Financing Conservation and Restoration of Nature

The Economics of Biodiversity

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Environment Management & Conservation Policy

Saki Murakami, Michael Murawski

Contents

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The Economics of Biodiversity: The Dasgupta Review

Final Report of the Independent Review led by **Professor Sir Partha Dasgupta**

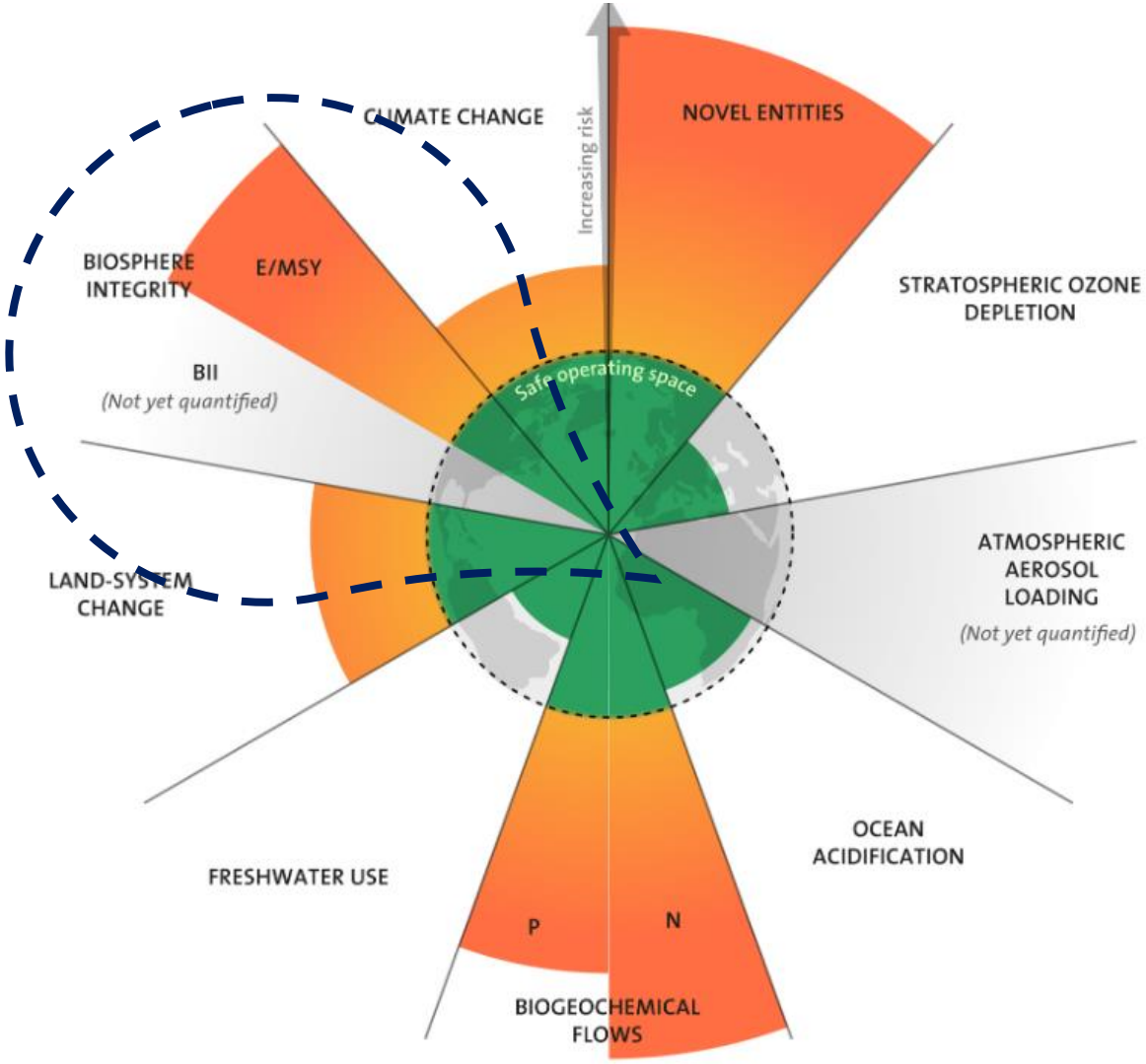
Commissioned by the Government of UK

Biodiversity, a problem child

Planetary Boundaries - Status Quo

Biodiversity…

"refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi."
- National Geographic

