Linear Infrastructure Safeguards in Asia "LISA" Project

GREENING TRANSPORTATION PROJECTS

ADB_WII Webinar Series 2021-2022

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BUILDING A FOUNDATION FOR LINEAR INFRASTRUCTURE SAFEGUARDS IN ASIA

"THE LISA PROJECT"

Prime Contractor: Perez, APC

ESS Work Assignment #13

CREDIT: GREGOIRE DUBOIS

LISA PROJECT SCOPE

Linear Infrastructure Focus

Roads

Rails

Power Transmission Lines

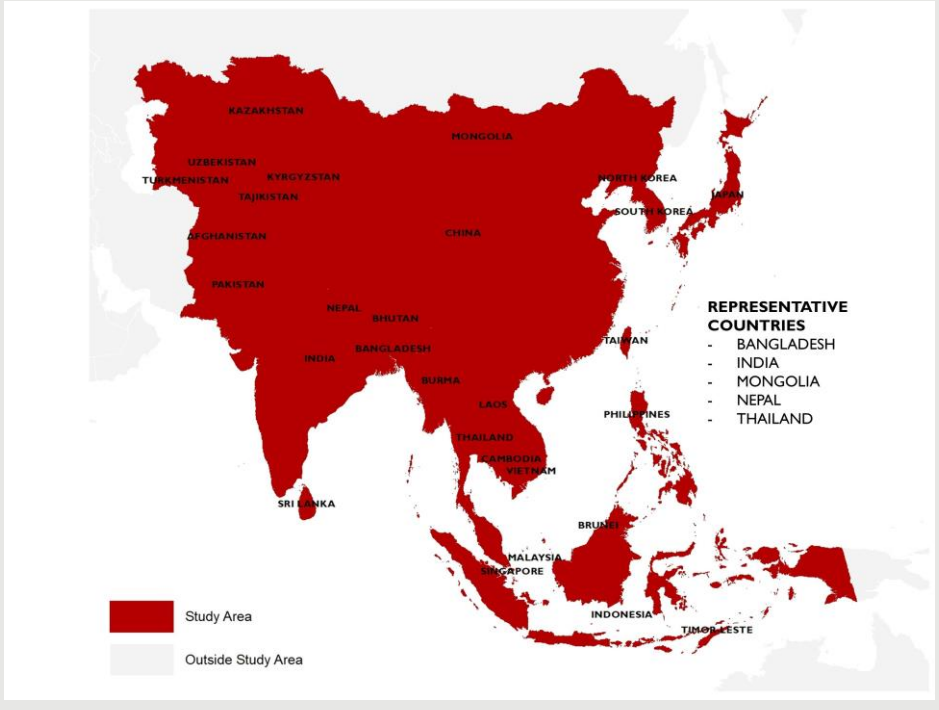

Photo: Nilanga Jayasinghe/ WWF-US

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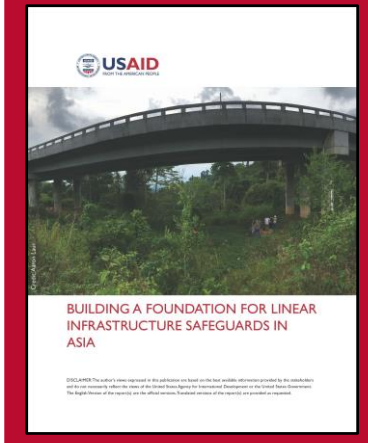
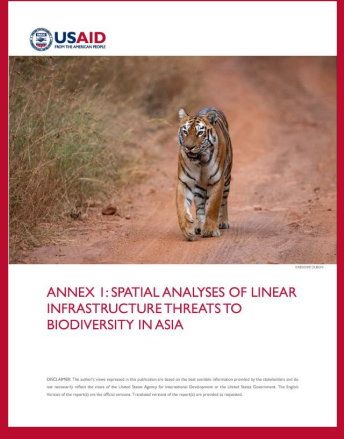
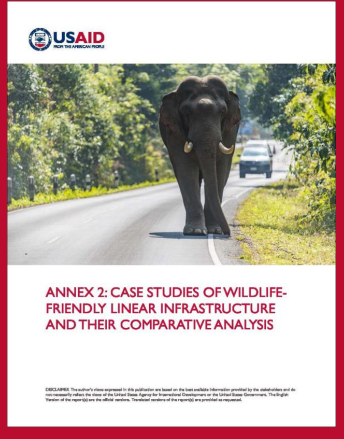
RESULTS OF THE LISA PROJECT

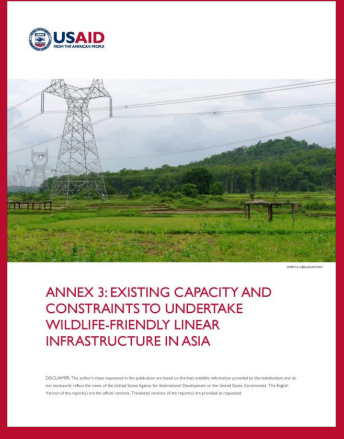


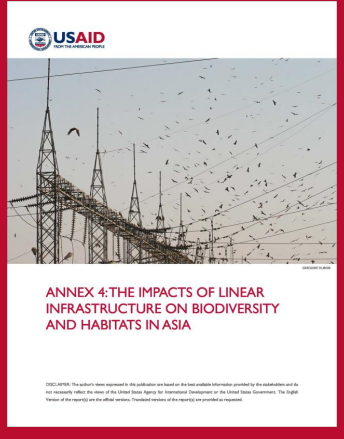
FINAL REPORT AND FOUR ANNEXES

Annex 1: Spatial Analyses
Annex 2: Case Studies
Annex 3: Capacity Assessment
Annex 4: Literature Review









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www.largelandscapes.org/LISA-project

THE LISA PROJECT

By the numbers

300+	LI experts responding to the Lisa Project survey on capacity
28	Asian countries
24+	LISA Project specialists in policy, ecology, finance, transport planning, economics
14	Months
7	Languages: English, Bengali, Hindi, Mongolian, Nepali, Russian, Thai
5	Representative countries – India, Nepal, Bangladesh, Thailand, Mongolia (assessment)
4	Reports (annexes) – Literature Review, Spatial Analyses, Case Studies, Capacity Assessment
3	Modes of linear infrastructure – roads, railways, power lines
1	COVID pandemic

