

# Institutional Development and Land-Use Dynamics at the Agricultural Frontier in the Peruvian Amazon



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## Introduction

Agriculture plays a vital role in the Peruvian Amazon's economy, contributing significantly to both domestic consumption and exports. Unfortunately, it stands as the primary contributor to Amazon forest loss. This concerning association poses a significant challenge to conservation efforts, undermining their effectiveness. Given the ongoing global climate crisis, it is imperative to comprehend how this conflict occurs to address the escalating deforestation within the Amazon social-ecological systems (SESs) in Peru. To gain a deeper understanding of this issue, there is a need to examine the role of institutions in connection with agricultural activities. Studies have not yet engaged much with this matter, mainly keeping track of the accelerating deforestation and identifying drivers of land-use change. This research focuses on institutions while conceptualizing the Peruvian Amazon as an SES to contribute to narrowing this knowledge gap. The spotlight is placed on the agricultural frontiers, as these regions serve as convergence points for diverse institutions, transcending the boundaries of mere legal enforcement.

## Research question

How do multiple institutions shape land-use dynamics of agricultural frontiers in the Peruvian Amazon?

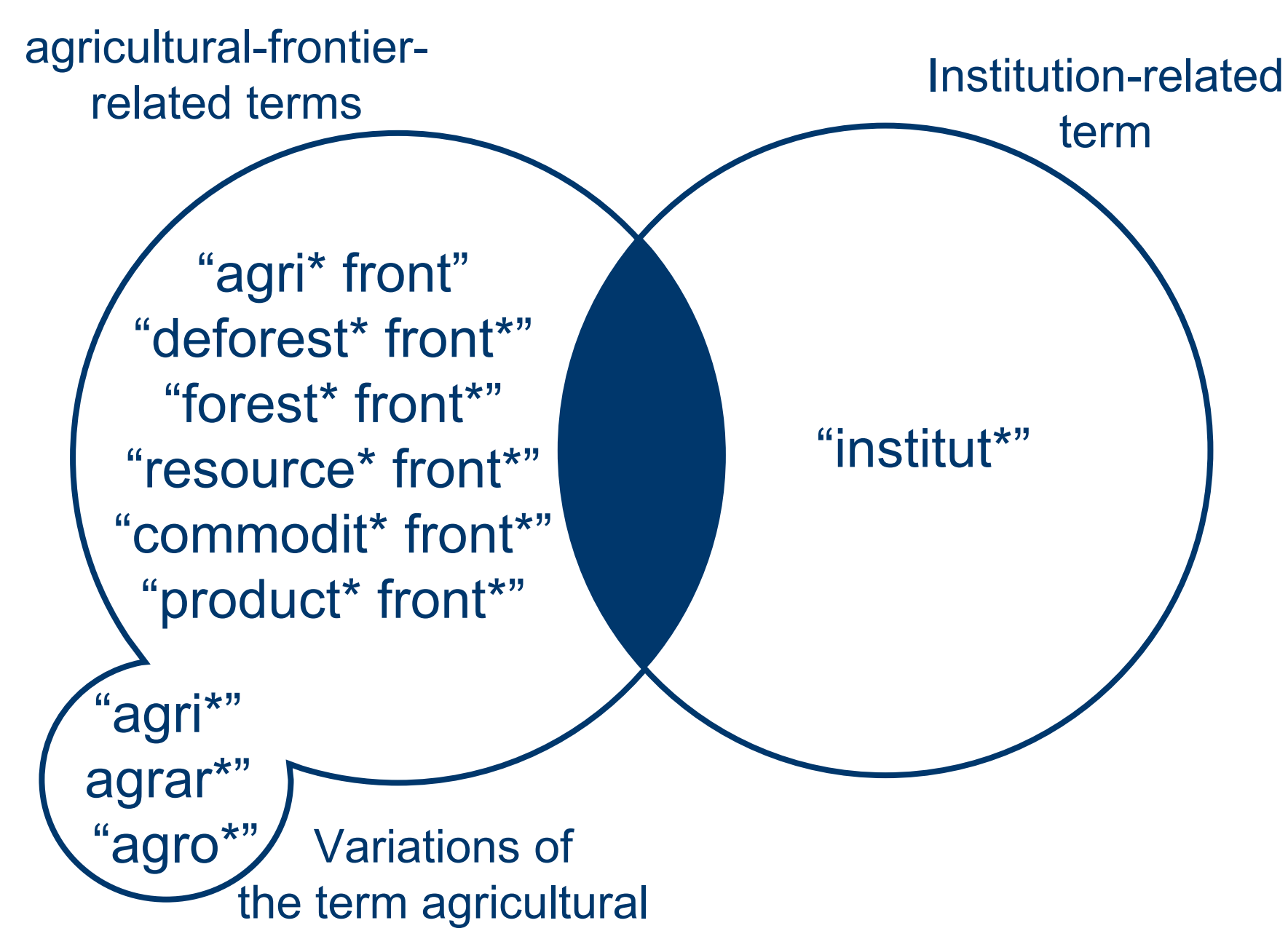
## The Research Is Divided into Three

1. A systematic literature review: role of institutions in agricultural frontiers (not only tropical forests).
2. Overview: International- and national-level institutions influencing the agricultural frontier in the Peruvian Amazon.
3. Connection with case studies: two cases in regions with contrasting views of agricultural development.

