



Independent
Evaluation Office
GLOBAL ENVIRONMENT FACILITY

Leveraging Geospatial Science in Evaluations

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Outline for Today

Use of Geospatial Approaches in GEF IEO

Value for Money Analysis using Geospatial Analysis

Project Case Study: Indigenous Land Rights in the Amazon

Demo of the Geo-Query Tool

Benefits observed in using Geospatial Analysis

Efficiency

Analysis at different scales

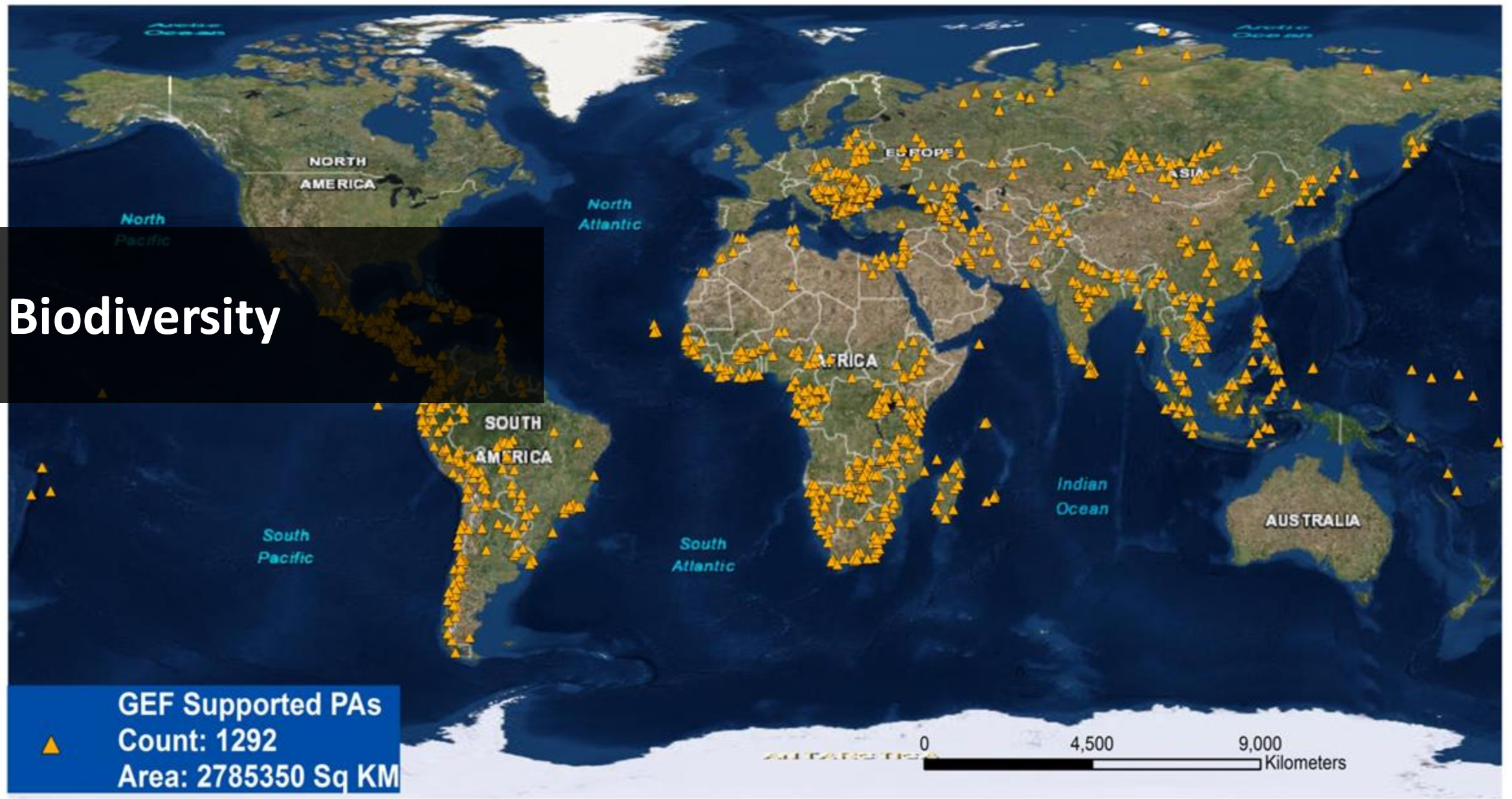
Objectivity and Transparency

Complements variety of evaluation methods

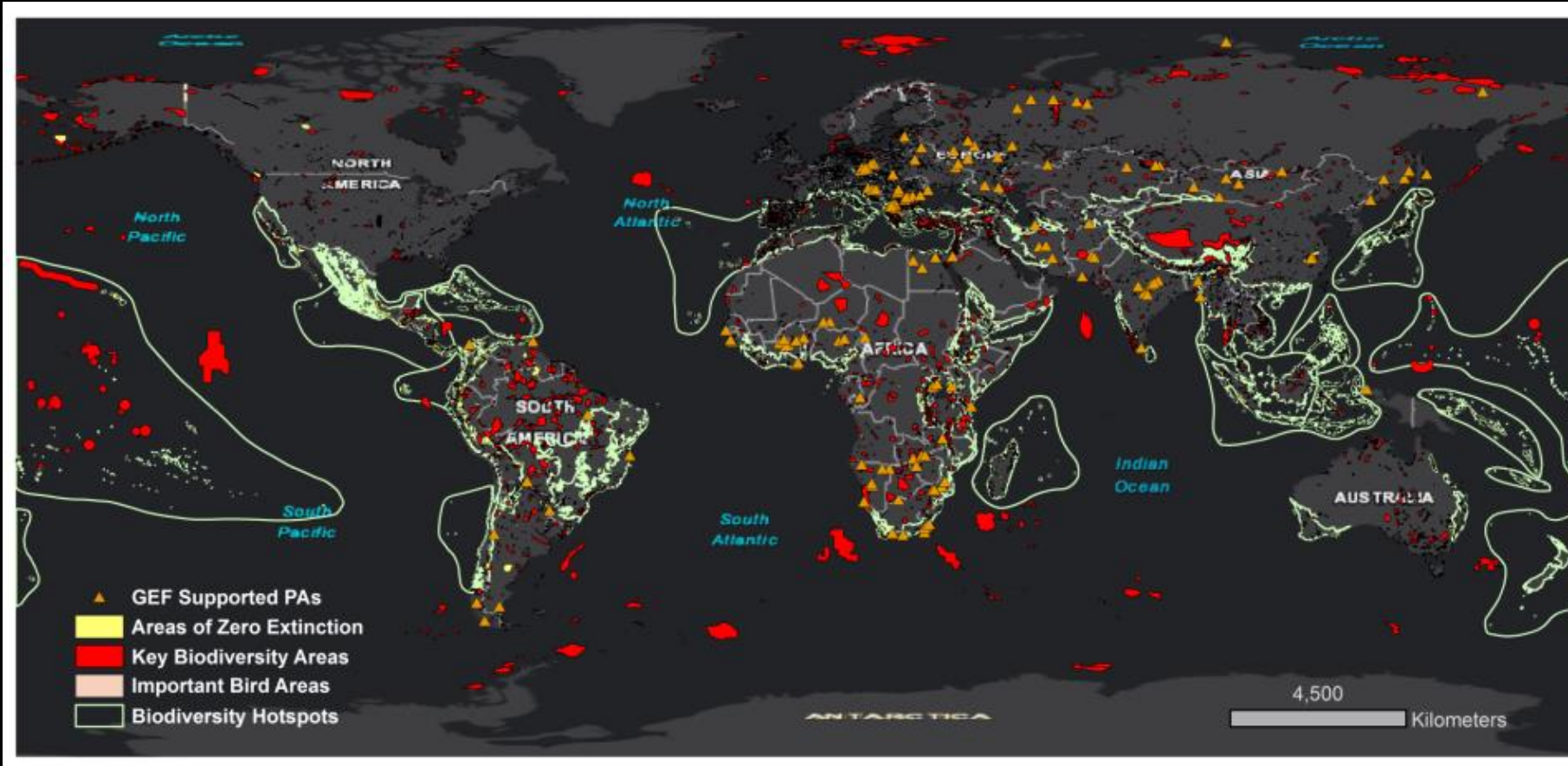
Issues addressed

- Location of Projects
- **Relevance** of the intervention—is it in the right context?
- Trends in performance and **impacts** going far back in time...even if we didn't have **baseline** data?
- Factors influencing the outcomes
- Does the intervention deliver **value for money**?

