



THE UNIVERSITY OF
SYDNEY

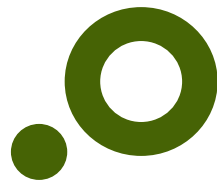
Forest landscape restoration in a global production network: The case of the Brazilian Amazon

Danilo Ignacio de Urzedo, Jeff Neilson, Robert Fisher



multi-scalar processes

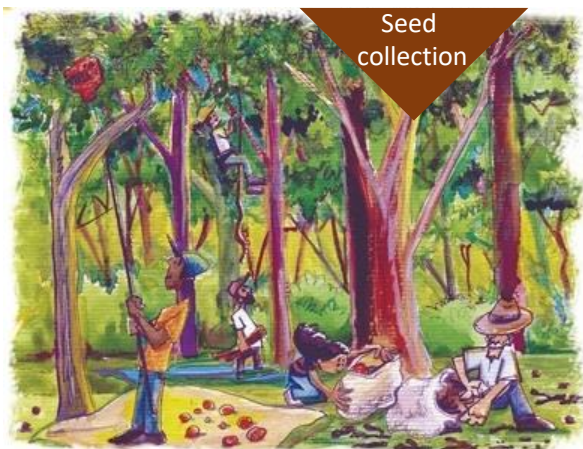
multiple
stakeholders



transnational
production systems



Ecosystem
services markets



GLOBAL
PRODUCTION
NETWORK



complex institutions



asymmetrical
power



Explore how Forest Landscape Restoration can be understood as an ecosystem service embedded within a global production network

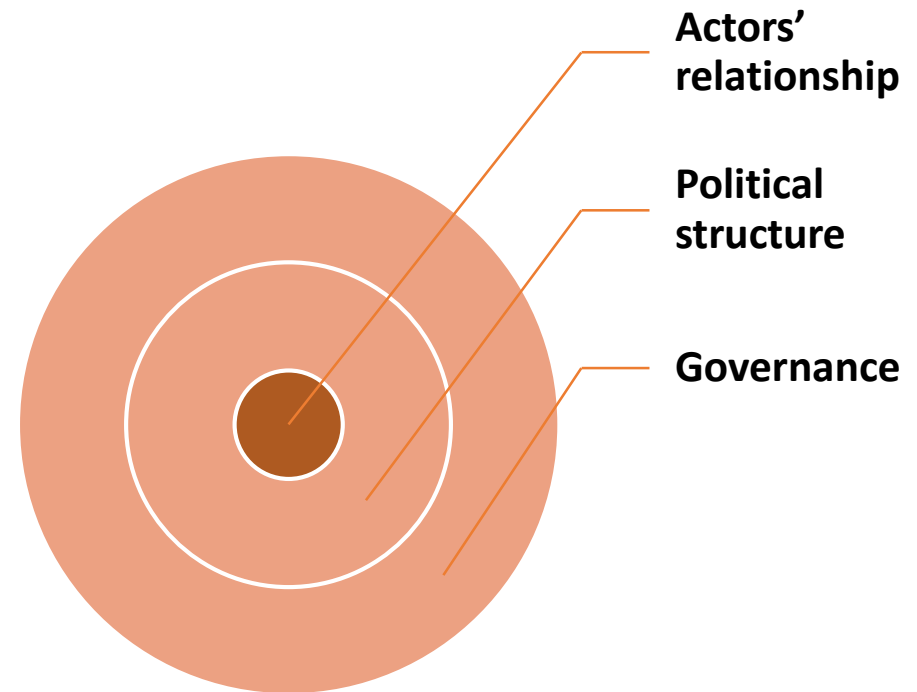
1. identify the multiple forces that have coalesced to promote restoration
2. present an “input-output structure” for restoration that examines the various activities
3. challenges for developing restoration markets for ecosystem services
4. how different political changes can break down the governance of restoration

