

# **14<sup>th</sup> APBON Workshop and 15<sup>th</sup> APBON web seminar**

## **Implementation of 30 x 30 Global Biodiversity Framework: Case Study from Thailand**

**Yongyut Trisurat et al.**

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Co-chair, Asia-Pacific Observation Network (APBON)

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Fukuoka, Japan

## CBD Aichi Target 11



- Yes 17% PAs achieved (when OECMs are included)
- **BUT**
  - Protected areas biased toward locations that were remote and less suitable for biodiversity
  - A percentage target on its own **won't halt species extinction** or loss of ecosystems and sites of ecological integrity



2020 UN BIODIVERSITY CONFERENCE  
COP 15 - CP/MOP10-NP/MOP4  
Ecological Civilization-Building a Shared Future for All Life on Earth  
KUNMING – MONTREAL

## COP 15: Kunming- Montreal GBF



## The two targets that refer to areas of importance for biodiversity

- **Target 1** commits countries to implementing spatial planning for biodiversity conservation, focusing on *areas of high biodiversity importance*,
- **Target 3** states that *by 2030, 30%* of terrestrial, inland waters, coastal and marine areas, especially ‘*areas of particular importance for biodiversity*’ ... will be effectively conserved and managed through systems of *protected areas and other effective area-based conservation measures (OECMs)*

Question: how to better define areas of “*high biodiversity importance*”





# National Policies

## National Forest Policy (1985-present)

- 40% forest cover
  - 25% conservation forests
  - 15% production forest

## 20-years National Strategy (2016-2037)

- 55% green areas
  - 35% natural forests
  - 15% production forests
  - 5% urban forests and recreation areas



Source: Royal Forest Department, 2019



Article

## Can Thailand Protect 30% of Its Land Area for Biodiversity, and Will This Be Enough?

Nirunrut Pomoim <sup>1,2</sup>, Yongyut Trisurat <sup>3</sup>, Alice C. Hughes <sup>1,4</sup> and Richard T. Corlett <sup>1,4,\*</sup>

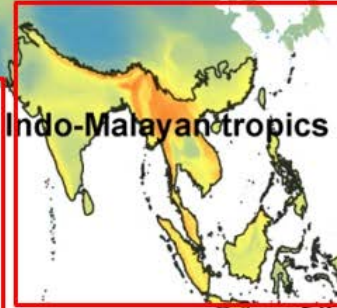
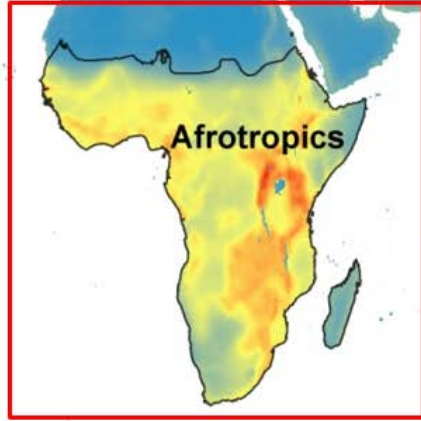
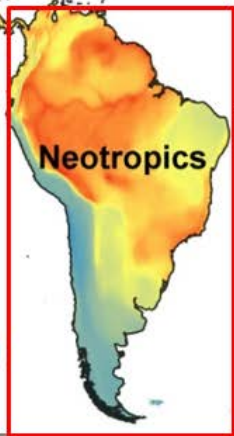
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**Abstract:** The draft post-2020 Global Biodiversity Framework asks CBD parties to conserve at least 30% of the planet by 2030 ‘through a well-connected and effective system of protected areas . . . with the focus on areas particularly important for biodiversity’. We use Thailand as a case study for the ability of a densely populated, hyper diverse, tropical, middle-income country to meet this target at a national level. Existing protected areas (PAs) total 24.3% of Thailand’s land area. Adding forest on government land adjacent to existing PAs, plus unprotected areas of Ramsar sites, raises this to 29.5%. To assess the importance for biodiversity, we used modeled distributions of birds and mammals plus, as proxies for other biodiversity components, elevation, bioclimate, forest type, and WWF ecoregion. All modeled species occur in the current PA system but <30% meet representation targets. Expansion of the system increases the proportion of mammals and birds adequately protected and increases the protection for underrepresented bioclimatic zones and forest types. The expanded system remains fragmented and underrepresents key habitats, but opportunities for increasing protection of these are limited. It is also still vulnerable to climate change, although projected impacts are reduced. Additional protection is needed for wetland and coastal habitats, and limestone karsts.



Citation: Pomoim, N.; Trisurat, Y.; Hughes, A.C.; Corlett, R.T. Can

# SPARC



25 years | gef

CONSERVATION INTERNATIONAL

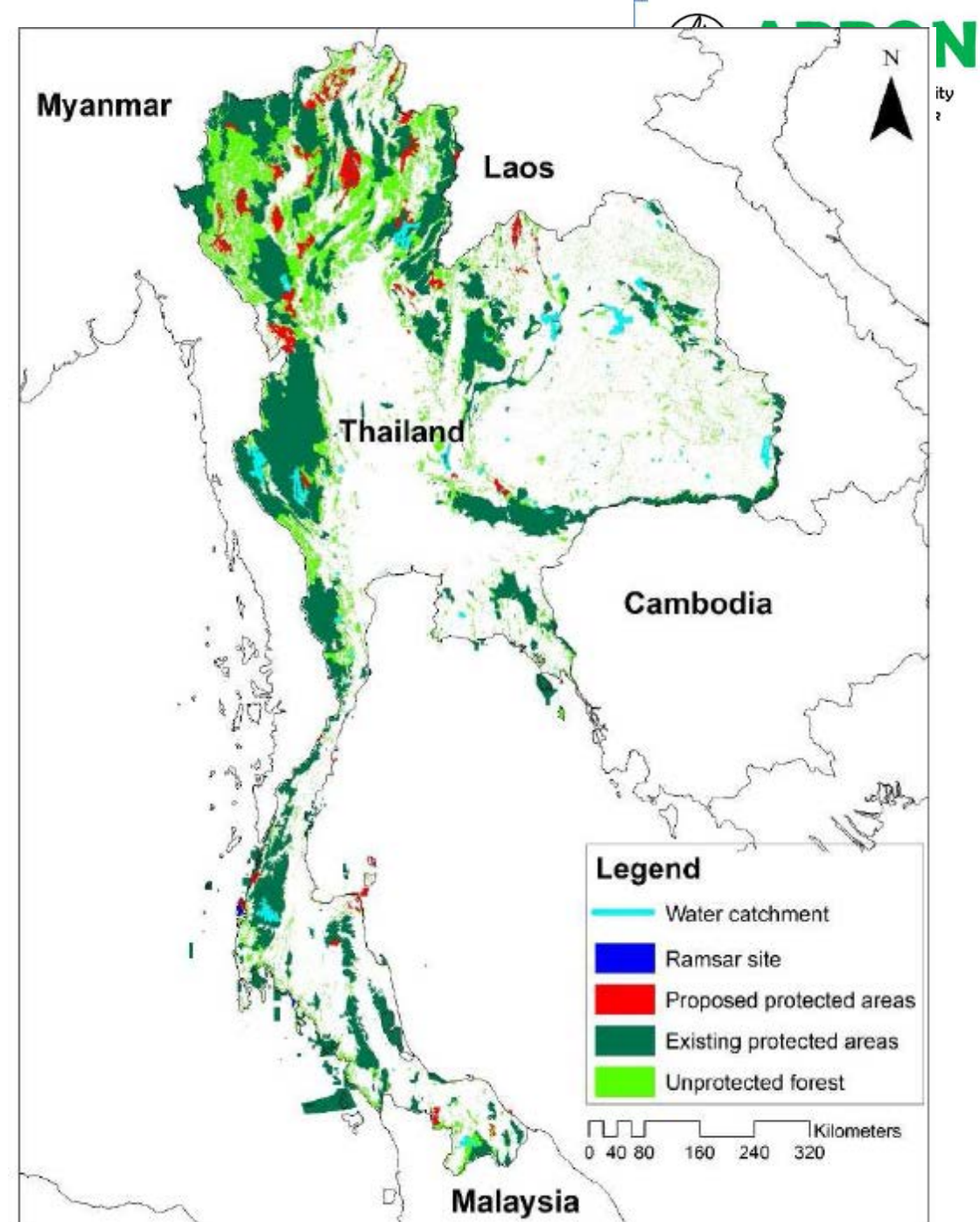
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 KASETSART UNIVERSITY

