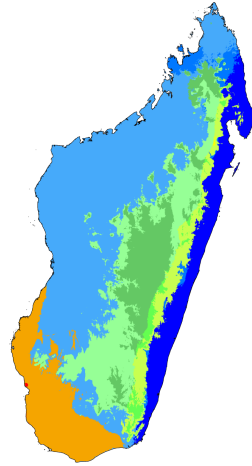# Theory of Change for Capacity Development to Enhance Long-Term Biodiversity Conservation in Madagascar

Jennifer Zavaleta Cheek, Johanna Eklund, Daniel Charles Miller, Jeremy Brooks, Nikolas Merten, and Kanyao Han

ILLINOIS

Madagascar is a conservation priority

Tropical, rainforest (Af)
Tropical, monsoon (Am)
Tropical, savannah (Aw)
Arid, desert, hot (BWh)
Arid, steppe, hot (BSh)
Temperate, dry summer, hot summer (Csa)
Temperate, dry winter, hot summer (Cwa)
Temperate, dry winter, warm summer (Cwb)
Temperate, no dry season, hot summer (Cfa)
Temperate, no dry season, warm summer (Cfb)

Madagascar's biodiversity faces threats

Deforestation

Mining

Wildlife Trade

Political Instability

Madagascar received US$300 million from 1980-2008

Capacity Development

The process of strengthening the abilities of individuals, organizations and societies to make effective use of the resources, in order to achieve their own goals on a sustainable basis.

Capacity Development Examples

Training

Community of Practice

Technical skills
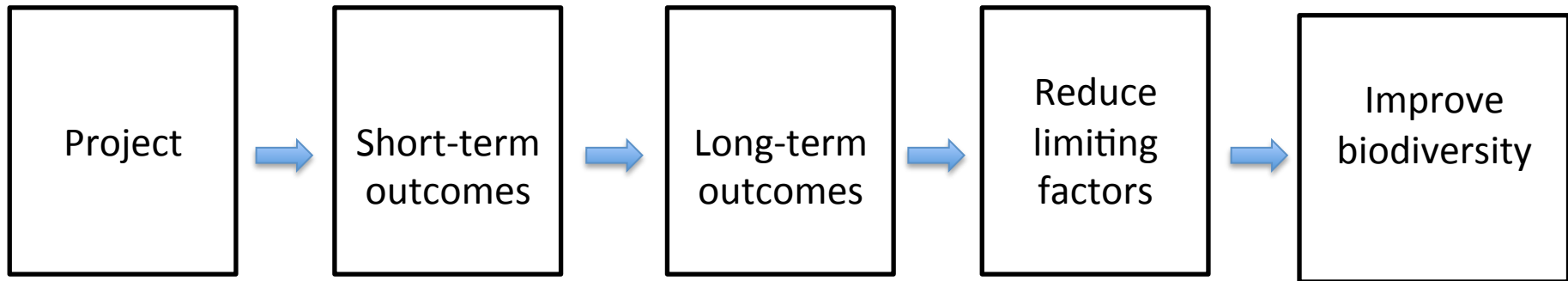
Alternative livelihoods
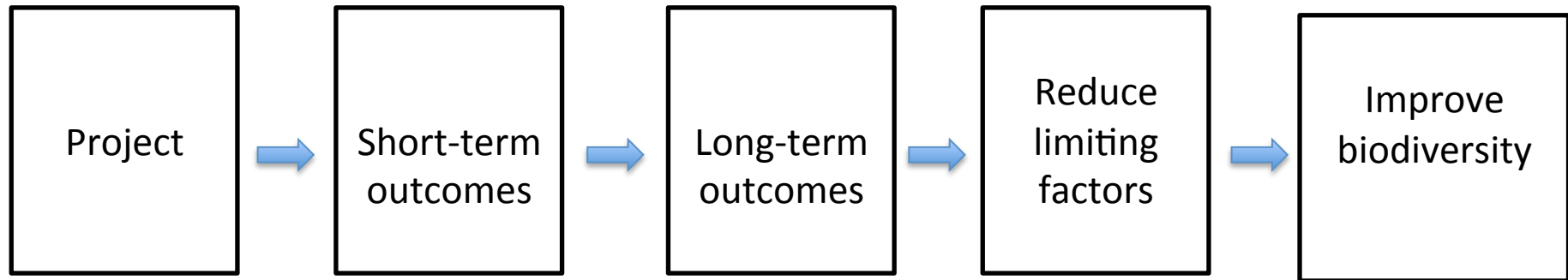
Research Question:

- What are the most important short-term outputs and long-term outcomes of capacity development interventions?

- What are the most significant factors limiting conservation outcomes?

- How do these relate to one another in a theory of change?

Goal: Theory of Change

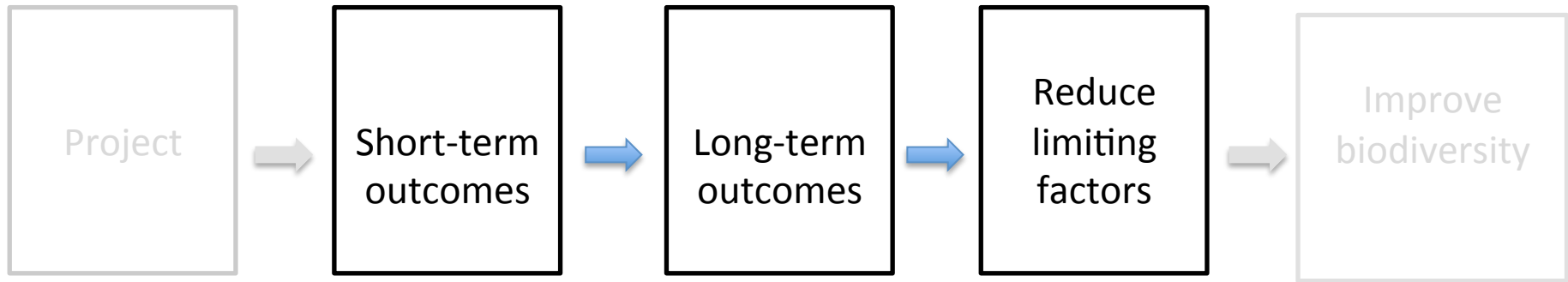| Project | → | Short-term outcomes | → | Long-term outcomes | → | Reduce limiting factors | → | Improve biodiversity |

Goal: Theory of Change

| Project | → | Short-term outcomes | → | Long-term outcomes | → | Reduce limiting factors | → | Improve biodiversity |

Most literature measures these

. . .

Assumes intervention will achieve these

Card Sorting Activity

| Project | | Short-term outcomes | | Long-term outcomes | | Reduce limiting factors | | Improve biodiversity |

Card Sorting Activity

- 3-day workshop in Antananarivo in January, 2020

- 18 representatives from 11 conservation NGOs, community-led organizations, and academic institutions

- Cards based on systematic review of 86 articles

Rank short-term outputs

Short-term

1	

- Training on alternative livelihoods
- More formal education
- Monitoring skills
- Establishing community of practice
- New equipment
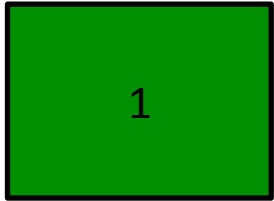- Money for operational costs
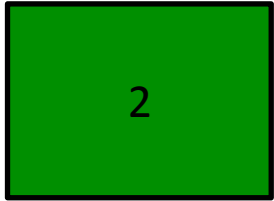- Creating new local institutions
- Strengthening institutions