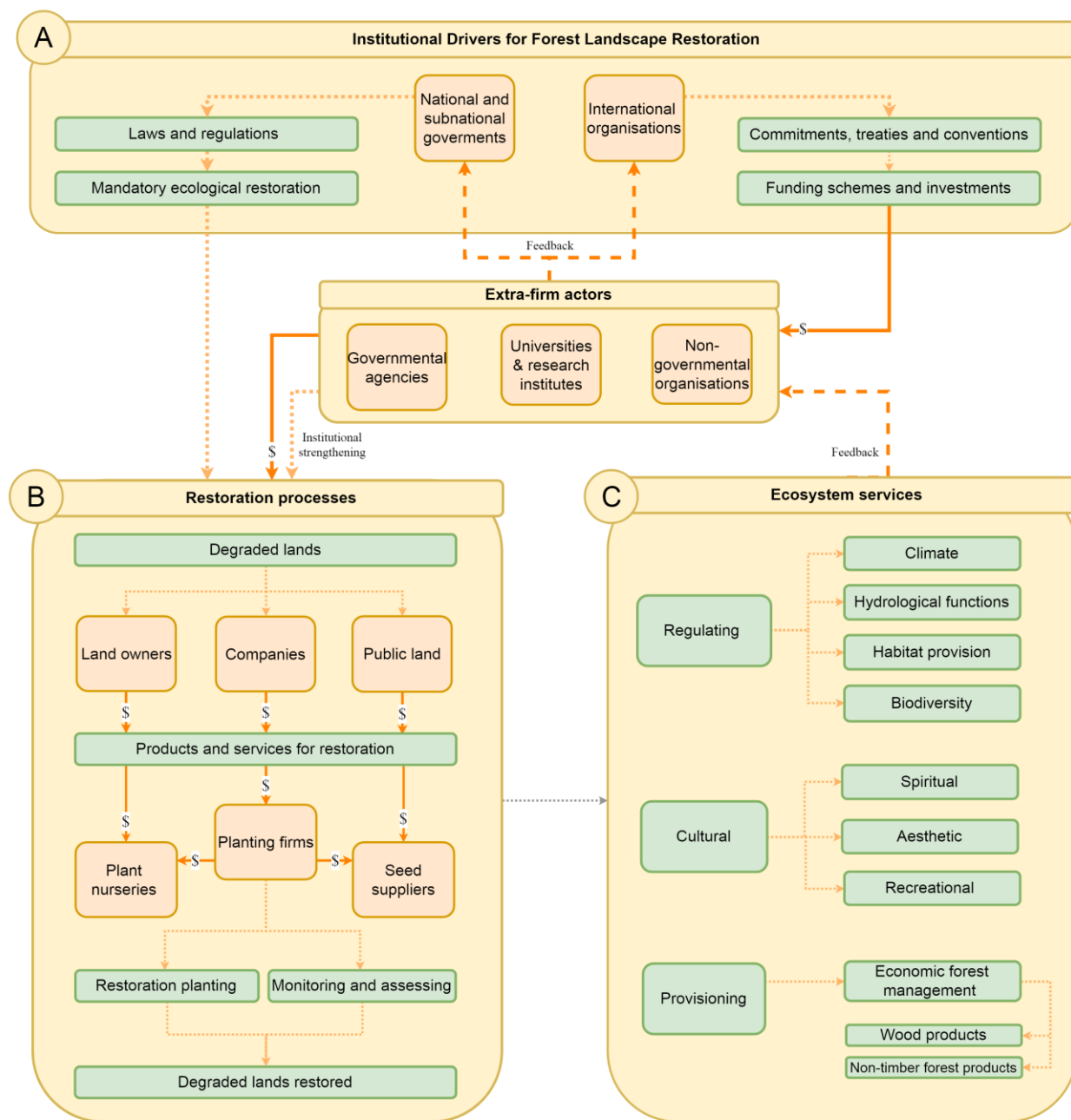
GLOBAL PRODUCTION NETWORK

Explanatory frameworks 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.

(Neilson et al., 2014)