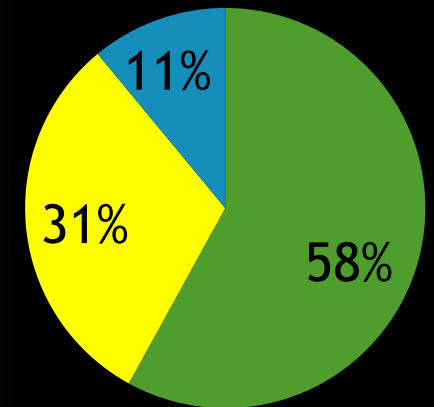
Biodiversity



Biodiversity: Relevance



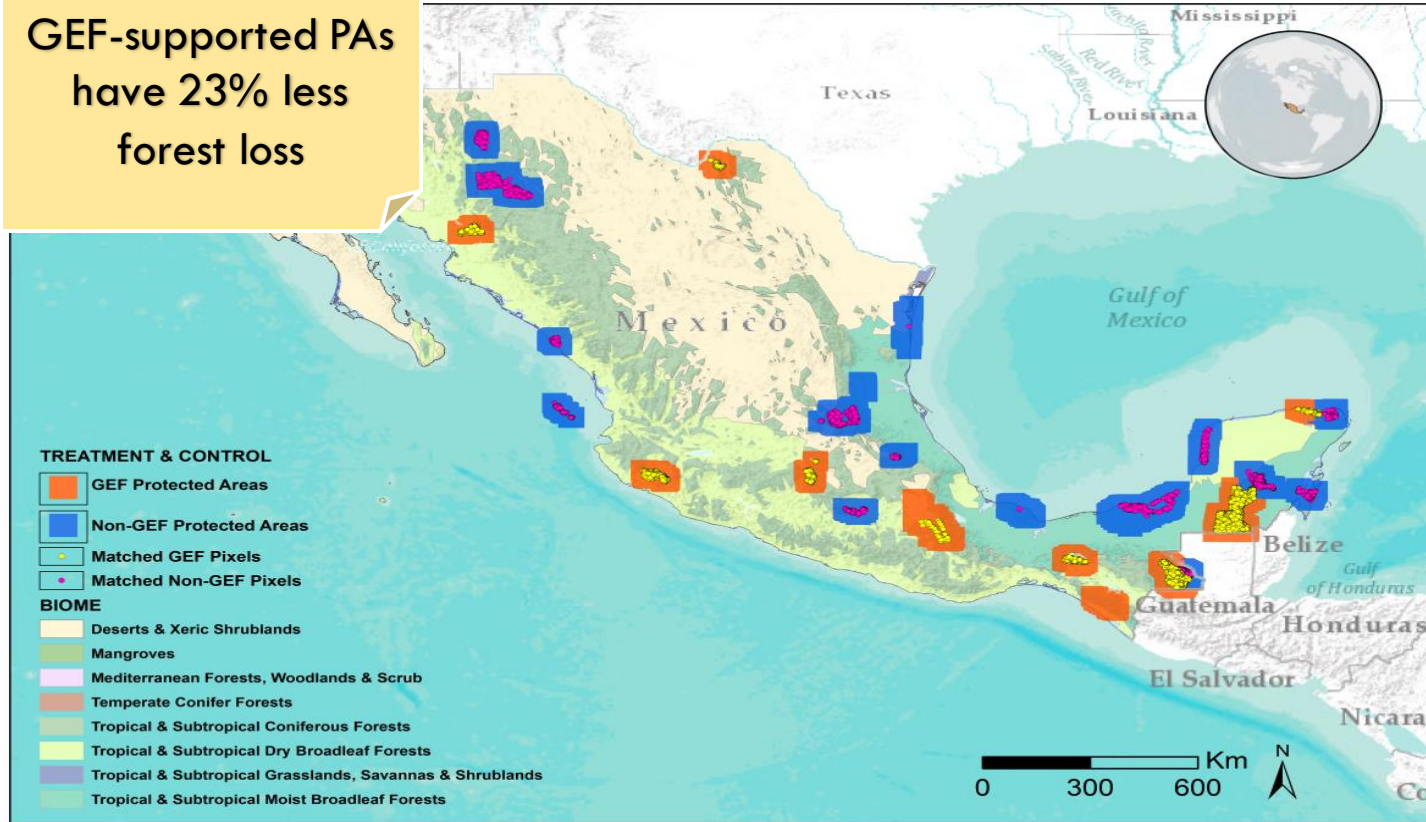
KEY BIODIVERSITY AREAS (KBA), highest scientific designation of global biodiversity significance