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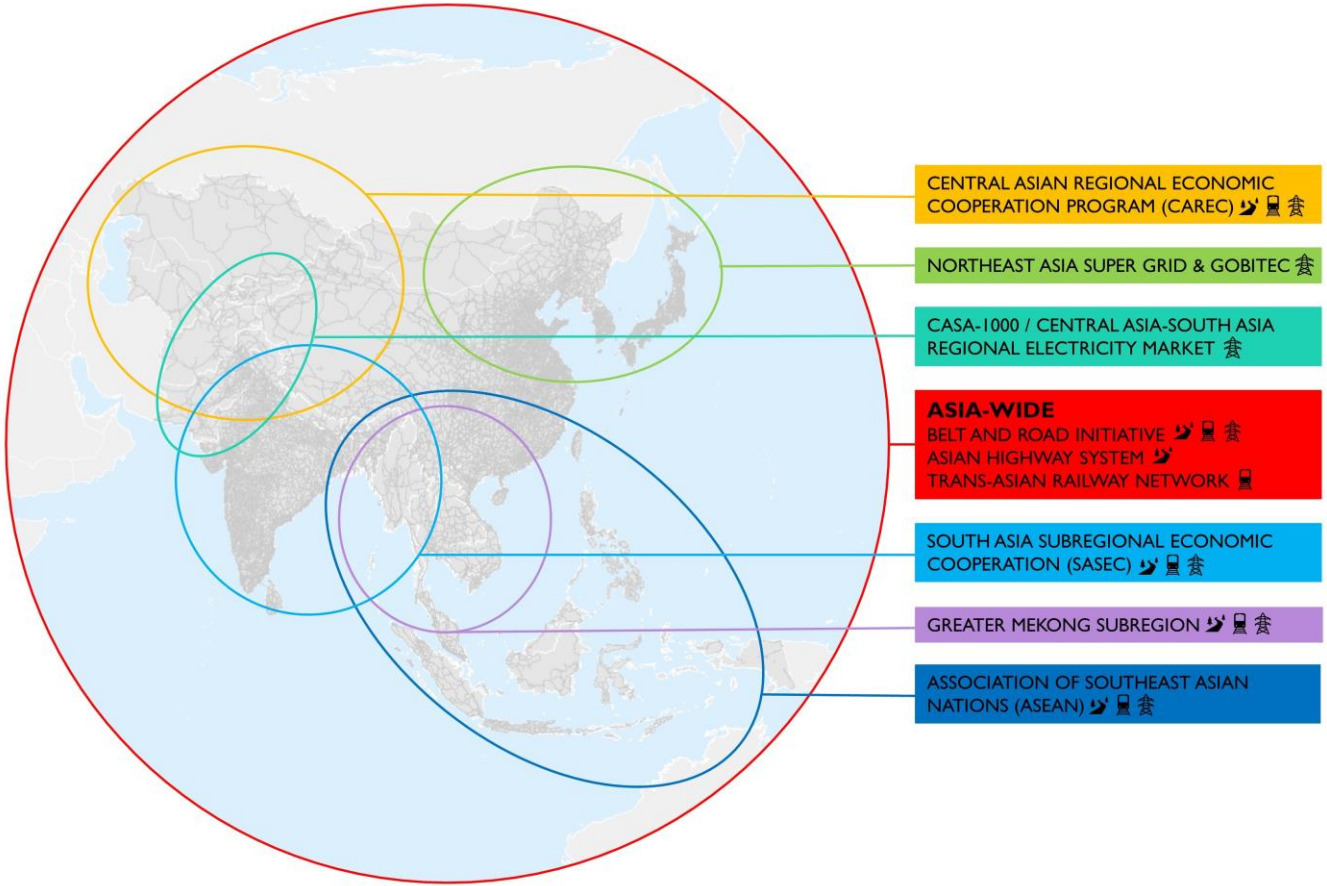
ASIA'S INTERNATIONAL INITIATIVES: COORDINATED LI EXPANSION

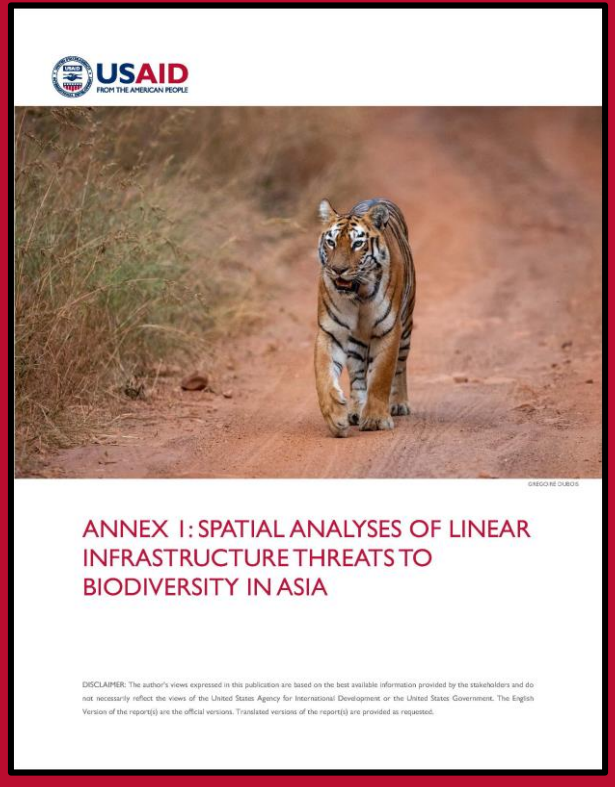


LISA PROJECT TASKS

Conduct	Conduct spatial analyses of LI projects most likely to impact biodiversity and critical habitats
Synthesize	Synthesize research to understand the impacts of LI on wildlife and critical habitats
Compile	Compile case studies of exemplary wildlife-friendly LI projects and provide cautionary examples
Examine	Examine capacities regarding policies, regulations and resources for adopting LI safeguards
Identify	Identify opportunities and barriers for implementing biodiversity safeguards in key countries
Develop	Develop training materials for a capacity building program