2

3

4

Rank long-term outcomes

Long-term

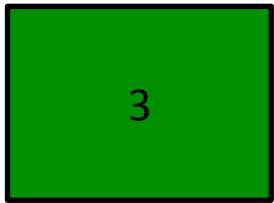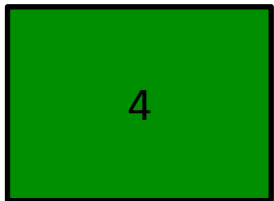| Box	
1	
2	
3	
4	

- More regulations and laws for conservation
- More political support for conservation issues
- More fair processes of dealing with conflict
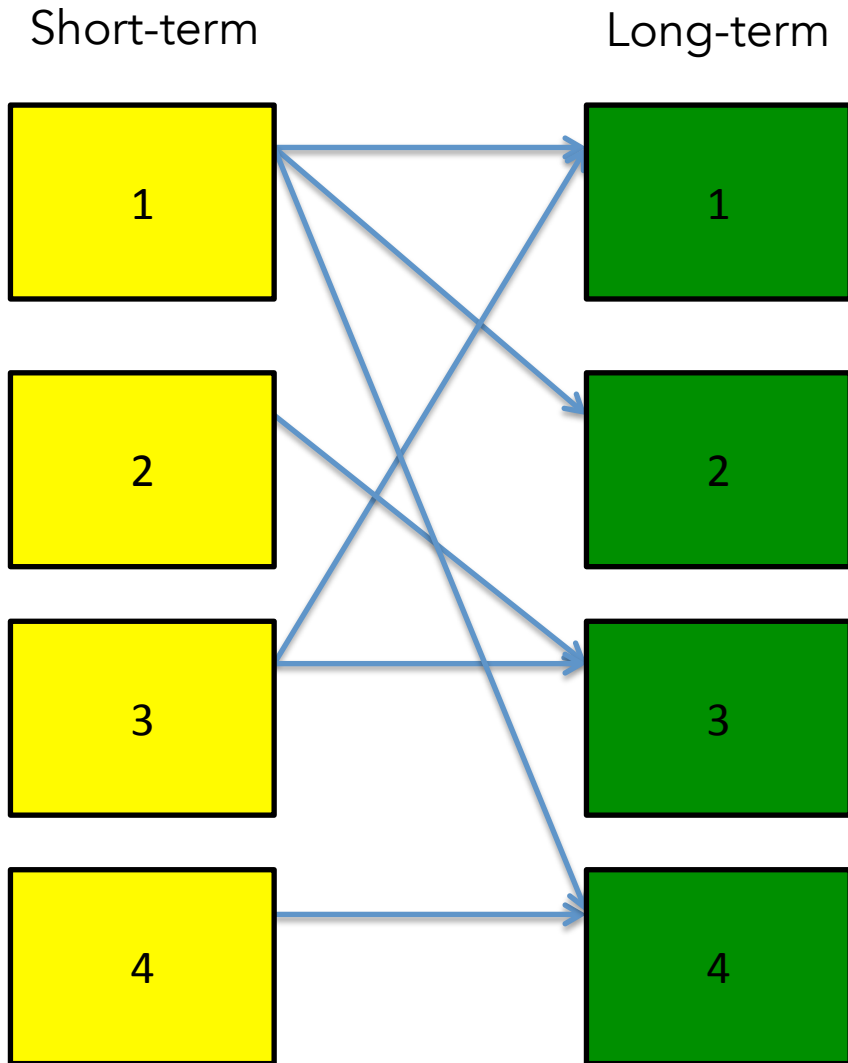- More local ownership over management decisions
- Increased perception of ability of have an impact/ self-efficacy
- Diverse groups that work together

