Managing trade-offs in climate-smart landscapes: A global analysis at multiple levels

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Climate-smart landscapes

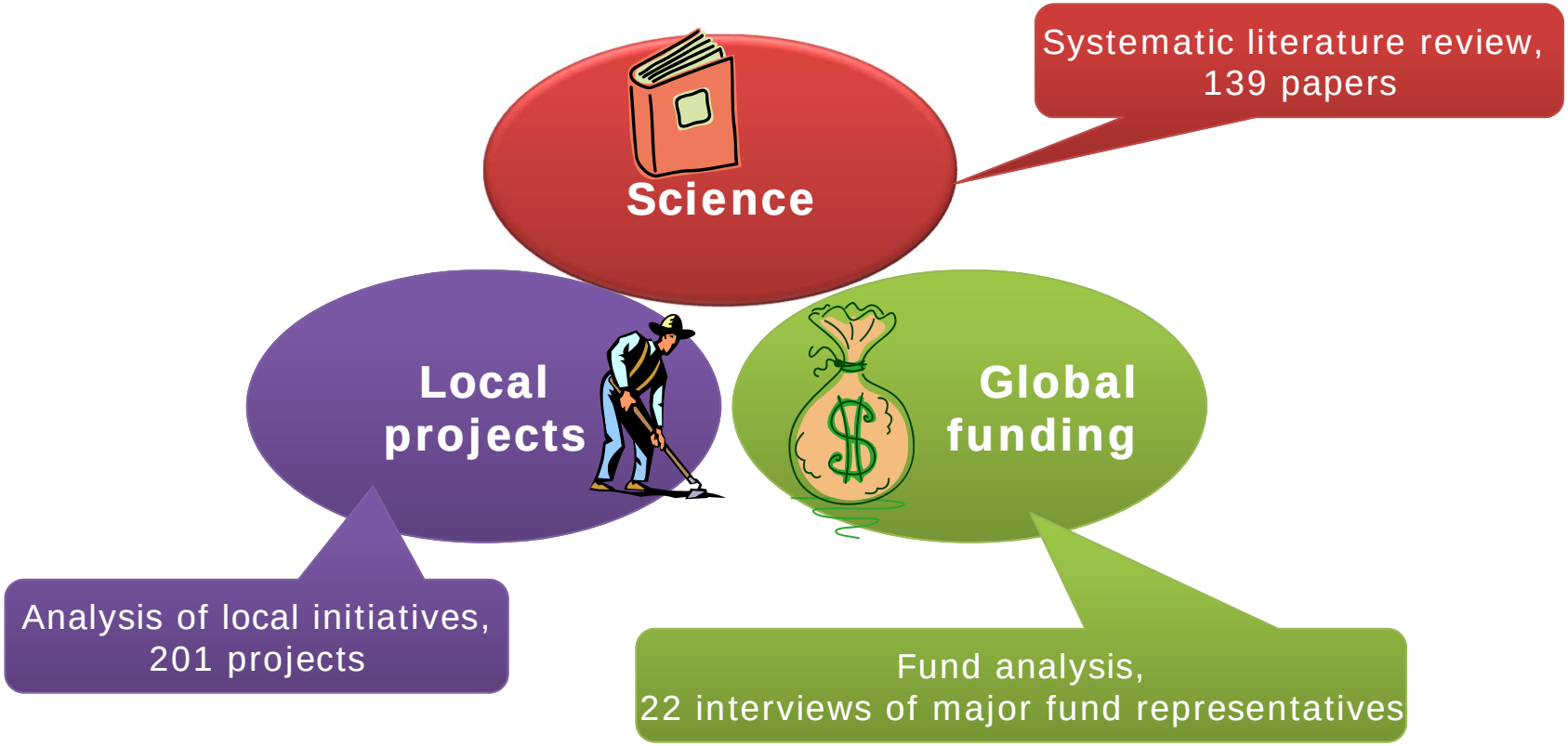
- Managing for joint adaptation and mitigation outcomes at the landscape scale
  - Adaptation
    - for people (e.g. food security, flood risk reduction with watershed management)
    - for agriculture (e.g. better water management)
    - for ecosystems (e.g. landscape connectivity)
  - Mitigation
- Growing interest in exploring how A and M can be pursued simultaneously
  - win–win options?
- However, concerns about:
  - feasibility of implementing A and M jointly
  - possible drawbacks of a ‘forced marriage‘

