ENVIRONMENT

Restoring Coastal Ecosystems: The Power of Mangrove Restoration

Change Initiatives

Walking with the Es: Environment, Education & Empowerment

Story

"Plant Mangroves: Rebuild Sundarbans"

The Sundarbans is a biodiversity hotspot and became a UNESCO Heritage site in 1987. But in the last two decades, due to major cyclonic events, soil erosion and human encroachment of land, large tracts of land has been left without forest cover.

Change Initiatives' role to combat the problem: *Change Initiatives adopted a "Plant Mangroves: Rebuild Sundarbans" to recover these exposed tracts of land and protect the area from cyclones and soil erosion.*

Result: *Approximately **1,528 women** of Self-Help Groups (SHGs) have successfully planted **350,000** saplings across the Gram Panchayat areas of Chhotomollakhali, **Kumirmari, Gosaba , and Nazat**. These efforts, coupled with proper maintenance, have achieved an impressive **survival rate of over 85%**, transforming vacant lands into thriving forest ecosystems.*

Change Initiatives

About Change Initiatives

Change Initiatives

Change Initiatives is a Kolkata-based NGO working on Digital Inclusion since 2002.

Our Vision

We empower the **vulnerable** and **under-privileged** by promoting **learning**, protecting the **environment** and pushing for **empowerment**