RESULTS OF THE LISA PROJECT

Annex 1: Spatial Analyses



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ANNEX 1: SPATIAL ANALYSES

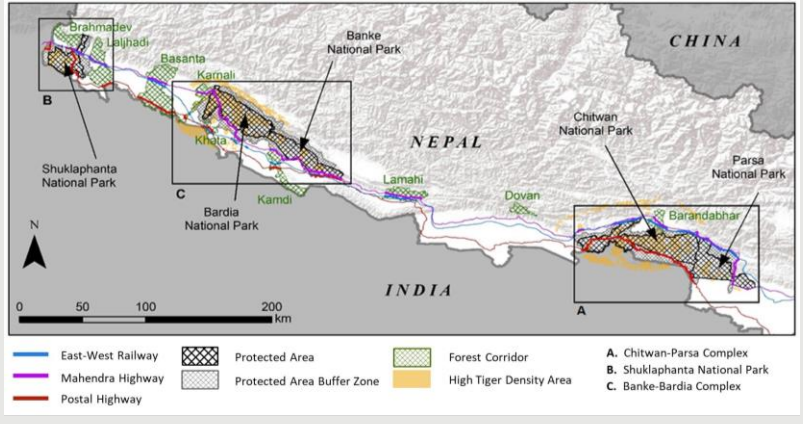
1. Asia wide spatial analysis

2. Fine-scale spatial analyses
   - Tiger (Nepal)
   - Snow leopard (Mongolia)
   - Goitered gazelle and khulan (wild ass) (Mongolia)
   - Saiga antelope (Kazakhstan)
   - Birds and powerlines – multiple species (Thailand)
   - Use of roadkill data – multiple species (India)

3. Review of 11 exemplary spatial analyses of projected impacts

ROADKILL IN INDIA

LI IMPACTS TO TIGER HABITAT IN NEPAL



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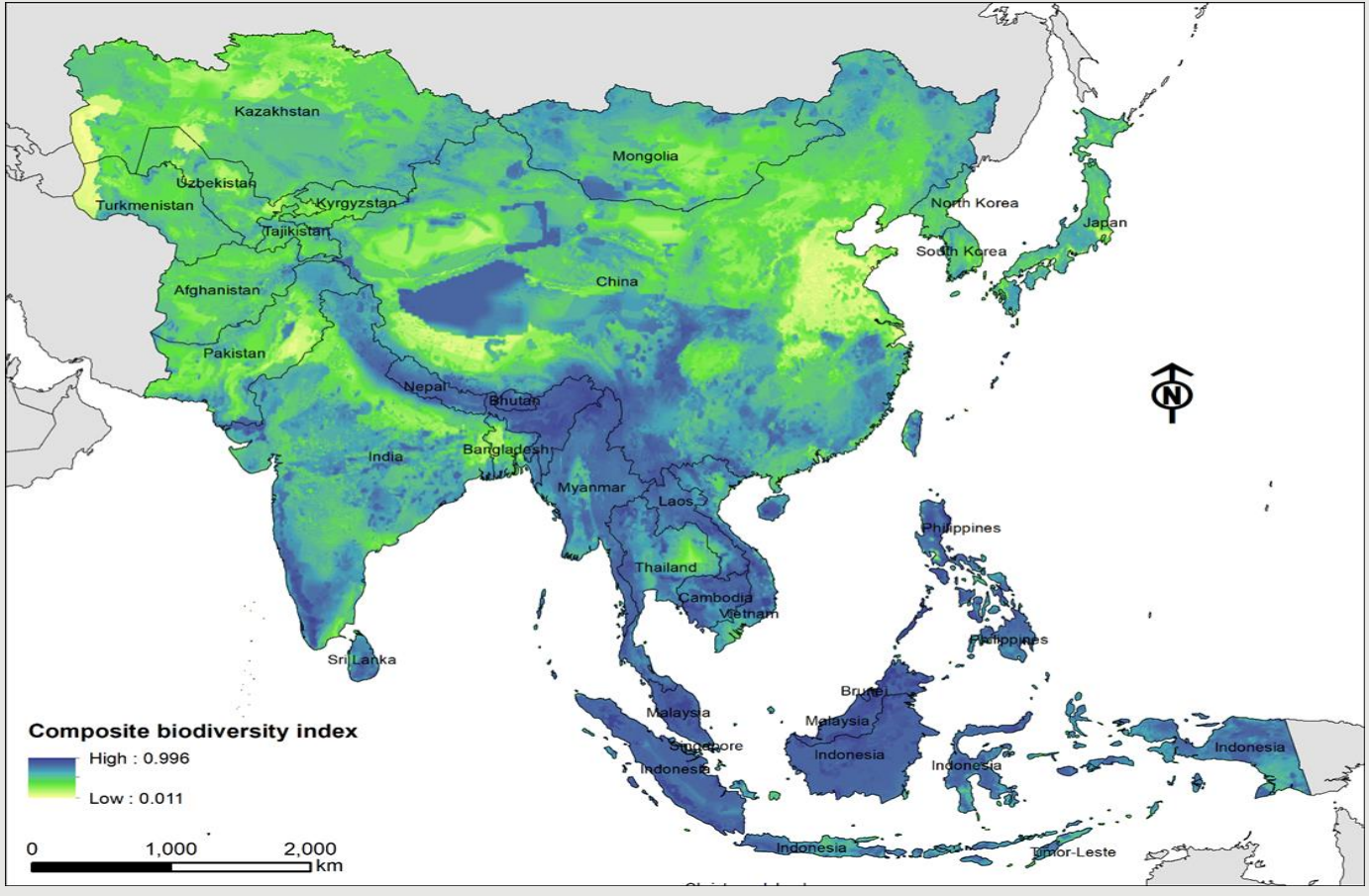
FINDINGS: COMPOSITE BIODIVERSITY INDEX