- Global development literature
- Actor Network theory

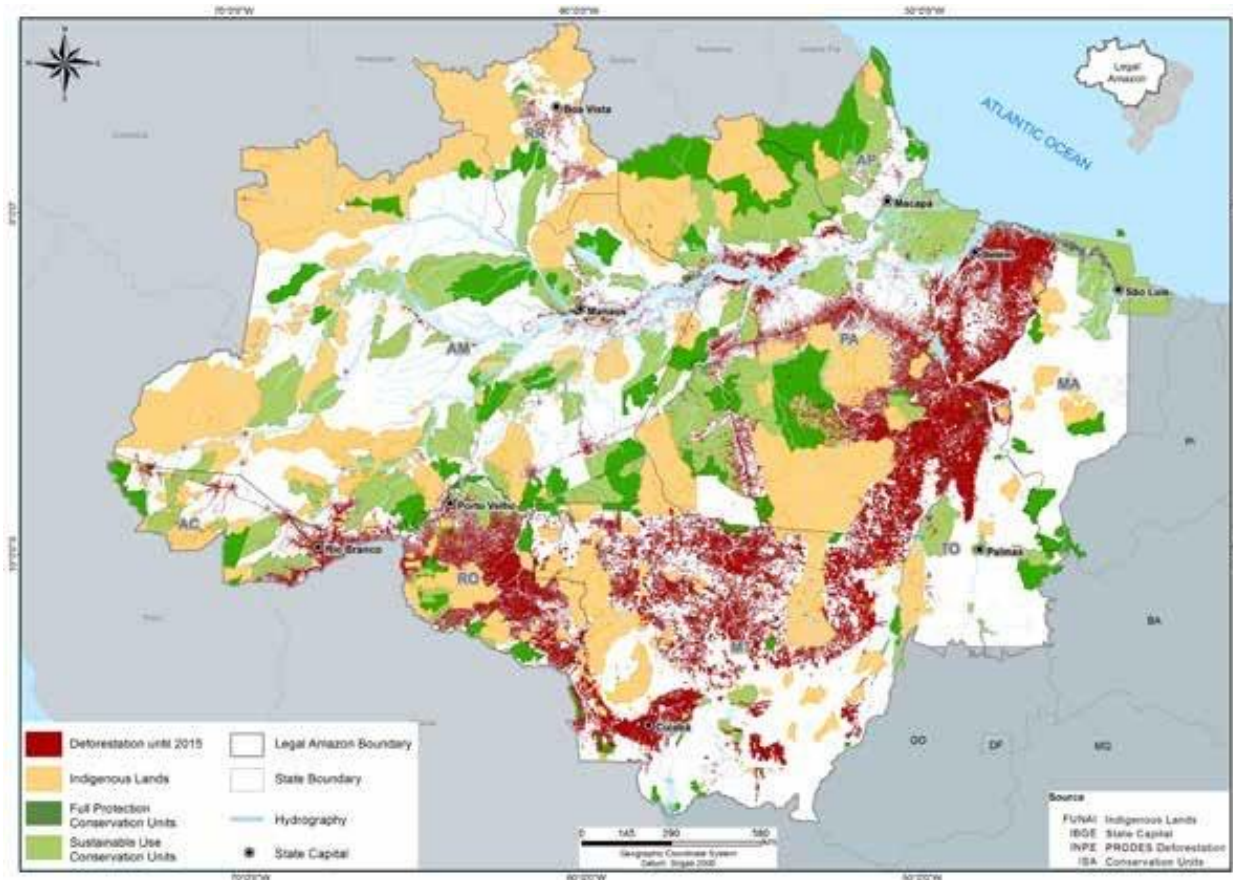




National regulation as a key driver

i) mandatory ecological preservation on rural properties

- Law on the Protection of Native Vegetation (12,651/2012)
- Policy on the Protection of Native Vegetation (Decree 8,972/2017)



Brazil:

12

million hectares

US\$ 13.7
billion until 2030
(World Bank, 2017)

Brazilian Amazon:

4.8

million hectares



CONAVEG



National regulation as a key driver

ii) ecosystem offsetting as part of the environmental impact assessment

- National Environmental Policy (Law 6.938/1981)

Hydroelectric, road, mining projects

iii) conversion of environmental fines into restoration activities

- Environmental Crimes Act (Law 9.605/1998)
- Decree 9.179/2017; IBAMA Normative Instruction 6/2018

US\$ 805 million yearly
committed - US\$ 700 million

Global regulation as a key driver for restoration

Commitments and conventions



Convention on
Biological Diversity



BONN
CHALLENGE



NY DECLARATION
ON FORESTS



RIO+20

UNITED NATIONS
PARIS CLIMATE
AGREEMENT
SIGNING CEREMONY
— 22 APRIL 2016 —



Funds and investments

91
Climate Funds
(OECD 2015)

Brazil

- Governance to monitor and combat deforestation in the Amazon

Policies

- Action Plan for the Prevention and Control of Deforestation
- National Strategy for REDD+

Global regulation as a key driver for restoration



major financing schemes in Brazil
REDD+ mechanism

US\$ 1.21 billion

voluntary schemes

Norway

Germany

Restoration action in the Amazon:

