

Enhancing Climate Resilience of India's Coastal Communities

Annual Report ECRICC, Odisha

2024-25













Table of Contents

List	of Abbr	reviations
Exe	cutive S	ummaryV
1.	Introdu	uction1
2.	Project	t Coverage in Odisha2
3.	Institu	tional Framework of ECRICC Project in Odisha3
4.	Project	t Activities5
4	.1 P	Progress on Restoration of Coastal Eco-system
	4.1.1	Mangrove Plantation and Restoration
Pro	gress and	d Achievements7
	4.1.2	Progress on Restoration of degraded Watersheds7
	4.1.3	Progress on Restoration & Protection of Seagrass11
4	.2 P	Progress on Climate-Adaptive Livelihoods12
	4.2.1	System of Rice Intensification (SRI)12
	4.2.2	Crab Culture
	4.2.3	Ornamental Fisheries: A Climate-Resilient Livelihood for Coastal Communities19
4	.3 S	trengthened governance and institutional frameworks
5.	Conve	rgence through ECRICC Project22
6.	Specia	l Initiatives at the District Level
7.	Streng	thening Climate Resilience through Knowledge and Skills24
8.	News	and Media Coverage27
9.	Conclu	usion: Advancing Climate Resilience in Coastal India



List of Abbreviations

CBRTI:	Central Bee Research Training Institute
CC:	Climate Champion
CIFA:	Central Institute of Freshwater Aquaculture
CRZ:	Coastal Regulation Zone
CSIR:	Council of Scientific Industrial Research
CSMCRI:	Central Salt & Marine Chemicals Research Institute
CZMP:	Coastal Zone Mangement Plan
DPMU:	District Project Management Unit
FPIC:	Free, Prior, and Informed Consent
GCF:	Geen Climate Fund
GIS:	Geographic Information System
ICAR:	Indian Council of Agriculture Research
IIT:	Indian Institute of Technology
IMAGE:	Institute on Management of Agricultural Extension
IMPEDA:	Marine Products Export Development Authority
NCSCM:	National Centre for Sustainable Coastal Management
NPMU:	National Project Management Unit
NRRI:	National Rice Research Institute
SIRD:	State Institute of Rural Development
SPMU:	State Project Management Unit
UNDP:	United Nation Developent Programme



Executive Summary

Enhancing Climate Resilience of India's Coastal Communities" (ECRICC) project, initiated in 2019, aims to safeguard vulnerable coastal populations by enhancing ecosystem resilience and diversifying livelihoods. Implemented across 3 coastal states (Adhra Pradesh, Maharashtra and Odisha) of India, the project employs an ecosystem-based adaptation (EbA) approach and is supported by the Green Climate Fund (GCF), state government, and the United Nations Development Programme (UNDP). The project integrates vulnerability assessments, ecosystem restoration, and community-driven livelihood initiatives while strengthening governance mechanisms. In Odisha the project is implemented in 7 landscapes of 4 coastal districts (Balasore, Puri, Kendrapada & Ganjam). Under this project, promotion of climate adaptive livelihoods in the fisheries and agriculture sector is an important component for enhancing climate resilience capacity of the coastal communities through income enhancement and diversification of livelihoods. Total GCF funding for Odisha is Rs. 117.44 Crore and Co-Finance is Rs. 144 Crore. (total Rs. 261.44 Crore)

Key Achievements

Enhanced Resilience of Coastal and Marine Ecosystems

- **Mangrove Restoration**: A total of 2,225 hectares restored, with 200 hectares completed in 2024. An additional 250 hectares is planned for 2025, using community-driven approaches like creek deepening and fishbone channel construction.
- Watershed Restoration: Addressed soil and water conservation through innovative structures like check dams and earthen bunds, restoring 300 hectares in Ganjam district.
- Seagrass and Saltmarsh Initiatives: Collaborations with IIT Bhubaneswar aim to restore 50 hectares of seagrass and 200 hectares of salt marshes, emphasizing Odisha's coastal biodiversity.

Climate-Adaptive Livelihoods for Vulnerable Communities

- System of Rice Intensification (SRI): Covered 18,481 households, focusing on reduced greenhouse gas emissions and increased productivity.
- Aquaculture Innovations: Piloted crab farming with 18 units established and facilitated market linkages through state-level platforms with technical support from Marine Products Export Development Authority (MPEDA).
- **Ornamental Fisheries**: Partnering with research institutes like Central Institute of Freshwater Aquaculture (CIFA), these initiatives will provide diversified income opportunities
- **Women Empowerment**: SHGs leveraged revolving funds for economic activities, such as dry fish production, enhancing household incomes and social inclusion.

Strengthened Governance Framework

- **Institutional Structures**: Strengthened multi-level coordination with district, block, and panchayat-level committees, ensuring the convergence of government schemes and active community participation. 304 Climate Champions groomed under this project.
- **Knowledge Dissemination**: Workshops, training programs, and stakeholder engagement sessions enhanced awareness of climate resilience among over 51637 school students and community **members**.

Cross-Cutting Initiatives

• Resources mobilized through convergence with various Government Scheme ₹116.29 lakhs covering 12717 beneficiaries.



1. Introduction

Coastal areas are among the most dynamic and resource-rich regions on Earth, serving as vital hubs for economic, ecological, and social activities. However, these areas face increasing threats from environmental and social challenges, such as cyclones, coastal flooding, storm surges, and rising sea levels. These natural hazards, coupled with human-induced pressures, impact livelihoods, infrastructure, and ecosystems. Despite these challenges, coastal zones remain highly productive due to agriculture, robust communication networks, fisheries, and global fishery exports.

The Odisha coast, spanning over 480 kilometres along India's eastern coastline, exemplifies the complexity of coastal dynamics. It hosts diverse ecosystems, including mangroves, seagrass meadows, estuaries, mudflats, and sand dunes, which support both biodiversity and human livelihoods. To mitigate climate-related challenges, various climate-resilient initiatives have been implemented by the Odisha Forest, Environment, and Climate Change Department.

