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# BLUE CARBON: THE BRIDGE BETWEEN OCEAN AND CLIMATE

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# WHY BLUE CARBON, WHAT IT IS SO IMPORTANT, AND WHY INDONESIA

Blue Carbon is the carbon stored, sequestered, or released from both vegetation and sediment of the coastal ecosystems (mangrove, seagrass and tidal marsh)

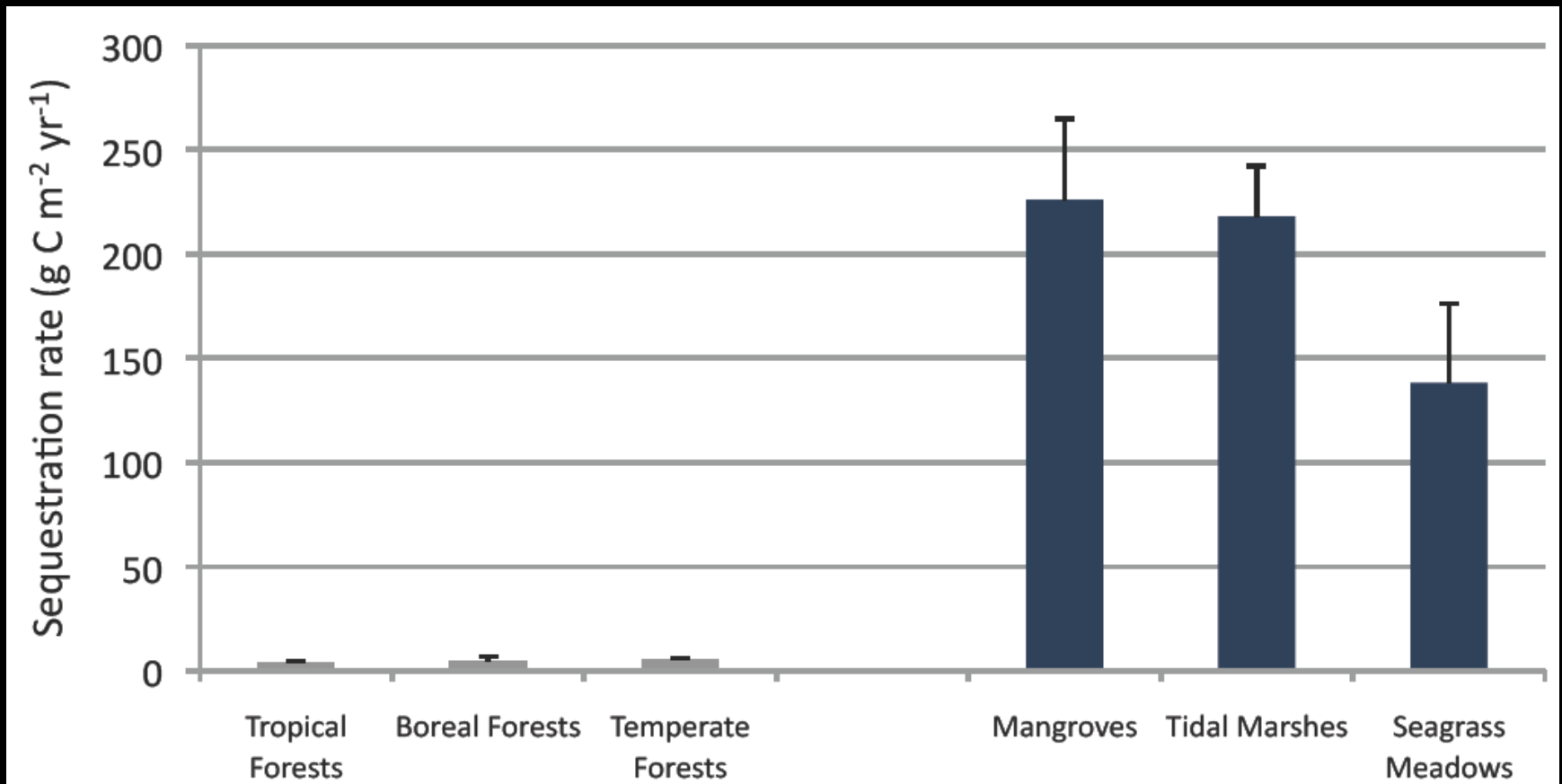
# MANGROVE EXTENT IN INDONESIA

SN	Country	Area (ha)	% of global total
1	Indonesia	3,112,989	22.6
2	Australia	977,975	7.1
3	Brazil	962,683	7.0
4	Mexico	741,917	5.4
5	Nigeria	653,669	4.7
6	Malaysia	505,386	3.7
7	Myanmar (Burma)	494,584	3.6
8	Papua New Guinea	480,121	3.5
9	Bangladesh	436,570	3.2
10	Cuba	421,538	3.1
11	India	368,276	2.7
12	Guinea Bissau	338,652	2.5
13	Mozambique	318,851	2.3
14	Madagascar	278,078	2.0
15	Philippines	263,137	1.9