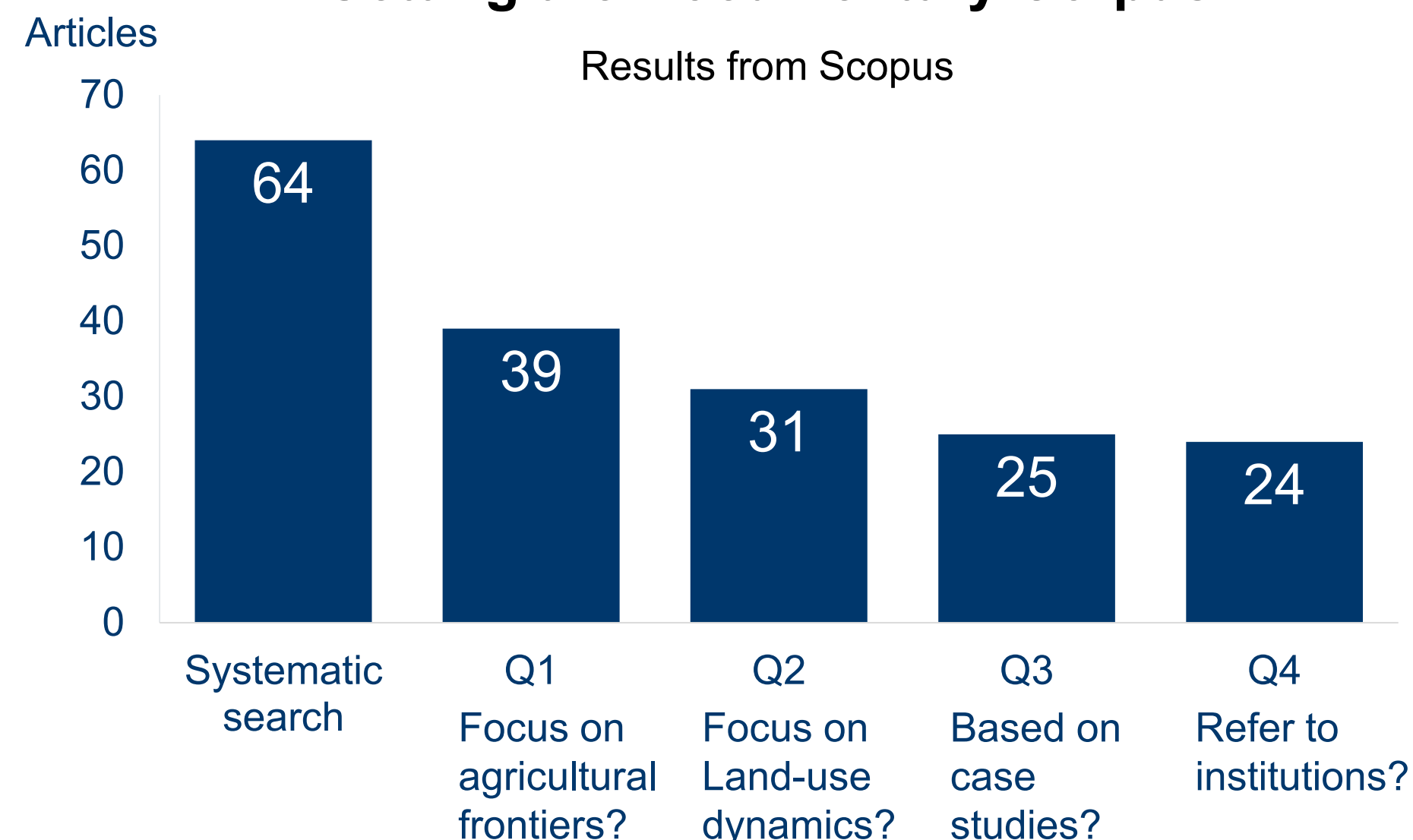
## The Systematic Literature Review

### Sifting through the Literature

#### Keywords for the Systematic Search



#### Getting the Documentary Corpus



Besides Scopus, the systematic search continues on Web of Science and SciELO (specific to Latin America and the Caribbean), considering a 50-paper threshold.

### Coding SES institutions

Papers are summarized based on the Social-Ecological Systems Framework's second-tier variables, focusing on institution-related ones.

#### Institution-Related Variables [1]

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <p><b>Governance systems (GS)</b></p> <ul style="list-style-type: none"> <li>GS1 – Government organizations</li> <li>GS2 – Nongovernment organizations</li> <li>GS3 – Network structure</li> <li>GS4 – Property-rights systems</li> <li>GS5 – Operational-choice rules</li> <li>GS6 – Collective-choice rules</li> <li>GS7 – Constitutional-choice rules</li> <li>GS8 – Monitoring and sanctioning rules</li> </ul> <p><b>Actors (A)</b></p> <ul style="list-style-type: none"> <li>A1 – Number of relevant actors</li> <li>A3 – History or past experiences</li> <li>A6 – Norms (trust reciprocity)/Social capital</li> <li>A7 – Knowledge of SES/mental models</li> </ul> | <p><b>Social, economic, and political settings (S)</b></p> <ul style="list-style-type: none"> <li>S4 – Other governance systems</li> <li>S5 – Markets</li> </ul> <p><b>Interactions (I)</b></p> <ul style="list-style-type: none"> <li>I3 – Deliberation processes</li> <li>I6 – Lobbying activities</li> <li>I7 – Self-organizing activities</li> <li>I8 – Networking activities</li> <li>I9 – Monitoring activities</li> <li>I10 – Evaluative activities</li> </ul> <p><b>Outcomes (O)</b></p> <ul style="list-style-type: none"> <li>O3 – Externalities to other SES</li> <li>OX – Rule changes</li> <li>OY – Changes in other governance systems</li> </ul> <p><b>Related ecosystems (ECO)</b></p> <ul style="list-style-type: none"> <li>Resource system (RS)</li> <li>Resource units (RU)</li> </ul> |