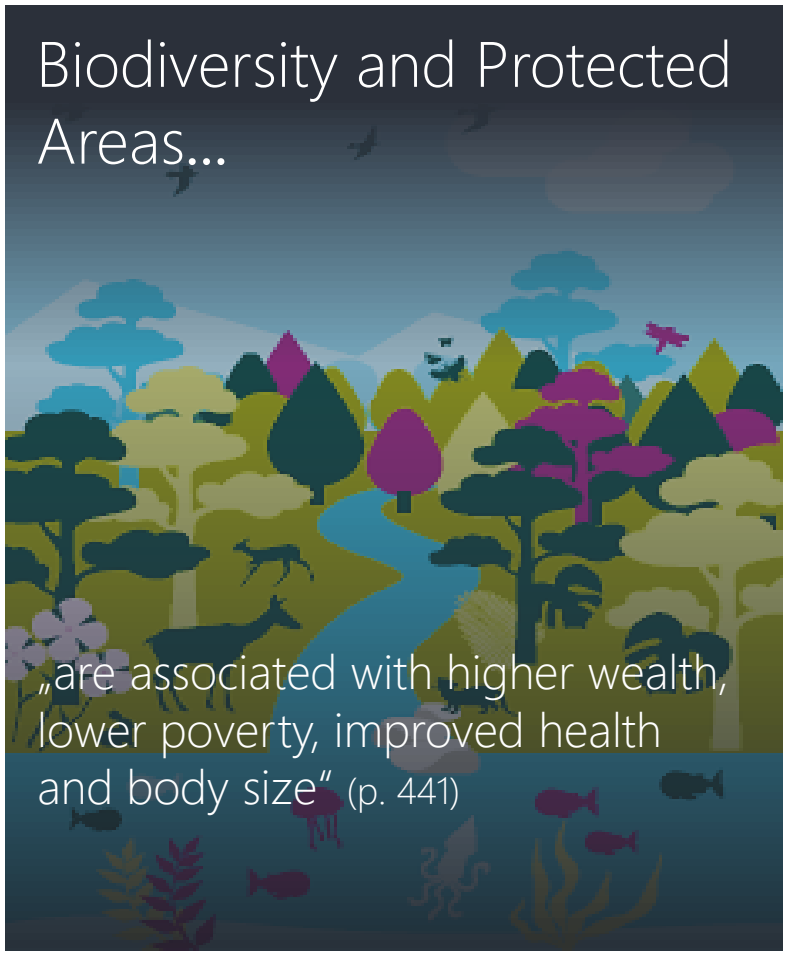


Source: Stockholm Resilience Center (2022)