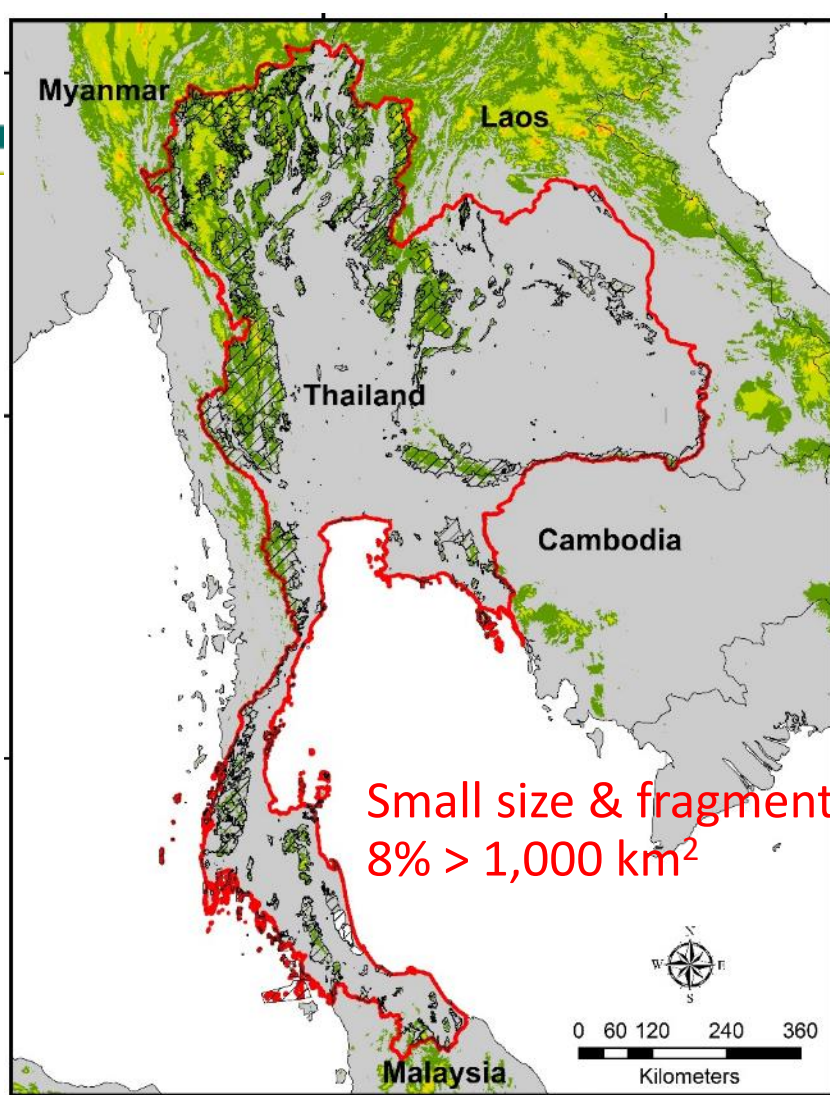
## Spatial Planning for Protected Areas in Response to Climate Change



## Thailand's commitment to GBF

- Meeting **Target 3** will require that the expansion and recognition of protected areas and OECMs. (24% to 30%)
- cover sites of global and regional biodiversity significance. It will also require
- **Target 1:** require the spatial planning to encompass the identification of the most significant sites for global, regional and national priorities.





Small size & fragmented;  
8% > 1,000 km<sup>2</sup>



# Can Thailand protect 30% of its land area for biodiversity and will this be enough?

- Forest area remaining 31.7%
- protected areas – planned 24%

## Key Questions.....?



How can Thailand meet the proposed CBD area target of 30% by 2030?



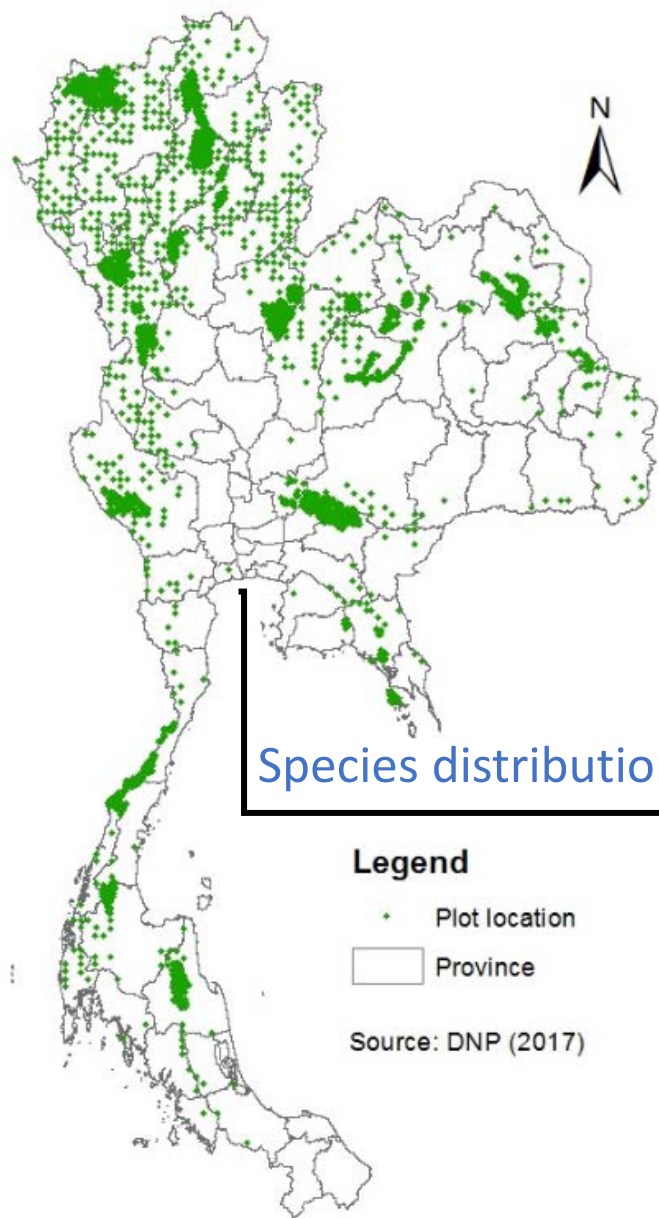
Will the 30% be “well connected” and important for biodiversity?