One such initiative is the Enhancing Climate Resilience of India's Coastal Communities (ECRICC) project, launched in collaboration with the Ministry of Environment, Forest and Climate Change (MoEFCC), the Green Climate Fund (GCF), and the United Nations Development Programme (UNDP). The project, spanning 2019–2025 (extended to June 2027), aims to enhance climate adaptation and resilience while promoting sustainable development in coastal regions. It targets four coastal districts of Odisha, addressing vulnerabilities such as sea-level rise, cyclones, and coastal flooding through ecosystem-based adaptation measures like restoring mangroves, seagrasses, and other coastal habitats. The project also integrates community-based interventions to strengthen livelihoods, improve disaster preparedness, and reduce social vulnerabilities. Aligned with the Sustainable Development Goals (SDGs), the ECRICC project fosters inclusive development, poverty reduction, and gender equality in coastal communities. By leveraging international partnerships, Odisha demonstrates its commitment to climate resilience while ensuring sustainable and equitable growth.

At the national level, the ECRICC project operates in 3 coastal states, with field implementation in 24 landscapes across 12 districts in Odisha, Maharashtra, and Andhra Pradesh. These states were selected based on their high vulnerability to extreme weather events and slow-onset climate impacts. The Odisha implementation is overseen by the Department of Forest, Environment, and Climate Change.

The project 'Enhancing Climate Resilience of India's Coastal Communities' is a six-year project, that aims to develop the resilience of the lives and livelihoods of the most vulnerable populations particularly women, in the coastal areas of India to climate change and extreme events, using an ecosystem-centred and community -based approach. The three broad outputs of the project are:



2. Project Coverage in Odisha

In Odisha, the project covers seven key landscapes: Talasari (Balasore), Bhitarkanika (Kendrapara), Mahanadi Mouth (Kendrapara), Devi Mouth (Puri), Chilika Puri (Puri), Chilika Ganjam (Ganjam), and Bahuda (Ganjam). These landscapes encompass critical habitats that provide essential ecosystem services like storm protection, carbon sequestration, and fisheries support.



Figure 1:ECRICC project Landscapes Map of Odisha

Administrative details of project landscape									
District	Project Landscapes	Forest Division & Project DPMUs	Blocks Covered	Total No. of GPs	Total No. of Villages				
Kendrapada	Bhitarkanika	DFO (WL), Rajnagar	Rajnagar	18	238				
			Rajkanika	11	52				
	Mahanadi		Mahakalpada	17	112				
	Mouth								
Puri	Devi Mouth	DFO (WL),Puri	Astaranga	15	101				
			Kakatpur	07	17				
	Chilika (Puri)		Brahmagiri	15	82				
			Krishnaprasad	21	107				

Ganjam	Bahuda	DFO (T), Berhampur	Rangeilunda	19	55
			Chikiti	06	26
	Chilika		Ganjam	05	41
	(Ganjam)		Khalikote	12	68
Balasore	Talasari	DFO(WL),Balasore	Bhograi	11	39
			Baliapal	04	11
			Total	161	949

3. Institutional Framework of ECRICC Project in Odisha

The ECRICC (Enhancing Climate Resilience of India's Coastal Communities) project operates within a robust institutional framework, ensuring coordinated efforts across multiple levels of governance. At the state level, the State Level Steering Committee on Climate Change provides overarching policy direction, while the State Project Management Unit (SPMU) and National Project Management Unit (NPMU) oversee implementation. District-level governance is strengthened through the District Project Management Unit (DPMU) and District Level Coordination Committees (DLCC), which facilitate integration with local line departments in fisheries, agriculture, and forestry. Additionally, 7 Nos. of Facilitating NGO Teams (FNGOs) have been engaged in 7 project landscapes of 4 project DPMUs for mobilization of communities, awareness generation of climate change, climate resilience and implementation support of climate adaptive livelihoods activities at grassroot level through Self-Help Groups (SHGs), Eco-Development Committees, and village-level organizations, supported by 304 Village Facilitators designated as Climate Champions. The institutional framework is further bolstered by partnerships with UNDP, NGOs, and government agencies, ensuring a multi-stakeholder approach to climate resilience and sustainable development in Odisha's coastal communities.



Figure 2:Institutional Framework details for ECRICC Project

The ECRICC project establishes a sustainable model for long-term resilience and inclusive growth by integrating these interventions,. Through national, state, and local collaborations, as well as partnerships with international organizations, the project safeguards livelihoods, biodiversity, and infrastructure along Odisha's vulnerable coastline. The seven targeted landscapes, rich in biodiversity and ecosystem services, serve as focal points for implementing adaptation measures such as mangrove restoration, livelihood diversification, and community capacity building, ensuring resilience against climate change impacts while aligning with global sustainability goals.

4. Project Activities

The ECRICC project activities are categorized into three main groups based on the project goals: ecosystem restoration activities, livelihood activities, and capacity building and training initiatives aimed at strengthening the resilience of coastal communities. These activities are given below, according to their respective outputs.

4.1 Progress on Restoration of Coastal Eco-system

The "Enhancing Climate Resilience of India's Coastal Communities" (ECRICC) project aims to bolster the resilience of coastal and marine ecosystems and their services. Under Output 1, the project focuses on several key initiatives:

- 1. **Conducting Vulnerability Assessments**: Evaluating coastal areas to inform the planning of ecosystem-based and community-based adaptation interventions.
- 2. **Community-Based Conservation and Restoration**: Engaging local communities in the conservation and restoration of coastal ecosystems, including mangroves, seagrass beds, salt marshes, and watersheds, to enhance ecosystem resilience.
- 3. **Collaborative Efforts for Ecosystem Restoration**: Partnering with institutions like IIT-Bhubaneswar to develop plans for the protection, restoration, and management of seagrass and salt marshes, which are vital for carbon sequestration and coastal protection.

These initiatives are designed to strengthen the adaptive capacities of coastal ecosystems, ensuring they continue to provide essential services and protection against climate-induced hazards.