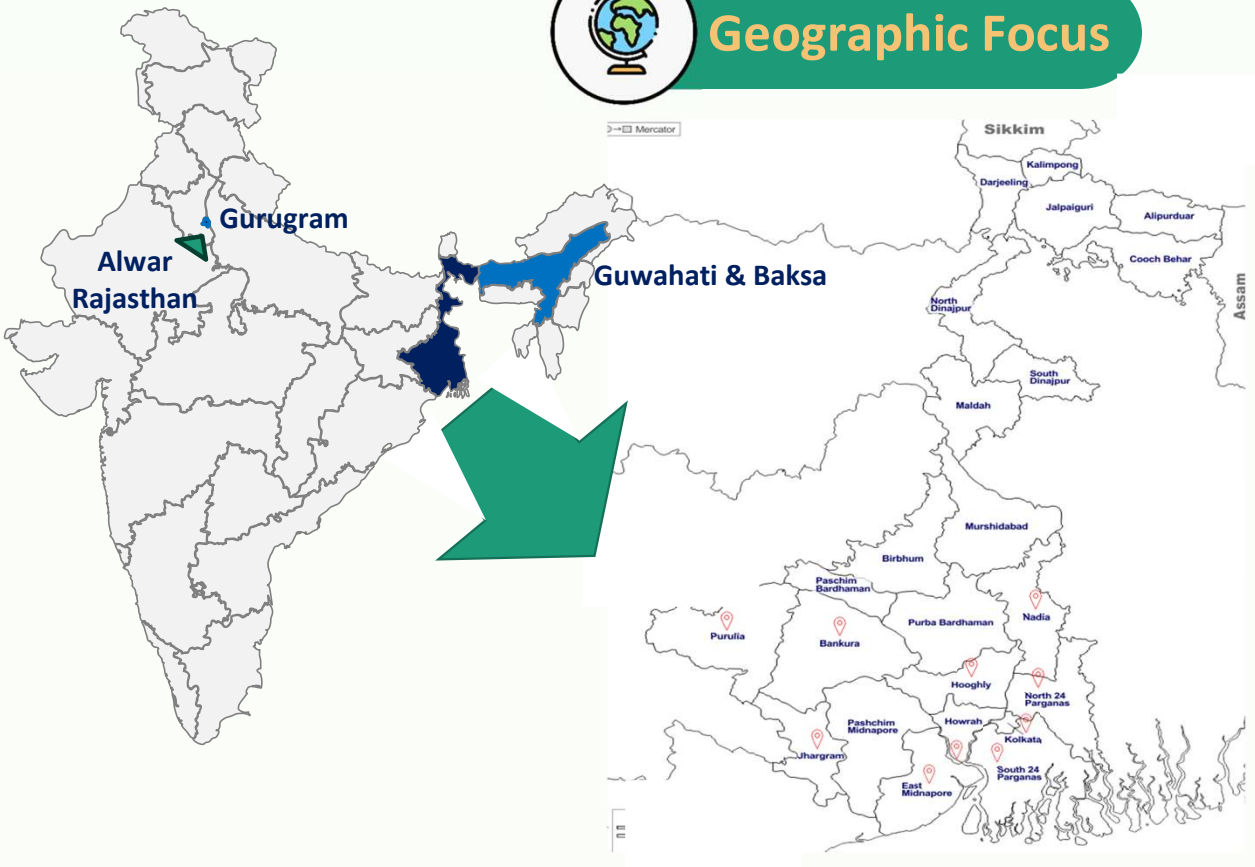
Key Themes

Environment

Education

Empowerment

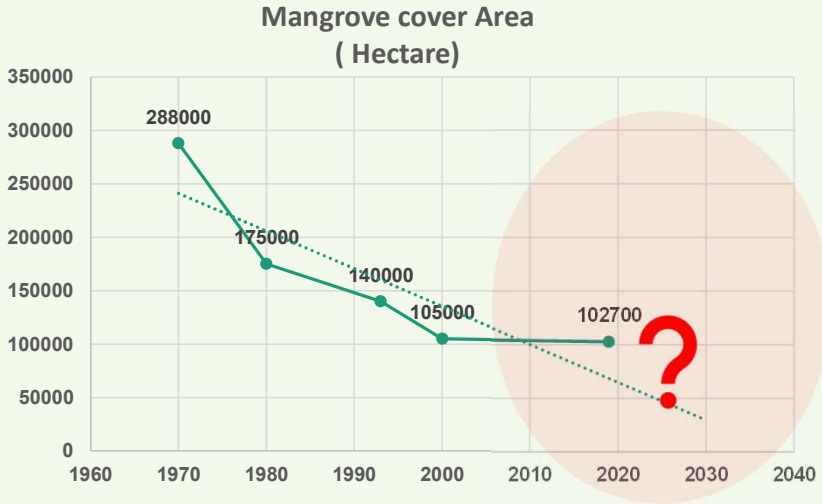
Geographic Focus



Problem Statement

Change Initiatives

Once renowned for their abundant mangroves and wildlife, the Sundarbans are now at risk from rising sea levels, climate change, and human activity. The mangroves have been severely damaged by frequent cyclones, putting vulnerable coastal regions at risk from wind and storm surges.



Key Issues

Mangrove Ecosystem Degradation

The Sundarbans' lush mangrove forests are deteriorating due to rapid climate change, rising sea levels, and increased salinity, jeopardizing coastal protection and biodiversity.- make it one liner

Vulnerable Island Communities

Cyclonic events and habitat degradation have left island peripheries exposed to wind and storm surges, endangering marginalized communities dependent on the ecosystem, leading to displacement and livelihood loss.

Lack of Conservation Motivation

A significant issue in the Sundarbans is the deficiency of motivation and awareness among local communities and stakeholders to actively participate in conservation efforts, hindering the protection and restoration of the fragile ecosystem.

The Mangrove Challenge

Change Initiatives

Community Impact: The destruction of mangroves significantly impacts the local communities that rely on them, as saline water intrusion disrupts agricultural activities in nearby areas.

Climate Change Vulnerability: The increasing frequency of extreme weather events, such as Cyclones, exacerbates the vulnerability of mangroves to natural disasters.

Anthropogenic Threats: Urbanization, industrialization, and the discharge of industrial effluents, untreated sewage, and agricultural pesticide runoff significantly degrade these fragile ecosystems.

Human-Induced Damage: Activities like saltpan development and aquaculture cause extensive damage to mangroves, while unplanned expansion leads to forest fragmentation.

Rising Sea Levels: Mangroves, particularly along the Bay of Bengal coastlines, face heightened risks from sea-level rise, threatening their survival and ecosystem functions.

