



# Ecological Economics

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*Ecological Economics* invites contributions for a special issue on **Ecological Macroeconomics Modelling: Exploring Alternative Futures**, guest-edited by Tiziano Distefano (University of Florence), Simone D'Alessandro (University of Pisa), Iñaki Arto (BC3 Basque Centre for Climate Change) and Guilherme Spinato Morlin (University of Pisa).

## Topic

The challenges posed by climate change and rising inequality demand that the scientific community produce knowledge capable of driving transformative action. Ecological Macroeconomics (EM) is an emerging research area that addresses the critical intersection of economic systems and environmental constraints. It provides robust modelling tools to explore alternative future scenarios, enabling the ex-ante evaluation of direct and indirect effects of policies on well-being, employment, and the ecosystem. Given the complexity of the climate crisis and the urgency for action, EM emphasizes the development of alternative methodologies grounded in a more solid epistemological foundation.

A significant contribution to EM are the recent Integrated Assessment Models (IAMs) rooted in system dynamics (Hardt & O'Neill, 2017; Van Eynde et al., 2024). These models offer a comprehensive perspective on the interdependencies between economic and ecological systems. Unlike mainstream IAMs, EM-based IAMs emphasize "hard links" between ecological, social, and economic systems; employ scenario analysis rather than optimization frameworks; explicitly account for biophysical boundaries and the limits to resource substitutability in production; and incorporate household heterogeneity to analyse inequalities. Furthermore, EM-IAMs are increasingly incorporating well-being analysis, aligning with the broader agenda of decoupling well-being from material resource use to explore socially desirable Post-Growth scenarios (D'Alessandro et al., 2020; Fioramonti et al., 2022).

These advanced EM-IAMs have been instrumental in evaluating and comparing alternative scenarios based on "what-if" conditions, revealing that achieving multiple (and often conflicting) goals requires a combination of policies. However, relevant challenges remain, including data collection and harmonization, model validation, the trade-off between complexity and usability, and the need to address temporal and multiple spatial scales. To enhance their practical relevance, EM-IAMs must integrate qualitative analyses, fostering political and behavioral changes that align with sustainability goals.

In light of these developments, this special issue is dedicated to the emerging methodologies and applications of EM-IAMs. These models expand the scope of research by enabling the study of inequalities, De- and Post-Growth scenarios, and the impacts of diverse policy sets on

socioeconomic and ecological indicators. We invite submissions that explore epistemological foundations, methodological innovations and applications of EM-IAMs, with a particular focus on broadening the policy toolkit, re-evaluating the effects of climate damage, analyzing Post-Growth pathways, and integrating ecological boundaries into economic modeling. We warmly welcome submissions from alternative EM-IAM frameworks, fostering a rich and interdisciplinary dialogue on Ecological Macroeconomics.

Keywords:

Integrated Assessment Models, degrowth, climate justice, environmental justice, sufficiency, policy scenario analysis, system dynamics, input-output, post-Keynesian economics

Useful references

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### Timeline

The special issue is **open for submission** starting from **1st July 2025** . The **deadline for submissions** is **31st January 2026**.

Submissions must be made through the journal's online submission platform Editorial Manager <https://www.editorialmanager.com/ecolec/default1.aspx>.

We aim for publishing accepted publications likely from **June to December 2026**.

### Preparing contributions

Contributions to the special issue may be Analysis, Survey, Commentary, or Book Review, as described in the **Guide for Authors** (<https://www.elsevier.com/journals/ecological-economics/0921-8009/guide-for-authors>). When submitting your contribution, select "VSI: Ecological Macroeconomics Modelling" as the article type. All contributions to a special issue must be prepared according to the journal's **Guide for Authors**.

For any inquiries about the appropriateness of contribution topics, please contact Managing Guest Editor: Prof. Simone D'Alessandro.

### Review process

All contributions will go through the **normal peer-review process** and are expected to at least meet, if not exceed, the usual quality standards of articles published in *Ecological Economics*. This includes the possibility that a given contribution will not be published if it is found to be not suitable.

### Publication format

Special issues are published as **virtual special issues**. Each paper is published as soon as the proof is corrected in the next available regular issue, with an imprint indicating that it is part of a special issue. Simultaneously all special-issue articles are gathered together in an online-only grouping for the special issue itself. On ScienceDirect, the special issue is set up under the heading Article Collections and filled with special-issue-articles one by one, as they are published. The special issue becomes visible to end-users once the first article is linked to the special issue, rather than waiting for all papers to be finalised before it can be compiled. **Examples** of previously published special issues can be found at <https://www.sciencedirect.com/journal/ecological-economics/special-issues>.

### Contact

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