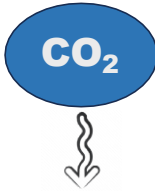


# Blue horizons : pioneering carbon conservations and biodiversity revival

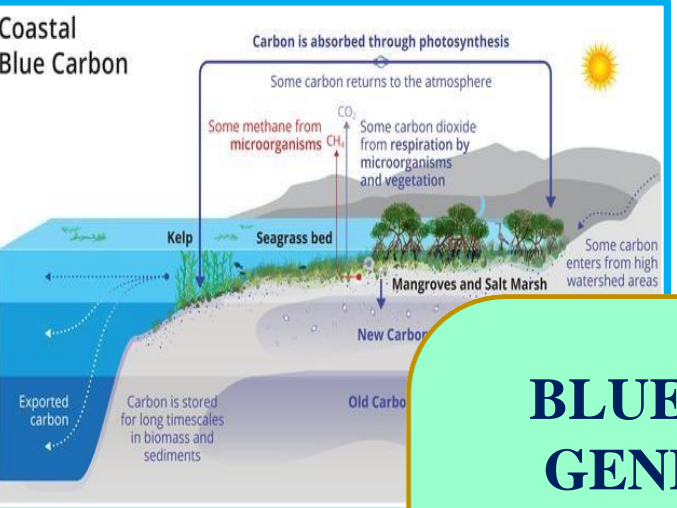
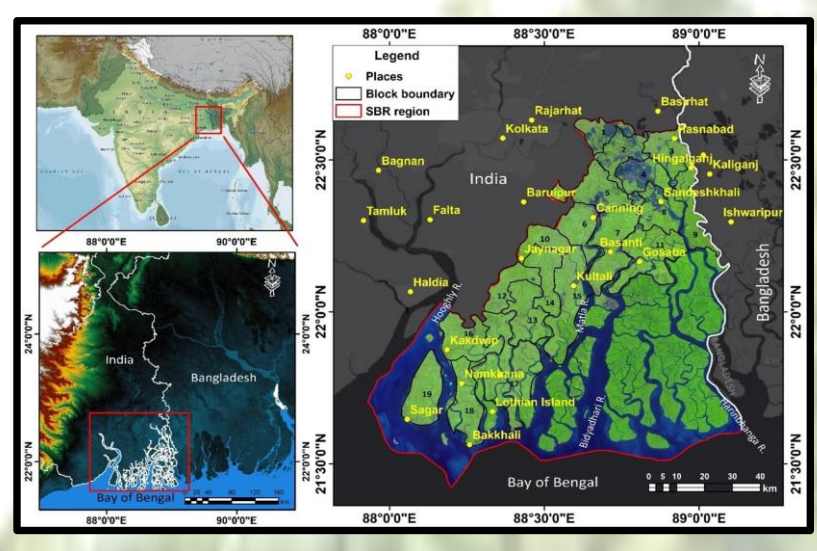
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**DEFINITION:**  
CO<sub>2</sub> absorbed from the atmosphere & stored in sediments by coastal ecosystems such as marshlands & seagrass meadows, which helps mitigate climate change. One acre of seagrass is capable of absorbing & storing up to 740 pounds of carbon per year, the amount of carbon emitted by a car driving 3,860 miles per year.

## AREA OF INTEREST



## BLUE CARBON GENERATING PROCESS

Mangroves in the Sundarbans play a crucial role in absorbing CO<sub>2</sub> from the air and generating blue carbon, which is carbon stored in coastal and marine ecosystems