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Variable definitions are compiled from various studies [e.g., 2, 3]. Besides, there is particular emphasis on incorporating concepts like power, discourses and institutional change, as well as addressing dynamics and historical perspectives.

### Upcoming work

The systematic literature review also addresses the papers' theoretical approaches, methods and main messages.

### Key contribution

While the primary focus remains on institutions, examining the existing literature through a social-ecological lens establishes a robust foundation for the forthcoming research. Such an approach fosters comprehension of the complex dynamics within agricultural frontiers in the Peruvian Amazon. This first step is crucial in the journey to transform food systems in this natural region and can also serve as a valuable framework for understanding other resource frontiers.



Oscar Vilca; Mongabay



Claudia Calderón; OjoPúblico

### Cited references

- [1] McGinnis, M. D., & Ostrom, E. (2014). Social-ecological system framework: initial changes and continuing challenges. *Ecology and Society*, 19(2). <https://doi.org/10.5751/ES-06387-190230>
- [2] Hinkel, J., Cox, M. E., Schiller, M., Binder, C. R., & Falk, T. (2015). A diagnostic procedure for applying the social-ecological systems framework in diverse cases. *Ecology and Society*, 20(1). <https://doi.org/10.5751/ES-07023-200132>
- [3] Nagel, B., & Partelow, S. (2022). A methodological guide for applying the social-ecological system (SES) framework: a review of quantitative approaches. *Ecology and Society*, 27(4). <https://doi.org/10.5751/ES-13493-270439>



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