

A GLOBAL PRODUCTION NETWORK FOR ECOSYSTEM SERVICES: THE EMERGENT GOVERNANCE OF LANDSCAPE RESTORATION IN THE BRAZILIAN AMAZON

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INTRODUCTION

Over the last few decades, numerous initiatives have advanced forest landscape restoration in the Amazon, and in 2015 the Brazilian government set an ambitious target to **restore 4.8 million hectares of degraded Amazonian land by 2030**

An global **restoration network has emerged** to connect multiple stakeholders and processes for funding, implementing and monitoring restoration for ecosystem services

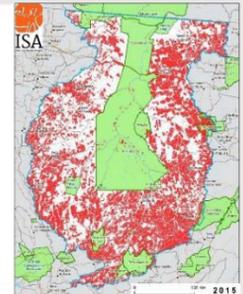
This paper applies the **Global Production Network (GPN)** framework to **landscape restoration** to understand the emergence of a hybrid system of **global environmental governance** that ultimately shapes territorialised landscape outcomes.



CASE STUDY

We explore the implementation of restoration actions in the Amazon focusing on the experiences of the Upper Xingu region, in Mato Grosso state. The Xingu Basin has been a **major site of deforestation** resulting from land clearing for agriculture and cattle raising, with correspondingly high restoration needs.

This region has provided the **first restoration-based package of marketable ecosystem services** in Amazonia. Restoration activities in Xingu have been relatively successful due to **the participation of a wide variety of actors**. Particularly, the case of the **Xingu Seed Network** shows how actors at the base of the supply chain can create innovations that affect the overall network.



FRAMEWORK: RESTORATION GPN

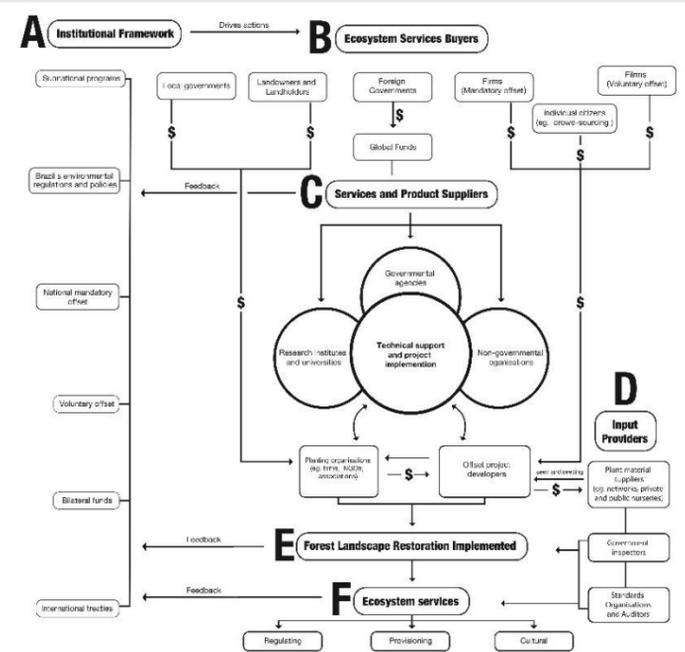
Governance of restoration is often described at either the micro or macro-level, neglecting the fundamental links between multi-scalar processes, and the asymmetrical power relations between multiple stakeholders and markets that determine specific territorial outcomes.

A **GPN** is a prominent multi-scalar approach for understanding the global market engagement of firms, regions and nations, which effectively explain patterns of value creation, retention and capture in the contemporary **global economy**.

The network is globally coordinated as it involves **cross-border governance** derived from international agreements and funding commitments alongside emergent **global markets** that penetrate and transform place-specific processes.

The restoration GPN facilitates interactions between governments, the private sector, research institutions, NGOs, local communities, firms, landholders and landowners.

A restoration GPN emerged within Brazil connects **national and international institutional drivers** (component A) to **end-buyers of restoration-related ecosystem services**, including foreign governments (component B).



RESTORATION NETWORKS IN THE SOUTHEASTERN AMAZON

A **restoration network** was developed in the Upper Xingu based on a **social-environmental campaign** launched in 2004 with multiple stakeholders.

These actors promoted **direct seeding techniques**, which involve applying a mix of seeds from native plants and green manure species.

Restoration costs were reduced from around US\$ 3-5 thousand/ha (for planting of tree seedlings) to US\$ 1.77 thousand/ha for direct seeding.

A **community-based seed production** (The Xingu Seeds Network) was created to satisfy demands for seed and become the largest native seed supplier in Brazil.

Restoration initiatives, global fund mechanisms, project developers, planting firms and coalitions have now endorsed and applied direct seeding for land restoration elsewhere in Brazil.



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