Conservation of Nature

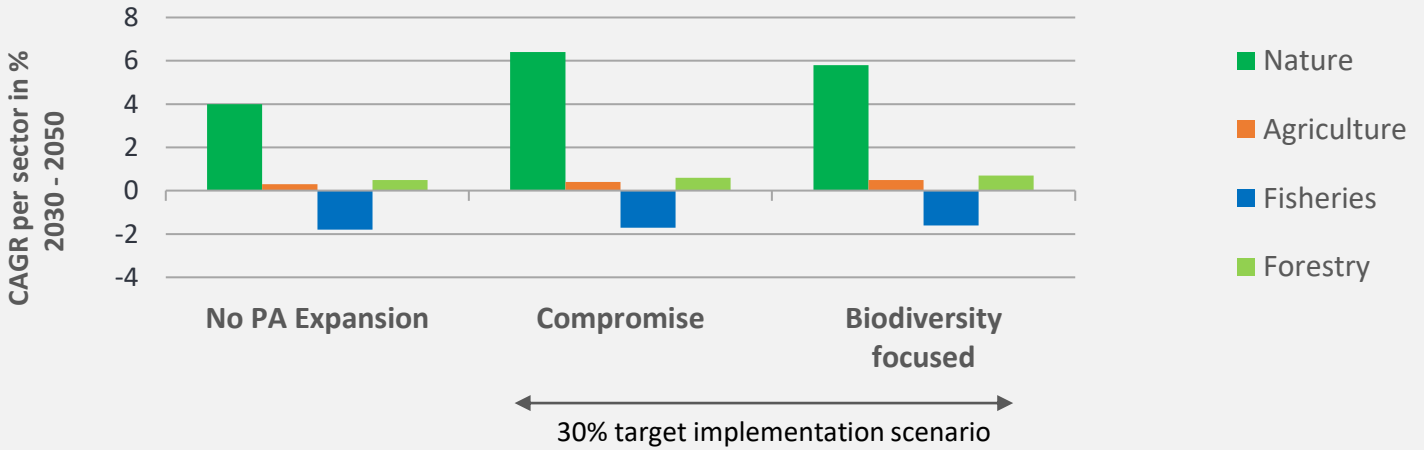
Chapter 18

Biodiversity and Protected Areas…



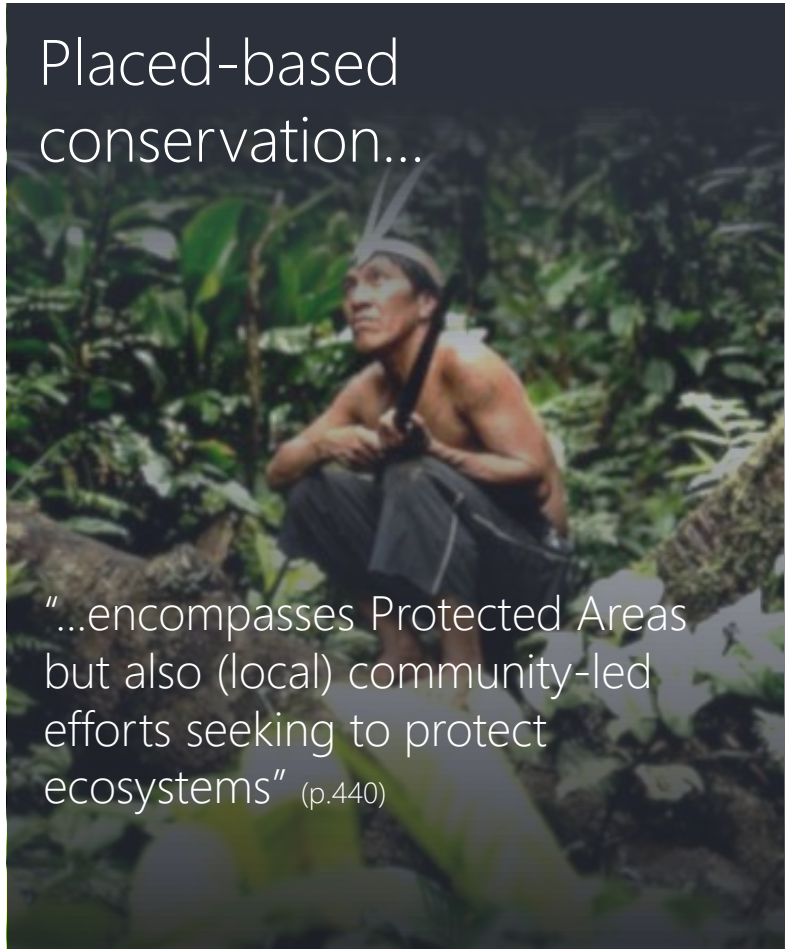
„are associated with higher wealth, lower poverty, improved health and body size“ (p. 441)

- Between 20% to 40% of terrestrial vertebrates and plants at extinction risk
- 515 species are currently facing extinction (Raven et al., 2020)
- Acceleration expected
  - Due to human pressures and
  - Ecological interactions – “extinction breeds extinction”



Place-based conservation

Conservation of Nature



Case Study:

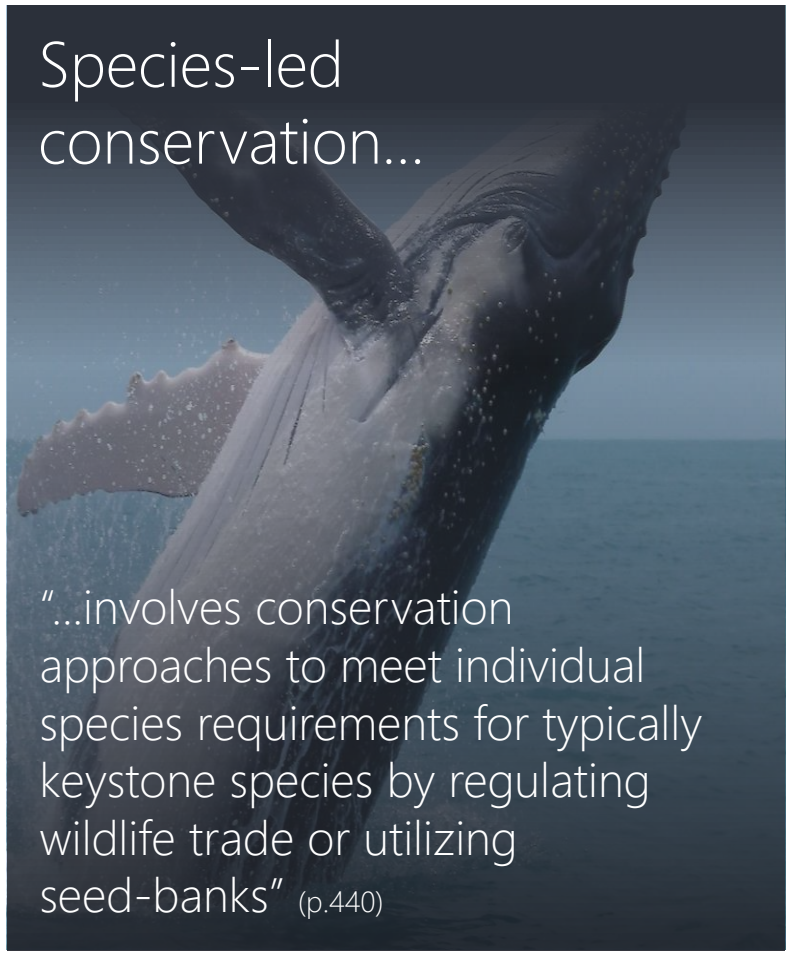
The Coastal Cloud Forest of Loma Alta

Ecuador

- Protected Areas are typically downsized ("PADDD")
- While enduring terrible management
- Solution: Understanding of ES and established ownership rights