Draw arrows between short- and long-term cards

Short-term

Long-term

| 1 |

| 1 |

Most important

| 2 |

| 2 |

| 3 |

| 3 |

| 4 |

| 4 |

Least important

Rank limiting factors

Limiting factors

- Lack of stakeholder involvement or support
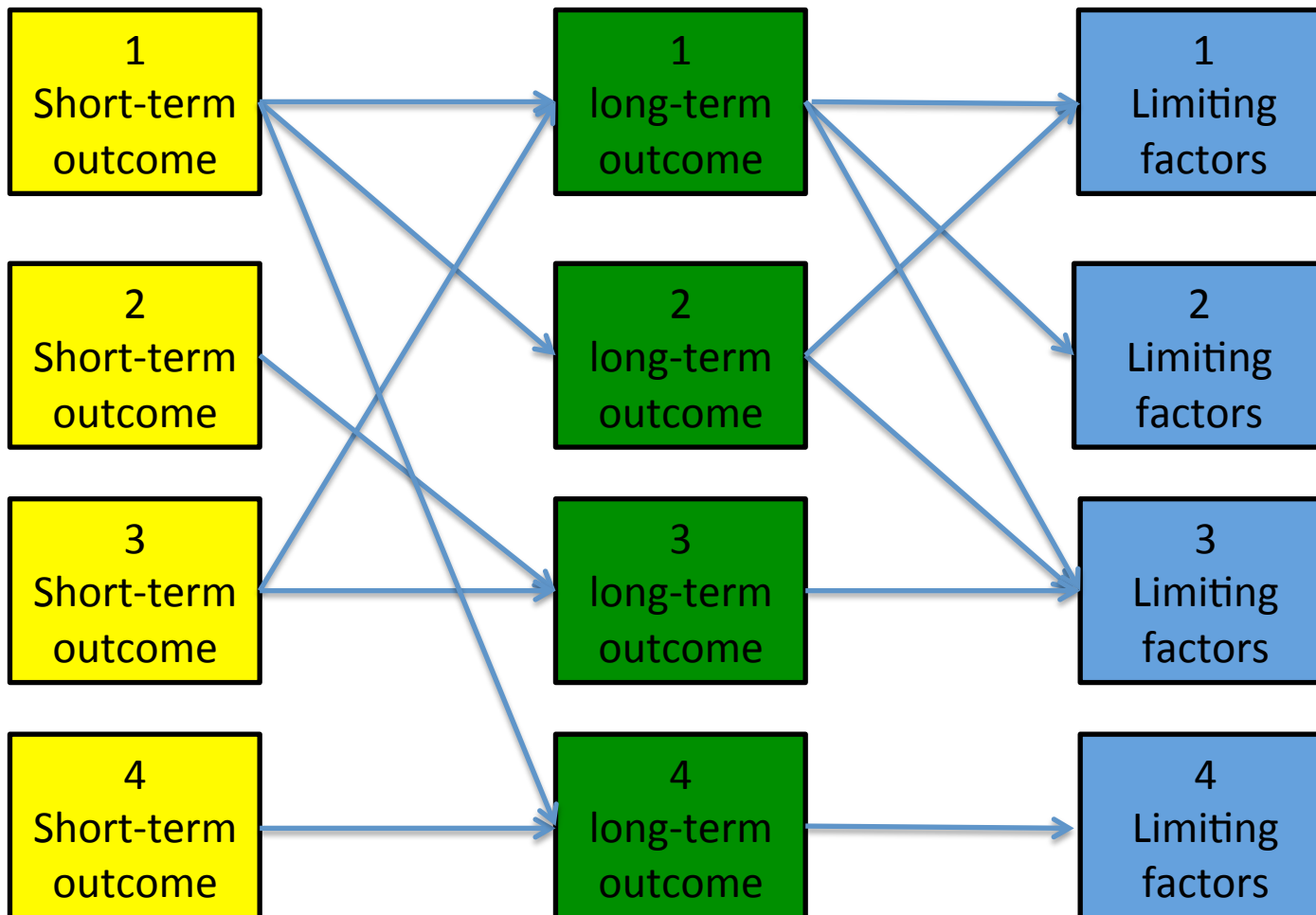- Lack of motivation
- Extreme poverty
- Corruption
- Insufficient scientific evidence
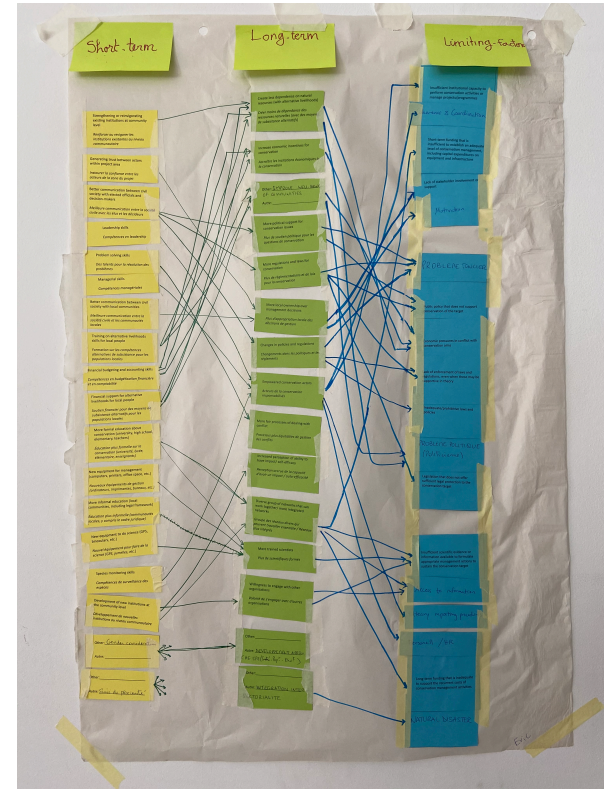- Insufficient institutional capacity to perform conservation activities