- US\$ 60 million investments
- 15 thousand hectares
- 5 years

A

Institutional Drivers for Forest Landscape Restoration

Laws and regulations

Mandatory ecological restoration

National and
subnational
governments

International
organisations

Commitments, treaties and conventions

Funding schemes and investments

Feedback

Extra-firm actors

Governmental
agencies

Universities
& research
institutes

Non-
governmental
organisations

\$

\$

Institutional
strengthening

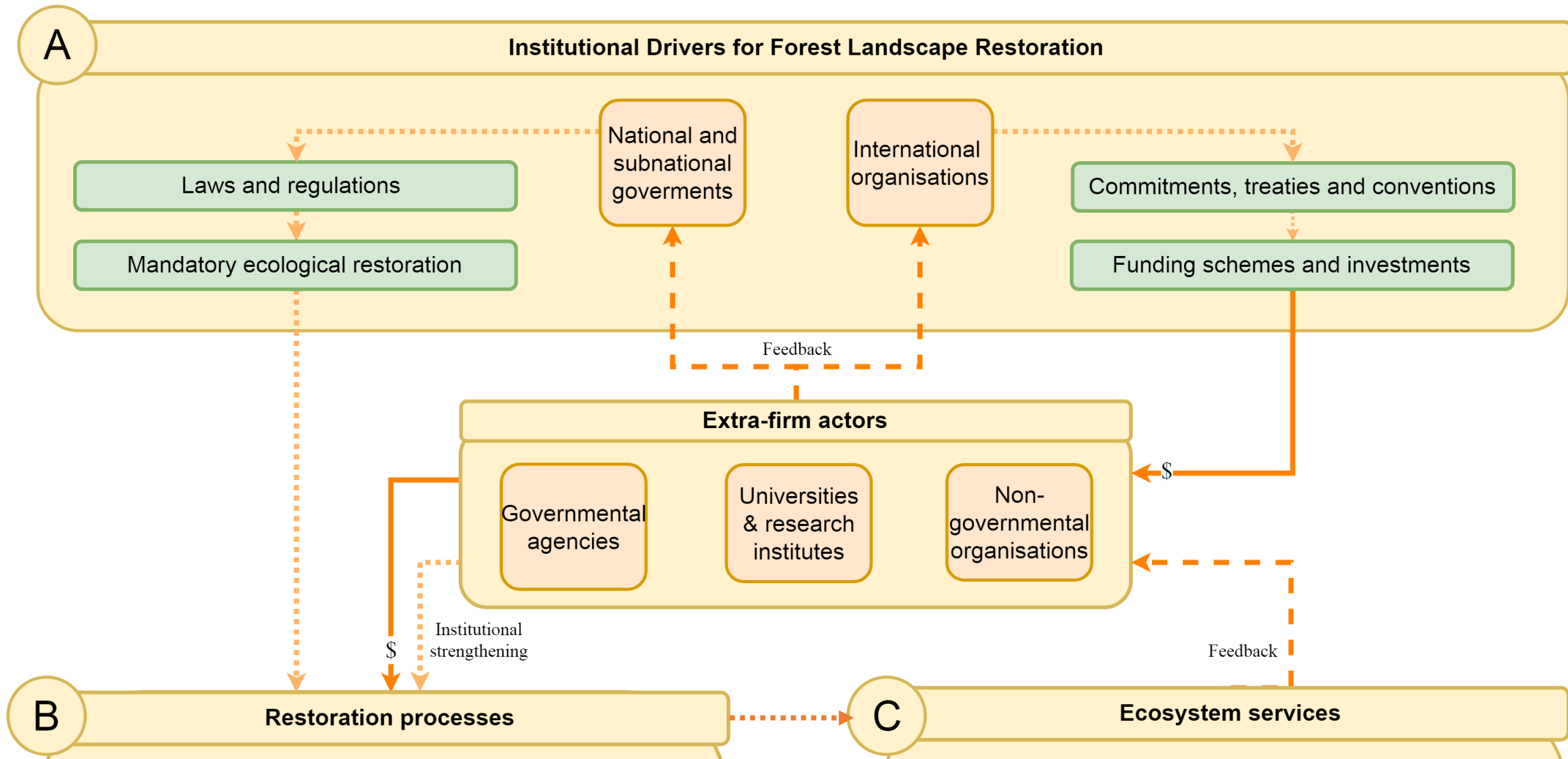
Feedback

B

Restoration processes

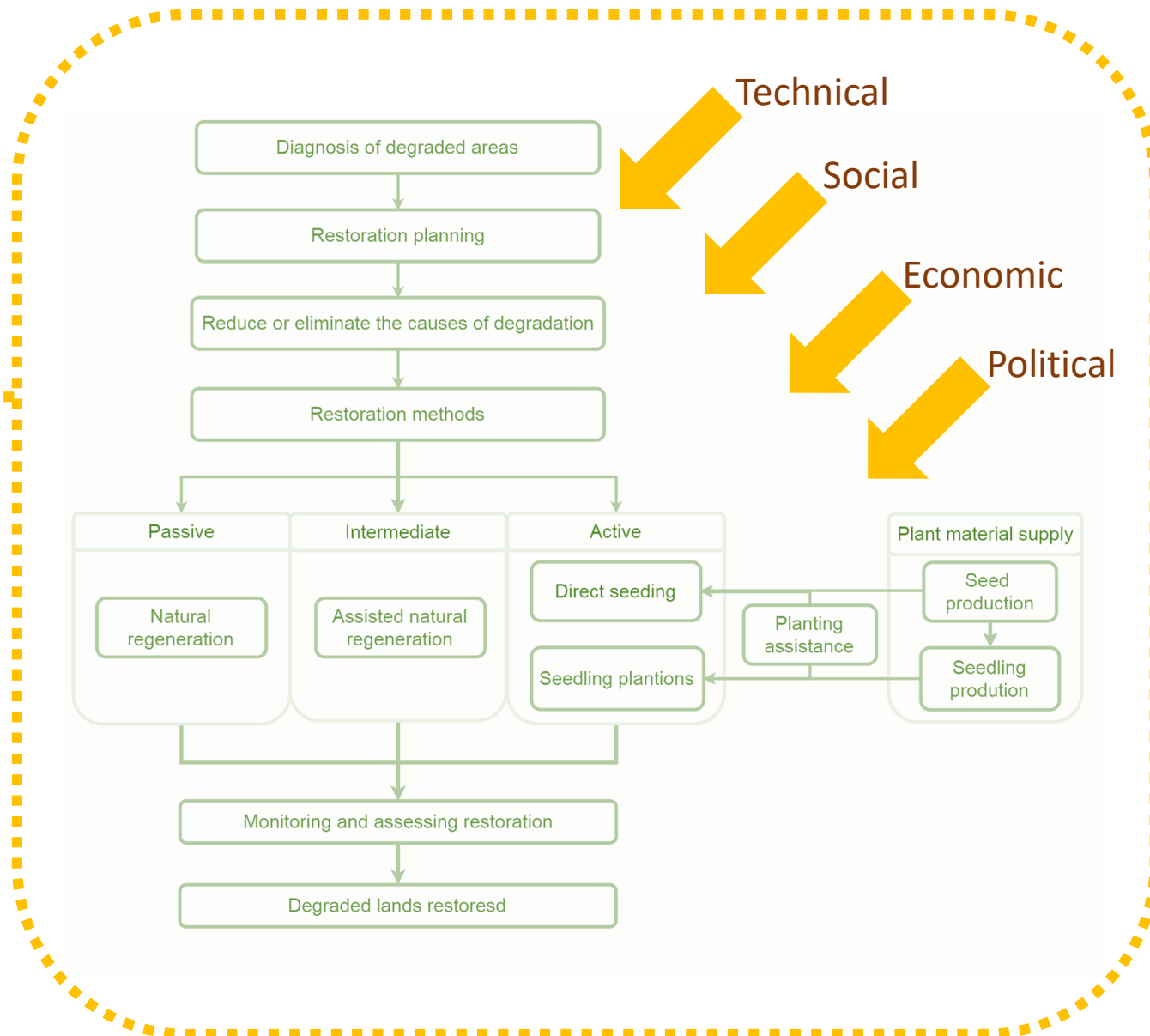
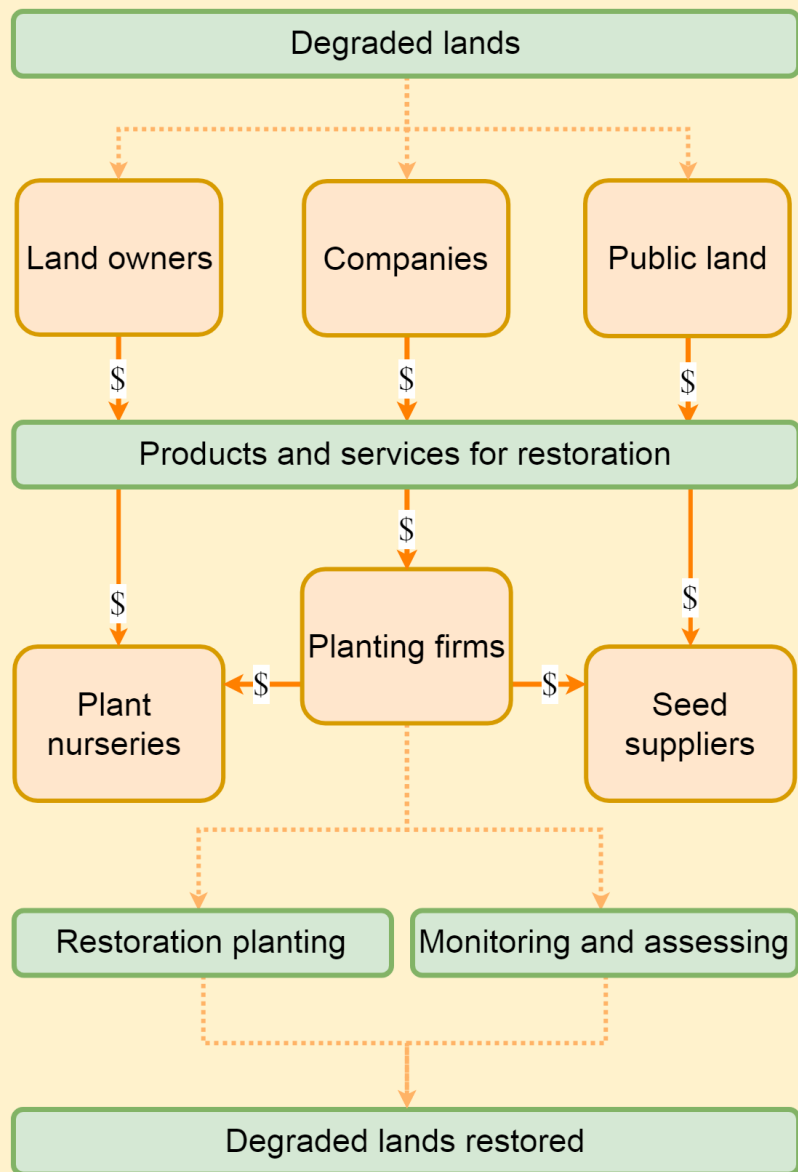
C