PHOTOSYNTHESIS & CO<sub>2</sub> ABSORPTION

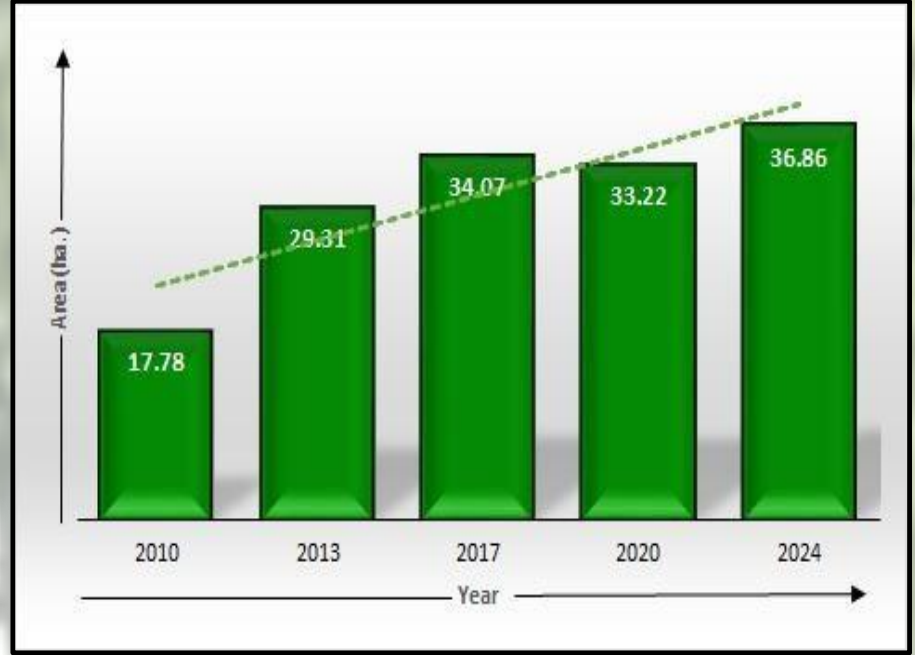
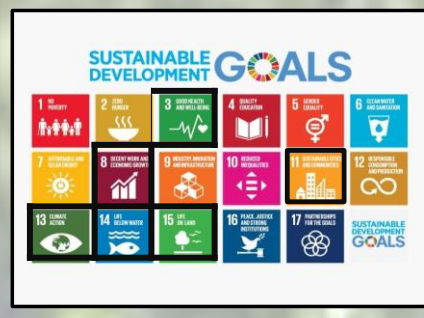
CARBON STORAGE IN BIOMASS

LITTERFALL & CARBON TRANSFER TO SOIL

CARBON EXPORT TO MARINE ECOSYSTEM

PROTECTION AGAINST CARBON RELEASE

SOIL CARBON SEQUESTRATION



SIGNIFICANCE

- HIGH CARBON SEQUESTRATION:** 5 times more carbon per hector.
- LONG TERM CARBON STORAGE:** Centuries to millennia
- COASTAL PROTECTION:** Buffer against storm surges, coastal erosion & rising sea levels.
- BIODIVERSITY HOTSPOT:** Unique flora & fauna including the endangered Royal Bengal Tiger.

Mangrove	Seagrass	Salt marsh
Carbon offset = (Share of protected hectares susceptible to conversion)	Number of hectares protected	Carbon in above ground + below ground + biomass
		Carbon in soil + Annual carbon accumulation

Temporal changes of mangrove area of Chargheri Satjeliya Island in the Sundarbans



**CONSERVATION & POLICY RECOMMENDATIONS:**

- ✓ Strict Protection Measures: Enforce laws to prevent illegal logging and land conversion.
- ✓ Community Involvement: Engage local communities in sustainable mangrove management.
- ✓ Restoration Projects: Encourage mangrove reforestation to enhance carbon sequestration potential.
- ✓ Blue Carbon Credits: Promote carbon financing initiatives to support conservation efforts.



## STRATEGIES TO BE IMPLEMENTED:

- ☐ CARBON CREDIT & FUNDING
- ☐ RESTORATION & REFORESTATION
- ☐ COMMUNITY BASED CONSERVATION
- ☐ POLICY & LEGAL FRAMEWORKS
- ☐ RESEARCH & MONITORING
- ☐ AWARENESS AND COOPERATION
- ☐ TRANSBOUNDARY COOPERATION

Under the supervision of **Mr. Umashankar Mandal**, "The Mangrove Man", we have successfully planted approximately 12,00,000 mangrove trees in Sundarbans till now, enhancing blue carbon stock and strengthening coastal resilience. This effort contributes to biodiversity conservation and mitigation of climate change in global scenario.

**CHALLENGES:**

- > CLIMATE VULNERABILITY
- > ANTHROPOGENIC PRESSURE
- > LACK OF AWARENESS & FUNDINGS

## IMPORTANT INSIGHTS:

- ☐ Loss of 6.31 Tg of carbon between 1975 – 2020 due to deforestation & climate change.
- ☐ A \$ 3.31 billion reduction in ecosystem services over 45 years.
- ☐ 43544 hectors loss of mangroves, impacting biodiversity & climate resilience.
- ☐ Increased urbanization & conversion of mangroves into crop lands & agriculture zones.
- ☐ It is estimated that 2.6 – 4 mm per year rise in sea level, submerging parts of the deltas.

