

Special Issue

Assessing Ecosystem Respiration in Global Carbon Cycle: Digital Application in Agriculture

Message from the Guest Editors

Ecosystem respiration (Reco), a critical flux of carbon from terrestrial ecosystems to the atmosphere, plays a key role in the global carbon cycle. Although agricultural landscapes are major contributors to carbon exchange, quantifying Reco in these systems remains challenging due to their high spatiotemporal variability. The emergence of digital technologies now offers promising avenues to overcome these limitations and enhance the accuracy of Reco estimation in agriculture. This Special Issue aims to highlight innovative research on the assessment of ecosystem respiration in agricultural systems and its implications for the global carbon cycle. We are particularly interested in the application of digital technologies, including remote sensing, data synthesis, and artificial intelligence, to advance the monitoring, modeling, and understanding of Reco in agricultural landscapes. We will emphasize research that integrates multi-source data (e.g., from flux towers, satellites, and drones), employs machine learning and AI techniques, and develops novel digital approaches for quantifying Reco and its drivers.

Guest Editors

Prof. Dr. Jinshi Jian

College of Soil and Water Conservation Science and Engineering,
Northwest A&F University, Xianyang 712100, China

Prof. Dr. Qianfeng Wang

College of Environment & Safety Engineering, Fuzhou University,
Fuzhou 350108, China

Deadline for manuscript submissions

15 August 2026



Agriculture

an Open Access Journal
by MDPI

Impact Factor 4.5
CiteScore 7.8



mdpi.com/si/252390

Agriculture
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agriculture@mdpi.com

[mdpi.com/journal/
agriculture](https://mdpi.com/journal/agriculture)





Agriculture

an Open Access Journal
by MDPI

Impact Factor 4.5
CiteScore 7.8



[mdpi.com/journal/
agriculture](https://mdpi.com/journal/agriculture)



About the Journal

Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, scholarly and scientific open access journal publishing peer-reviewed research papers, review articles, communications and short notes that reflect the breadth and interdisciplinarity of agriculture.

Editor-in-Chief

Prof. Dr. Les Copeland
Sydney Institute of Agriculture, School of Life and Environmental
Sciences, The University of Sydney, Sydney, NSW 2006, Australia

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), GEOBASE, PubAg, AGRIS, RePEc, and other databases.

Journal Rank:

JCR - Q1 (Agronomy) / CiteScore - Q1 (Plant Science)