Ecosystem services



B

Restoration processes





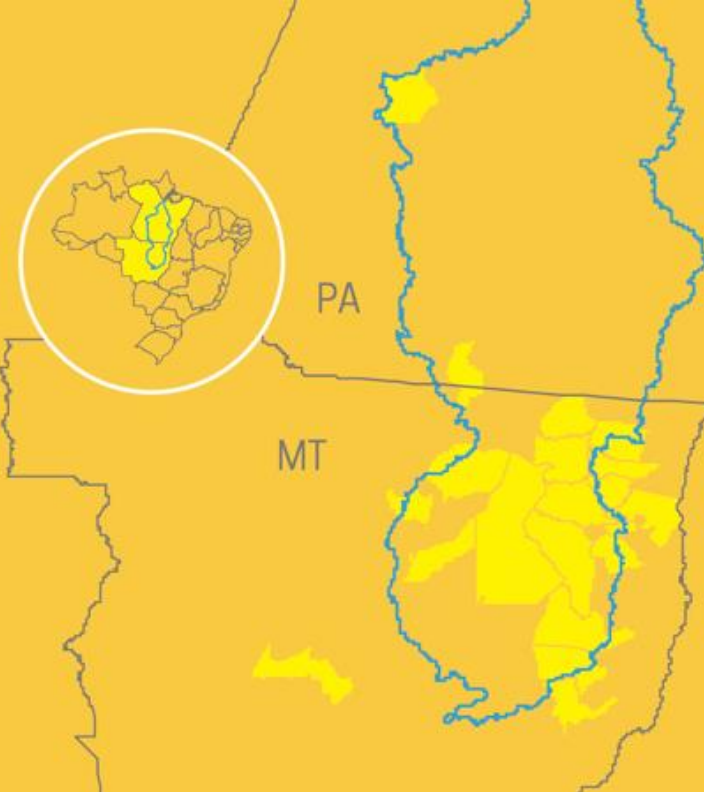
3.000

hectares

Innovative method

Direct seeding

Restoration of the Upper Xingu



600 *Seed
collectors*

Cooperation:

- 7 indigenous ethnicities
- 14 rural settlements
- 1 extractive reserve



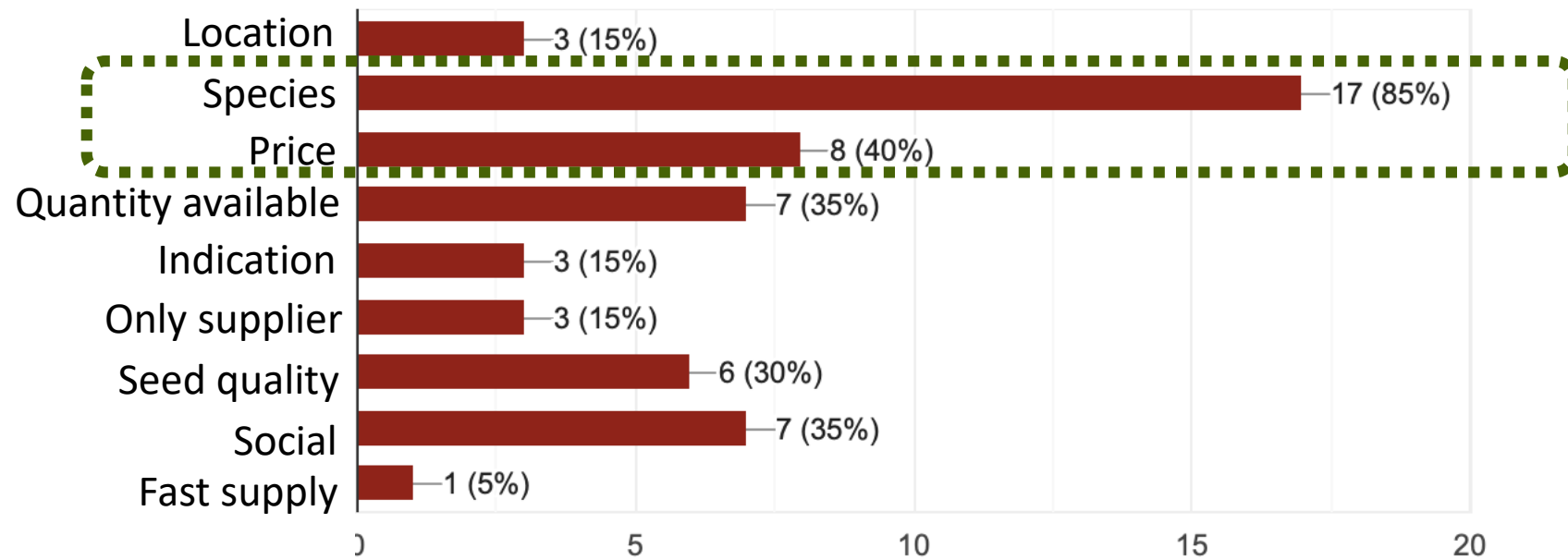
US\$ 1.1
million

200
tonnes of seeds





Market	Customers (n)	Restoration area (ha)	Seed sold (US\$)
Mandatory restoration on rural private properties	6	65	\$26,534.36
The offset of environmental impact	4	396	\$118,023.39
Incentives from cause-related marketing	1	150	\$120,200.54
Plant nurseries	8	-	\$2,628.10
Total	19	611	\$267,386.39