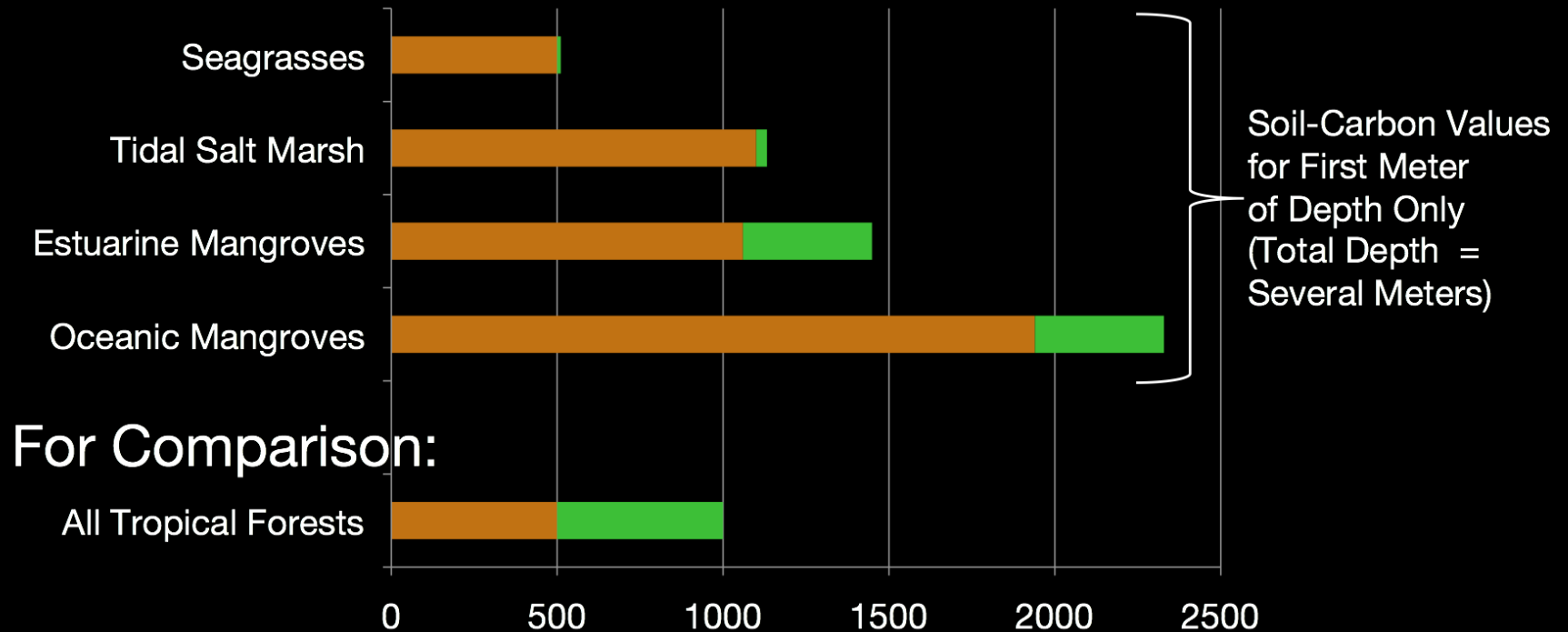
Carbon stock in mangrove ecosystem in Indonesia was estimated around 3,4 PgC (17% of global Blue Carbon numbers)

Within the past 30 years, Indonesia has 40% mangrove loss equal to 52.000 ha/year deforestation.