4.1.1 Mangrove Plantation and Restoration

The ECRICC project has undertaken a comprehensive mangrove restoration initiative in Odisha, aimed at mitigating climate change impacts and strengthening coastal resilience. The initiative is executed through Divisional Forest Officers (DFOs) -cum- Nodal Officers, who are responsible for overseeing the project's implementation in designated landscapes. The approach is integrated and multi-pronged, incorporating various ecological and hydrological techniques to ensure the long-term sustainability of the mangrove ecosystem. These activities play a crucial role in enhancing ecological stability, reducing vulnerability to extreme weather events such as cyclones and storm surges, and promoting biodiversity conservation.

The initiative includes mangrove plantation, fishbone channel creation, creek deepening, and the establishment of mangrove nurseries, each playing a critical role in restoring and fortifying the coastal environment. Mangrove plantations help in stabilizing coastal areas, preventing soil erosion, and sequestering carbon, thereby mitigating the effects of global warming. Fishbone channel creation, a method of restoring natural water flow through the mangrove forests, ensures proper tidal exchange, allowing nutrient replenishment and improving the habitat for aquatic and terrestrial species. Creek deepening is another significant intervention that enhances the hydrological functioning of tidal water, facilitating better drainage, increased oxygenation, and higher biodiversity richness. Additionally, the establishment of mangrove meta-nurseries ensures a sustainable and continuous supply of saplings for restoration efforts, enhancing the success rate of plantations. These nurseries cultivate climate-resilient mangrove species, ensuring that the regenerated forests are better adapted to withstand rising sea levels, salinity intrusion, and extreme weather conditions.

Project Coverage and Implementation

The mangrove restoration activities are spread across four coastal districts of Odisha—Kendrapada, Puri, Ganjam, and Balasore. The project focuses on critical landscapes such as Bhitarkanika, Mahanadi Mouth, Devi Mouth, Chilika, Bahuda, and Talasari- —covering a total of 161 Gram Panchayats (GPs) and 949 villages. These areas are particularly susceptible to climate-induced threats, and the interventions aim to rejuvenate their mangrove ecosystems.



Figure 3: Fishbone channel for Mangrove Plantation

Progress and Achievements

By 2024-25, a total of 2,225 hectares of mangrove restoration has been completed, against a target of 2,475 hectares. The restoration efforts include plantation, fishbone structures, creek deepening, and meadow development. District-wise progress in mangrove plantation is as follows:

(,	the District	rear w	ise progre	Achievements (in Ha)	
Mangroves Plantation		2022-23	2023-	2024-25	
			24		
	Kendrapada	90	149	203	442
	Balasore	50	100	125	275
	Puri	25	25	0	50
	Ganjam	0	0	06	06
	Total	165	274	334	773
 Mangroves Restoration Activities 65 hectares of fishbone structures, 1,052 hectares of creek deepening, 280 hectares of GI chain link fencing, 30 hectares of meadow development, and 25 hectares of foraging ground development. 	Kendrapada	1362	90	0	1452
Total Achievements (in Ha)		1527	364	334	2225

Maintenance of Mangrove Ecosystem

The project also emphasizes the maintenance of restored mangroves. By 2024-25, maintenance has been completed for **424 hectares**. The **2025-26 action plan** includes maintenance for an additional **1,540 hectares**, ensuring long-term sustainability.

4.1.2 Progress on Restoration of degraded Watersheds

Watershed restoration is a crucial component of the ECRICC Project, falling under the broader ecosystem restoration framework outlined in Output-1. The project has initiated several watershed restoration activities, including the construction of Loose Boulder Check Dams (LBCDs), Water Harvesting Structures, Check Dams, Sunken Pits, Earthen Bunds, and Urban Plantations. These interventions aim to enhance water conservation, improve soil stability, and support local biodiversity.

Among the various landscapes covered under the ECRICC Project, the Chilika Ganjam landscape has been identified as the most suitable for comprehensive watershed restoration activities. This preference is due to the region's unique combination of coastal plains and hilly terrain, which provides the necessary slope and geological conditions for the effective construction of LBCDs and Check Dams. Other landscapes within the project were deemed unsuitable due to feasibility constraints, making Chilika Ganjam the focal area for these restoration efforts. As of 2024, a total of 30 hectares of watershed restoration work has been successfully completed in the Chilika Ganjam landscape. Looking ahead, an additional 807 hectares are planned for restoration starting in 2025. The selection and finalization of suitable sites are currently underway to ensure the efficient and sustainable implementation of these activities. This long-term commitment to watershed restoration under the ECRICC Project will contribute significantly to ecological balance, water security, and community resilience in the region.

			Low		Restoration Area in
SN	Watershed	Top Elevation	Elevation	No	Ha.
1	Narayani_W1	138m	65m	4	38
2	Narayani_W2	320m	107m	22	111
3	Narayani_W3	202m	75m	9	74
4	Karakhol-1	79m	41m	5	2.07
5	Karakhol-2	133m	34m	4	7.08
6	Tarakhol-1	96m	45m	4	7.32
7	Tarakhol-2	97m	41m	4	8.76
8	Tarakhol-3	124m	51m	4	5.63
9	Urban Plantation	165m	79m		5
10	Kaithabanabila			WHS	4.38
11	Nagardihapatna			WHS	2.44
	Gabudi			Check	
12	Mardakote-I			Dam	9.59
	Gabudi			Check	
13	Mardakote-II			Dam	9.2
14	Prayagi-I			WHS	6.47
15	Prayagi-II			WHS	9.06
		Total			300

