

Blue Carbon for a Resilient Delta

Designing a Mangrove-Based Carbon Credit Project

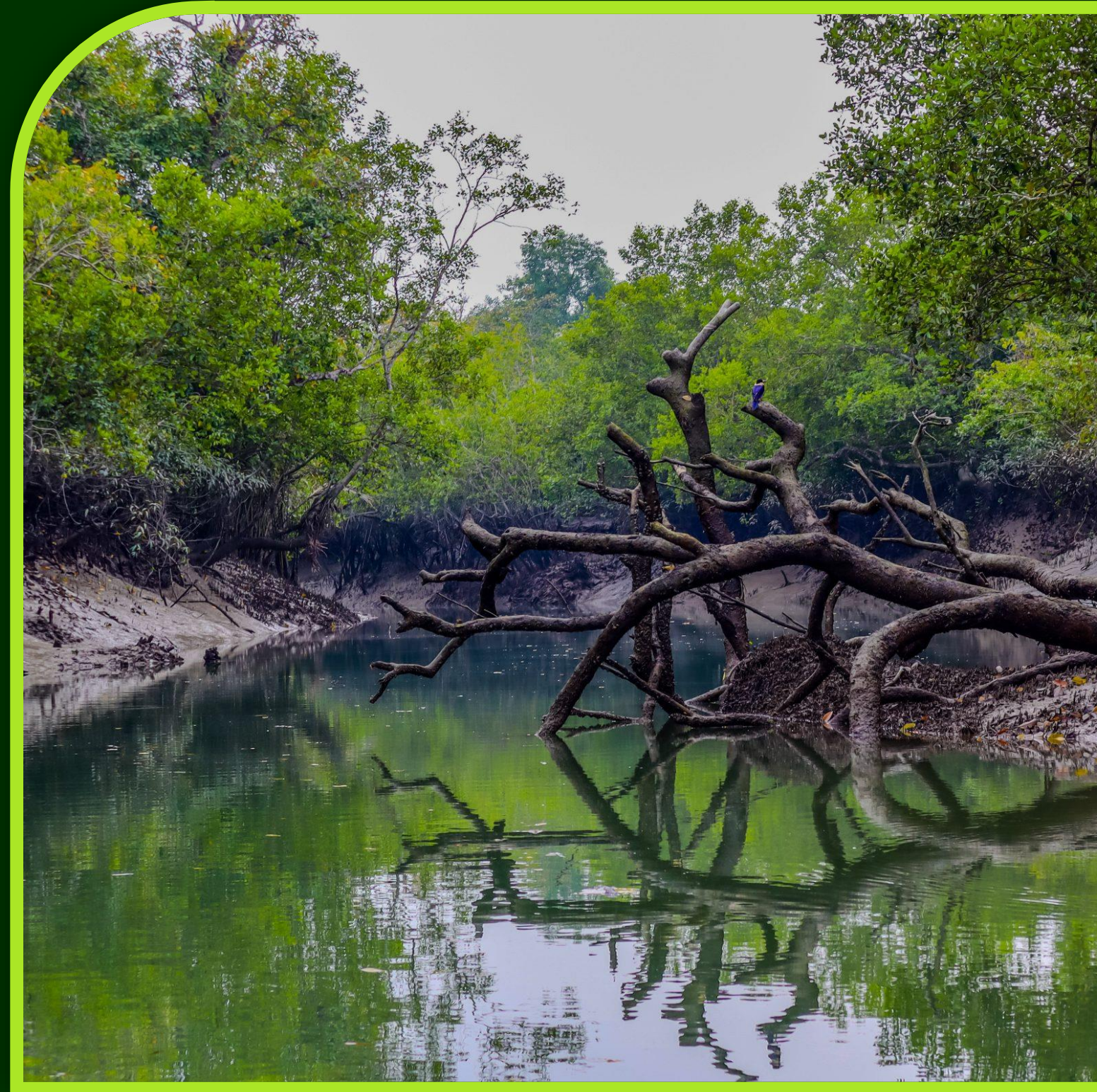
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Institute of Water Modelling (IWM)

Date: 7th December 2025



Institute of Water Modelling (IWM)

Water, Environment, Climate & ICT for Green and Climate Resilient Bangladesh



**Independent Trust established
in 1996 by the GoB**



ISO Certified Institute



Self-sustained



**Operating under Board of
Trustees**



**500 trained professionals with
expertise**



**Completed hundreds of
projects in National &
International Level**



Vision

- World-class institute in land, water, climate, environment & ICT
- Deliver smart solutions to improve quality of life



Climate Finance Support by IWM

- Climate change impact assessment using advanced models
- Storm surge, sea-level rise, and coastal vulnerability analysis with financial planning
- Flood and drought management studies with financial planning
- Integrated water resources management for climate adaptation
- Technical support for accessing global climate funds
- Project bankability assessments and feasibility studies for climate finance projects
- Develop projects with a strong focus on NbS
- IWM received LOI to develop 4 NbS carbon credit projects