Species-led conservation

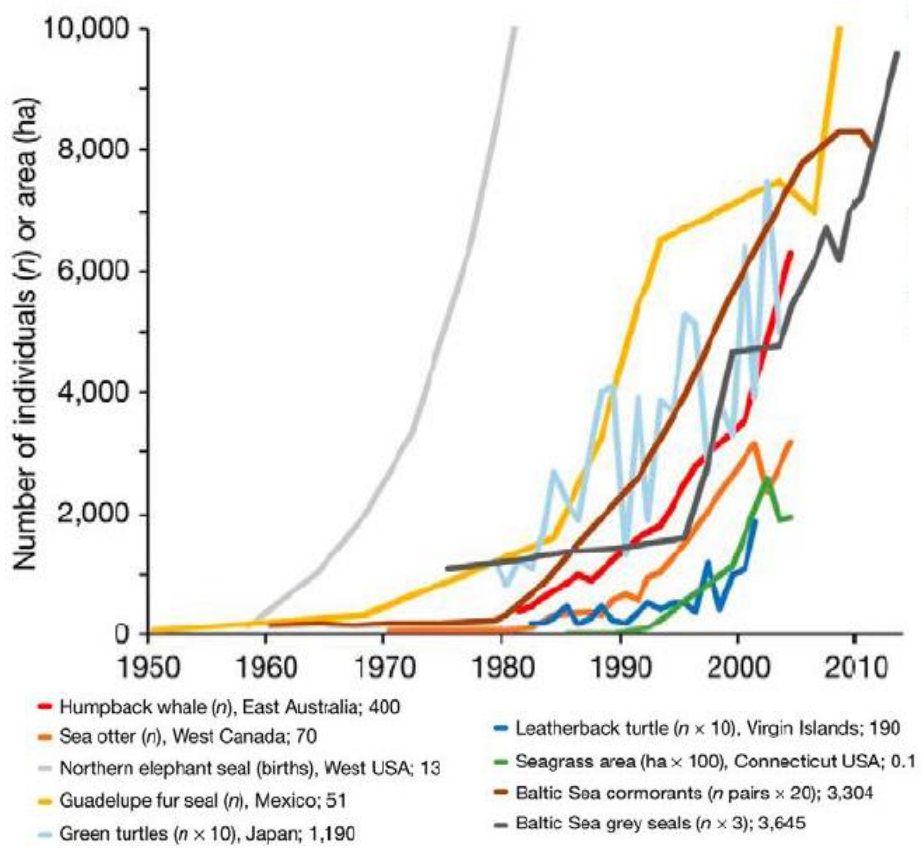
Conservation of Nature



Case Study:

Humpback Whaling Ban 1986

Atlantic and Pacific Ocean



- Whale population reduced to 440
- Ban was highly effective, full rebound
- CITES Wildlifetrade
- Only 4% to 9% of animals are covered by Protected Areas

Conservation methods – Pros and Cons

Conservation of Nature

	+	−
Place-based	Job opportunities for locals Allows for indigenous knowledge • And traditional wisdom	Solid <u>local</u> framework required • Property rights, peace Difficult supervision • resulting in poor management
Species-led	Fast and global conservation • Bans on hunting and wildlife trade can work well (assuming enforcement)	Limited application • Charismatic animals are preferred, human preference bias

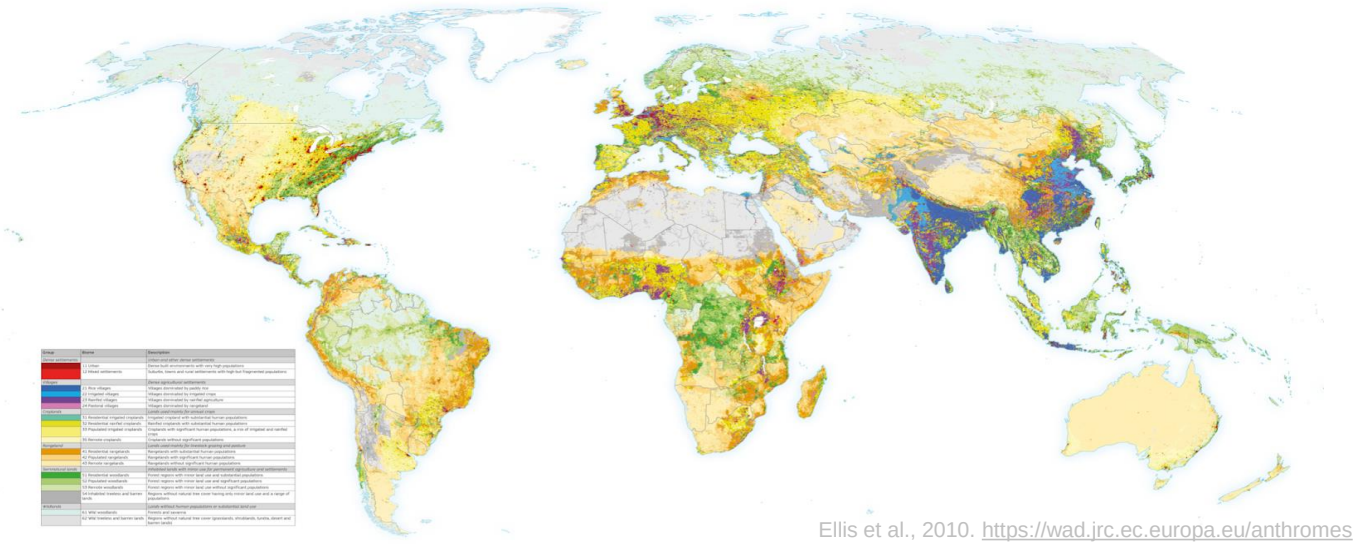
Restoration of Nature

Chapter 19

Anthromes (Anthropogenic biomes)