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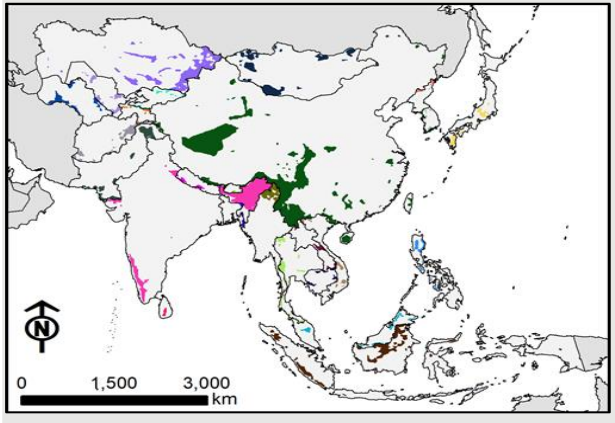
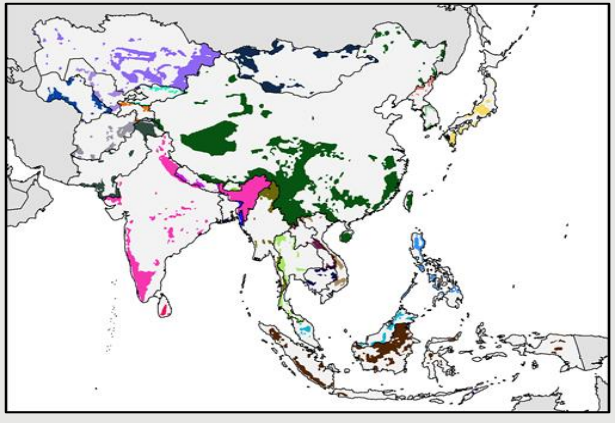
FINDINGS:
BIODIVERSITY RICH LANDSCAPES (NATIONAL)

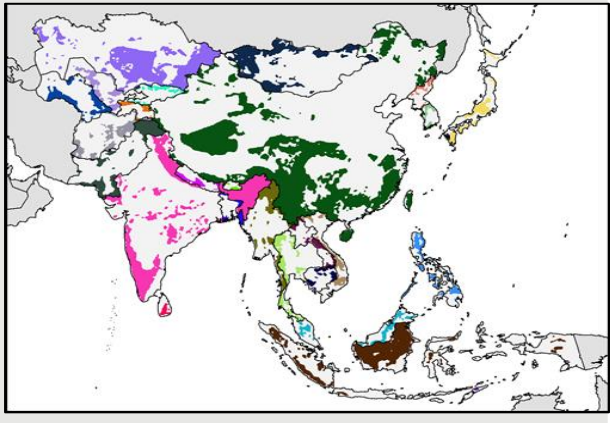
TOP 10%



TOP 20%



TOP 30%



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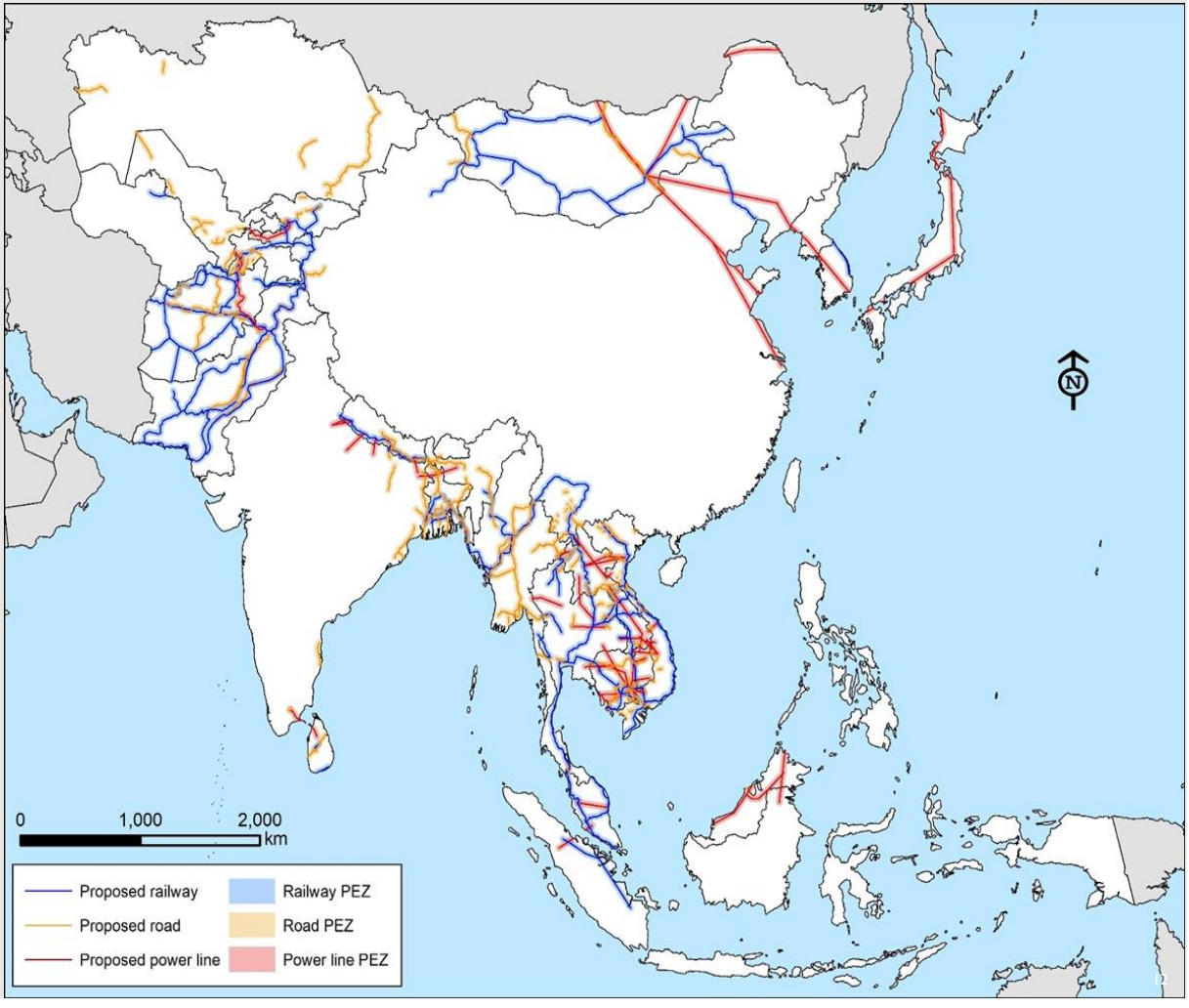
ASSESSING THE POTENTIAL IMPACT OF LI ON BIODIVERSITY