Our mitigation strategy

Change Initiatives

Community Awareness

Educating communities on the ecological and economic benefits of mangroves fosters their commitment to protecting these vital ecosystems for safeguarding lives and livelihoods.

Community Mobilization

Engaging locals in activities like seed collection, planting, and maintenance, along with roles such as boatmen and porters, creates employment and shared responsibility for conservation.

Environmental Protection and Reforestation

Mangroves protect coastlines from climate-induced disasters and sequester up to four times more carbon than rainforests. Adapted to saline habitats, they filter salt and breathe through their roots, supporting unique ecosystems.

Maintenance and Nurturing

Regular monitoring, care, and replanting ensure the health of mangroves, securing long-term ecological and economic benefits.

Methodology

Change Initiatives

Operating Model

Pre-Plantation Phase

Site Selection

Stakeholder Engagement

Seed Collection and Propagation

Nursery Management

Plantation Phase

Site Preparation

Plantation

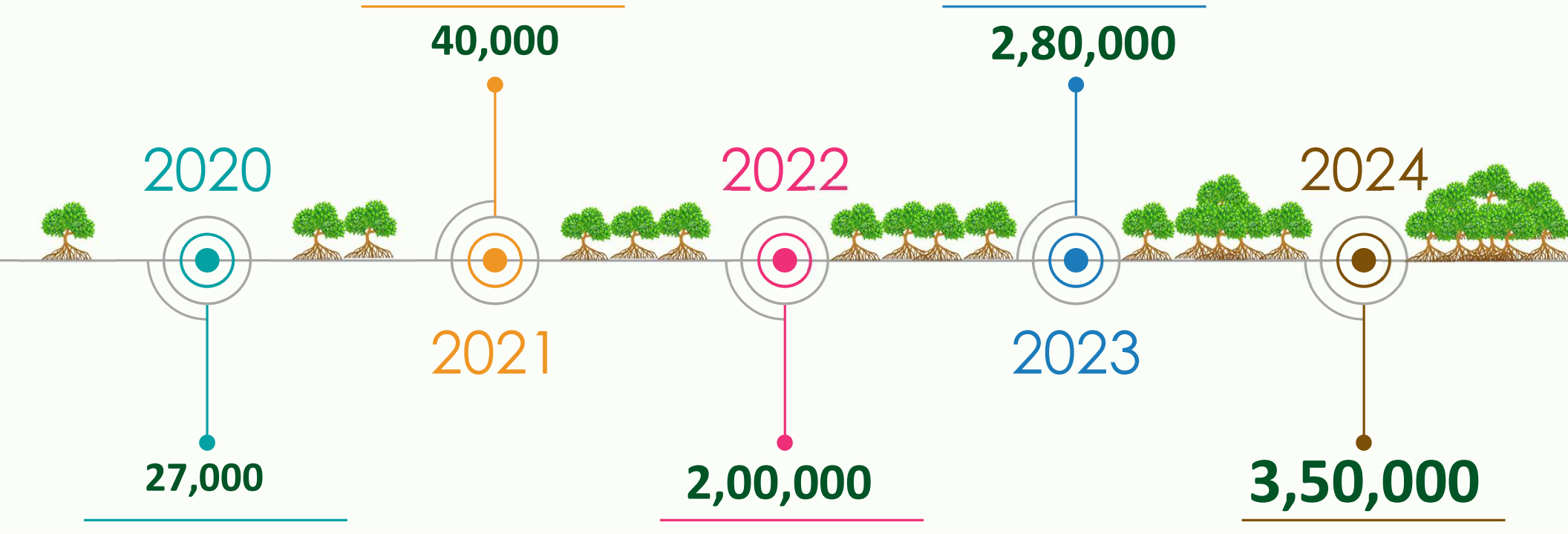
Maintenance

Monitoring and Evaluation

Timeline and Location

Change Initiatives

A total of ***3,50,000*** mangroves have been planted along the riversides in ***Hentalbari, Kalidaspur, and Chhotomollakhali*** mouza of Chhotomollakhali Gram Panchayat, ***Dulki*** mouza of Gosaba Gram Panchayat in Gosaba Block, South 24 Parganas, and ***Nazat*** mouza of Nazat-I Gram Panchayat in Sandeshkhali-I Block, North 24 Parganas, Sundarbans, West Bengal, India.