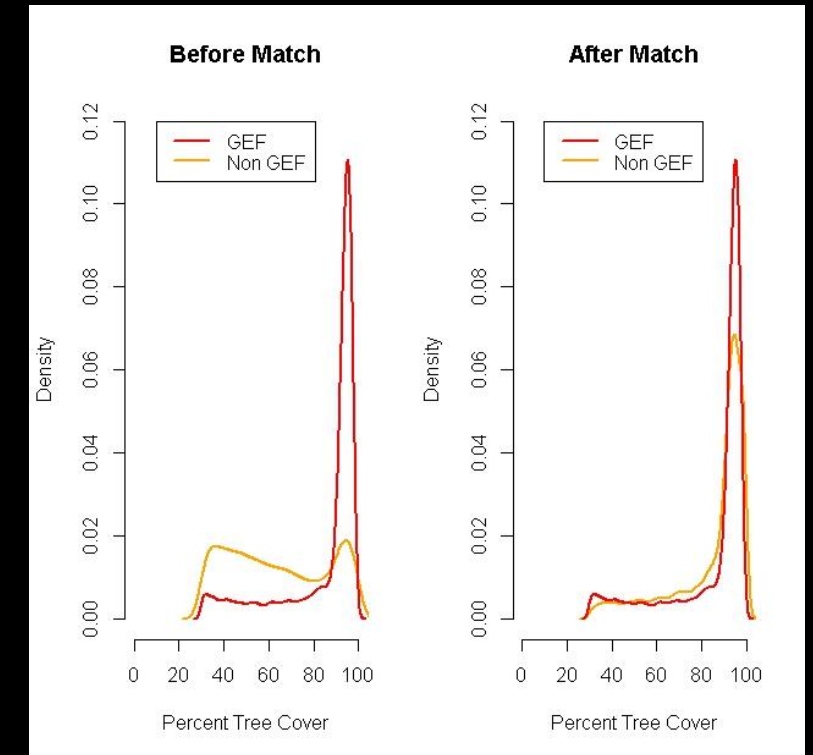
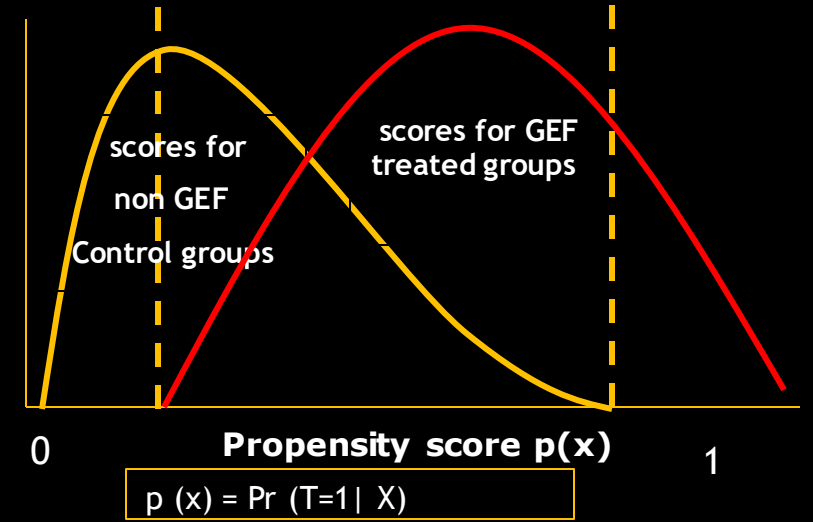
■ KBA ■ International Designation ■ National Importance

Study the impact of GEF support to 1292 global protected areas across 147 countries.