Programa Arboretum
de Conservação e Restauração da Diversidade Florestal



COOPPROJIRAU

Cooperativa dos Produtores Rurais
do Observatório Ambiental Jirau



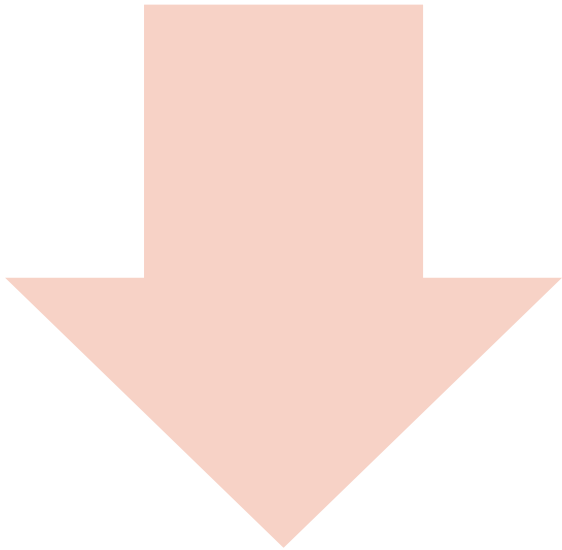
**sementes do
portal**



Emerging restoration markets

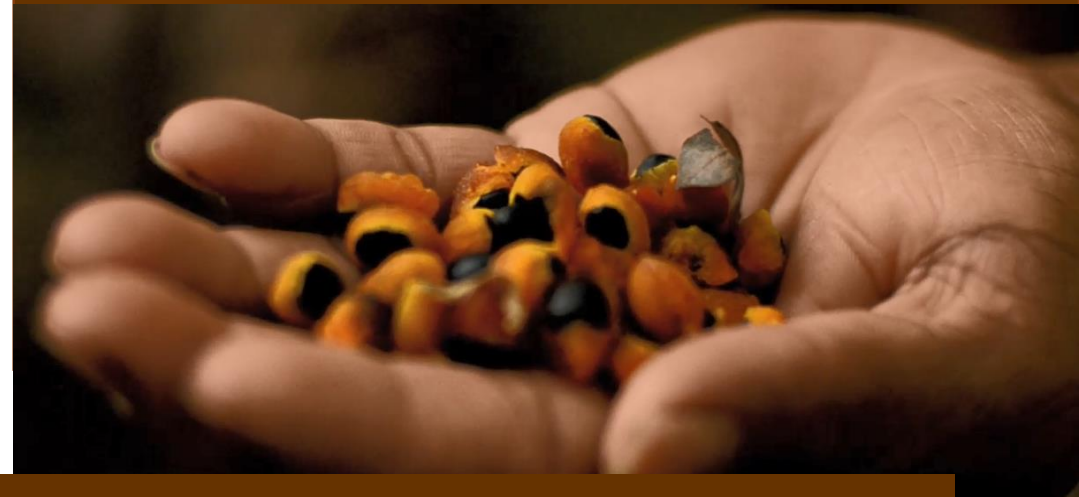


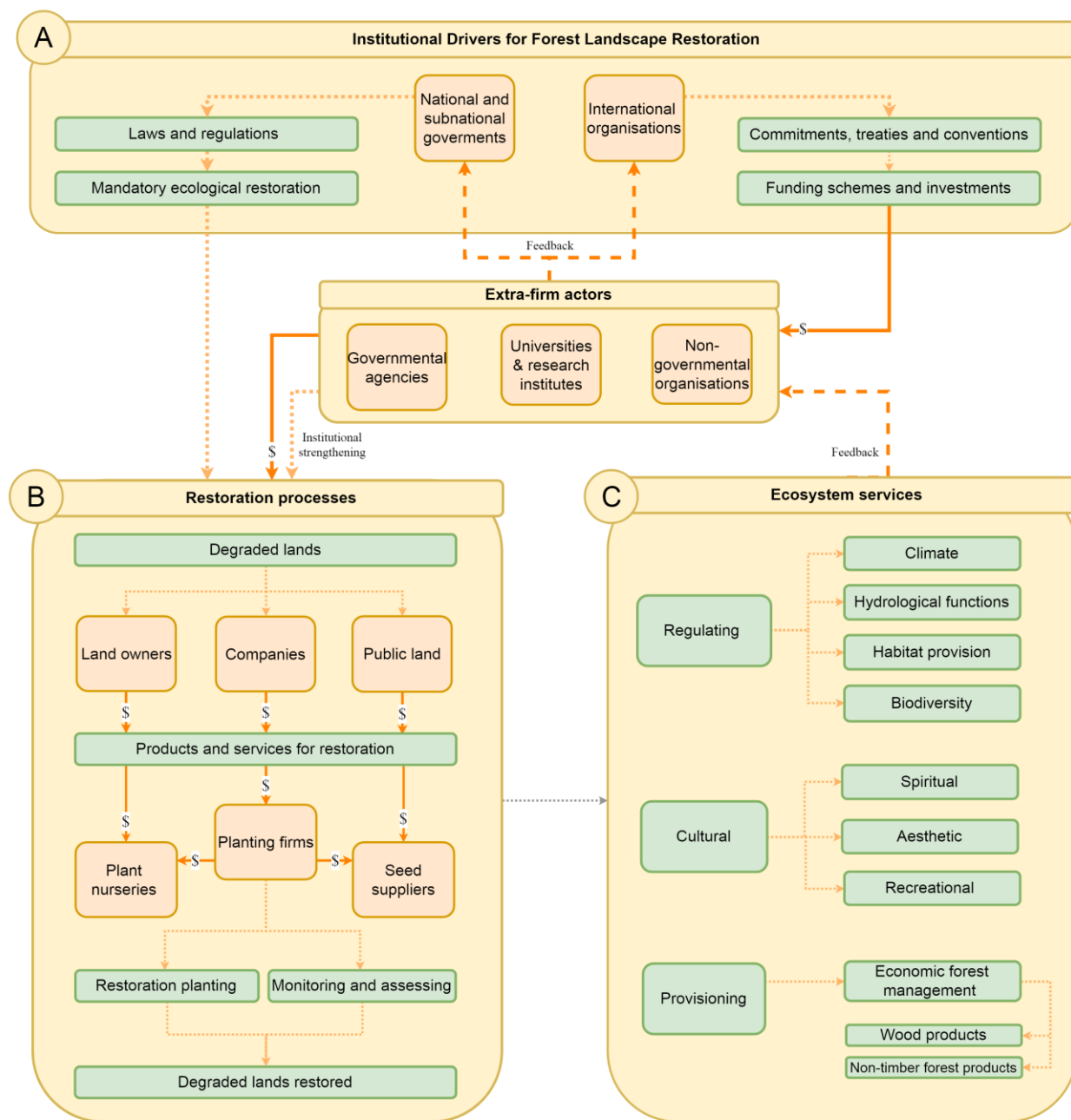
tangible benefits
economic growth
incentives to ensure conservation



limitations of valuation
perverse investments
commodification
neglect social justice

- Carbon
- REDD+
- Environmental Reserve Quotas
- Watershed services
- Economic forest management





Effects of institutional change on multi-scalar restoration governance

