Research Institute, Division of Agricultural Economics, India*
[3] *Texas Tech University, Department of Agricultural and Applied Economics, United States*

Abstract

Land degradation neutrality (LDN) was adopted as a global target under Sustainable Development Goal 15.3, and more than 130 countries have since committed to voluntary neutrality targets. Whether the science that has grown around the concept actually supplies the soil and land management knowledge needed to meet those targets has not been examined systematically. This study maps the LDN research field and asks how far it has moved from describing degradation toward delivering practical means of reversing it. Bibliographic records were retrieved from Scopus using a focused query centered on the concept of neutrality and its precursors, and 607 documents published between 2013 and 2026 were analysed after cleaning. Performance analysis and science mapping, including keyword co-occurrence and country collaboration networks, were carried out in Python, and each record was additionally classified as diagnosis-oriented, policy-oriented, or solution-oriented based on its title, abstract, and keywords. The literature expanded rapidly after 2015 at roughly 32 % per year and now spans 257 sources and 2,193 authors. China, India, and a small group of European countries produce most of the work, whereas the drylands of sub-Saharan Africa, which bear much of the global degradation burden, remain weakly represented. Assessment and monitoring accounted for 41.5 % of the corpus, and policy or conceptual framing for 35.4 %, while studies centered on management interventions such as restoration, conservation tillage, residue retention, and organic amendment accounted for only 22.4 %. The field has matured in its ability to measure and report degradation, but the evidence base for acting on it through soil management remains thin and geographically skewed. We outline a research agenda that places sustainable soil and land management at the center of LDN scholarship. Keywords: .

Keywords: Bibliometric analysis, land degradation neutrality, restoration, SDG 15.3, soil conservation, sustainable land management

Contact Address: Jyothilakshmi Pradeep, University of Hohenheim, Agricultural Economics, 70599 Stuttgart, Germany, e-mail: jyothilakshmi.pradeep@uni-hohenheim.de