Our Objectives

Change Initiatives

Combatting Climate Change

Planting mangroves is an effective way to combat climate change, as they sequester carbon, protect against extreme weather events, and preserve biodiversity. These natural ecosystems play a crucial role in building climate resilience and supporting sustainable development.

Developing Community Forestry

Developing community forestry in Sundarbans areas

Creation of Mangrove Ecosystem

Community forestry initiatives are being developed in the Sundarbans with the active involvement of local women from Self-Help Groups (SHGs). This collaborative approach empowers women, enhances sustainable forest management, conserves biodiversity, and builds climate resilience, while also creating livelihood opportunities for the local communities.

Maintain Coastal Ecology

Maintaining coastal ecology at Sundarbans coasts by providing habitat to diverse species

A few glimpses ....

Beneficiaries

Change Initiatives

Primary

1528 SHG women who actively participate in mangrove plantations and maintenance, and they were supported financially for their work.

Secondary

Nearly 50,000 on the island's population, will benefits from this initiative as the mangroves serve as a barrier safeguarding the island from erosion, floods and other natural disasters.

Indirect

Mangrove forests effectively absorb carbon dioxide helping to reduce greenhouse gas emissions and combat climate change on a scale. It presents an approach that benefits communities, ecosystems and our planet as a whole.

Key performance indicators

Change Initiatives

Number of trees planted

Total area protected by mangrove forests

Number of women and SHGs involved in the project

Sl. No.	Impact Indicator	Impact Measured	Means of Verification
1.	Number of saplings planted	A total of mangrove saplings planted	Records of saplings procurement, field monitoring report, photographs
2.	Community engagement, involvement and empowerment of women self-help groups	Active participation of women SHGs in mangrove plantation, monitoring and nurturing	Records of SHG involvement, master-role preparation, and case study of SHG-associated women
3.	Survival rate of planted saplings	90% survival rate (after 1 year)	Quadrate method, photographs, field reports

SDGs and our work

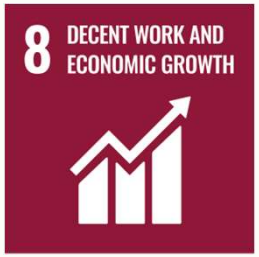
Change Initiatives

The project combats climate change by planting mangroves, which effectively capture and store carbon. These mangroves also protect coastal areas from storm surges and rising sea levels, boosting the resilience of vulnerable communities.

The project restores and protects mangrove forests, vital habitats for marine biodiversity, supporting fish, crustaceans, and other species. This helps sustain fisheries and boosts marine biodiversity in the Sundarbans.

Mangrove planting restores coastal ecosystems, protects shorelines from erosion, and supports wildlife, including endangered species, contributing to land conservation and biodiversity preservation.

By engaging women from Self-Help Groups in the plantation and management of mangrove forests, the project fosters gender equality and empowers local women.



The mangrove plantation project creates jobs and income for local communities, empowering women in forest care. It promotes economic growth through sustainable practices like eco-tourism and resource harvesting.

Increased green cover results in more rainfall and the recharge of groundwater.