Terrestrial lands whose ecosystem was altered by human activity

e.g., rice villages, farmland or urban areas



Ellis et al., 2010. https://wad.jrc.ec.europa.eu/anthromes

Control of Invasive Species

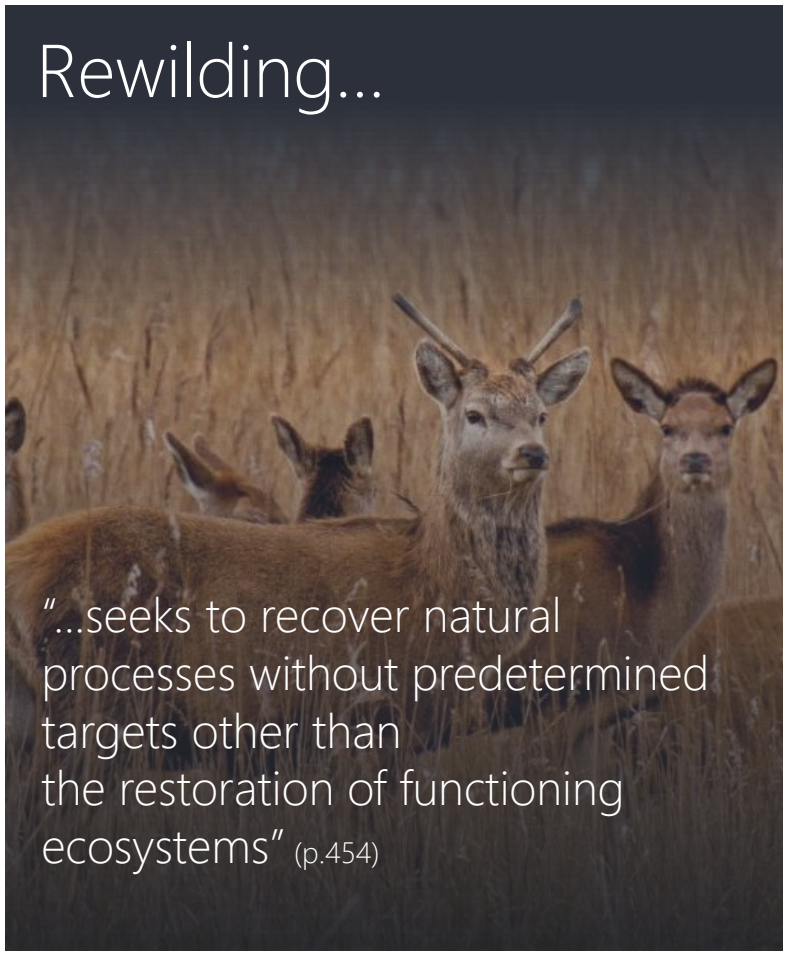
Sustainable Land Management

Rewilding

Nature-based solutions

Rewilding
Restoration of Nature

Rewilding...



"...seeks to recover natural processes without predetermined targets other than the restoration of functioning ecosystems" (p.454)

Case study:

The Oostvaardersplassen

The Netherlands

1970s
- abandoned reclaimed area
- colonized by greylag geese

1980s
- Introduced Heck cattle & Konic horses

1990s
- Added red deer & fox

Today
- 6000 ha. Of marshland, wet and dry grasslands
- Over 250 bird species including white-tailed eagle

Rewilding – Pros and Cons

Restoration of Nature

Cost-effectiveness

- Less human interventions = less cost

Richer and more abundant species

- In comparison to active restoration

Slow progression

- Minimum of 30 years after clear-cutting

Requires vast area

Lack of predictability

- Results may include “incomplete” or novel ecosystems

Nature-based solutions

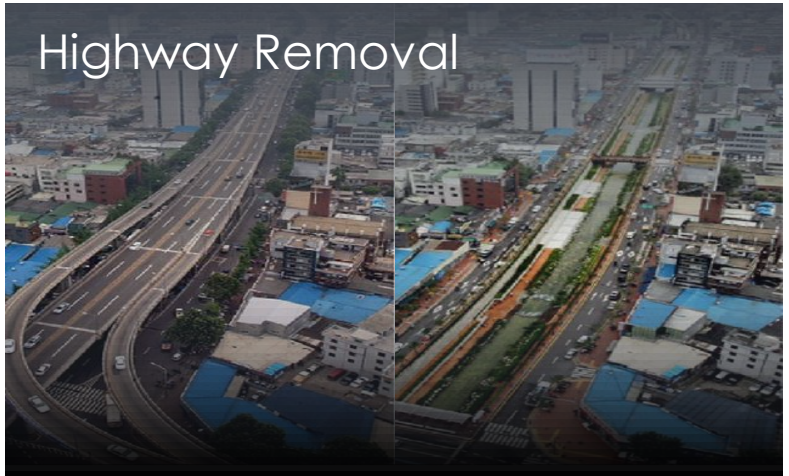
Case Study 2: Cheonggyecheon River Restoration in Seoul, South Korea

Nature-based Solutions...