List of Watershed restoration activities in the ECRICC Project

Water Harvesting Structure and Check Dam

The restoration of degraded watersheds through the rehabilitation of existing Water Harvesting Structures (WHS) and the construction of new Check Dams is a key intervention under the ECRICC Project, aimed at ecosystem restoration. These structures play a vital role in enhancing water availability, improving groundwater recharge, and reducing soil erosion in degraded landscapes. By capturing and storing rainwater, WHS ensures a steady water supply for agriculture, livestock, and domestic use, particularly in regions facing water scarcity. Check Dams, constructed across streams and small rivers, help in slowing down water flow, reducing sediment transport, and preventing flash floods. The restoration of existing WHS and Check Dams not only revives their functionality but also extends their longevity, ensuring sustainable water management. Additionally, these structures promote biodiversity by creating microhabitats that support aquatic life and vegetation growth. The ECRICC Project emphasizes the use of locally available materials and community participation in the restoration process to enhance sustainability and ownership. Through these interventions, degraded watersheds are gradually restored, leading to improved soil moisture retention and increased agricultural productivity. Furthermore, the project contributes to climate resilience by mitigating the impact of erratic rainfall and prolonged dry spells. The integration of WHS and Check Dams within the broader watershed restoration framework enhances landscape stability and promotes ecological balance. The project also focuses on site-specific planning to ensure optimal placement and effectiveness of these water conservation structures. Monitoring and maintenance of restored WHS

and Check Dams are integral to their long-term success, requiring periodic assessments and community-led management. In addition to water conservation, these structures support reforestation efforts by sustaining plant growth and reducing land degradation. By addressing both water scarcity and soil erosion, these interventions contribute to sustainable livelihoods and ecosystem health. The involvement of local communities in planning, implementation, and maintenance ensures that the benefits of these restoration efforts are long-lasting. Overall, the ECRICC Project's approach to restoring Water Harvesting Structures and Check Dams exemplifies a holistic strategy for watershed rehabilitation and sustainable resource management.

With the objective of improving degraded water harvesting structures (WHS), four WHS have been restored under the ECRICC Project during the year 2023-24 in the middle reach through the Project Director, Watersheds, Ganjam. Each watershed operates under its own Watershed Development Committee. Prior to the execution of the restoration activities, a Free Prior Informed Consent (FPIC) meeting was conducted, where PRI members from the Gram Panchayat and community members of the concerned village were consulted, and the project proposals were discussed in detail. Additionally, a Local Monitoring Committee was constituted to assess the project sites. This committee visited all intervention sites and provided approval for the project implementation.

Currently, water is being successfully stored in all the WHS, benefiting local communities for domestic use, livestock needs, and irrigation purposes. During community interactions, it was revealed that wild boars and sambar deer have occasionally been observed drinking water from the WHS. Furthermore, at one WHS located in Nagardihapatna near Narayani Hill, adjacent to Karakhol PRF under Khallikote Forest Range, seasonal birds have been spotted, marking a significant ecological improvement as these birds were not previously seen in the area. Additionally, two check dams have been constructed in Dabudi Mardakote, and two WHS have been developed at Prayagi



Figure 4:Feasibility study before execution of the project (2023) village, contributing to enhanced water security and biodiversity conservation in the region.



Figure 5: Execution of work

4.1.3 Progress on Restoration & Protection of Seagrass

Restoration and Protection of Seagrass & Salt Marshes are new interventions under the project in the state as well as at the national level with limited experience and expertise. Seagrass has more carbon sequestration potential than mangrove eco-system as per available research studies. In Odisha, seagrass is available in Chilika Lagoon and there are presence of salt marshes in other project landscapes of Balasore, Kendrapada and Puri districts. The project has a target of seagrass restoration and protection (85 Ha) & saltmarshes restoration and protection (500 Ha).

The actual mapping, coverage area assessment, and restoration activities for these habitats are being undertaken in collaboration with IIT Bhubaneswar, targeting the restoration of 85 hectares of seagrass and 500 hectares of saltmarshes. A Memorandum of Understanding (MoU) has been signed with IIT Bhubaneswar for restoration work spanning from 2025 to 2027. The Chilika Lagoon is home to five seagrass species—*Halophila beccarii, Halophila ovata, Halophila ovalis, Halodule uninervis*, and *Halodule pinifolia*—out of the 56 known seagrass species found globally.



4.2 Progress on Climate-Adaptive Livelihoods

To ensure long-term sustainability, ECRICC prioritizes **climate-resilient livelihoods**, equipping local communities with the skills, knowledge, and resources necessary to adapt to changing environmental conditions. This includes promoting sustainable fishing practices, introducing climate-smart agriculture, and fostering nature-based enterprises that reduce dependency on climate-vulnerable income sources. The project also places a strong emphasis on **community engagement**, ensuring that local stakeholders, including Self-Help Groups (SHGs), fisherfolk, and farmers, actively participate in decision-making and implementation processes.

Through strategic partnerships with government agencies, research institutions, NGOs, and international organizations, the project leverages technical expertise to implement innovative approaches to climate adaptation. These includes use of traditional knowledge for sustainable resource management. Furthermore, capacity building is a cornerstone of the initiative, with extensive training programs aimed at strengthening institutional and community-level resilience. By fostering a multi-stakeholder, science-based, and community-driven approach, ECRICC ensures that Odisha's coastal communities are better equipped to withstand and adapt to the growing threats posed by climate change.

4.2.1 System of Rice Intensification (SRI)

The System of Rice Intensification (SRI) is gaining recognition globally as an important climate-resilient practice for paddy cultivation. The SRI is an agroecological method that can help mitigate greenhouse gas emissions and improve soil health. SRI emphasizes efficient water management, making it particularly relevant for regions facing water scarcity and climate change impacts. The ECRICC project has identified SRI as a key intervention to enhance the resilience of rice farming communities in coastal areas.

Objectives of promoting SRI under ECRICC Odisha

Increased Income of Small & Marginal Farmers through enhanced yield.

1.Reduction of methane gas emissions (CH4) to Green House Gas (GHG) addressing Climate Change.



Climate Benefits from SRI

Mitigation Benefits (Source:SRI-2030.org)

- Rice production contributes 12% of global anthropogenic methane emissions-SRI is an attractive option
- SRI can reduce GHG emissions by 50% or more per Kg of rice produced.
- AWD & SRI can reduce methane emissions by 35 to 48 %

Adaptation Benefits

- Increase in yield and food security
- Reduced water use by 30 to 40%
- Reduced Pest & diseases
- Sustain for 2 weeks in dry spells

Principles of SRI

•Seedlings get transplanted at a much younger age at 8-12 days old (2 leaf stage).