# CHARACTERISTICS OF BLUE CARBON ECOSYSTEM OPPOSED TO TERRESTRIAL CARBON



# BLUE CARBON (AGC AND BGC)



Sources: IUCN, Duke Nicholas Institute

# BLUE CARBON ECOSYSTEM ENVIRONMENTAL SERVICES

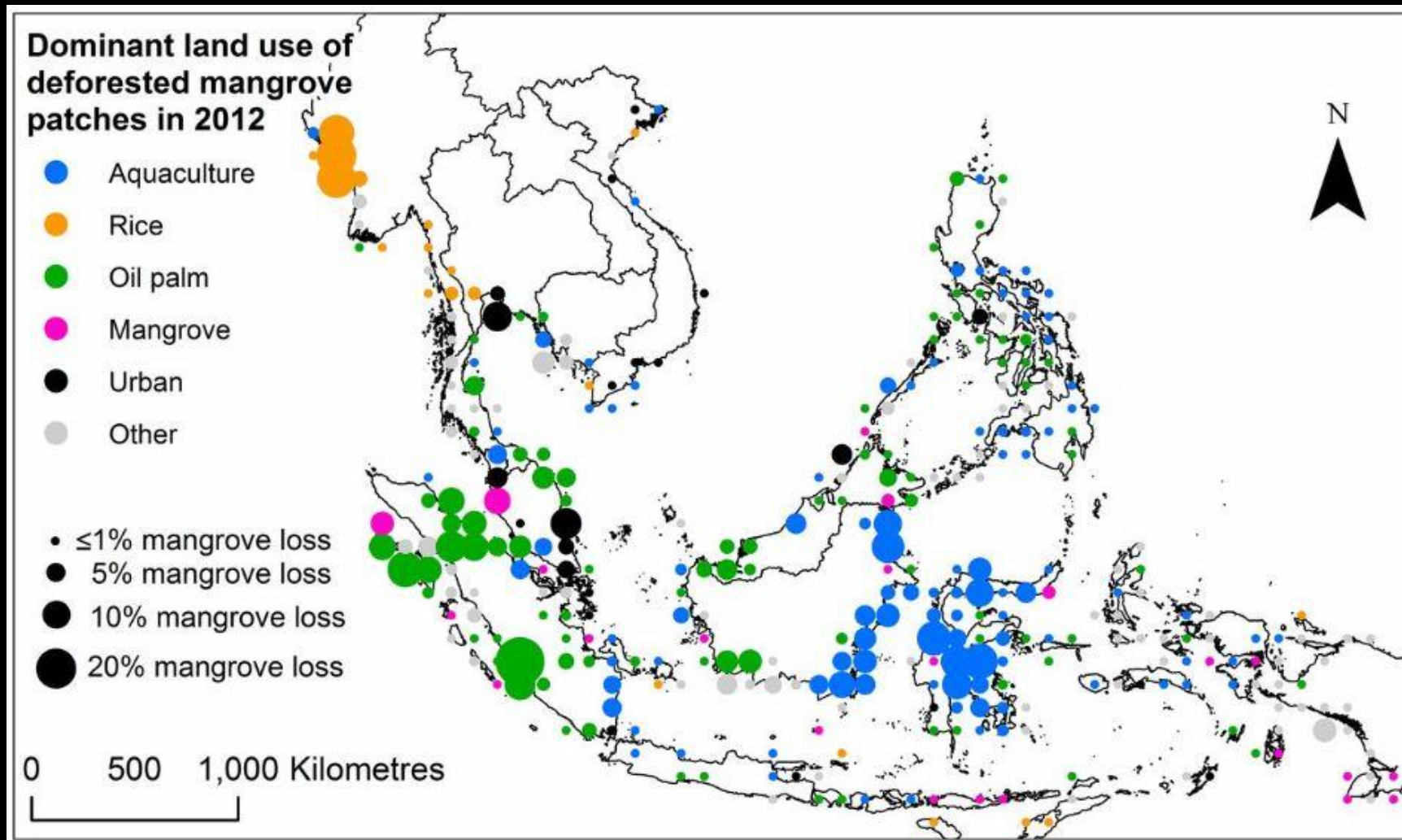
- Protection from storms and sea level rise.
- Prevention of shoreline erosion.
- Regulation of coastal water quality.
- Nursery ground for high fisheries commodity and endangered marine species.
- Food security for coastal communities.
- Carbon sink.

# INDONESIA BLUE CARBON VALUATION MAIN CHALLENGES

- Since current ministries are using forest management approach (terrestrial carbon) to value blue carbon ecosystem, blue carbon valuation tends to be UNDERVALUED.
- Forest Reference Emission Level (FREL) is developed under terrestrial carbon approach.