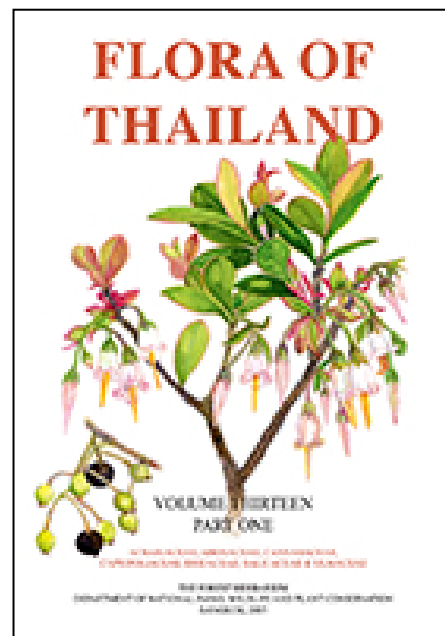
How vulnerable will this 30% be to climate change?



# Plants: Systematic Forest Inventory

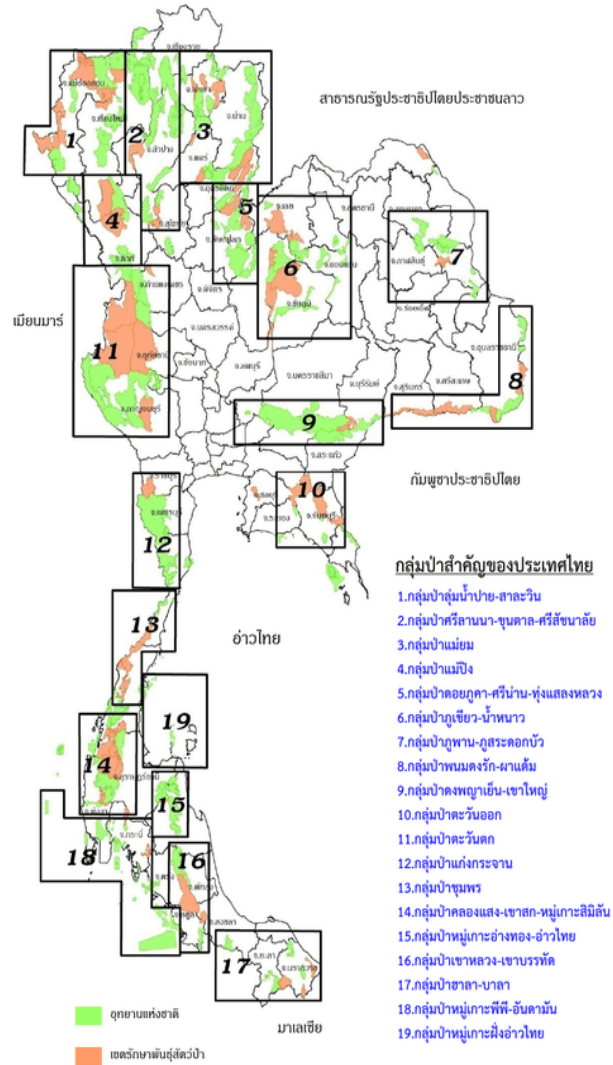


Spacing	Year	Number of plots	Extent	Responsible agency	Remarks
1.5 km × 1.5 km	2001–2003	903	Country	RFD/ITTO	Designed and pilot project
20 km × 20 km	2004–2007	1,285	Country	RFD/ITTO	Entire country but 158 plots un-established
10 km × 10 km	2004–2005	10,372	Country	RFD/DNP	Only inside remaining forest cover
5 km × 5 km	2006–2010	14,152	Protected area	DNP	Using a 0.1 ha plot center
10 km × 10 km	2011	859	Country	DNP	Using a 0.1 ha plot center
2.5 km × 2.5 km <sup>a</sup>	2012–present	4,500	Protected area	DNP	Using a 0.1 ha plot center



# Wildlife: Large mammal inventory

แผนที่แสดงกลุ่มป่าที่สำคัญในประเทศไทย



Birds 702  
Mammals 80



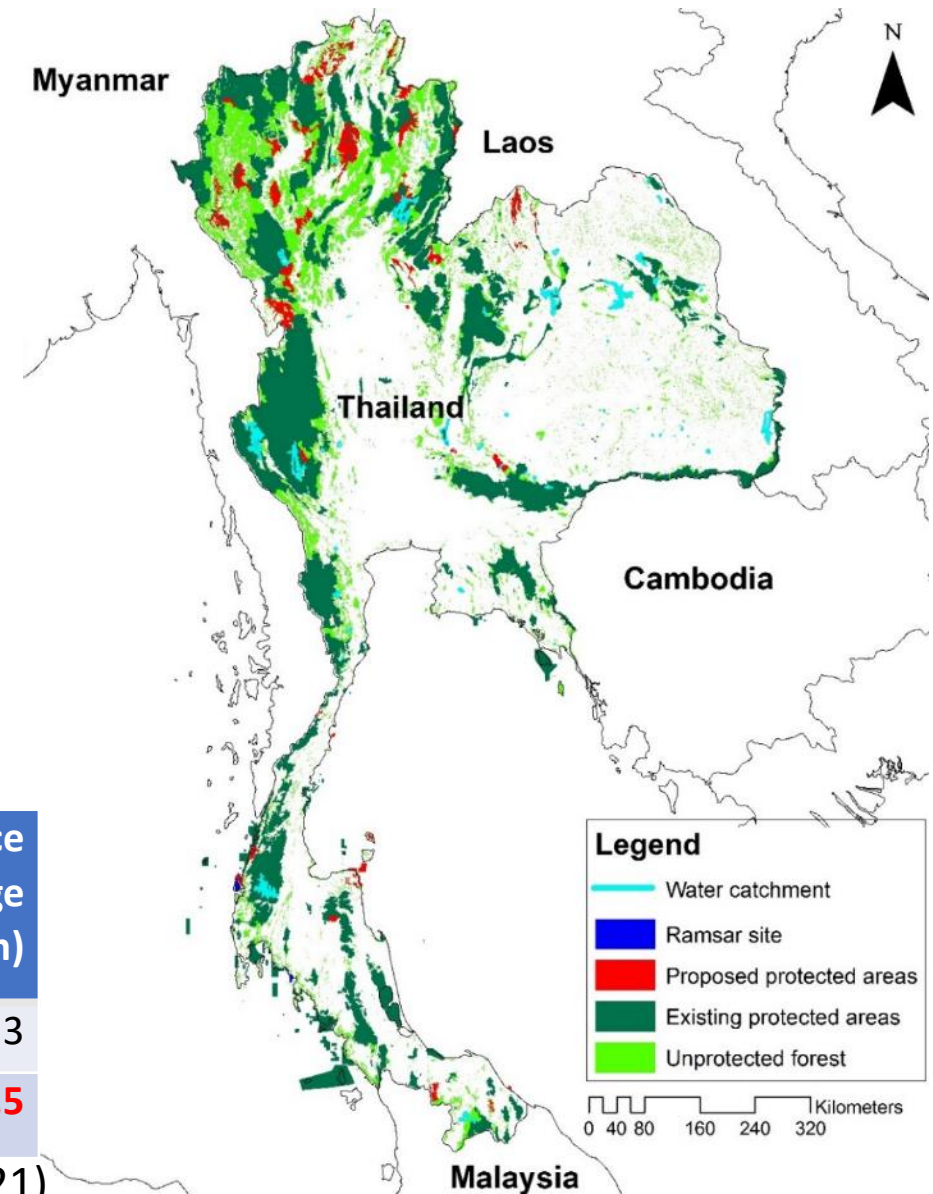
# How to achieve 30% of protected areas?