•Only single seedling, instead of a handful of seedlings get planted in each hole.

•Increased use of organic fertilizer to enhance soil fertility.

•Intermittent water application to increase wet and dry soil conditions, instead of continuous flood irrigation.

•Plants are spaced wider apart; plants were set out carefully and gently in a square pattern, 25x25cm or wider if the soil is very good.

•Mandwa weeder/Cono weeder/ rotary hoe/power weeder to control weeds and promote soil.

Best practices promoted by the ECRICC Project

- Baseline data & case record of each SRI Farmers.
- Promotion of Organic manure preparation and application to enhance soil health, reduce use of synthetic fertilizer there by reduction of nitrous oxide (N2O) emission to GHG.
- Promotion of Farmers Field School (FFS) and SRI Demonstration Plots.
- Convergence with line department schemes for supply of Agri-Inputs & Implements.
- Yield Assessment & authentication by Agriculture & Farmers' Empowerment Department, GoO.
- Geo-tagging of all SRI Beneficiaries.
- Development of Case Studies on use of water under SRI vs. Line Transplanting through Pilot Field Research.

Districts	Number of Farmers	Area in (Ha)
Puri	7664	775.7
Balasore	3287	332.69
Ganjam	2403	486.43
Kendrapada	5127	518.92
Total	18481	2113.74

Progress on implementation of SRI under ECRICC, Odisha



Figure 6: Graph Showing Yield Enhancement (in %) of SRI farmers through crop cutting experiment

Estimation of Methane Gas Emission Reduction through SRI Interventions

The ECRICC project in Odisha collaborated with National Rice Research Institute (NRRI), Cuttack for study to explore the potential of the System of Rice Intensification (SRI) to reduce methane (CH₄) emissions from rice cultivation This initiative aims to assess how SRI interventions contribute to lowering greenhouse gas (GHG) emissions, enhancing climate resilience, and improving farmer incomes through increased yields. Methane and nitrous oxide, major contributors to GHG emissions from rice fields, are monitored to establish evidence-based policies for emission reduction and sustainable farming practices. The study employs a rigorous methodology, including weekly GHG sample collection using the Closed Chamber Technique from SRI and non-SRI fields during Rabi (2024-25) and Kharif (2025) seasons across project blocks in Odisha. Samples are analyzed using gas chromatography, while soil samples are studied for biochemical properties and nutrient content to understand variations influencing emissions.

SRI adoption presents several benefits, including higher water-use efficiency, improved soil aeration, and better root development, leading to enhanced crop resilience. However, challenges such as the need for labour-intensive transplanting, precision water management, and capacity-building for farmers remain key considerations for scaling up the practice. To further expand SRI implementation, 10 blocks have been identified for the 2024-25 Rabi season, with an increase to 11 blocks planned for the 2025-26 Kharif season. Strengthening farmer training programs, ensuring access to required inputs, and integrating mechanization in SRI techniques will be critical for sustaining and expanding these gains in the future.



Figure 7: Weeding in SRI field (Weeder are provided under ECRICC project)

4.2.2 Crab Culture

Aquaculture has become essential in fulfilling the growing global demand for fish. With expanding population, increase in income and change in consumer preferences towards healthier and more nutritious food, there is significant demand on the industry to boost the production of quality fish. Aquaculture is the culture of fish, crustaceans, mollusks, and aquatic vegetation across diverse aquatic environments, representing one of the most rapidly expanding sectors in global food production. Brackish water aquaculture contributes to the economic development of our country by generating essential foreign exchange, creating a range of direct and indirect employment opportunities, providing livelihoods, and enhancing nutritional security. The brackish water fin fishes & shell fishes have high consumer preference and market demand. Among the brackish water shell fishes, mangrove crab(Scylla serrata) also known as mud crab is one of the important cultured hardy species.

Mud Crab is highly popular due to its high demand in the domestic as well as in external market. It has the potential of export also. The commercial scale mud crab farming is developing fast along the coastal states like Andhra Pradesh, Tamil Nadu, Kerala, Odisha, West Bengal and Karnataka. Project districts under ECRICC (Ganjam, Puri, Balasore and Kendrapada) have scope in up scaling mud crab culture. Mud crab culture is effectively initiated in the year 2024 under both Devi mouth and Chilika landscapes which are part of the ECRICC Project intervention. Though the number of farmers under mud crab culture is still not very high, but the scope and interest among farmers is very high. With availability of local knowledge and market, the condition is favourable for scale up. Non-availability of certified inputs like crablets is a challenge as there is no Government or Private hatchery in Odisha and supply chain for crablets from trusted agencies is weak.

As part of its fisheries sector interventions, the ECRICC Project introduced mud crab culture (Scylla serrata) in 2024 to enhance sustainable aquaculture practices and improve livelihoods. This initiative targeted 18 farmers across four districts—Puri, Kendrapada, Ganjam, and Balasore—utilizing a combined water spread area of approximately 6 hectares. The project received comprehensive technical support from the Marine Products Export Development Authority (MPEDA) under the



Figure 8:Demonstration of Crab Culture site in the Bahuda landscape, Ganjam district

Ministry of Commerce and Industry, Government of India. To support this intervention, the Rajiv Gandhi Centre for Aquaculture (RGCA), a unit under MPEDA based in Tamil Nadu, supplied 38,000 matchbox-sized crablets to the farmers. This marked a significant step in ensuring the availability of quality seed stock for the culture operations. Throughout the crab culture cycle, District Project Management Unit (DPMU) teams and fisheries experts from the ECRICC Project worked closely with the farmers, providing technical guidance and hands-on support to optimize production and address challenges.