Partners & Corporates

Change Initiatives

Schneider Electric Foundation India

IAHV INDIA

Schneider Electric

WWF

Capgemini

IRRI

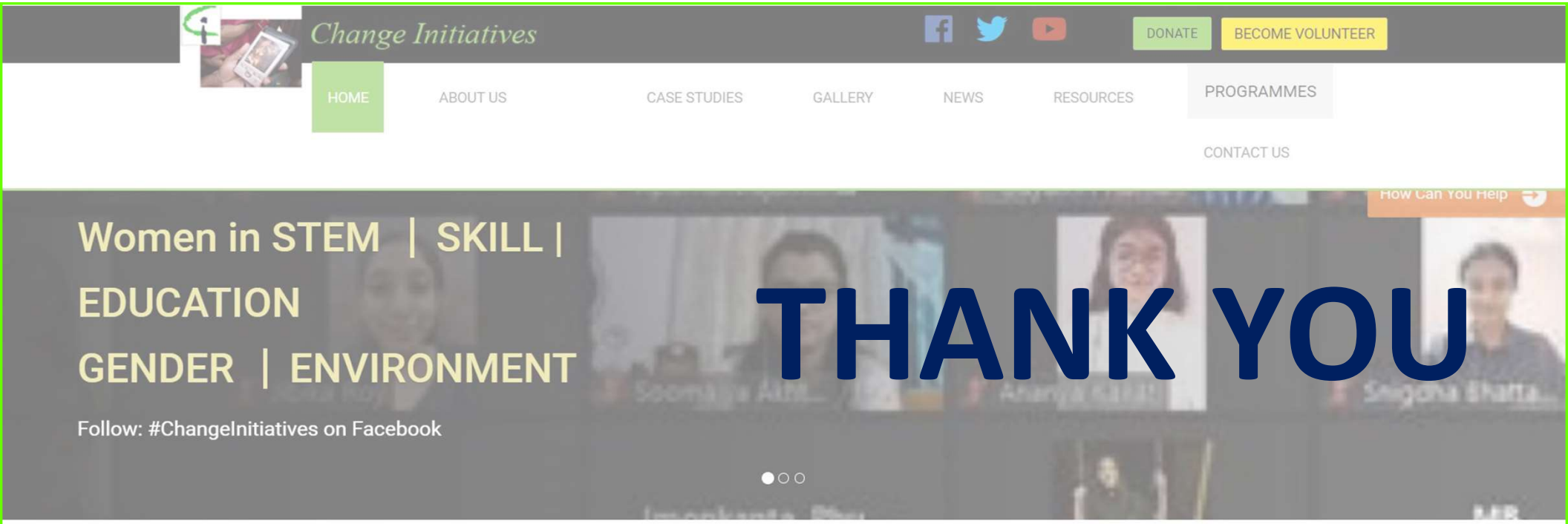
CGIAR

Conclusion

Change Initiatives

The Sundarbans mangrove plantation project in West Bengal is a long-term initiative aimed at ensuring environmental sustainability and resilience against climate change. By planting 350,000 mangroves along riversides in Hentalbari, Kalidaspur, and Chhotomollakhali mouza of Chhotomollakhali Gram Panchayat; Dulki mouza of Gosaba Gram Panchayat in Gosaba Block, South 24 Parganas; and Nazat mouza of Nazat-I Gram Panchayat in Sandeshkhali-I Block, North 24 Parganas, this effort has created a critical natural defense against rising tides, cyclones, and storm surges. The mangroves serve as a dynamic barrier, protecting vulnerable coastal communities by preventing soil erosion, improving water quality, and stabilizing the coastline. They also act as vital carbon sinks, sequestering significant amounts of CO_2 to combat global warming. Furthermore, the project engages local communities, particularly women from Self-Help Groups, providing them with sustainable livelihoods and empowering them to be stewards of this fragile ecosystem. With 350,000 mangroves already planted, this is just the beginning. The project envisions the continuous planting of more mangroves in the years to come, expanding its reach and impact. As the mangrove forests grow and flourish, they will further enhance biodiversity, offer safe habitats for endangered species, and build stronger ecological and community resilience. This initiative not only safeguards the Sundarbans' natural heritage but also stands as a replicable model for climate adaptation and socio-economic upliftment, proving that bold and consistent efforts today will pave the way for a sustainable and thriving tomorrow.



Find us on

Change Initiatives

Registered Address

Change Initiative
GC-79, Sector-III, Salt Lake City
Kolkata 700106
West Bengal, India

Email
changeinitiatives@gmail.com