Mapped proposed LI development from major LI Initiatives

- ~ 2/3 new routes
- ~ 1/3 upgrades

- More than 81,000 km of proposed LI
  - Rail: 35, 698 km
  - Road: 27,919 km
  - Power Line: 17, 991 km



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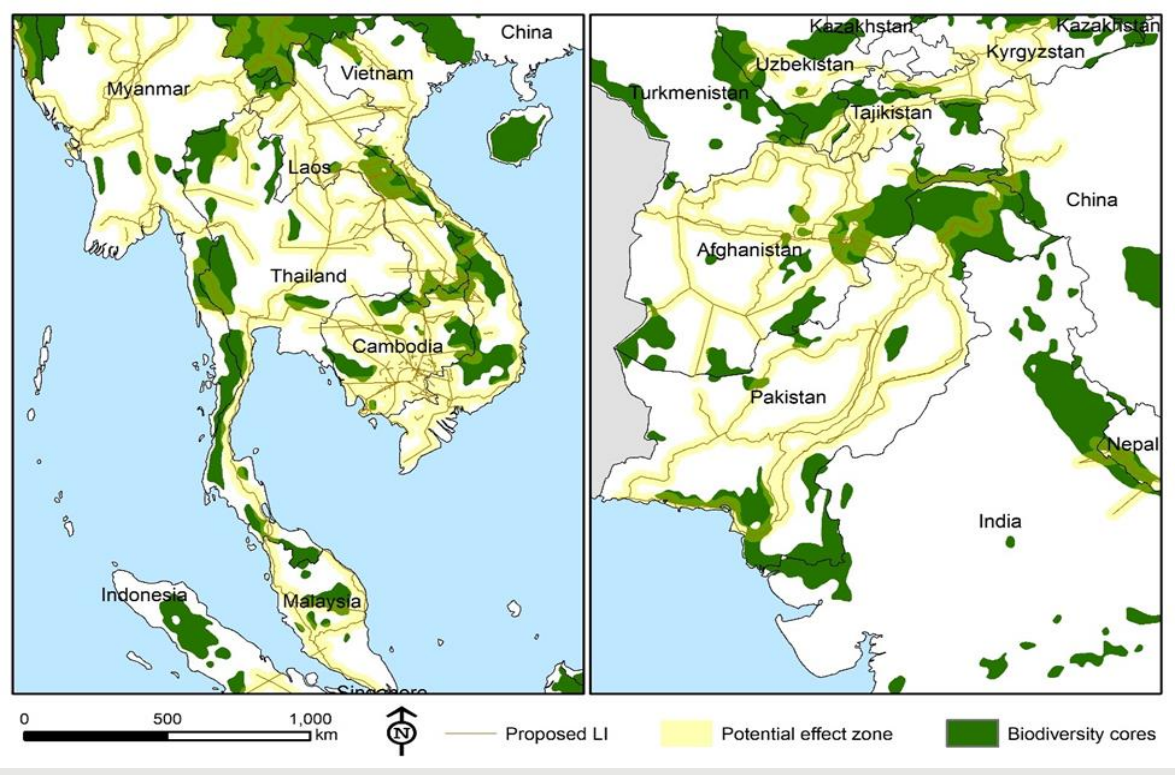
FINDINGS: BIODIVERSITY and FUTURE LI CONFLICT AREAS

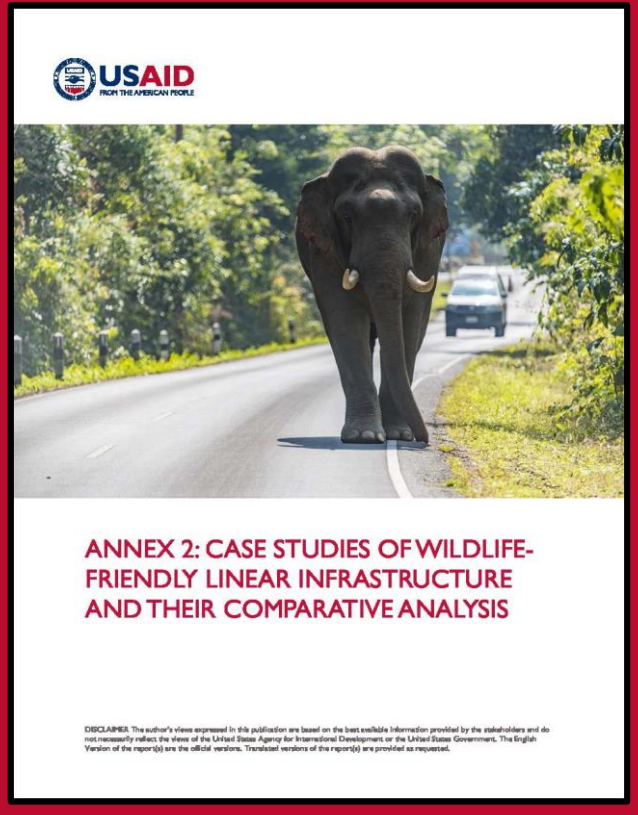


Overlap between potential effect zones (PEZs) of proposed LI routes and top 20% biodiversity core areas within selected regions of Asia.

