JICA Cooperation Approach for Blue Carbon Ecosystem Conservation

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Mangroves in the Tropics: Realizing their Potential for Climate Change Mitigation and Adaptation
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JICA's Strategic Approach in Nature Conservation 2015-2020

Goal	Harmonization between Nature Conservation and Human Activities			
Strategic Theme	Addressing "**Climate Change**"		**Enhancement of livelihood** in vulnerable communities trough sustainable natural resource use	**Biodiversity conservation** through management of PA and its buffer zone
	Mitigation through **REDD+**	**Adaptation** through strengthening resilience of ecosystems, **Eco-DRR**		
Relevant IEAs	UNFCCC	UNFCCC Sendai Framework for DRR	UNCCD UNFCCC UNCBD	UNCBD
Approach	Implementation of REDD+ in tropical countries	Disaster risk reduction by restoring ecosystem and its services	Supporting local communities through green economy promotion	Capacity building and community participation for management of PA and buffer zone

Mangrove Ecosystem Services and Benefits to People

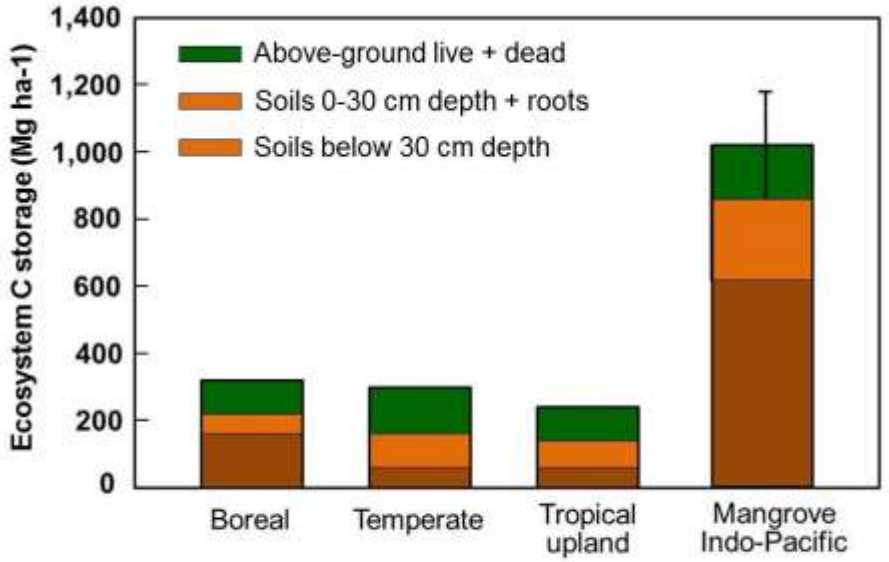
Services	Benefits	Threats
Carbon sequestration *Supporting service*	→ **Climate change mitigation**	- Deforestation by aquaculture and timber logging - Degradation by over fishing - Water pollution - Erosion due to sea level rise caused by global warming
Barrier against tsunami and storm waves *Regulating service*	→ **Disaster risk reduction (Climate Change Adaptation)**	
Providing fisheries, aquaculture, timber, fuel *Provisioning service*	→ **Enhancement of livelihoods**	
Eco-tourism *Cultural service*	→ **Enhancement of livelihoods**	
Biodiversity is associated with all the Services and Benefits above.		

Importance of Mangrove Ecosystem Conservation in Indonesia and the Philippines for Climate Change Mitigation

- **Total Mangrove Area in the world: 16.5 million ha**
- **South-East Asia: 5.1 million ha (33%): Indonesia (22.6%) and the Philippines (1.9%) (Giri *et al*. 2011)**
- **Mangrove ecosystem provides fishery resources, protecting shoreline from tsunami and sea level rise.**
- **Carbon sequestration rate in mangrove is the highest among forest ecosystems.**

Carbon storage under ground in mangrove is 6 – 7 times higher than that in tropical upland forests.

Mangrove conservation in Indonesia and the Philippines effectively contributes to climate change mitigation.