GEF-supported PAs
have 23% less
forest loss

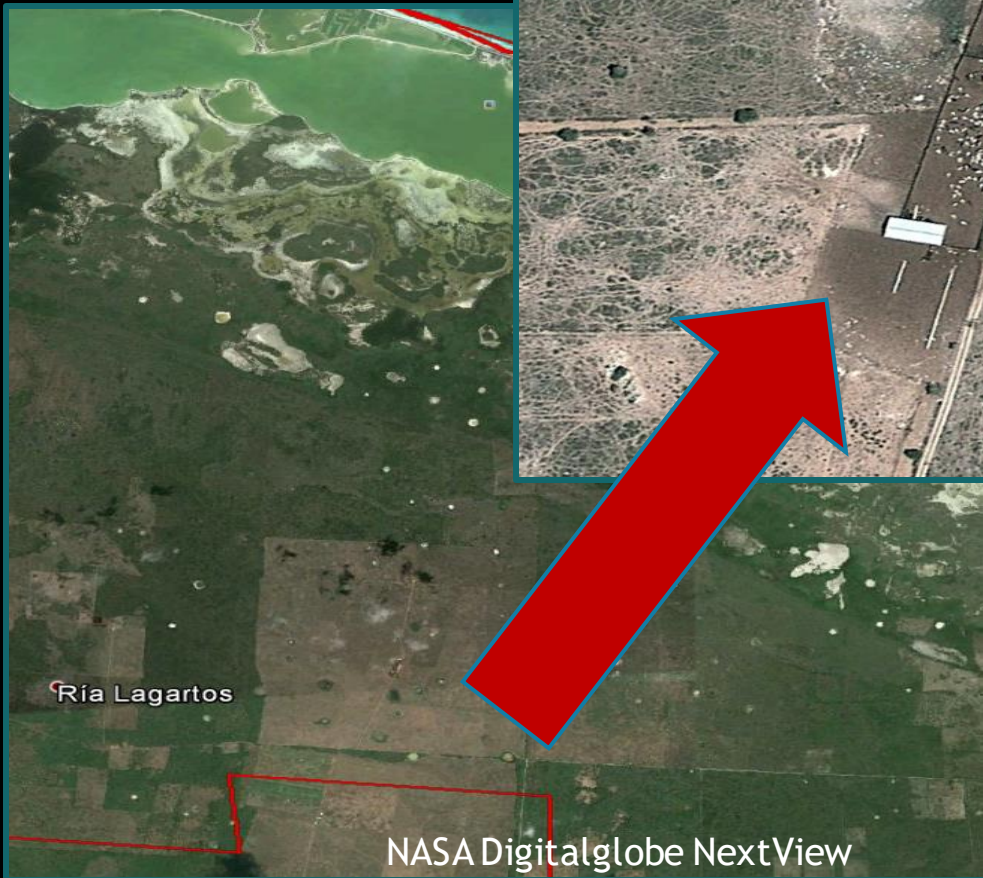


Probability

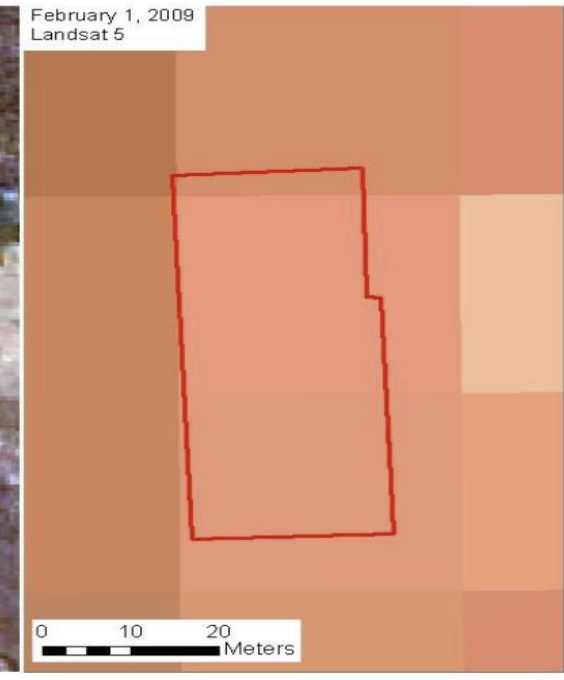


Quasi-experimental evaluation design based on PSM

Identify the drivers



2.5 m



30 m zoomed in to
2.5 m

Images at 2.5 to 0.5 m resolution used to identify drivers of change that hinder success of GEF support