"...sustainably manage and restore ecosystems while simultaneously providing benefits for human well-being and biodiversity" (p.456)

Restoration Process
(2003 – 2008)

Highway Removal



Green & Blue Infrastructure recreation for wildlife

Current developments
(2003 – today)

✓ Socio-economic Benefits
- New recreation space
- Hosting 20m per year
- Revitalization of community

✓ Environmental Benefits
- Flood protection
- Carbon reduction
- Heat-island effect
- Pollution reduction
- 639% increase in species richness

Nature-based solutions – Pros and Cons

Restoration of Nature

Simultaneous addressing of social, economic & environmental issues

Environmental Benefits

- Climate change mitigation
- Pollution reduction
- Biodiversity restoration

Social Benefits

- Cultural Services
- Local revitalization

Economic Benefits

- Creation & protection of jobs
- Cost-effectiveness (in comp. to grey infrastructure)

Requires careful planning and good governance

Potential for conflicts, trade-offs and resilience issues in long term

- Less ecosystem services

Effective Implementation

Bringing Natural Capital into Spatial Planning

Decision-making support

InVEST
(Integrated Valuation of Ecosystem Services & Tradeoffs)

ROOT
(Restoration Opportunities Optimization Tool)

- Assess trade-offs & ecosystem services
- Identify optimal area to invest in NC

Mitigate impacts

Biodiversity offsets
Compensate for negative impacts of projects

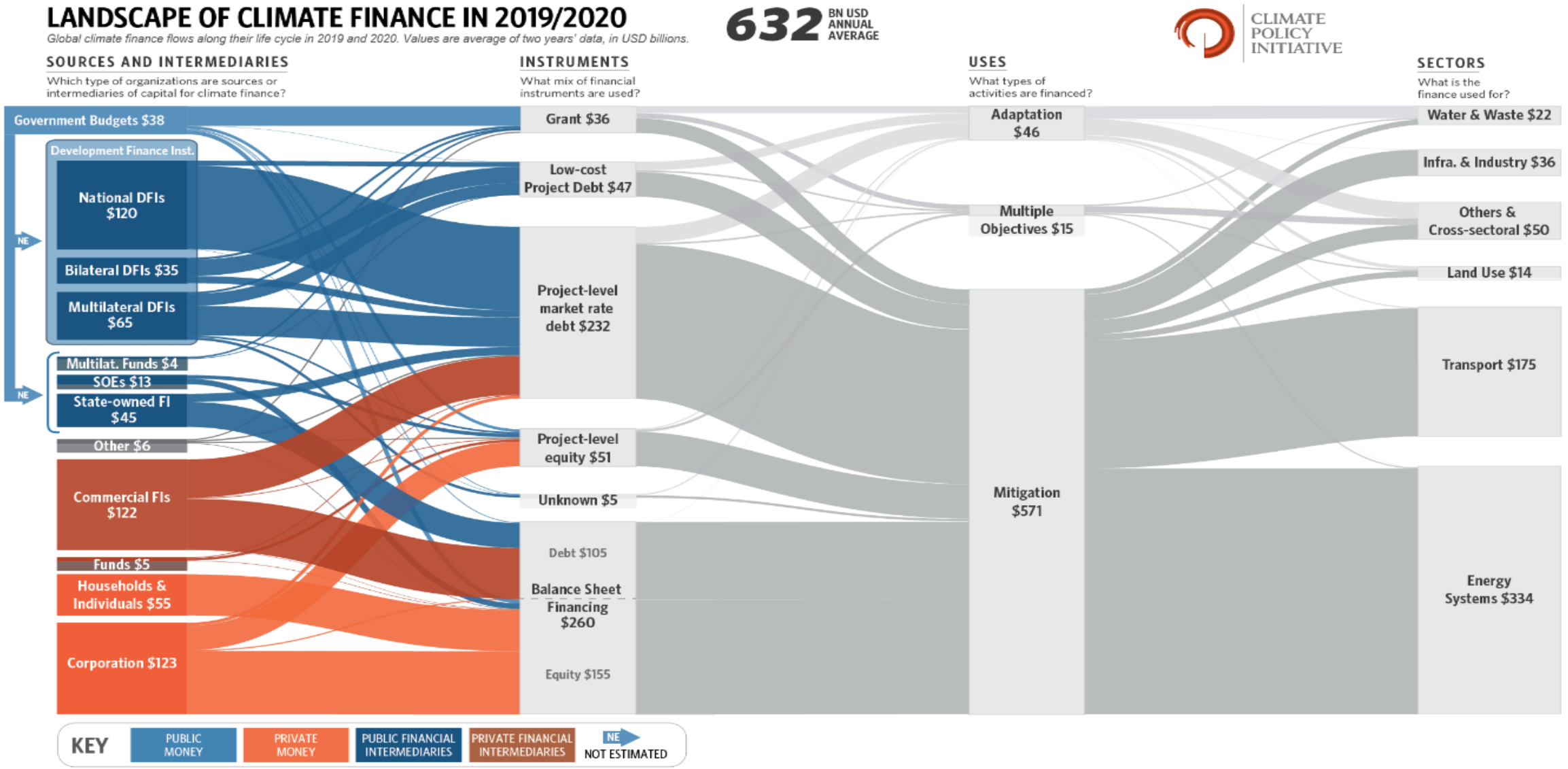
Habitat Banking
Trading „biodiversity credits“