Comparison of C storage (mean ±95% confidence interval) with that of major global forest domains. (Source Donato, *et al*. 2011)

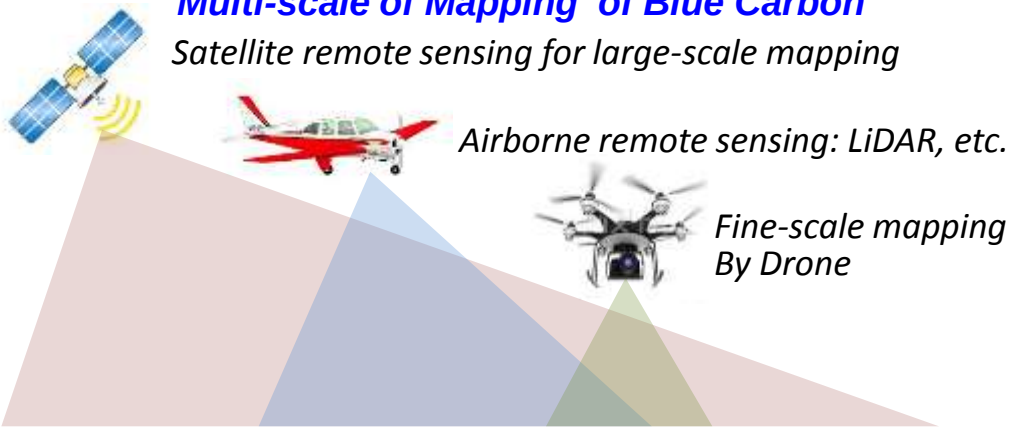
"Comprehensive Assessment and Conservation of Blue Carbon Ecosystem and Their Services in the Coral Triangle" (BlueCARES)

Joint project by Philippines, Indonesia and Japan from April 2017 to March 2022

Project Goal : Establish 'Blue Carbon Strategy' for enhancing local efforts to conserve coastal ecosystem for contributing to climate change mitigation and adaptation.

Assessment of Blue Carbon Dynamics in Marine Coastal Ecosystems

Multi-scale of Mapping of Blue Carbon

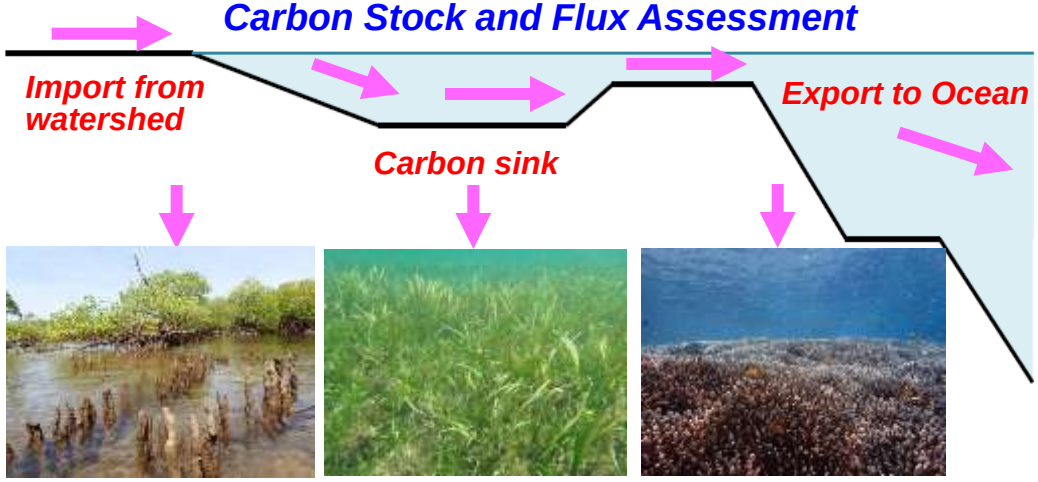


Satellite remote sensing for large-scale mapping

Airborne remote sensing: LiDAR, etc.

Fine-scale mapping By Drone

Carbon Stock and Flux Assessment



Mangrove *Seagrass bed* *Coral reef*

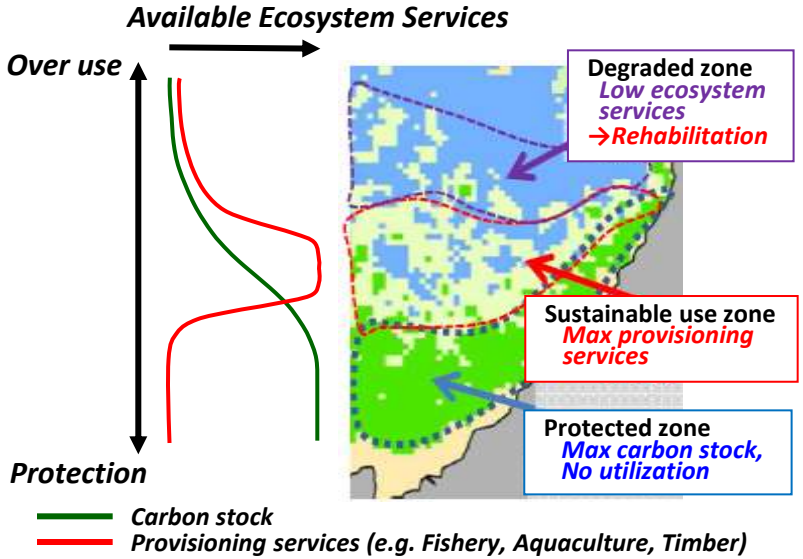
Assessment of Associated Ecosystem Services