Linkages between adaptation and mitigation in landscape management

What do we know?

What is being done at the local level?

What is being done at the global level?



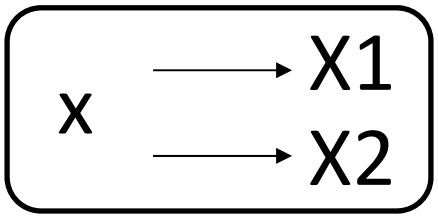
Science

Conceptualization #1

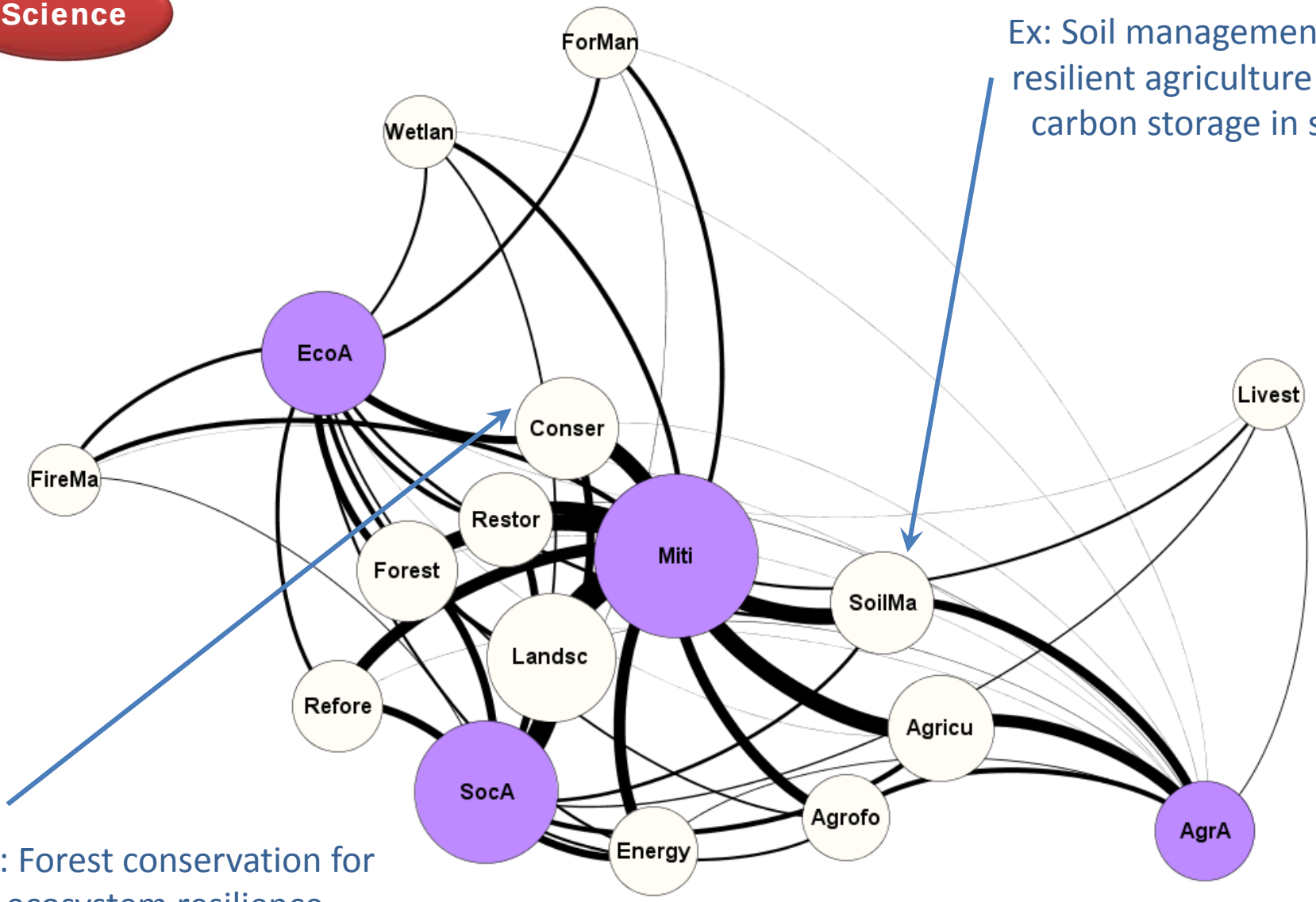
Objectives → Outcomes

(*x*: any objective) (X1, X2: Adaptation or Mitigation)

Joint outcomes



Science



Ex: Soil management for resilient agriculture and carbon storage in soil

Ex: Forest conservation for ecosystem resilience, livelihood adaptation and emission reductions

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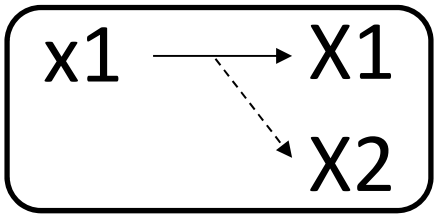
Conceptualization #2

Objectives → Outcomes

(*x1, x2*: Adaptation or Mitigation)

(X1, X2: Adaptation or Mitigation)

Coincidence



Projects

Example project

- Adaptation project in Colombia:
  - resilient agricultural practices → Agricultural adaptation