A key outcome of the initiative was the enrolment of all participating farmers under MPEDA, thereby linking them to export markets. This strategic move ensures that the farmers' produce meets international quality standards, paving the way for higher income opportunities through global market access. Through these efforts, the ECRICC Project has significantly contributed to the development of mud crab aquaculture, promoting sustainable practices and economic empowerment for small-scale fish farmers in the region.

Process followed for Crab Culture

Culture and fattening of Crab are two different operations though it appears to be the same. Culture is a grow-out operation that involves raising of young seed to marketable sizes of 500g or above over an extended culture period whereas fattening refers to the holding of growers or water crabs (freshly moulted soft crabs) for short duration to acquire maximum biological attributes to realize better economic returns. The SoPs followed for Crab culture are narrated below at a glimpse.

Pre Implementation Stage



SoPs followed for Crab Culture



Crab Farmers' and Exporters' Meet organised on 12th December 2024 as a pivotal initiative under the ECRICC project, fostering knowledge exchange, capacity building, and stronger market linkages for sustainable and climate-resilient aquaculture. With mud crab culture demonstrating significant potential to enhance livelihoods and bolster the fisheries sector, the project is well-positioned to scale up its interventions.

The identification of 93 potential farmers and ponds for crab culture in 2025 underscores the commitment to expand sustainable aquaculture practices. The planned establishment of a crab hatchery in Odisha, under the guidance of the Fisheries & Animal Resource Development Department (F&ARD), Government of Odisha, and technical support from MPEDA, will address critical challenges such as the availability of quality seed stock while mitigating pressure on natural ecosystems. These efforts are set to transform Odisha's fisheries landscape, empowering vulnerable coastal communities, enhancing income opportunities, and strengthening the state's position in the international crab market

4.2.3 Ornamental Fisheries: A Climate-Resilient Livelihood for Coastal Communities

As part of its efforts to enhance climate resilience and sustainable livelihoods, the ECRICC project in Odisha has made significant strides in promoting ornamental fisheries as an alternative incomegenerating activity for coastal communities. Recognizing the economic potential and climate adaptability of ornamental fish farming, the project has engaged 60 farmers in this initiative, demonstrating its viability as a sustainable and climate-smart livelihood option.

To facilitate capacity building and technical expertise, the ECRICC project collaborated with the Central Institute of Freshwater Aquaculture (CIFA), a premier institution specializing in aquaculture research, training, and technology transfer. As part of this partnership, a three-day residential training

program titled "Breeding & Culture of Ornamental Fisheries" was conducted from 18–20 December 2024 at the CIFA campus in Bhubaneswar. This intensive program provided hands-on training and technical knowledge to 36 participating farmers, equipping them with essential skills for successful ornamental fish breeding, culture, and management.

- The training curriculum covered key areas such as:
- Species selection and breeding techniques for high-value ornamental fish varieties
- Water quality management and disease prevention to ensure healthy fish stocks
- Sustainable feed formulation and nutrition strategies to improve growth rates
- Tank and pond management practices for optimal fish farming conditions
- Market linkages and entrepreneurship development to enhance economic returns

By integrating scientific knowledge with practical application, the training program aimed to empower local farmers with the skills needed to establish and manage small-scale ornamental fish farms. This initiative not only provides a profitable alternative to traditional fisheries, which are increasingly vulnerable to climate change impacts such as rising sea levels, cyclones, and declining fish stocks, but also encourages eco-friendly aquaculture practices.

The successful implementation of the ornamental fisheries initiative under the ECRICC project sets a strong precedent for climate-resilient livelihood diversification in coastal Odisha. With continued support, training, and access to market linkages, this initiative has the potential to scale up, improve economic security, and reduce climate vulnerability among fisher communities. Through such targeted interventions, the project continues to demonstrate the power of innovative, nature-based solutions in enhancing coastal resilience.



Figure 9: Training on Ornamental fishery by CIFA, Bhubaneswar to Farmer and Project staff.

4.3 Strengthened governance and institutional frameworks

District-level coordination committees (DLCCs) and block- and gram-panchayat-level arrangements in Odisha have played a crucial role in driving project activities. DLCCs meet regularly to review progress, plan interventions as per project requirements, and facilitate the convergence of existing government schemes with the ECRICC project. Climate Champions have been instrumental in raising community awareness about climate change and ensuring grassroots-level implementation. Currently, 304 active Climate Champions are engaged across project landscapes, organizing and supporting activities, fostering community participation, and enhancing project outreach. Regular workshops, meetings, and capacity-building initiatives have further strengthened project review processes and deepened conceptual understanding of key thematic areas.

By leveraging the established institutional and governance framework, the project has benefited from active supervision, monitoring, and direction by DLCCs. The six NGOs hired for the seven landscapes have ensured last-mile connectivity through continuous engagement with community organizations, women-led self-help groups (SHGs), and eco-development committees in ecosystem restoration and livelihood activities. Several meetings and workshops have been conducted, involving PRI members, volunteers, SHG leaders, Climate Champions, FNGO staff, and VSS leaders. Additionally, various training programs have been organized by District Project Management Units (DPMUs) and FNGOs to raise awareness about climate change among school children, VSS members, and women's groups.

The project has effectively leveraged the institutional and governance structures already established, benefiting from the active supervision, monitoring, and guidance provided by District-Level Coordination Committees. Collaboration with six NGOs across seven landscapes ensured last-mile connectivity through sustained engagement with community-level organizations, including women-led self-help groups (SHGs), eco-development committees, and other local bodies involved in ecosystem restoration and livelihood activities.

Numerous meetings and workshops were conducted, involving stakeholders such as Panchayati Raj Institution (PRI) members, volunteers, SHG leaders, Climate Champions, Facilitating NGO (FNGO) staff, and Village Social Service (VSS) leaders. These engagements have strengthened governance and community participation in project activities.