- **Could impact more than 350 protected areas**
- **Could impact 12-20% of the Asian landscapes with the greatest biodiversity**

RESULTS OF THE LISA PROJECT

ANNEX 2: Case Studies



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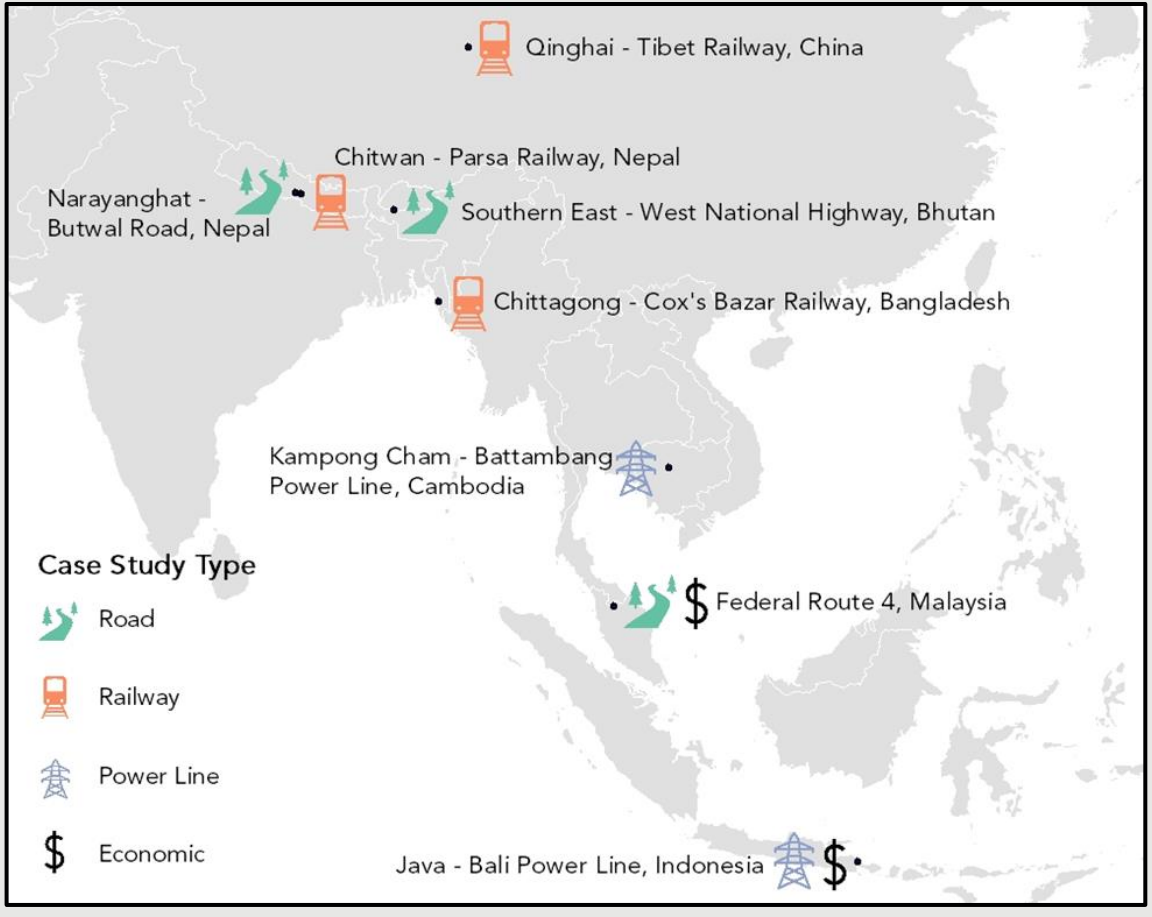
ANNEX 2: CASE STUDIES and COMPARATIVE ANALYSIS

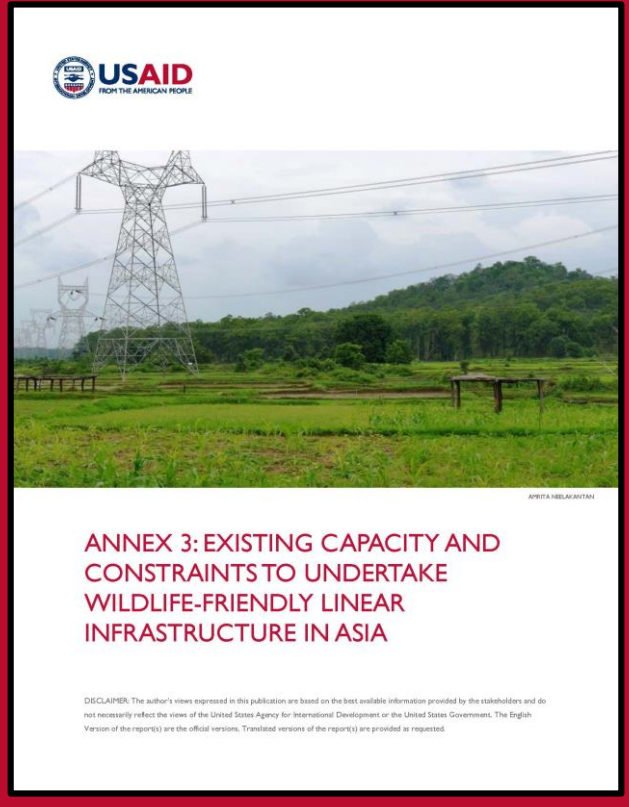


CASE STUDIES: KEY FINDINGS AND RECOMMENDATIONS

- Properly designed biodiversity assessments before construction are critical for informing safeguard design
- More subject matter experts are needed for Asia LI projects
- Post-construction monitoring and evaluation are essential to determine the effectiveness of the mitigation measures and their design
- Cost-benefit analyses can demonstrate that biodiversity safeguards not only protect environmental and biodiversity values, but can add to an infrastructure project's overall present net value
- Increased training and capacity building is urgently needed in Asia to have ecologically sustainable LI projects in the future.