  - livelihood diversification → People's adaptation
  - ecosystem restoration with flood-resistant trees for reducing flooding downstream → Ecosystem adaptation

"Reducing Risk and Vulnerability in Region of La Depresion Momposina, Colombia"

→ People's adaptation

  - expected outcomes likely to result in increased carbon storage in soils and trees (e.g. soil restoration, agroforestry and reforestation). → Mitigation

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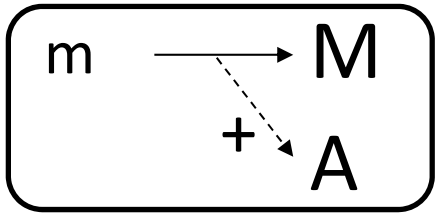
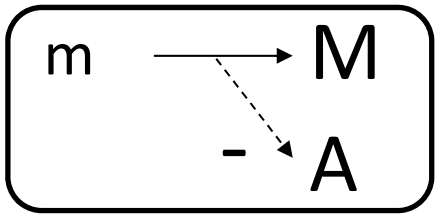
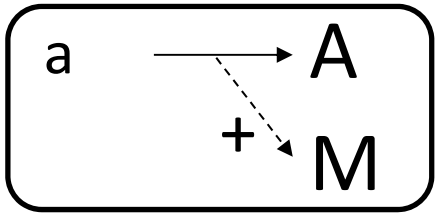
Examples



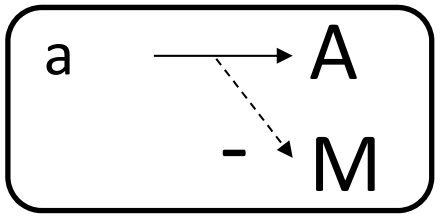
Conserving carbon in forests also protects adaptation ecosystem services (e.g. watershed protection)



Carbon forest plantations may reduce access to cropland and increase vulnerability or food insecurity of local communities