Draw arrows between long-term outcomes and limiting factor cards

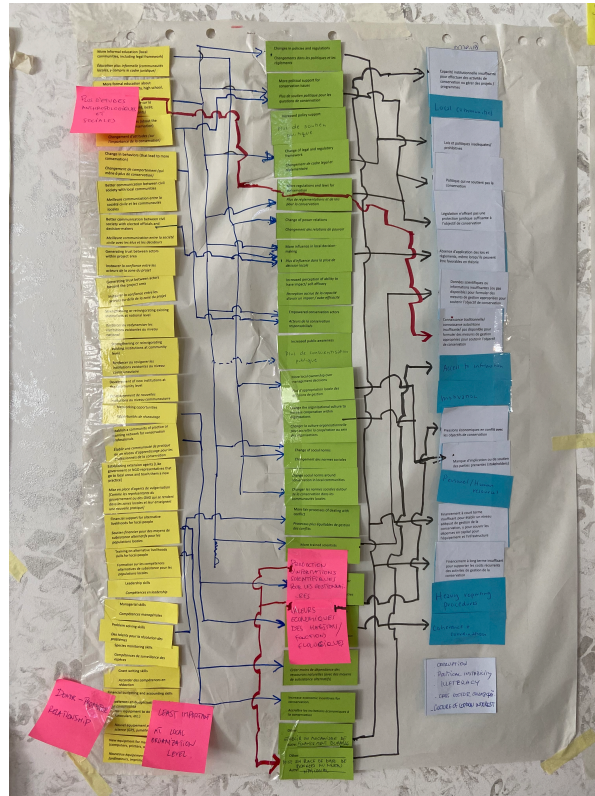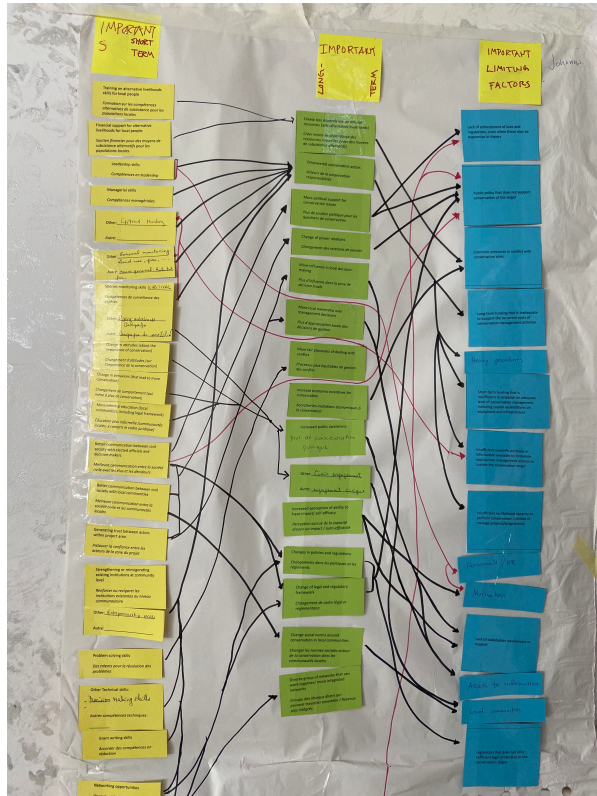| 1 Short-term outcome	1 long-term outcome	1 Limiting factors
2 Short-term outcome	2 long-term outcome	2 Limiting factors
3 Short-term outcome	3 long-term outcome	3 Limiting factors
4 Short-term outcome	4 long-term outcome	4 Limiting factors