RESULTS OF THE LISA PROJECT

ANNEX 3: Capacity Assessment



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ANNEX 3: CAPACITY ASSESSMENT

Two Scales:

1. Asia wide capacity assessment

2. National-level assessment of five representative countries (survey)
   - Bangladesh
   - India
   - Mongolia
   - Nepal
   - Thailand

Four Constituent Groups:

Government

International Financial Institutions (IFIs)

Industry

Non-Governmental Organizations (NGOs)

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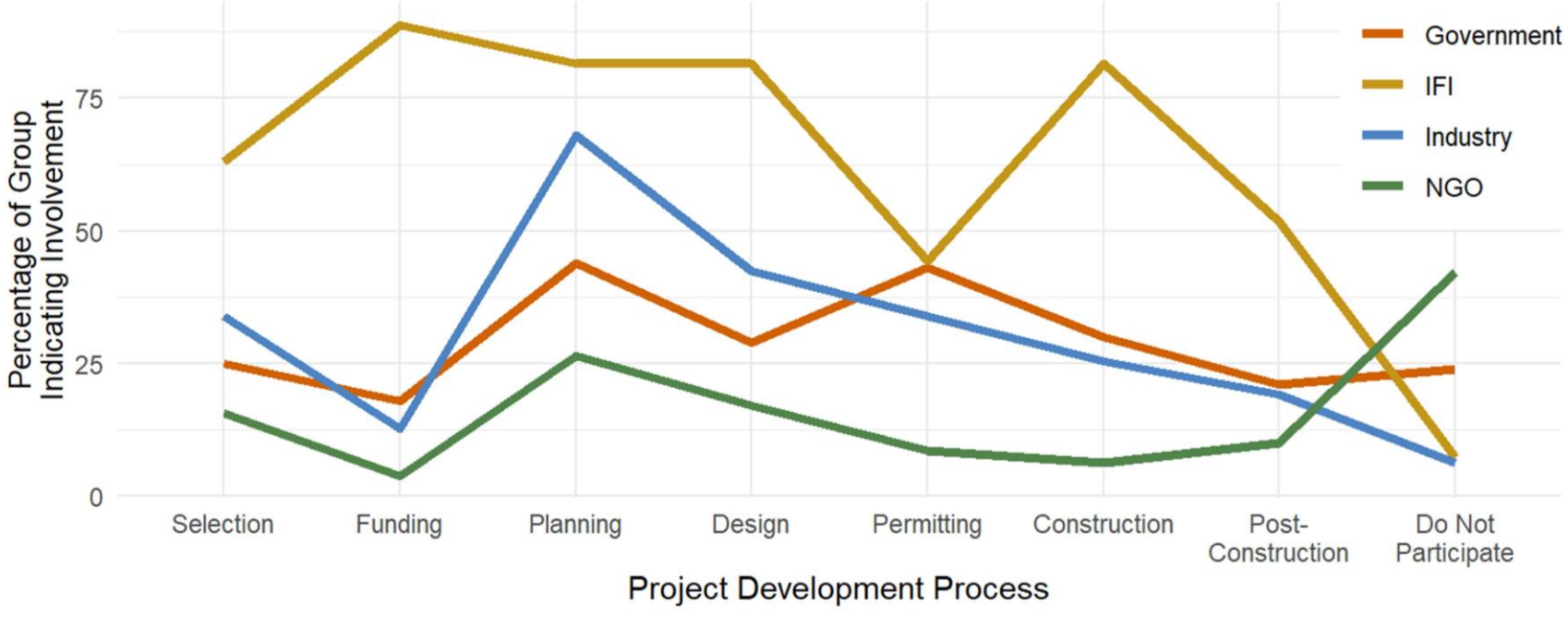
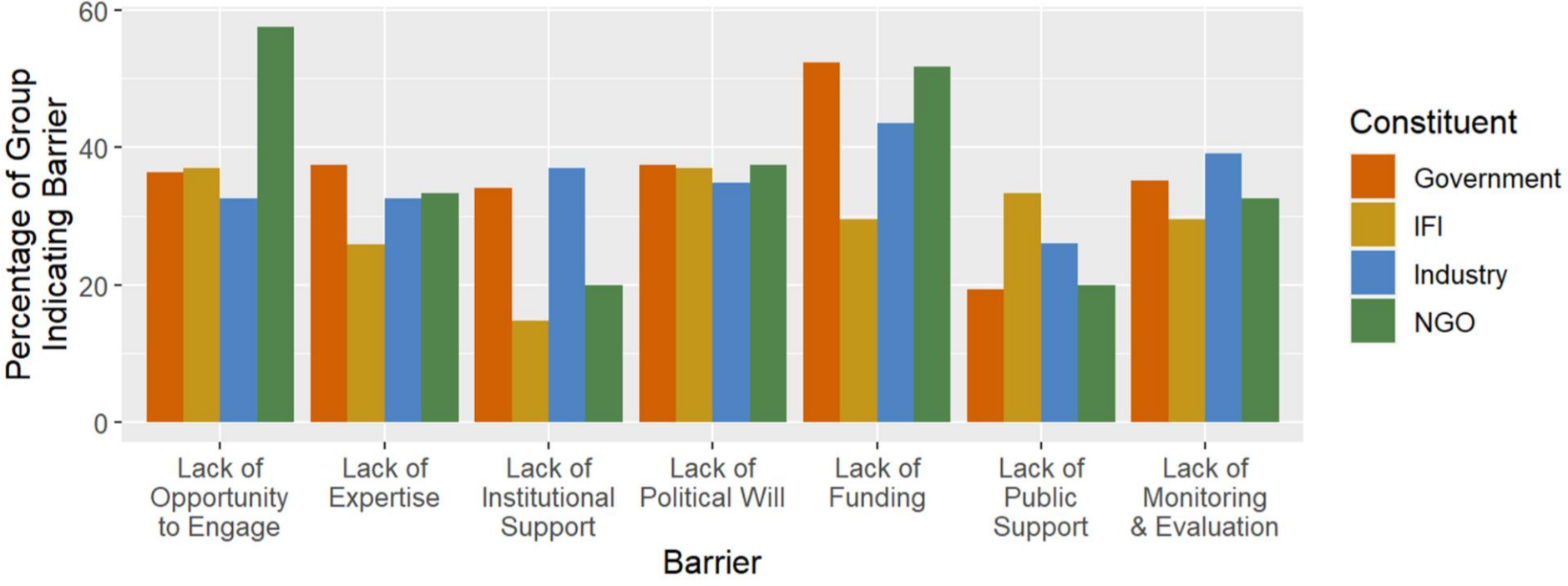
FINDING:
INVOLVEMENT IN THE PROJECT DEVELOPMENT PROCESS



Selection → Funding → Planning → Design → Permitting → Construction → Post-Construction