Agriculture adaptation can reduce the need to convert forests into new agricultural lands (less emissions)



Agricultural adaptation can increase emissions (e.g. nitrogen fertilization, energy-intensive irrigation)

Funding

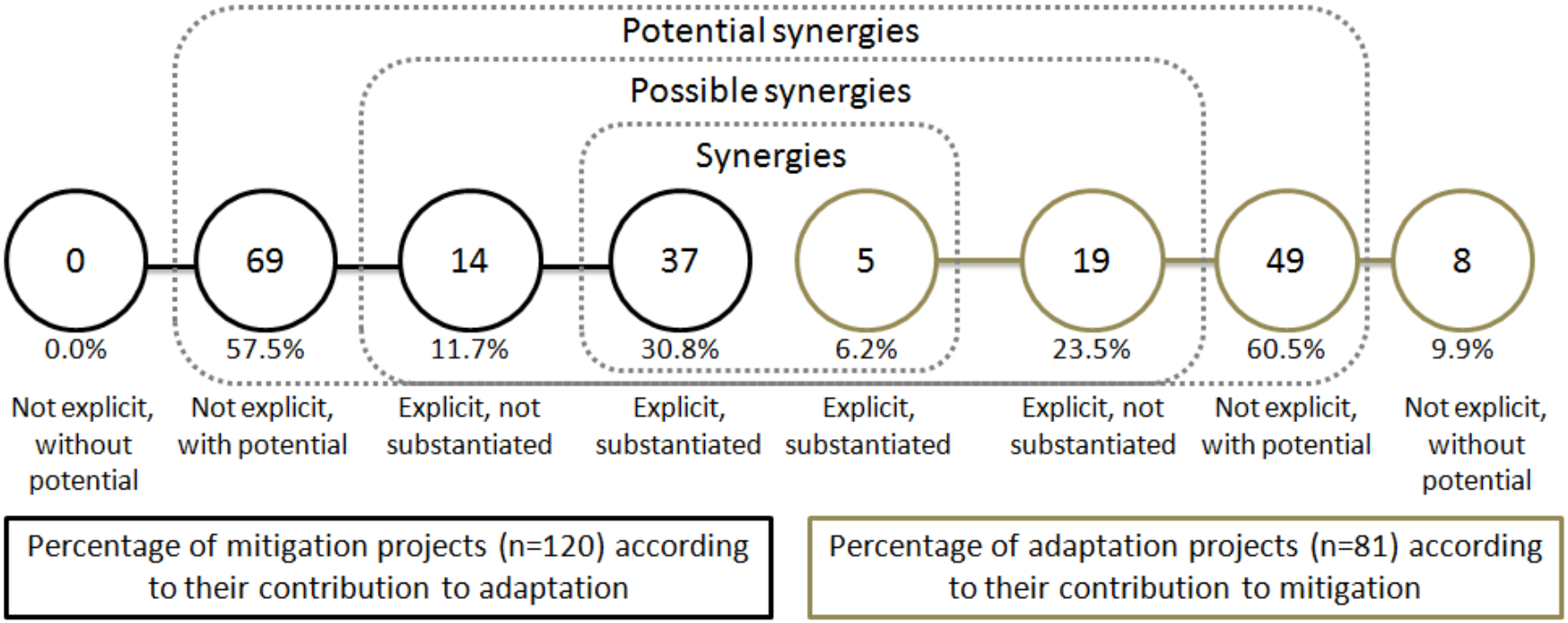
Separation between adaptation and mitigation in funding streams

- Funding streams are labelled as either A or M

- Interview results:
  - Do funds provide guidance on how to integrate A and M?
    - 89% no
  - Do templates for project description integrates A and M?
    - 100% no

Projects

How do projects consider the other goal?