Card Sorting Activity
N= 6 groups

Analytical Methods

Ranking Cards

- Kendall rank correlation to compare across groups

- Averaged ranking across cards and categories to compare means

- Grouped agreement based on the standard error

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Links Across Cards

- Jaccard similarity coefficient for asymmetric binary attributes
- Measured influence (the extent to which a card lies on paths between other cards)
- In-degree (# of in-coming links)
- Out-degree (# of out-going links)

Kendall Rank Correlation

Short-term Cards

Long-term Cards

Limiting Factor Cards

Agreement on Short-term Cards

Very Important:

- Change in attitudes (about the imp. of cons.) (3.67 $\pm$ 2)
- Better communication between civil society with local communities (7.25 $\pm$ 1.4)
- Better communication between civil society with elected officials and decision-makers (7.4 $\pm$ 3)

Low importance:

- Networking opportunities (16 $\pm$ 2)
- Species monitoring skills (17.7 $\pm$ 2.5)
- Strengthening or reinvigorating existing institutions at national level (20.7 $\pm$ 2)

Agreement on Long-term Cards

Very Important:

- Increased policy support (2.5±.70)
- More political support for conservation issues (3.5±1.6)

Medium importance:

- Change of power relations (4.5±1)
- More regulations and laws for conservation (5.7±.0007)
- More influence in local decision-making (6.6±1.52)

Low importance:

- Change the organizational culture to increase cooperation within organizations (13±.0007)

Agreement on Limiting Factor Cards

Important:

- Public policy does not support conservation of the target (4.2 ±1.9)

Low importance:

- Heavy reporting procedures for grants (14 ± 1.8)

Connections between cards

In-degree (arrows to it):

- Empowerment (62 links)

- Economic Incentives (26 links)

- Social Norms and Values (23 links)

- Law and Policy (37 links)

- Poverty (27 links)

Connections between cards

Out-degree (arrows coming to it):

- Technical Skills (41 links)

- Fostering Partnerships (39 links)

- Empowerment (36 links)

- Social Norms and Values (24 links)

- Law and Policy (23 links)

- Funding for Conservation (22 links)

Connections between cards

Influential (arrows run through it):

- Empowerment Category (e.g., increased perception of ability to have impact, more influence in local decision-making, change of power relations).

Conclusions

Groups did not totally agree on which problems were the most pressing and which short- and long-term capacity development incomes were needed.

What future initiatives should focus on to improve conservation in the long-run:

- Better communication between civil society and local communities and civil society and elected officials

- Empower conservation actors and increase local decision-making

- So people can change attitudes and get increasing support for conservation efforts (locally and within policy)

Questions?

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