Mission

- Excellence in research and services on land, water, climate & ICT
- Provide intelligent, technology-driven solutions for planning and management

Clients & Partners



THE WORLD BANK



পরিবেশ অধিদপ্তর



GREEN
CLIMATE
FUND



ICIMOD

Deltares
giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



ADB ASIAN DEVELOPMENT BANK



OXFAM

Nature-Based Climate Solution for Coastal Resilience

The Climate Crisis in Bangladesh

9th

Most Vulnerable Country

185

Extreme Weather Event (2000-2019)

\$3B

Annual disaster losses (2.2% of GDP lost)

6.3M

People affected annually due to natural disasters

7M

People displaced annually due to natural disasters

17%

Projected land loss from sea level rise by 2050

The Mangrove Solution (NbS)



Natural Shield

Reduce cyclone wind speed & wave energy by up to **66%**



Super Carbon Sinks

Sequester carbon at **3-5x** higher rate than terrestrial forests



Triple Bottom Line

Environmental, Social, and Economic returns

Project Overview

Project Area

30,000 ha

Bay of Bengal Char Areas

Project Duration

20 years

2025-44

Investment

USD 38M

Total Required

Total Generated Credit

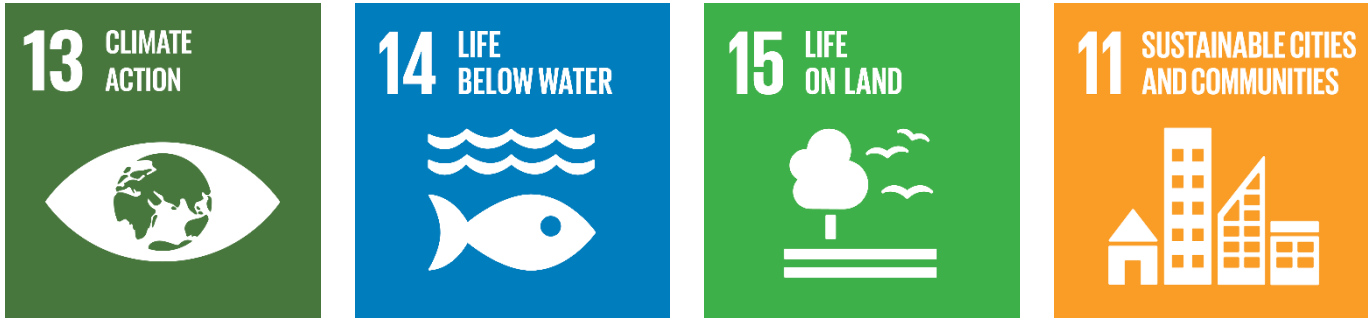
16.60M tCO₂

20 years

Internal Rate of Return (IRR)

24%

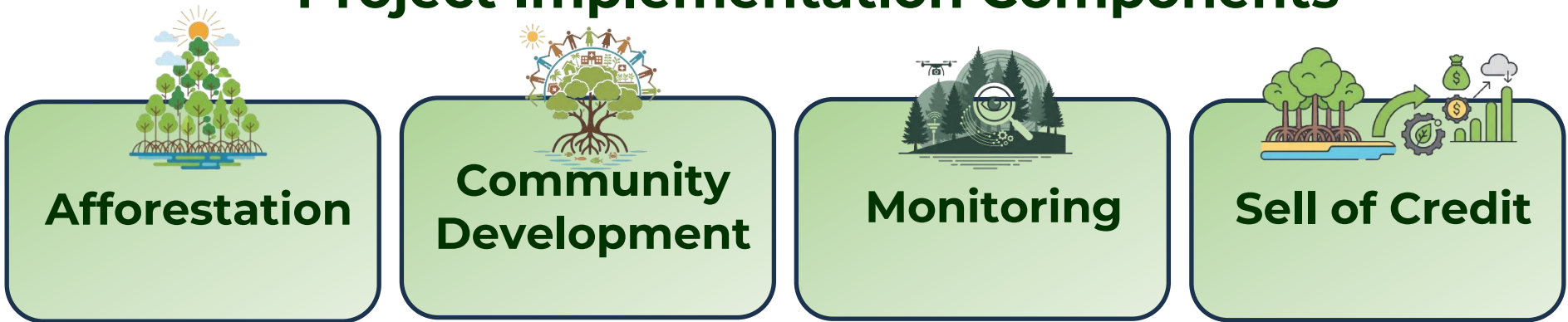
Average Annual Generated Credit: 0.83M tCO₂/year
Sequestration Rate: 3-4tCO₂/ha/year (up to 10tCO₂/ha/year including soil carbon)
NDC Contribution: 6.3M tCO₂ over 20 years