More mitigation projects consider adaptation than the contrary

Science

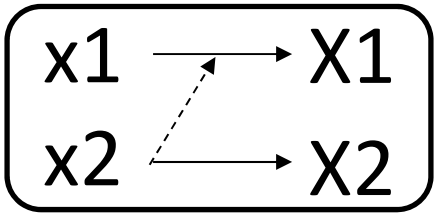
Conceptualization #3

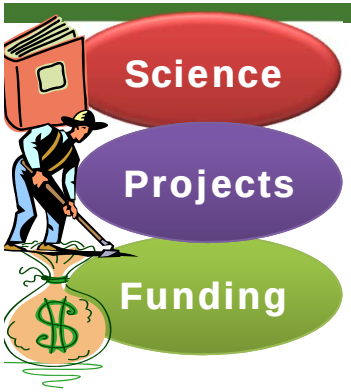
Objectives → Outcomes

(*x1, x2*: Adaptation or Mitigation)

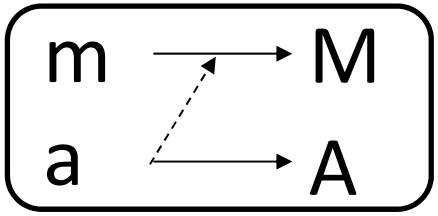
(X1, X2: Adaptation or Mitigation)

Interactions

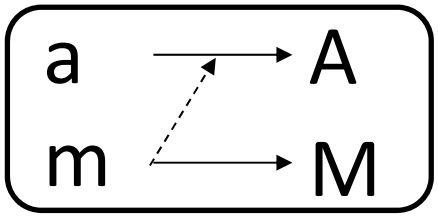




Examples of arguments in favor of integrating A and M



Adding adaptation objectives to a mitigation project can increase project success:
less climate risk, more carbon permanence, more local legitimacy, gold certification (CCBA)



Adding mitigation objectives to an adaptation project can increase adaptation success:
carbon funding, donor interest.

Other arguments:

\+ Holistic approach.
Fairness and justice.
Cost efficiency.

\- Complexity.
Distinct targets.
Cost inefficiency.

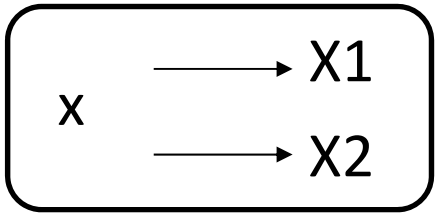
Policy implications

Objectives → Outcomes

(*x1, x2*: Adaptation or Mitigation, *x*: any objective)

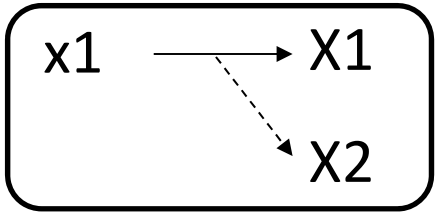
(X1, X2: Adaptation or Mitigation)

Joint outcomes



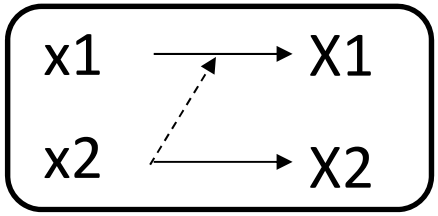
Opportunities for **mainstreaming** adaptation and mitigation in agricultural and forest policies