- The existing and already planned PAs - 24.3%
- Forest patches **>10 km<sup>2</sup>** adjacent to PAs cover **5.2%**
- Other effective area-based conservation measures (OECMs: Ramsar site, water catchment, KBAs) cover **0.04%**
- Smaller and isolated forest patches, may support viable species – **0.5%**

Increased patch size and well connected

Protected area	Number of patches				Mean area km <sup>2</sup>	Mean distance to nearest large patch (km)
	<100 km <sup>2</sup>	100-1000 km <sup>2</sup>	>1000 km <sup>2</sup>	total		
24.3%	570	80	20	670	188	14.3
29.5%	520	69	19	<b>608</b>	<b>251</b>	<b>12.5</b>

Pomoim et al. (2021)





# Well protect biodiversity?

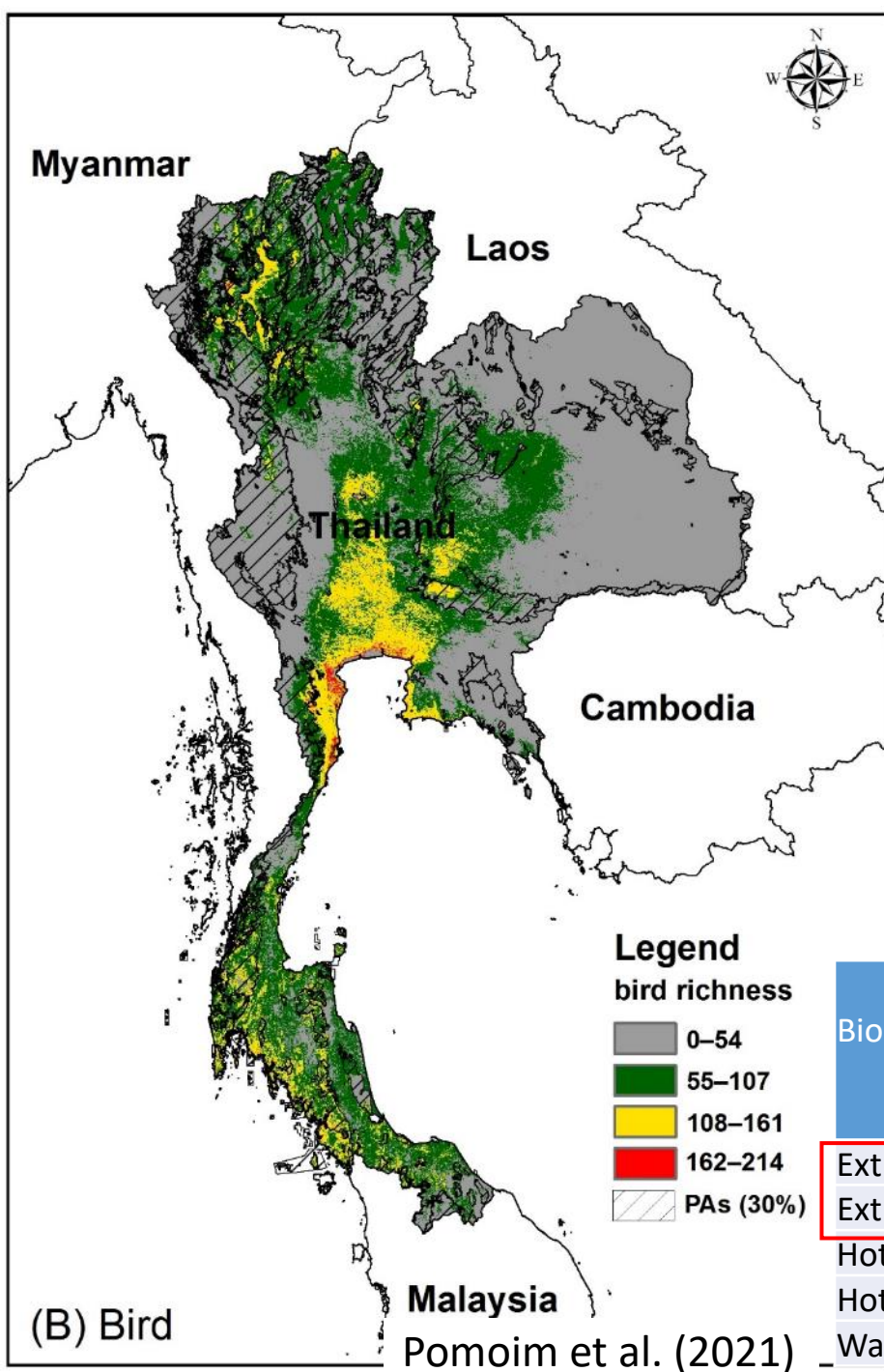
Based on SDMs of 702 bird and 80 mammal species obtained from GBIF

## Increase in adequately protected species

- from 28% to 60% of mammals
- from 26% to 38% of birds

## Increase in the area of under-represented forest

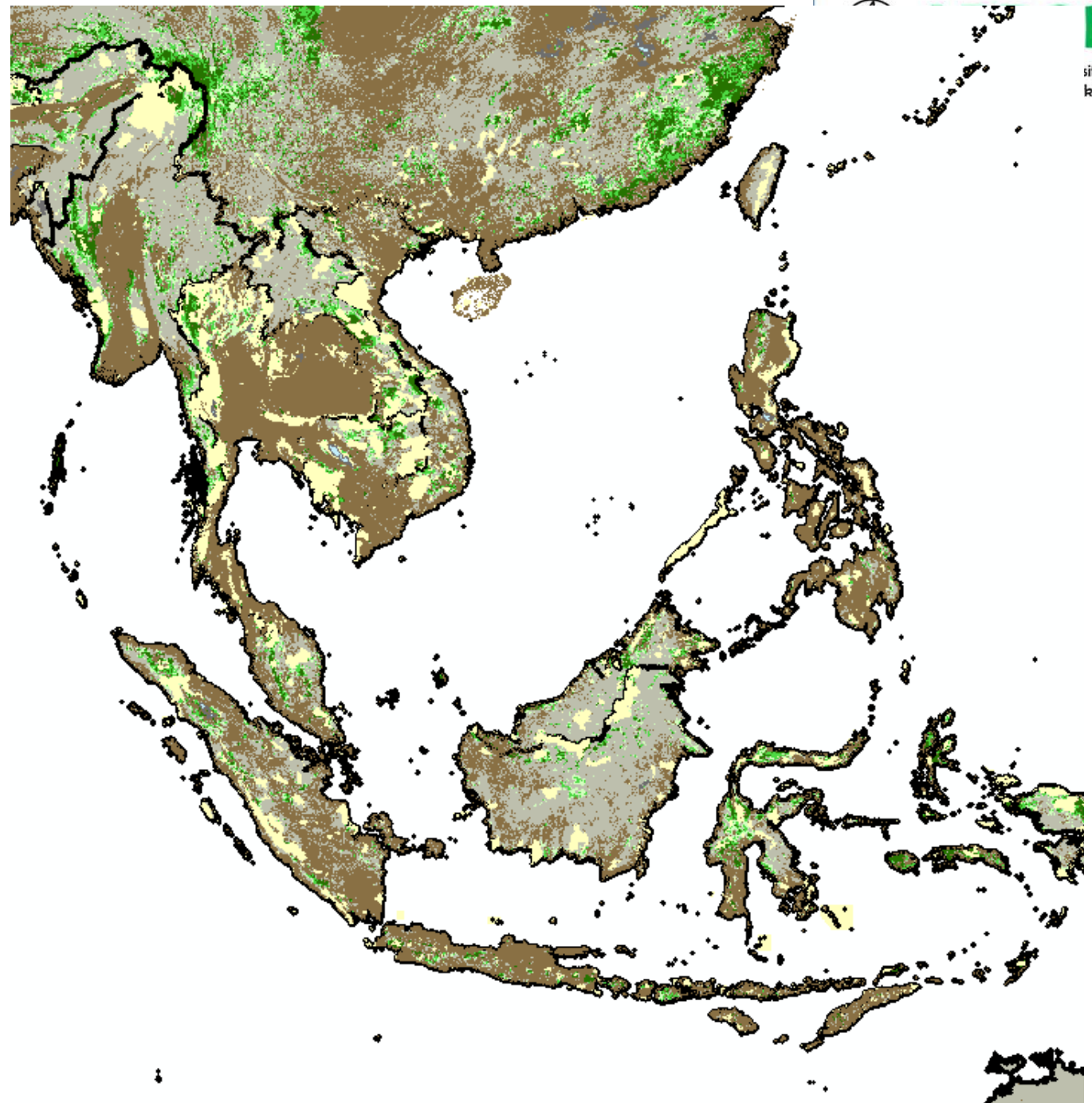
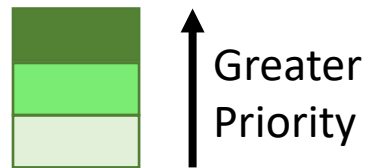
- Deciduous Dipterocarp Forest from 42% to 62%
- Mixed Deciduous Forest from 61% to 81%