- Mitigate the impact of development
- Potential gain in biodiversity

- Balance Economic, Social and Environmental trade-offs
- Provide long-term framework for stakeholders
- Opportunities to conserve & restore Nature

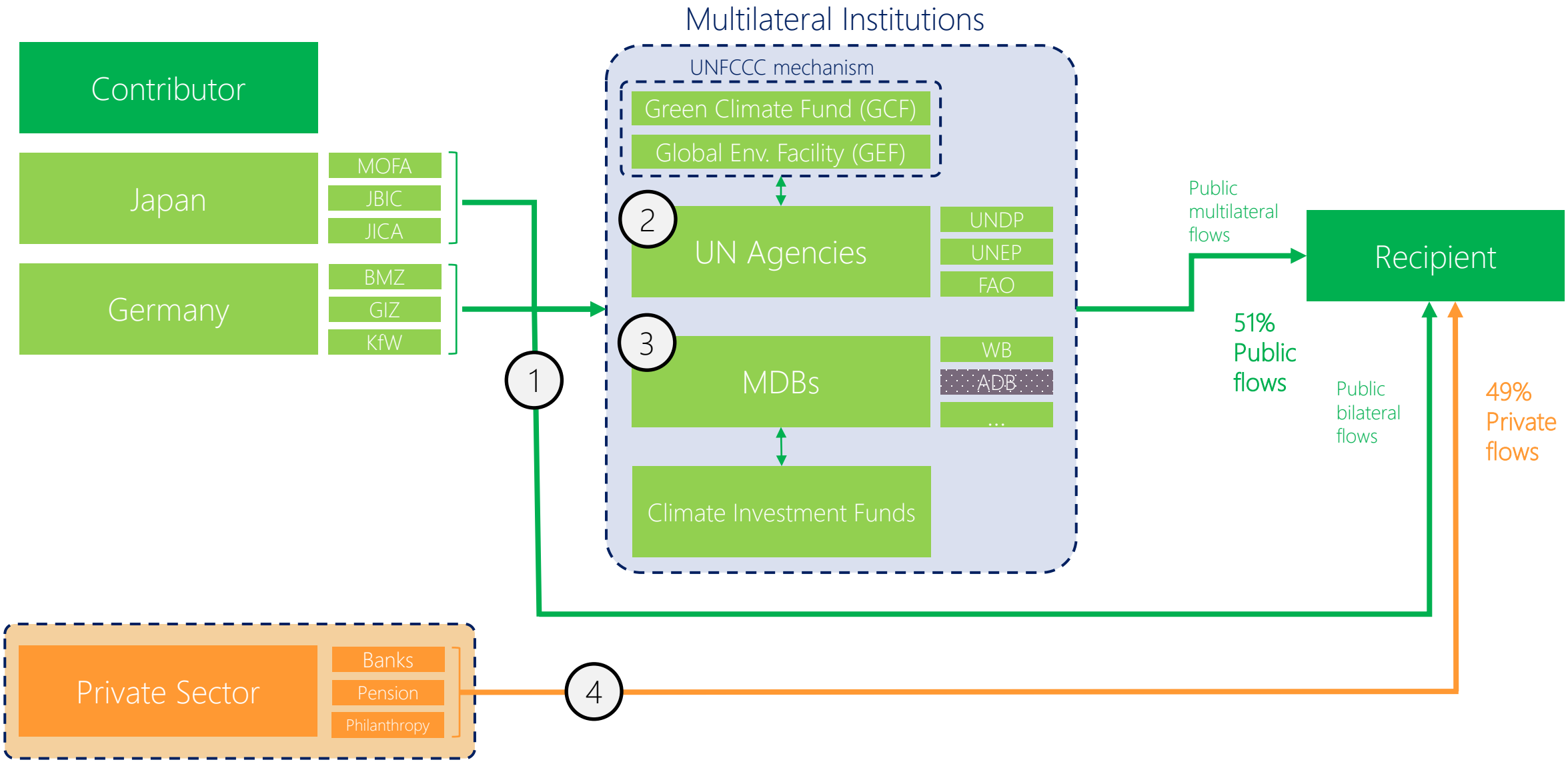
Finance for Nature

Chapter 20



Climate Finance Architecture

Finance for Nature

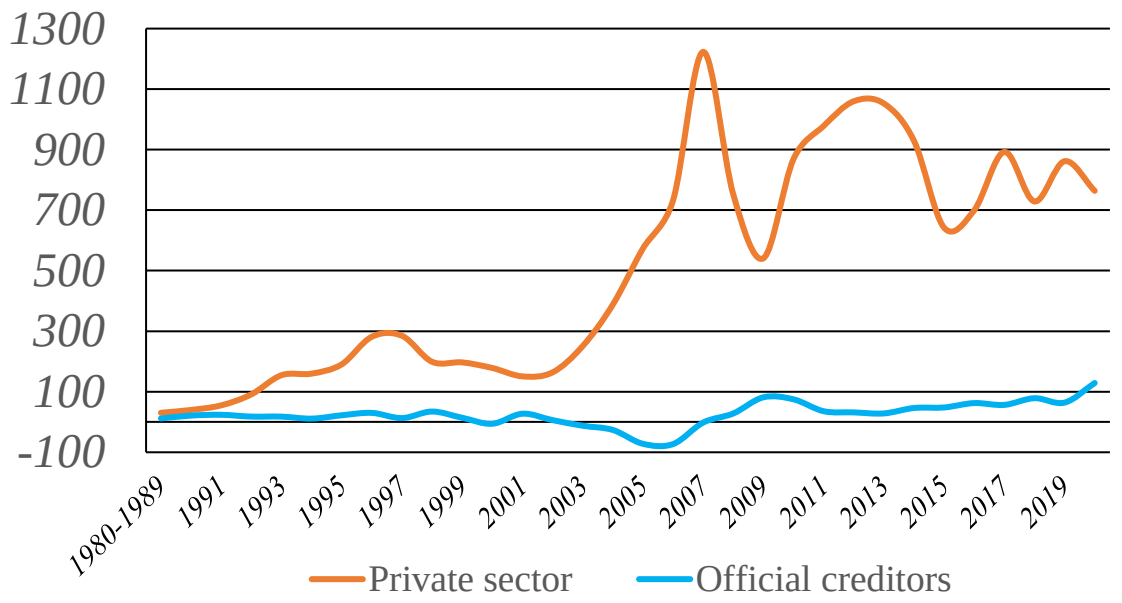


Climate Finance Architecture

Finance for Nature

Aggregate Net Financial Flows to Low- and Middle-Income Countries

1980 to 2020, in Billion USD



Source: Own representation, based on WBs International Debt Statistics, "1980-1989" refers to the average value across the timeframe

Why are Private Flows so small?

1) High-risk
2) Difficult investment climate
3) Data scarcity
4) Absence of Standards

Multilateral Institutions

Public multilateral

49% Private flows

Private Sector

Banks

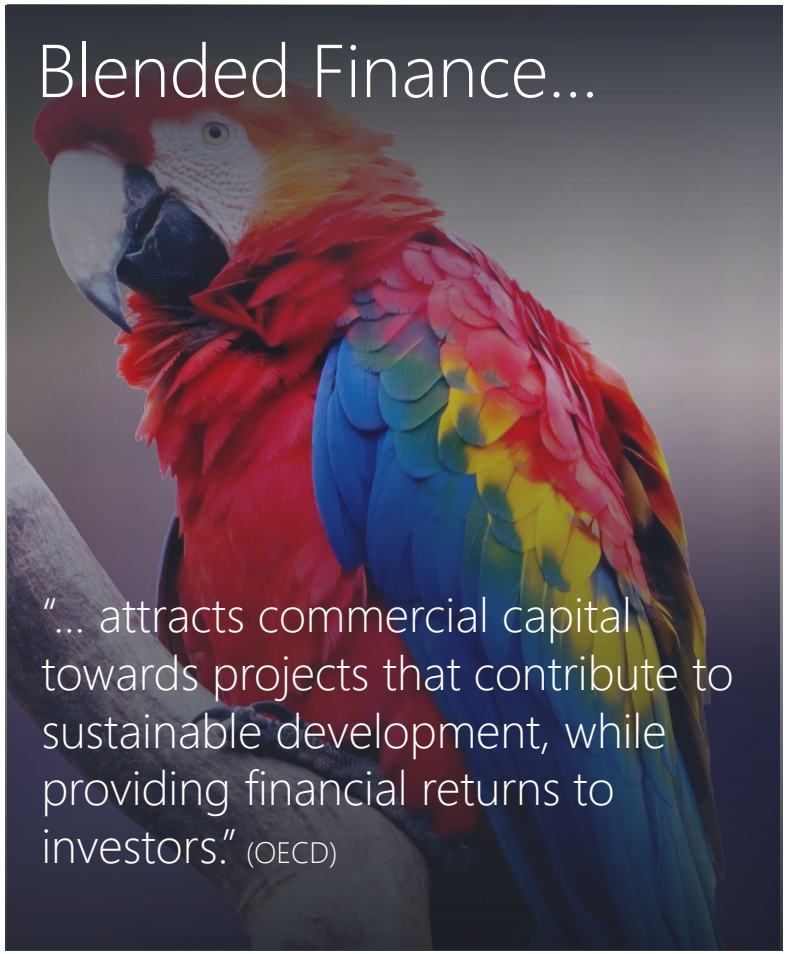
Pension

Philanthropy

4

Blended Finance

Financing of Nature



Case study:

EcoEnterprises Fund for Biodiversity

Colombia

Blended Finance

- Pre-Invest technical assistance
- Involvements of DFIs

Venture Capital technique

- Collaborative, stage-based approach

Portfolio aggregation and management

- Regular monitoring, project diversification

- 2000 ha. Lime plantation with employees
- Preserving ecosystem and food chain
- Grant-based savings accounts to fill cashflow gaps

Conclusion

- Community Engagement and ES comprehension is key
- Combining place- and species conservation for success
- The right restoration approach depends on the context
- Governance and careful planning are the foundation for good restoration projects
- The Biodiversity business case needs to be developed – Blended Finance as a great tool

Thank you for your Attention!
Any Questions?

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