DEMONSTRATING IMPACT

International waters: Lake Victoria



2000

2003

2005

2007

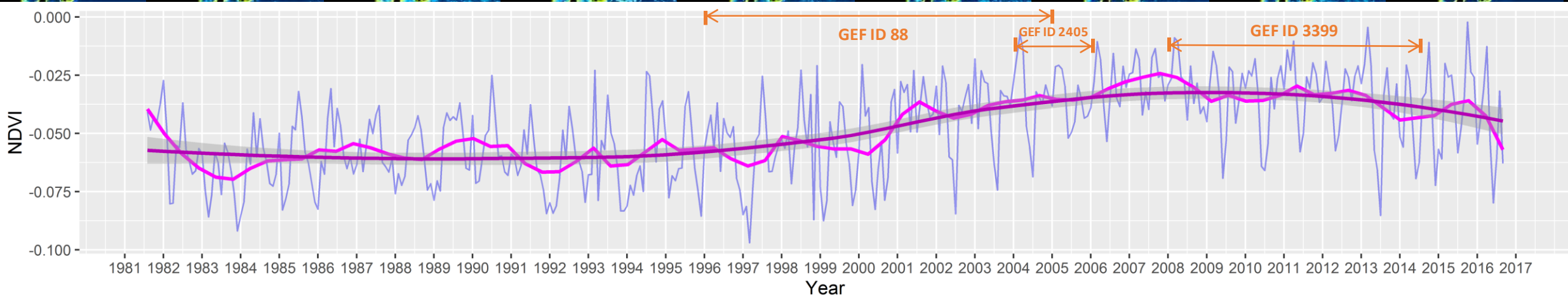
2009

2011

2013

2015

2016



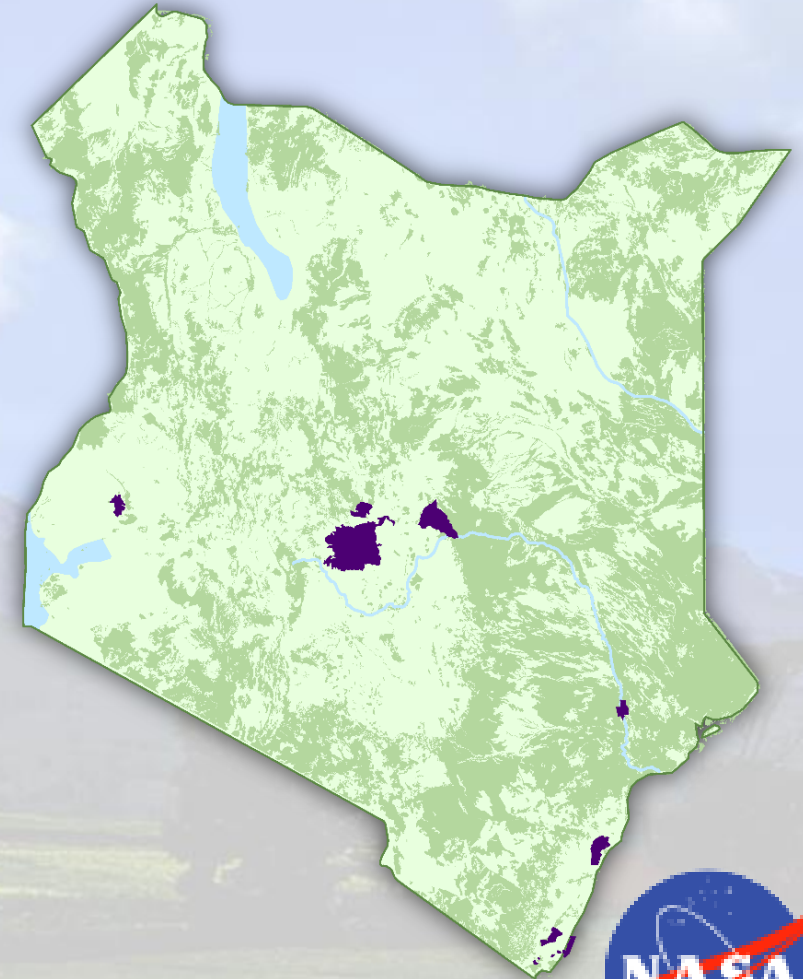
Ecological forecasting: Predicting the future

- 1 Estimating the impact
- 2 Project design
- 3 Scenario building

Kenya Ecological Forecasting

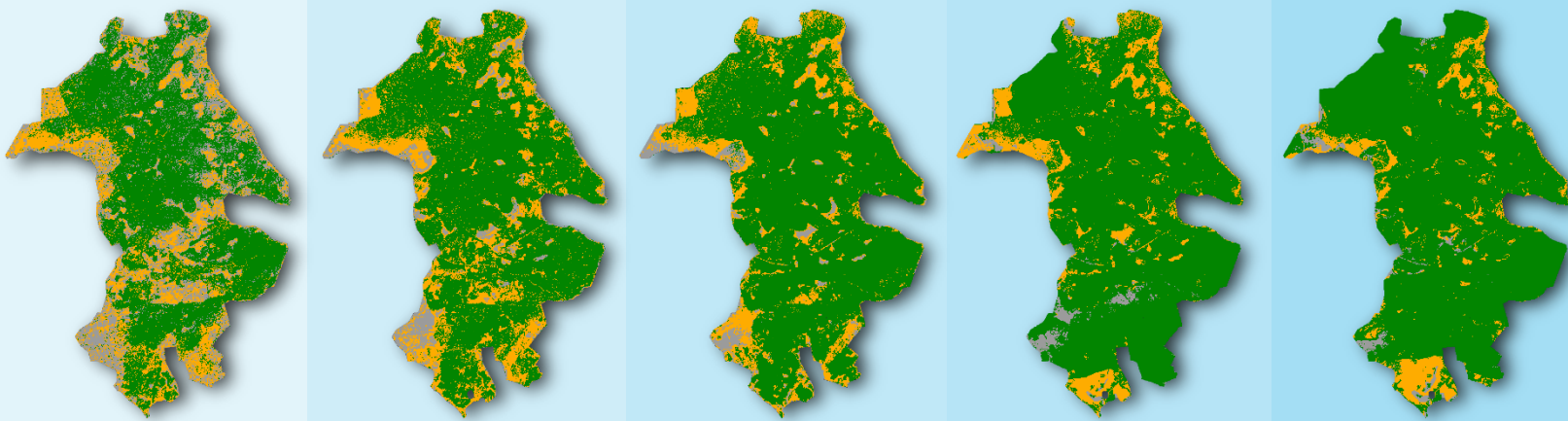
“Estimating Carbon Sequestration within Global Environment Facility (GEF) Funded Protected Areas in Kenya to Aid Future Policy”