Fishery & Aquaculture

Eco-tourism

Development of Blue Carbon Strategy

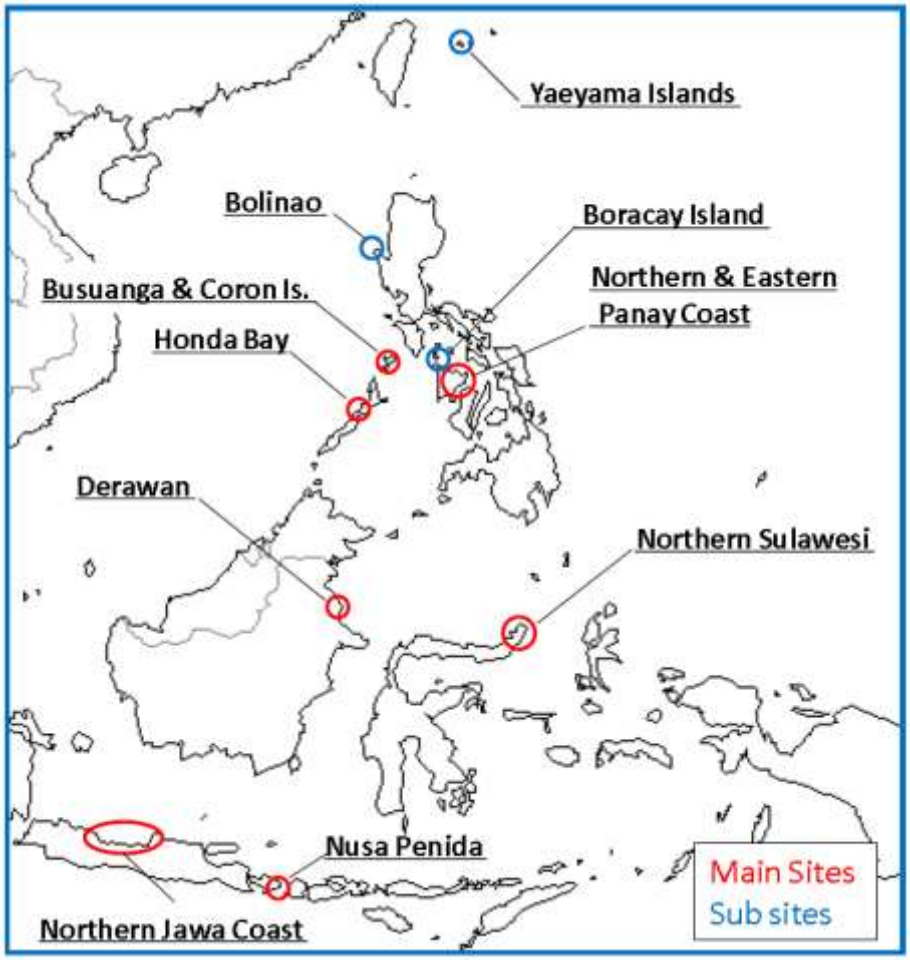
Maximize multiple ecosystem services



"Comprehensive Assessment and Conservation of Blue Carbon Ecosystem and Their Services in the Coral Triangle" (BlueCARES)

BlueCARES Candidate Project Sites

Collect basic data on carbon dynamics, associated Ecosystem services and mapping, in order to develop Blue Carbon Strategy



Core and Network System

Regional, National and Local Network for:
- ***Nation-wide monitoring***
- ***Implementation of Blue Carbon Strategy***
- ***Capacity building***

Climate Change Mitigation

Regional
National

MMAF (Indonesia) — **UPD (IPhilippines)**

Local

Local Communities (Indonesia: 20, Philippines: 15)

Supported by Local Governments, NGOs, Private Sectors, Institutes, Universities

Blue Carbon Ecosystem Conservation

Partnership with Private Sectors

Japanese Companies conducting relevant activities in the countries		
Company	Activity	C
AEON Environmental Foundation	Mangrove rehabilitation in Jakarta (2011 – 2013) 63,00 trees	I
Toyota Motor Cooperation	Living Asian Forest Project 2016- collaborating with WWF	I
Nichirei Fresh Inc.	Mangrove restoration, improvement of shrimp aquaculture	I
Tokyo Marine Nichido	Mangrove plantation	I, P


Thank you for your attention!!