FINDING: KEY BARRIERS TO IMPLEMENTING WILDLIFE SAFEGUARDS FOR LINEAR INFRASTRUCTURE



RESULTS OF THE LISA PROJECT

ANNEX 4: Literature Review

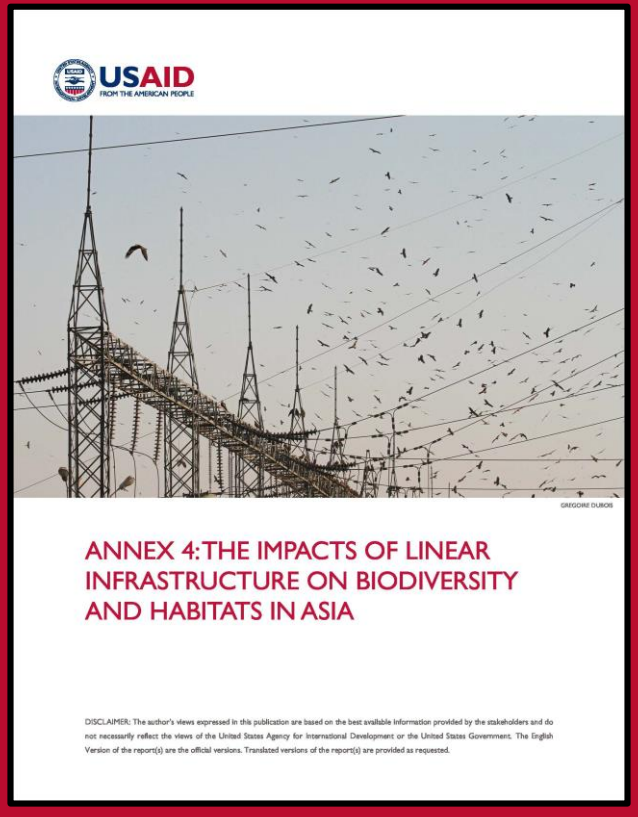


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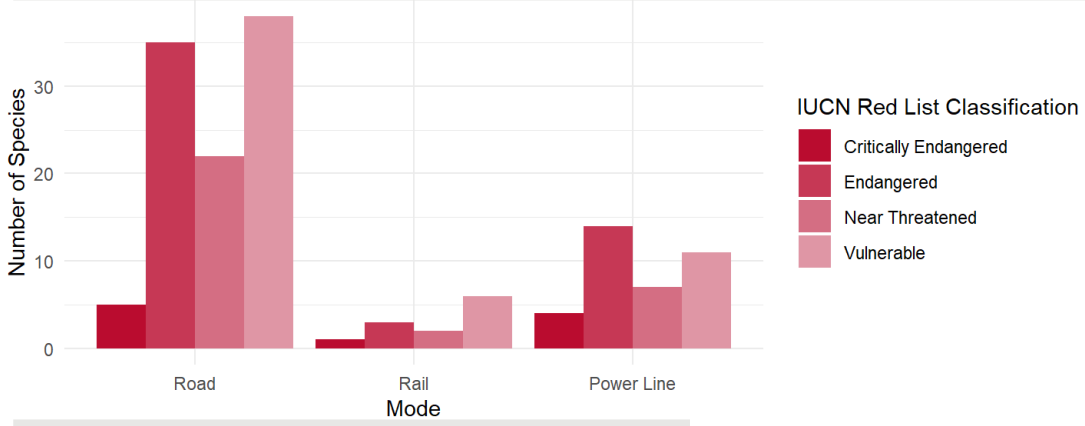
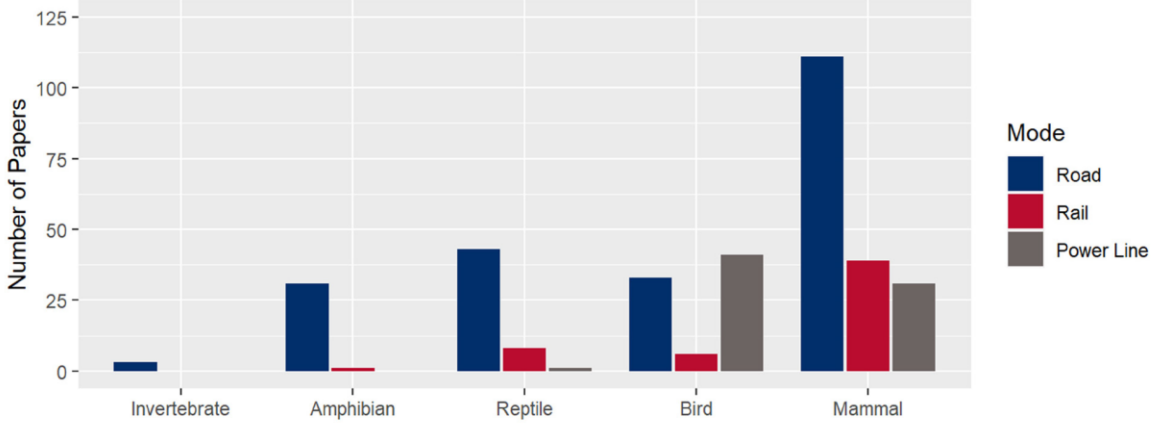
Figure 16: The Number of IUCN Red List Species Documented as Killed by Collisions on Roads and Rails, or with Power Lines in Asia.



ANNEX 4 Results

TOTAL PEER REVIEWED PAPERS	
Roads	162
Railways	49
Power Lines	78



LITERATURE REVIEW: KEY FINDINGS AND RECOMMENDATIONS

- The three LI modes differ in the extent to which their contribution to direct animal mortality is documented; railways, in particular, require more of these basic data.
- Direct mortality of wildlife by LI requires better correlation with explanatory variables to identify (and hence mitigate) risk factors.
- The consequences of direct impacts on population viability is currently under-studied across all three modes.
- The study of animal movement across roads and railways needs to be better linked with demographic rescue, gene flow and access to habitat.

TRAINING: SIX MODULES

Goal: Provide information and materials to share LISA project's findings and recommendations to safeguard linear infrastructure

6 webinar modules

A handbook

Library of additional resources

www.largelandscapes.org/LISA-project

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QUESTIONS?

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Credit: Milind Parikawam