Coincidence

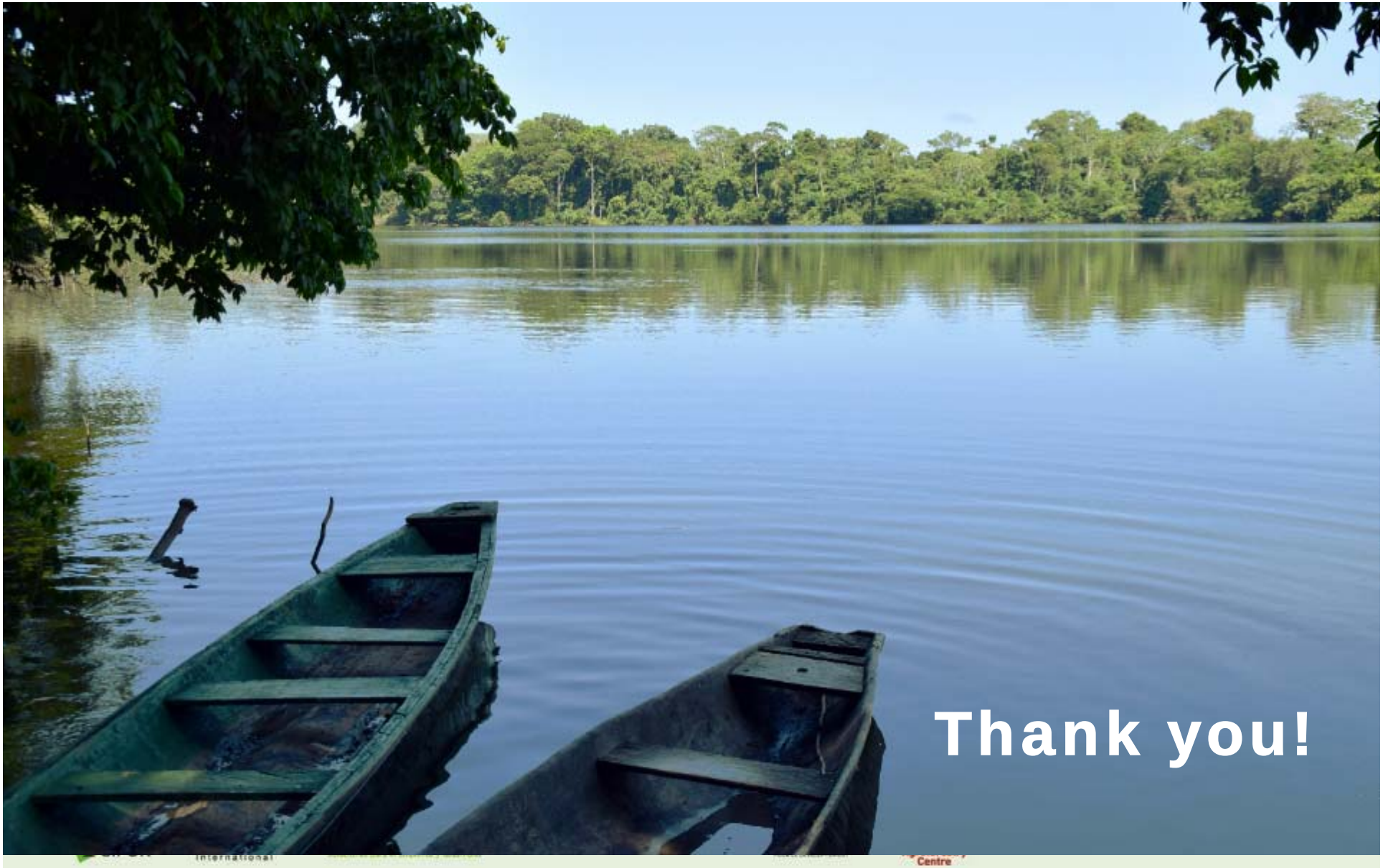


Opportunities for improving **policy coherence** (e.g. avoiding that A policies increase emissions)

Interactions



Opportunities for **policy integration**: addressing A and M together can improve both outcomes



This research was carried out by CIFOR as part of the CGIAR Research Program on Forests, Trees and Agroforestry (CRP-FTA). This collaborative program aims to enhance the management and use of forests, agroforestry and tree genetic resources across the landscape from forests to farms. CIFOR leads CRP-FTA in partnership with Bioversity International, CIRAD, the International Center for Tropical Agriculture and the World Agroforestry Centre.

Further reading

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Pour en savoir plus

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Para saber más

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