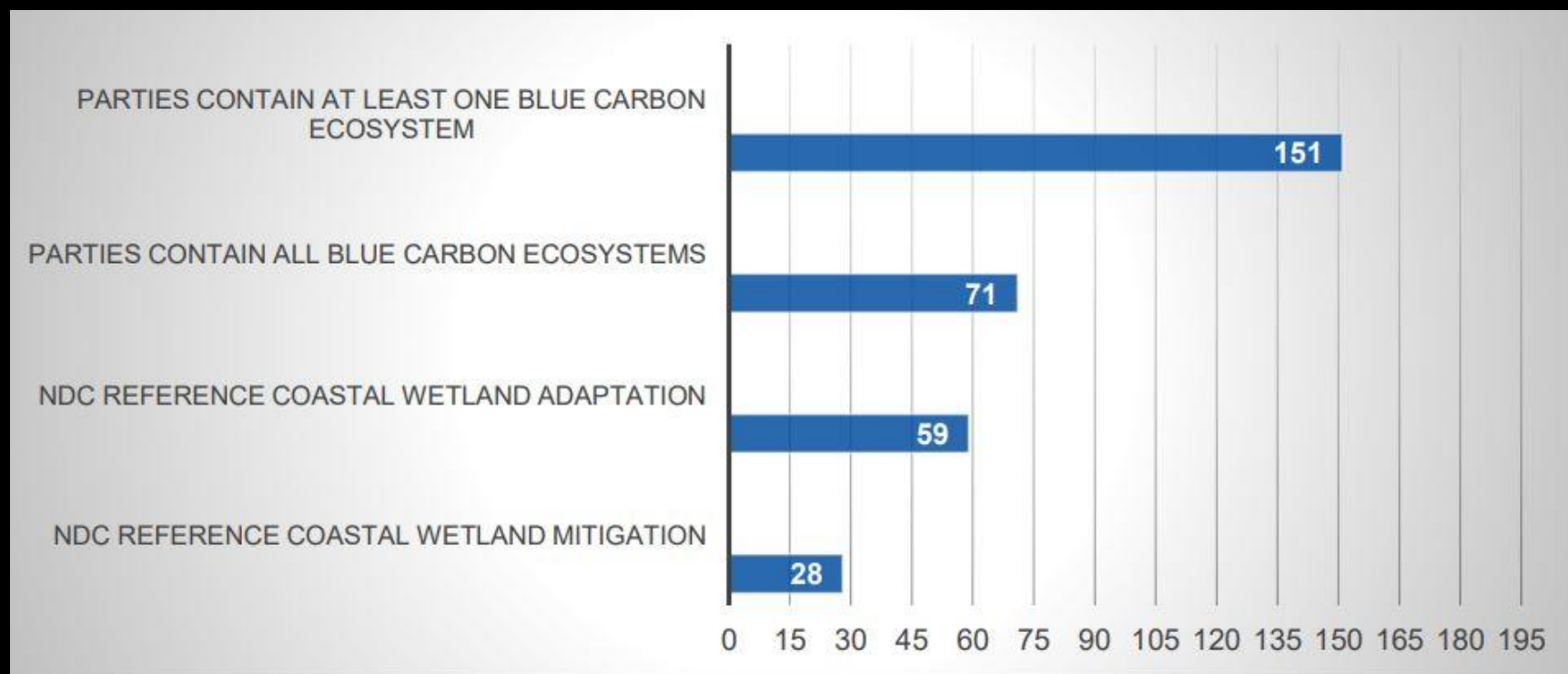


# INDONESIA MANGROVE DEFORESTATION DRIVERS





# MAINSTREAMING BLUE CARBON INTO NDC



# DUE TO ITS CHARACTERISTICS, THERE ARE SPECIFIC WAYS TO DEVELOP A NATIONAL BLUE CARBON POTENTIAL

## Ground assessment

Using either destructive or non-destructive methods that serve as ground truthing

## Remote sensing

To determine mangrove extent and determining AGC

## Overlay

Using ground database overlay with species information from remote sensing to develop BC potential by interpolation approach to fill DD areas

# LOW CARBON DEVELOPMENT INITIATIVE

- Sectoral approach; Forestry, Energy, Peatland, Fisheries, Water.
- Using system dynamics modelling for evidence-based decision making.
- Finding cross sectoral trade-offs and interventions for policy makers.
- Implementation phase in subnational.
- Adding more sectors; Blue Carbon

## LOW CARBON DEVELOPMENT INITIATIVE (CONT'D)

LCDI blue carbon sector in Subnational will differ into 2 main coastal ecosystem characteristics;

- RESTORATION
- CONSERVATION AND PROTECTION

# OPPORTUNITIES

- Stopping mangrove deforestation would reduce current Indonesian land-use emission by 30%.
- Mainstream the interrelation between SDG 13 and 14 through inter-ministerial national action plan
- Blue Carbon inclusion into national NDC.
- Using system dynamics modelling for blue carbon policy making
- Local knowledge valuation
- Policy and governance mapping to define leading institution for blue carbon

*To change the world starts with one step,  
however small first step is the hardest of all.*

*- Dave Matthews-*