Bioclimatic zone	Total area of zone (km <sup>2</sup> )	% of zone protected		% of total area protected		% of forest cover protected	
		24.3%	29.5%	24.3%	29.5%	24.3%	29.5%
Extremely Hot and Moist	262852	28.5	35	63.1	63.1	83.1	86.3
Extremely Hot and Xeric	200660	3.9	6	6.6	8.2	69.9	80.2
Hot and Mesic	43791	72.2	83.4	26.6	25	92.4	93.7
Hot and Dry	5818	76.5	88.8	3.7	3.5	93.2	93.6
Warm Temperate and Mesic	83	91.6	97.6	0.1	0.1	100	98.8

# SE Asia Tropics Conservation Priorities under Climate Change

Asia-wide Analysis:  
SDM for 80,000 Plants and  
30,000 Vertebrates  
(GBIF and BIEN)


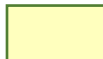



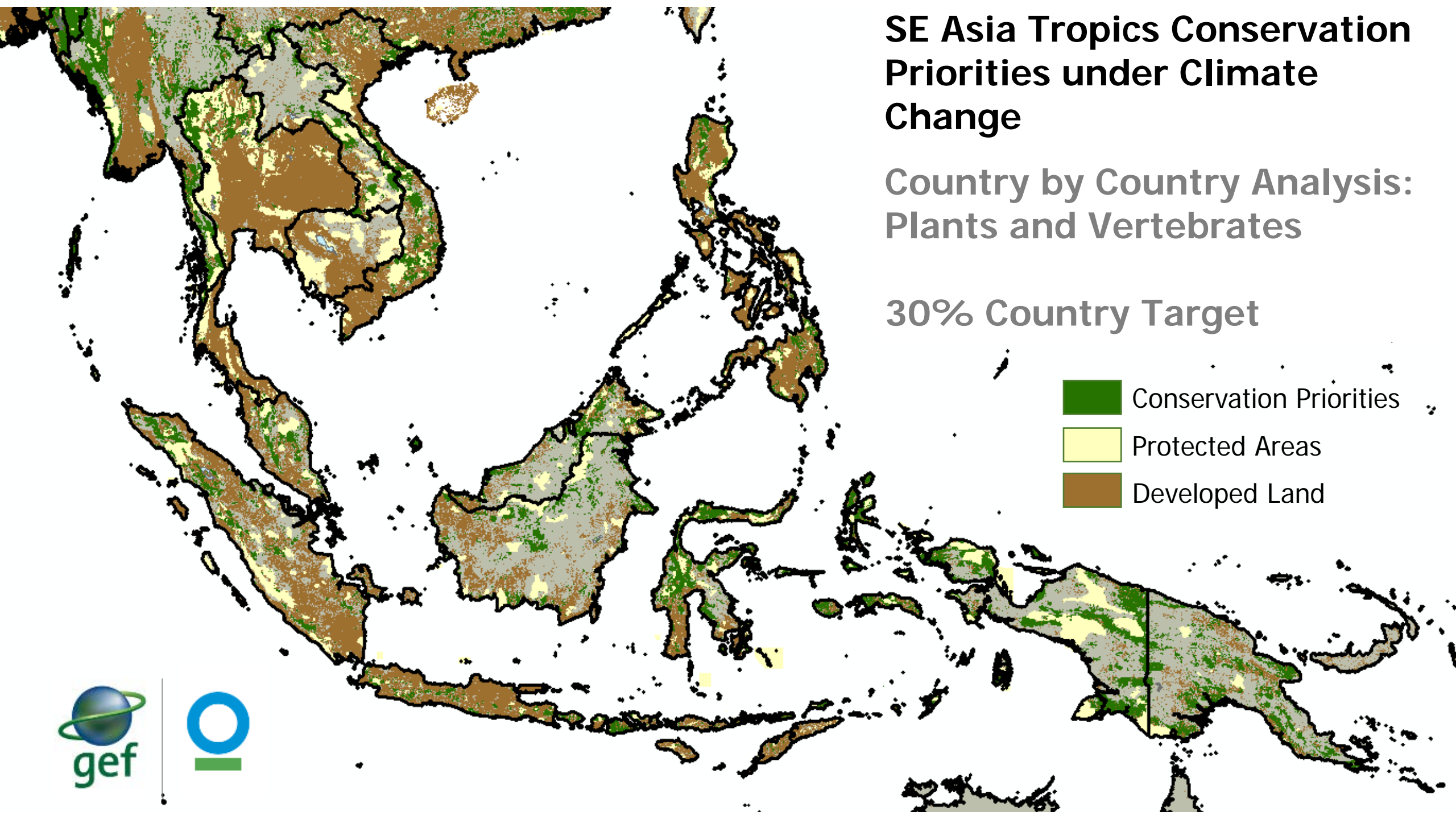


# SE Asia Tropics Conservation Priorities under Climate Change

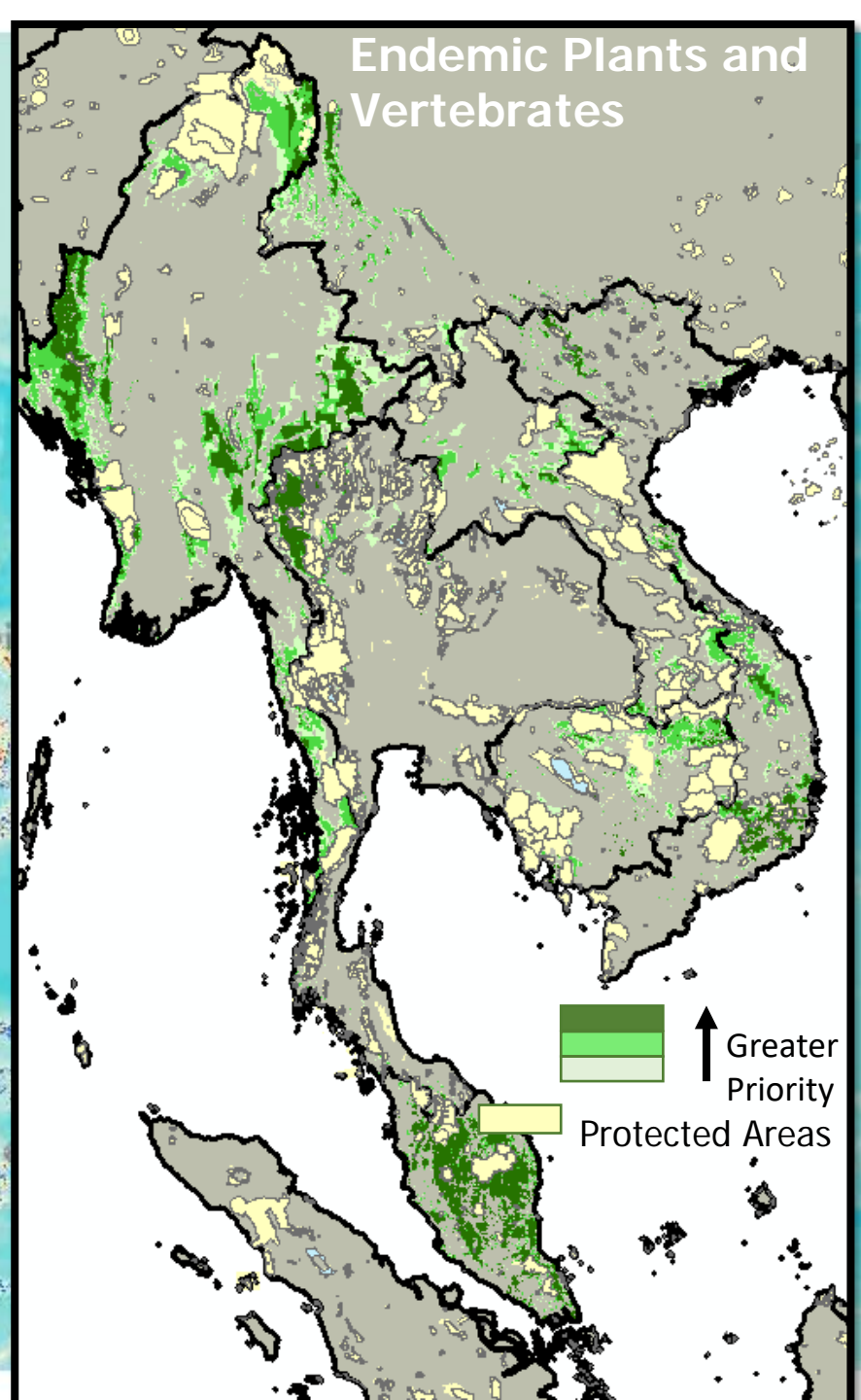
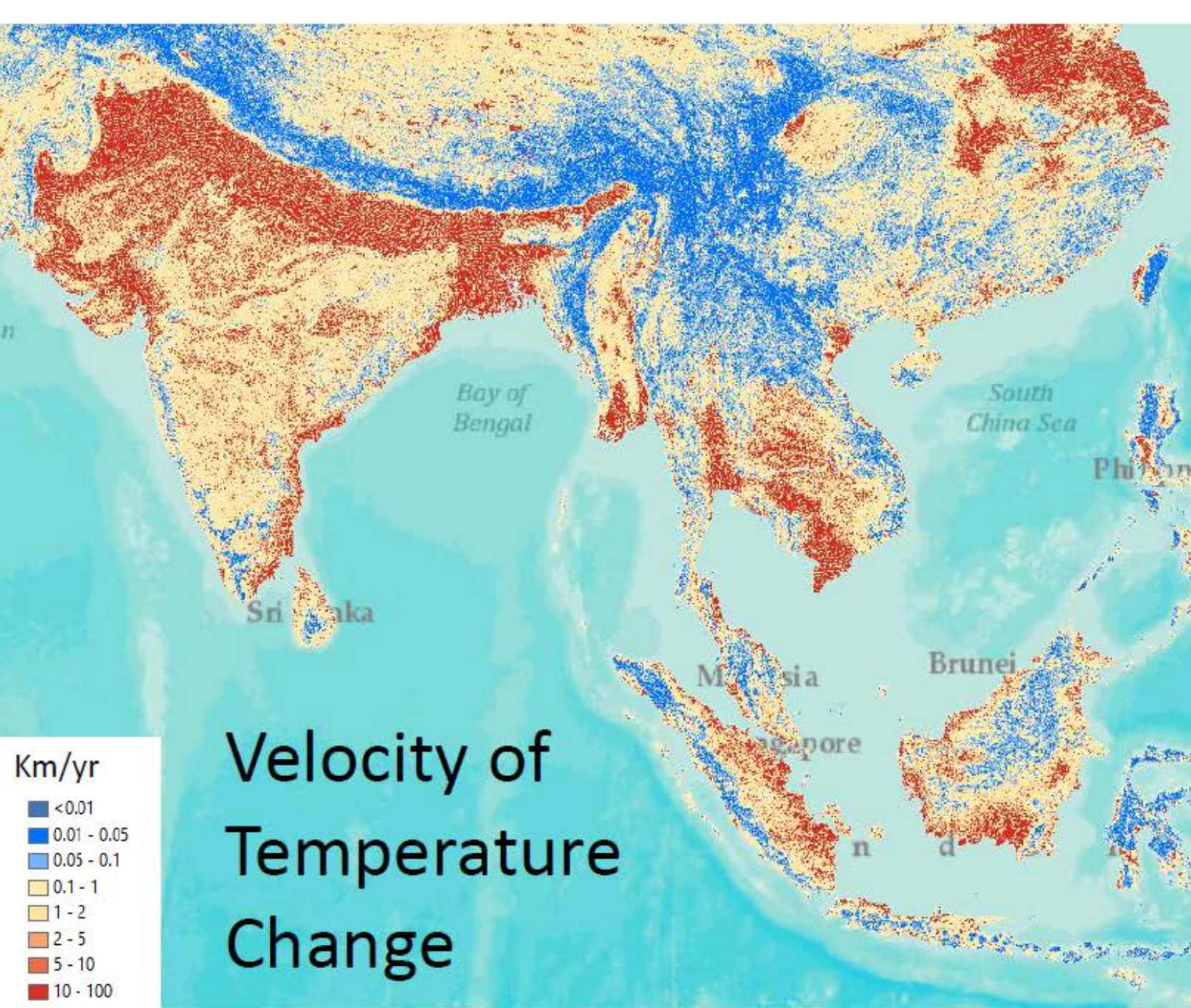
Country by Country Analysis:  
Plants and Vertebrates