- Research collaboration between the Global Environment Facility’s Independent Evaluation Office (GEF-IEO) and NASA DEVELOP program
- Evaluated land cover and aboveground carbon stocks for 12 GEF protected areas in Kenya

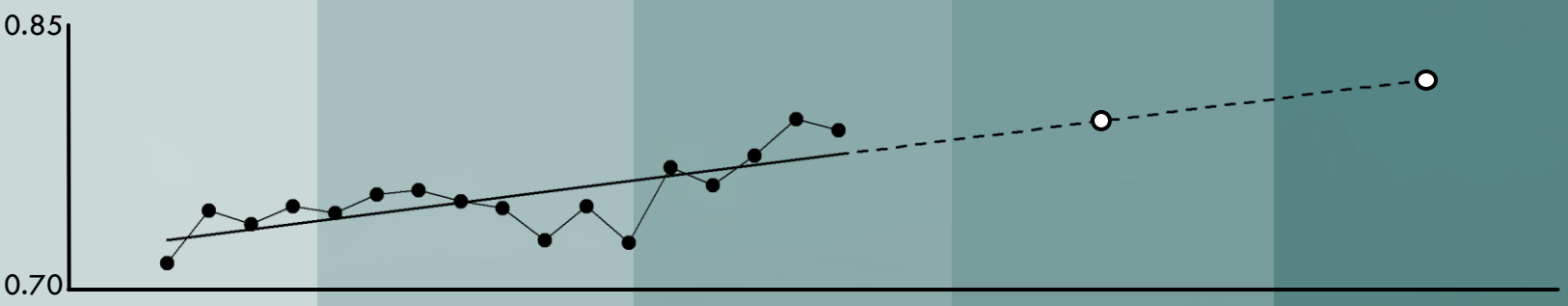


Land Cover Change

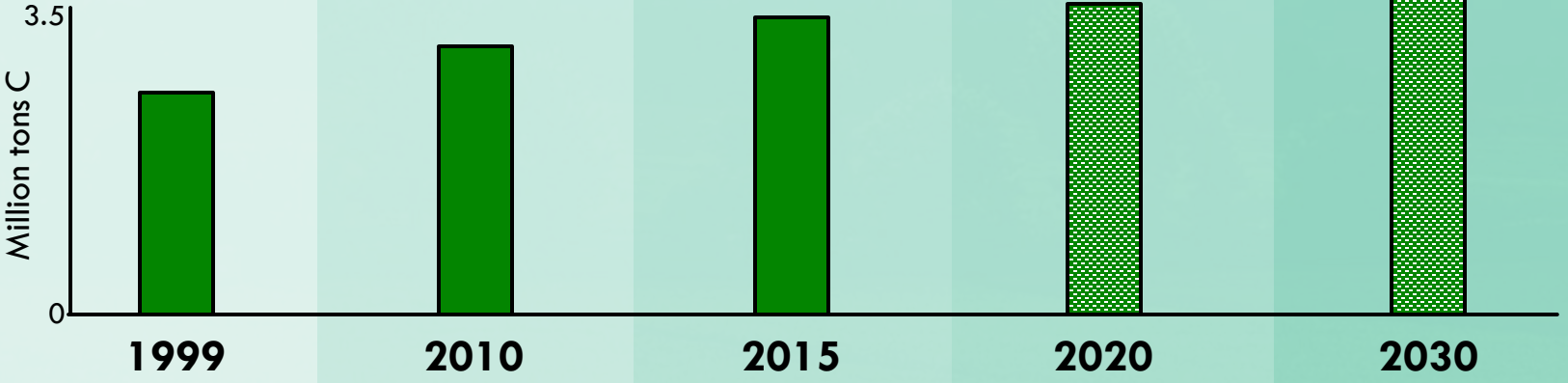
Forest Non-vegetated Shrub



NDVI

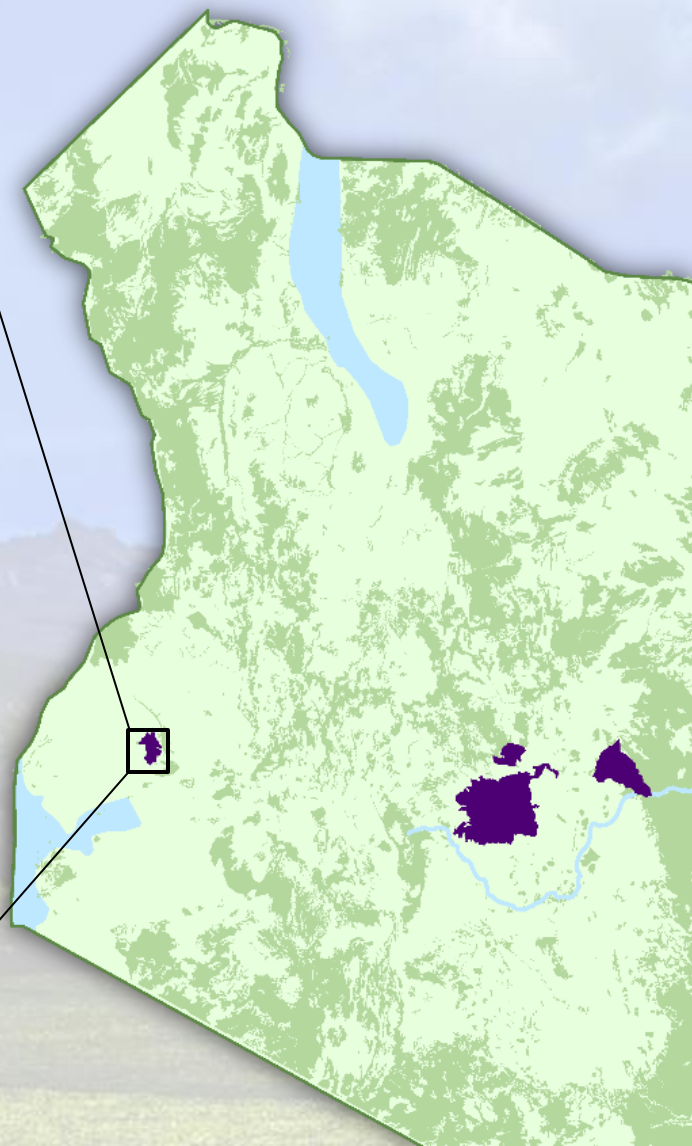


Carbon Sequestration



Case Study:

Kakamega Forest Reserve



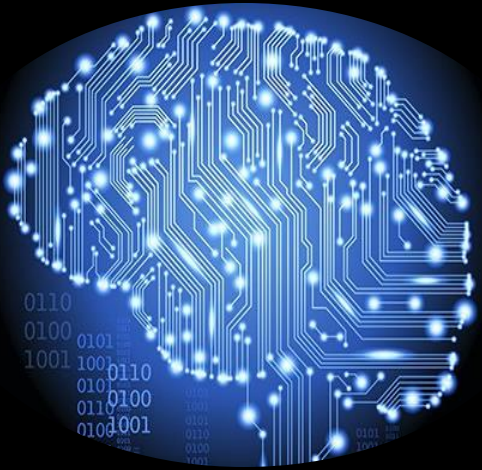


Thank you
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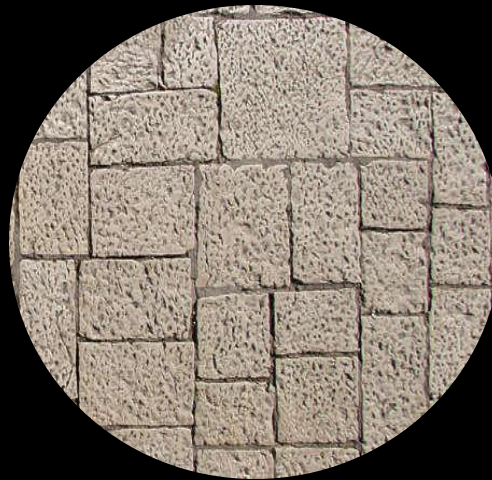


Over to Dan

Challenges and Limitations



High computing
power and
technical skills
needed



Uneven availability and
accuracy of contextual
variables across sites



Limitations on
answering “how” and
“why” questions



Needs to be combined
with field verification/
groundtruthing

Lessons for the future



**Partner with
global institutions**

**Use mixed
approaches and
methods**



**Continue exploring
new methodologies and
data sources**

**Approach evaluation as
a dynamic learning
process**