Training and Capacity-Building Programs

- 1. Awareness Training for School Children and Community Groups: A series of training programs were organized by District Project Management Units (DPMUs) and FNGOs to raise awareness about climate change. These programs targeted school children, VSS members, and women's groups, fostering a deeper understanding of climate resilience and sustainable practices.
- 2. Seagrass and Saltmarsh Training: A training-cum-exposure visit focused on seagrass and saltmarsh ecosystems was held from April 21 to 28, 2024, at NCSCM, with participation from state forest officials, District Coordination Officers (DCOs), and teams from DPMU and SPMU in Odisha.
- 3. **Beekeeping and Processing Technology:** A training session on beekeeping and processing technology was conducted at CBRTI, Pune, from July 16 to 20, 2024. This program involved participants from SPMU, DPMU, SMS Agriculture, and FNGO team leaders, focusing on enhancing value addition through technological adoption.

4. **Seaweed Cultivation and Processing:** A specialized training on seaweed cultivation and processing technology was held from July 23 to 25, 2024, at CSMCRI, Bhavnagar. This initiative enabled SPMU, DPMU, and FNGO staff to adopt best practices and evaluate the feasibility of seaweed culture in Odisha.

Key Outcomes

These initiatives significantly contributed to building the capacities of local stakeholders, particularly women's groups, and enhancing the community's ability to adopt climate-resilient livelihoods. The collaborative efforts between project teams, NGOs, and institutional partners have laid a strong foundation for sustainable development and ecosystem restoration.

5. Convergence through ECRICC Project

ECRICC project has successfully mobilized ₹116.29 lakhs through convergence with various government schemes, ensuring wider coverage and support for vulnerable coastal communities. This strategic alignment with existing governmental programs has enabled 12,717 beneficiaries to access financial, technical, and infrastructural resources that enhance their ability to adapt to climate change.

The convergence approach integrates multiple state and central government schemes related to livelihood development, ecosystem restoration, fisheries, agriculture, and climate adaptation. These include flagship programs such as MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme), National Adaptation Fund for Climate Change (NAFCC), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Rashtriya Krishi Vikas Yojana (RKVY), and schemes under the Forest and Fisheries Departments. By leveraging these funds, ECRICC has facilitated the construction of climate-resilient infrastructure, promoted sustainable agriculture and fisheries practices, and supported mangrove and seagrass restoration projects.

A significant portion of these resources has been directed towards capacity-building programs, livelihood diversification, and community-led conservation efforts. Beneficiaries include farmers, fishers, self-help group (SHG) members, eco-development committees, and marginalized communities, who have been empowered with the necessary tools and knowledge to build adaptive capacity against climate change-induced challenges.

By aligning with government programs, the ECRICC project ensures financial sustainability, policy coherence, and large-scale impact, maximizing the benefits of public sector investments while advancing climate-resilient development for coastal communities. This multi-stakeholder approach not only strengthens institutional coordination but also ensures long-term sustainability of climate adaptation efforts in Odisha's coastal districts.

DPMU	No of Beneficiary	Economic Value
Ganjam	934	12,76560
Balasore	3076	8,06725
Puri	7480	65,74086
Kendrapada	1227	29,72525
Total	12717	1,16,29,896

Table- 5: Details of District wise Resources Mobilized through Convergence in 2024

6. Special Initiatives at the District Level

- 1. **Beach Cleanup at Devi Mouth Landscape**: On International Coastal Cleanup Day 2024, a significant effort was organized at Pira Jahania Beach in Astarang. Led by the ECRICC Project and SWAD, the event involved 113 volunteers, collecting 385 kilograms of marine litter. Activities emphasized the importance of clean beaches for marine and human health, with participation from civic authorities, NGOs, and local communities. The campaign highlighted collective responsibility for coastal conservation.
- 2. Eco-Friendly Panayatra at Chilika Landscape: During the seven-day Pana Yatra festival in 2024, the campaign "Eco-Friendly Pana Yatra" addressed litter management near Chilika Lake. Over 107 women "Eco Changemakers" guided waste disposal, collecting 9.3 tons of garbage for composting. Eco stalls promoted sustainable practices, showcasing products made from recycled materials. This initiative empowered women as leaders in climate action, aligning with the broader objectives of reducing plastic pollution and fostering community-led environmental solutions.
- 3. Eco-Friendly Raksha Bandhan at Chilika Landscape: The 2024 Raksha Bandhan celebration promoted sustainable practices by creating plantable, eco-friendly rakshi made from biodegradable materials. Women groups and the HBT-ECRICC team organized the event, involving the Forest Department to highlight environmental conservation. Rakshi were tied to forest personnel and trees, symbolizing mutual protection. The initiative raised awareness about reducing waste from traditional rakshi and inspired eco-friendly practices.
- 4. International Coastal Cleanup Day at Chilika Landscape: The 2024 event at Baliharichandi Beach and Sipakuda mouth focused on removing waste and raising awareness about marine pollution under the theme "Sea the Change." Participants, including community members and government officials, collected 50-60 kilograms of garbage. Awareness meetings emphasized the importance of clean coasts for biodiversity and livelihoods, culminating in an oath for sustained environmental efforts.
- 5. School Students Impact Assessment at Chilika Landscape: This assessment evaluated the impact of climate awareness training among high school students, with 563 boys and 709 girls sensitized. Results showed commendable learning retention and dissemination, with students engaging in activities like tree planting, energy conservation, and waste management. Over 83% used dustbins correctly, reflecting the training's effectiveness in fostering eco-conscious behaviours.
- 6. School Students Impact Assessment at Devi Mouth Landscape: The training at Devi Mouth targeted Class IX and X students, involving 614 participants. Findings revealed good learning retention (41%) and dissemination efforts, with over 88% of students participating in tree planting and promoting organic practices. These outcomes underscore the program's success in cultivating climate-aware youth.
- 7. Seed Ball Initiative at Devi Mouth Landscape: A cost-effective afforestation effort utilized seed balls to promote greenery. Community groups, including SHGs and Climate Champions, prepared and dispersed over 1,400 seed balls. With a germination rate of approximately 60%, the initiative demonstrated significant ecological benefits, encouraging communities to adopt this sustainable reforestation method.