30% Country Target

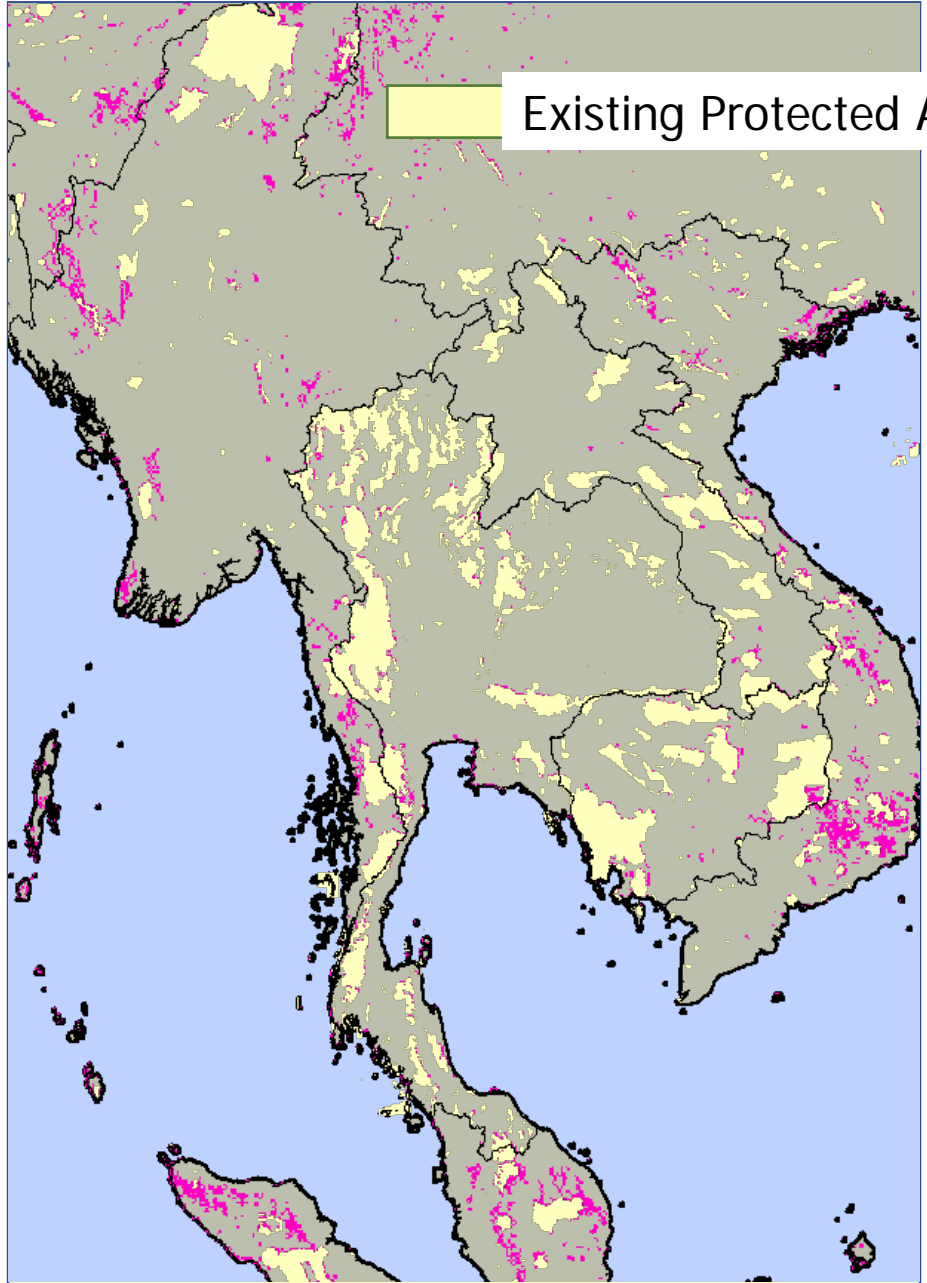
-  Conservation Priorities
-  Protected Areas
-  Developed Land



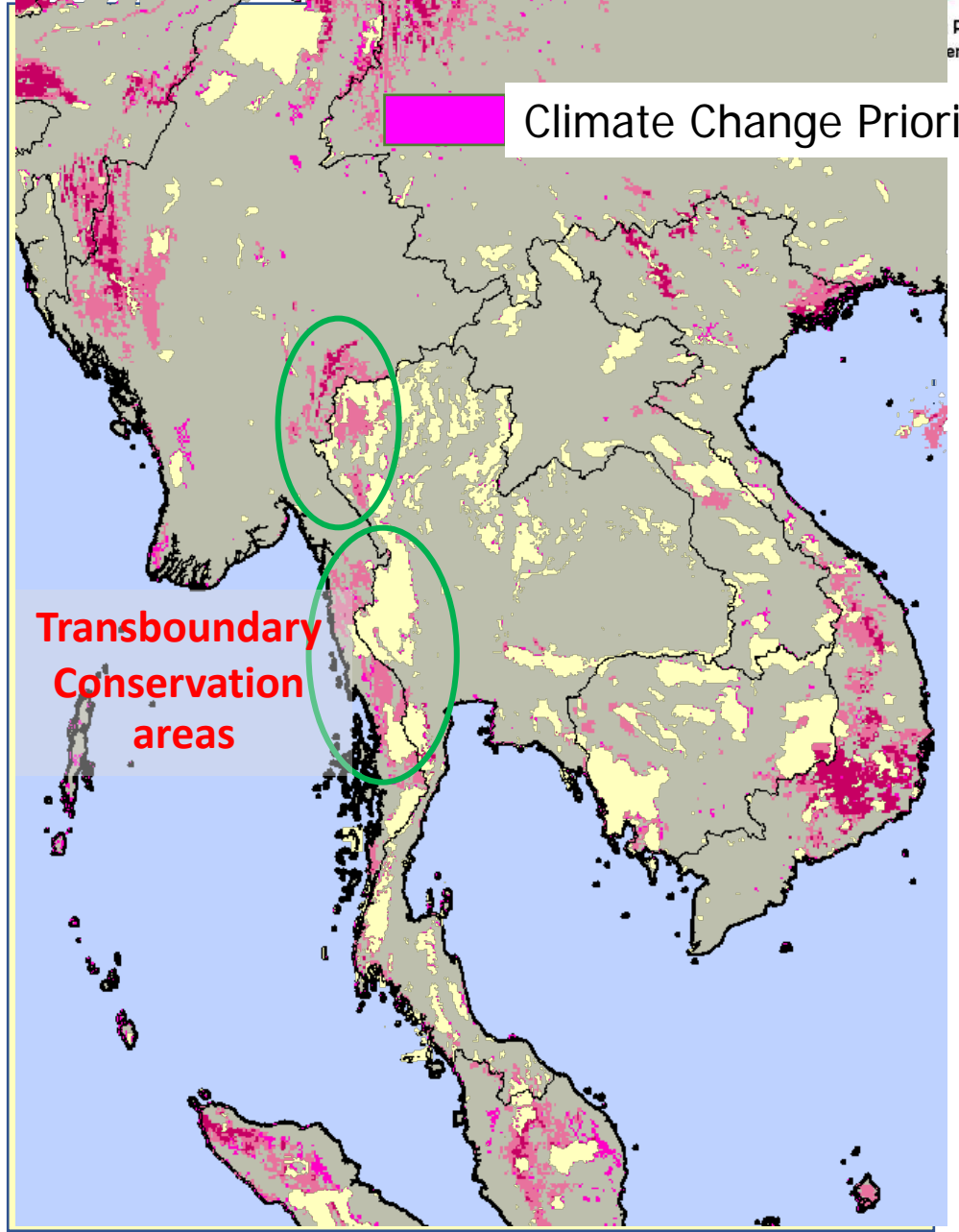








Optimized



Corridor Index

## Draft Biodiversity Act...

Provide a unified and effective tool for biodiversity management in Thailand and for meeting the country's obligations under the CBD, and other related int. agreements