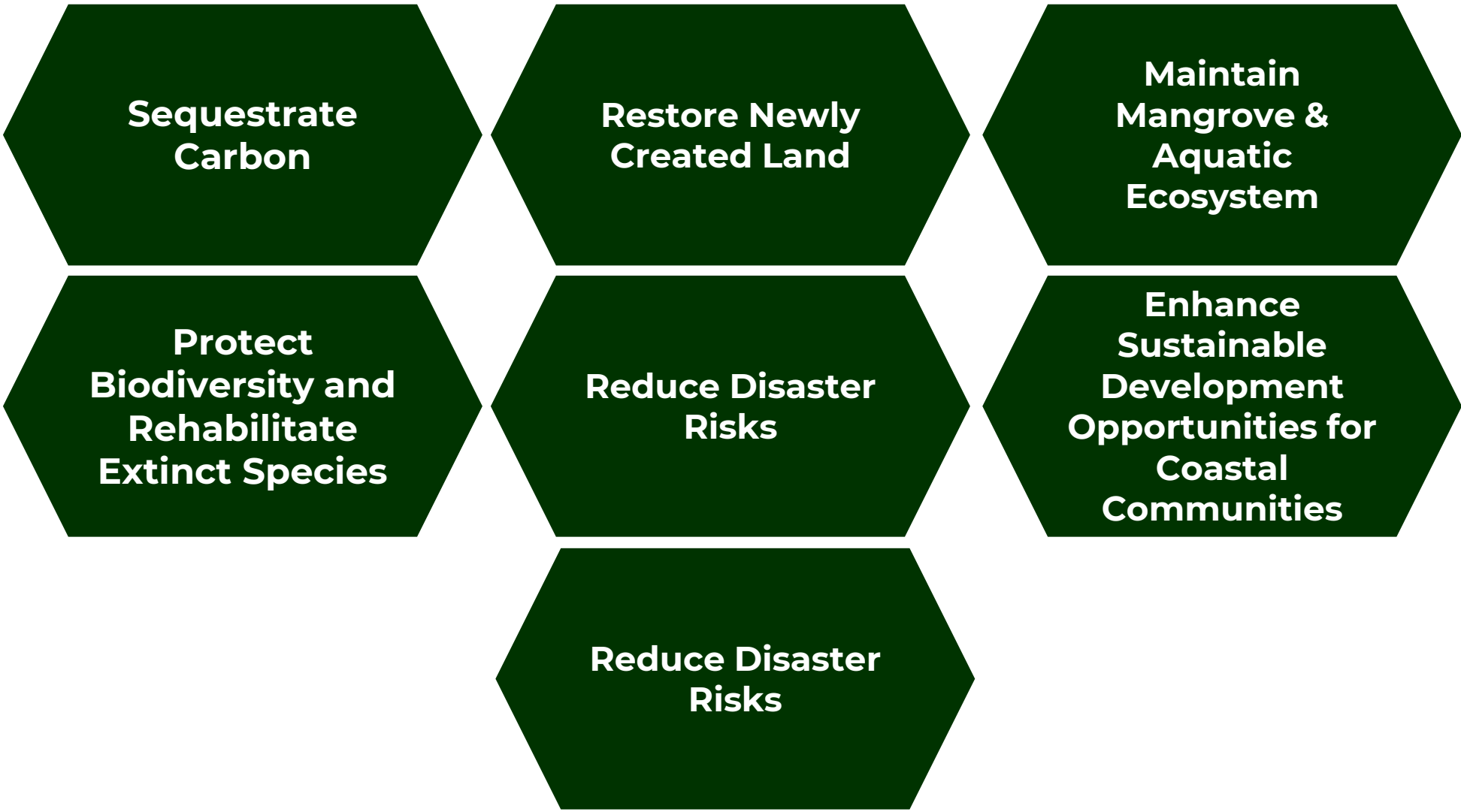
Plantation Schedule

2026-2027	5,000 ha
2027-2028	8,000 ha
2028-2029	10,000 ha
2029-2030	7,000 ha

Project Implementation Components

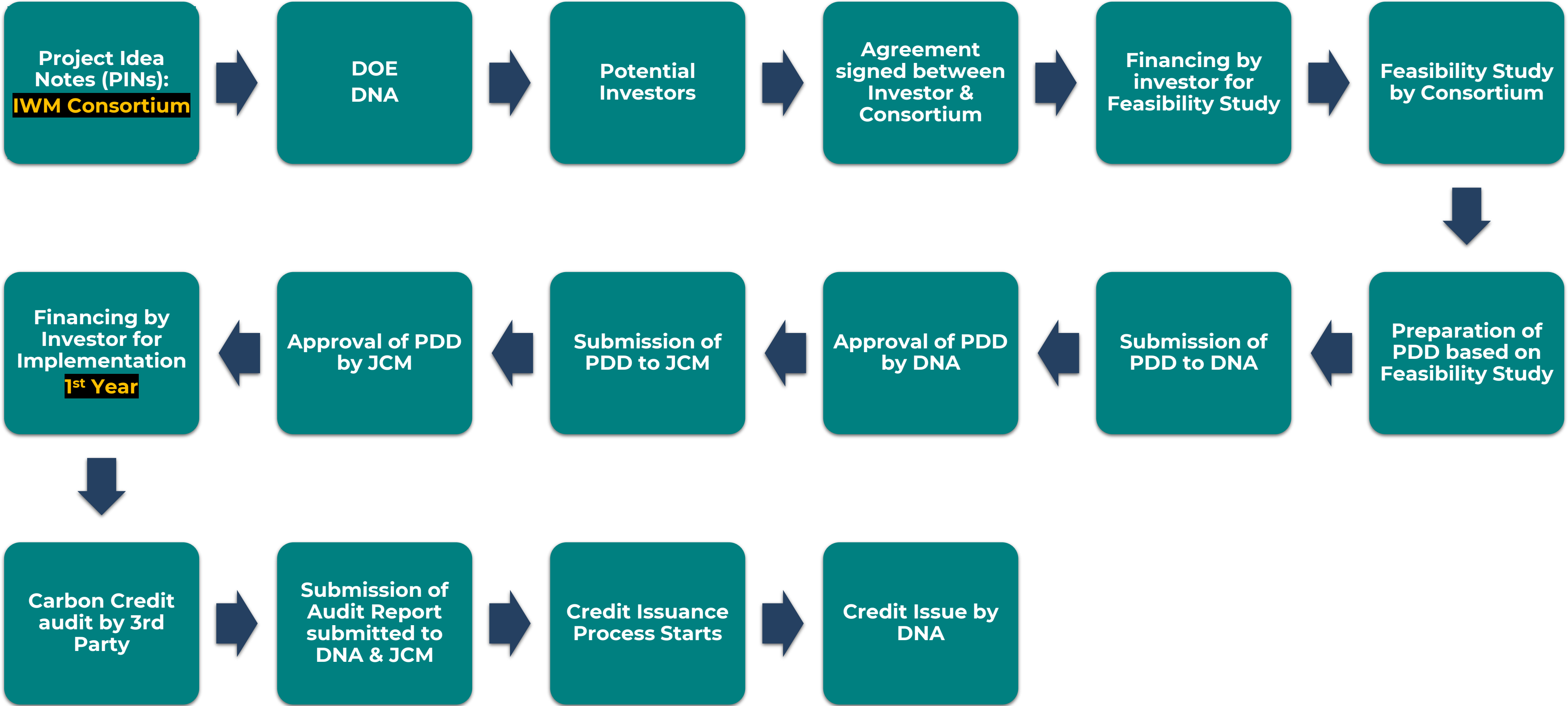


Objectives



Executing Government Agency: Bangladesh Forest Department, MoEFCC
Lead Project Partner: Institute of Water Modelling (IWM)
Joint Project Partners: Futures Inc. Japan, Global Centre of Excellence in Sustainability (GCS), Recycle Jar Ecosystem Ltd.

Article 6.2: The Process



Mangrove Restoration & Nature based Solution

Community Development

Training Programs

- Disaster preparedness & emergency response
- Alternative livelihoods (boat-making, honey trading)
- Sustainable land & water management

Community Involvement

- Nursery establishment & planting
- Forest patrolling & maintenance
- Women's active participation

Environmental Impact

GHG Removals

16.60M tCO₂
Over 20 years

Ecosystem Services

- Soil stabilization & flood prevention
- Microclimate improvement
- Biodiversity restoration
- Wildlife habitat creation

Disaster Risk Reduction

Storm Protection

50%+

Surge protection for 1M+ people

Natural Barriers

- Protection against storms & tidal waves
- Coastal erosion prevention
- Flash flood mitigation

Community Benefits Timeline

Short Term

Wages from planting & maintaining trees

Medium Term

Income from fruit trees & forest products

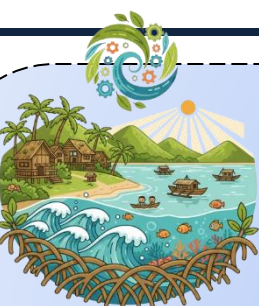
Long Term

Profit sharing & carbon credit revenues



Sustainable Practices

- Community-based marine resource management
- Sustainable fishing to prevent overfishing
- Coral reef & mangrove protection programs
- Market linkage for fair commodity prices



The Future with Mangroves

- More resilient coastlines to climate change
- Prosperous coastal communities through ecotourism & sustainable economics
- Healthy ecosystems for future generations

Thank You