- administrative mechanism on the **access to the biological resources and the sharing of the benefits**
- Establishment of **protected biodiversity areas** (sites containing rare, endemic and endangered species and habitats but **not overlapping with other PAs**)

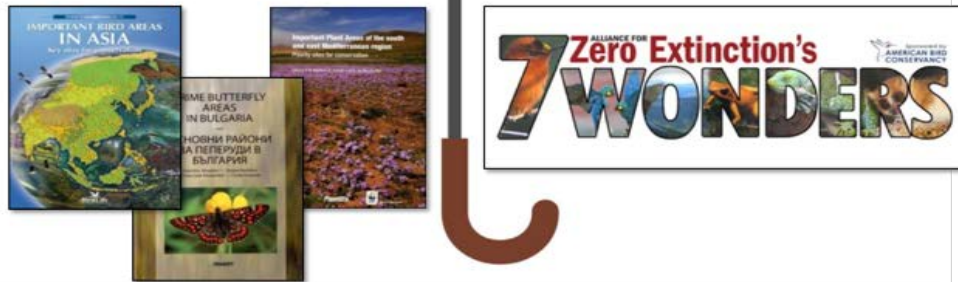
Other (OECMs) cover **0.04%**  
 Smaller and isolated forest patches **0.5%**



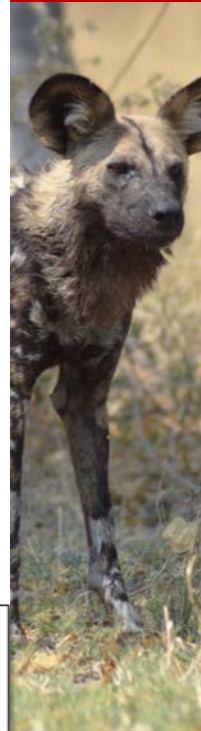


# KBA: A unifying framework to harmonize existing approaches

*“sites contributing significantly to the global persistence of biodiversity”*



## A. Threatened biodiversity



## B. Geographically restricted biodiversity



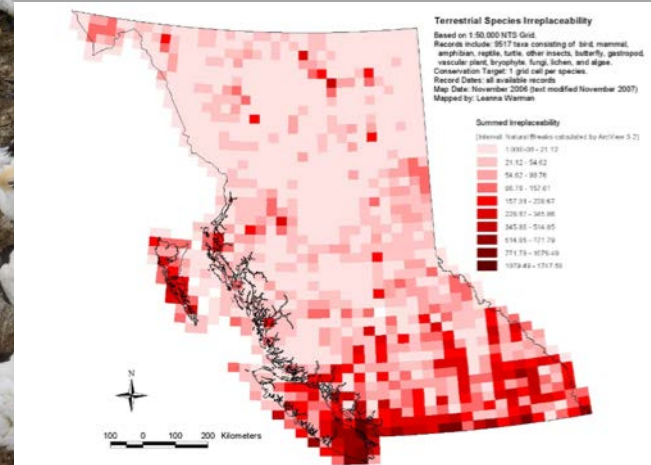
## C. Ecological integrity



## D. Biological processes



## E. Irreplaceability through quantitative



# Bilateral & regional Cooperation (JPSP)

## KBAs in the Indo Burma Hotspot Tordoff et al. (2012)

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE  
日本学術振興会

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  - Post-selection procedures
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  - Call for Proposals
- Application/Adoption Number and List of Adopted Projects

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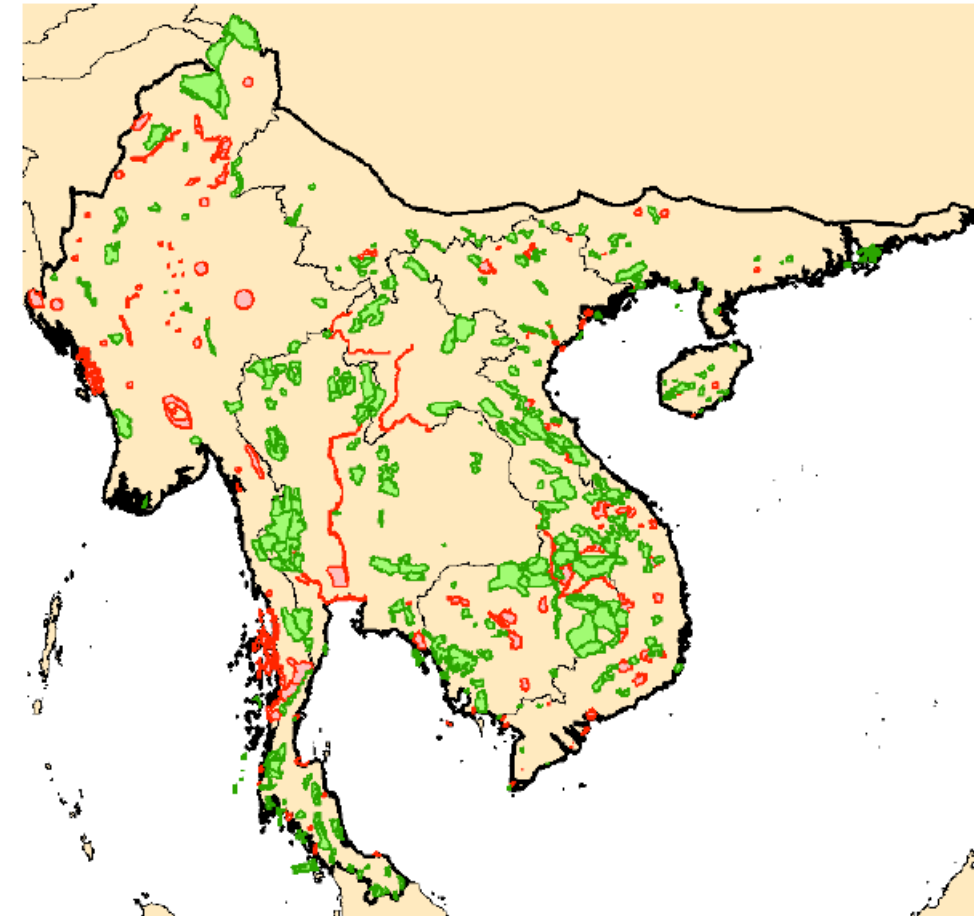
### Bilateral Programs

#### Application Guidelines and Forms

##### Guidelines

Application Guidelines for FY2023 Call for proposals	
July 15, 2022 Bilateral Joint Research Projects/Seminars FY2023 Calls with STDF (Egypt), NRF (South Africa), DST (India) and HAS (Hungary) were added.	
International Collaboration Programs "Review Section Table"	
FY2023 Bilateral Programs Joint Research Projects/Seminars "Document Review Set"	

\* There are no FY2023 calls with NACOSTI (Kenya), ISF (Israel), MOST (Vietnam), CAPES (Brazil), FWF (Austria), Inria (France), RFBR (Russia), and STINT (Sweden).



## Challenges

- To continue observation of biodiversity and transform analog dataset to standardized digital database
- To promote and **share the approach and data** to be used within the region and to address a large scale questions – **CC & GBF**
- To embed research results into **policy implementation (e.g., revised 8<sup>th</sup> NBSAP)**

## Opportunities

- **Collaboration** (e.g., APBON, ILTER, GBIF, KBAs) , **networking** and facilities are in place.
- Biodiversity data greatly contribute to **CBD, IPCC, NBSAP, etc.**