7. Strengthening Climate Resilience through Knowledge and Skills

A critical component of the ECRICC (Enhancing Climate Resilience of India's Coastal Communities) project is its comprehensive training and capacity-building initiatives, designed to empower communities, climate champions, government officials, and grassroots organizations with the technical knowledge and skills required for effective climate adaptation. These training programs focus on climate-adaptive livelihoods, ecosystem restoration, biodiversity conservation, and sustainable resource management, ensuring that stakeholders at all levels are equipped to implement and sustain project interventions effectively.

The project has successfully organized technical training programs, hands-on workshops, and exposure visits, covering diverse topics such as System of Rice Intensification (SRI), crab culture, ornamental fisheries, fish value addition, honey production, seaweed farming, and seagrass restoration. These sessions have been facilitated by KVK scientists, officers from line departments, and experts from renowned institutions like CIFA, CBRTI, CSMCRI, IMAGE, and NCSCM, ensuring scientific rigor and practical relevance.

Beyond technical skills, ECRICC has also focused on awareness-building and sensitization programs, reaching school students, village self-help groups (VSS), PRI members, and local communities through workshops, meetings, and special observances of biodiversity and climate action days. By fostering a culture of knowledge-sharing and participatory learning, these efforts are helping build a robust network of trained climate champions who can drive long-term, community-led climate resilience efforts in Odisha's coastal districts.

With a strong foundation in capacity-building and knowledge dissemination, the ECRICC project is bridging the gap between policy and grassroots action, ensuring that climate-adaptive practices become embedded in local governance, livelihoods, and community initiatives. Through these structured training programs, the project is empowering local communities to take ownership of climate resilience strategies, thereby securing a sustainable future for India's coastal ecosystems and the people who depend on them.

School Awareness Program on Climate Change and Community Action Plans

A school awareness program was conducted at Baliapal and Bhogirai high school of Balasore district, engaging 1,710 students and teachers. The sessions educated participants on climate change topics like global warming, greenhouse gases, and the Paris Agreement. Students were encouraged to adopt eco-friendly practices such as saving water, planting trees, and reducing single-use plastics. Teachers and students collaboratively developed action plans to mitigate climate impacts at the micro level. The initiative aims to transform into a student-led movement for sustainable community development.

Technical Training to the Communities/Beneficiaries, Climate Champions on Climate Adaptive Livelihoods

During implementation of climate adaptive livelihoods, project beneficiaries and climate champions have been imparted technical trainings through project teams, FNGO teams, KVK scientists, officers of line departments on climate adaptive livelihoods for effective and timely implementation of project interventions.

Name of the CB Event.	Key Participants	Total	Male	Female	SC	ST	Others		
Training to Climate	Communities,	3852	1594	2258	720	156	2976		
Champions, Communities of	Climate Champions								

Detail Capacity Building event list along with participant under ECRICC Project

Name of the CB Event.	Key Participants	Total	Male	Female	SC	ST	Others
SRI, Crab Culture, Fish Valu	FNGO teams &						
addition, Ornamental Fisheri	Farmers						
(98 trainings)							

Technical Training to SMS & FNGO teams in Core Livelihood Activities as Master Trainers SPMU, Odisha organised/nominated SMS, department officials SPMU team, FNGO team to technical training programme as mentioned below.

Name of CB	Date of CB	Venue of	Key Participan	Total No.	Male	Femal
Event	events	Training		Participants		
Technical	July 16 to	CBRTI,	SPMU,	15	11	4
Training on	20,2024	Pune	DPMU,			
Honey			FNGO Teams			
Production at						
CBRTI, Pune						
Technical	July 23 to	CSMCRI,	SPMU,	15	12	3
Training on Sea-	25,2024	Bhavnagar	DPMU,			
weed Farming,			FNGO teams.			
CSMCRI,						
Bhavnagar						
Technical	Date	IMAGE,	SMS, FNGO	40	31	09
Training on		Bhubanesw	Teams, Crab			
Mud crab		ar	farmers			
farming						
Training &	21-28	NCSCM,	FE&CC	25	22	3
Field Exposure	April,2024	Chennai	Department			
Visit to NCSCM			Officials,			
Chennai on			DCOs, SPM,			
seagrass, salt			SELA, GIS			
marshes and			Expert			
seaweed						
Technical	12.12.2024	SIRD,	SPMU,	69	15	54
training on		Bhubanesw	DPMU, Crab			
Farmer and		ar	Farmer,			
Exporter meet			IMPEDA			
			Officials,			
			F&ARD			
			Officials			
Technical	18.12.2024 to	CIFA,	SPMU, SMS	34	11	23
training on Fish	20.12.2024	Bhubanesw	Fishery,			
breeding and		ar	Farmer			
Ornamental						
Fishery						

List of Technical training organised under ECRICC Project

Name of CB	Date of CB	Venue of	Key Participan	Total No.	Male	Femal
Event	events	Training		Participants		
Technical	9.04.2024 to	IMAGE,	SPMU team,	44	29	15
training on Crab	10.04.2024	Bhubanesw	IMPEDA			
Culture in		ar	team, SMS			
ECRICC project			fishery,			
			Livelihood			
			officers, Crab			
			farmers			

Awareness programs on climate change issues are conducted for communities, school students, VSS members, PRI members, GPLF members, and Climate Champions under the project. These initiatives also include the observance of important days related to biodiversity conservation and ecosystem restoration. Additionally, PRI members and Mission Shakti Community Cadres are engaged in discussions on key climate change issues and climate-adaptive livelihoods through Gram Panchayat and village-level meetings. The beneficiary details are provided below in Table-8.

Table-8 Total Participant details on different Awareness Programme and other Climate Change program

No. of Event	Total Participants	Male	Female	SC	ST	ОТН
1769	51637	14458	37179	8526	1427	41684



8. News and Media Coverage

The ECRICC (Enhancing Climate Resilience of India's Coastal Communities) project has received widespread news and media coverage, reflecting its significant impact on climate adaptation, ecosystem restoration, and sustainable livelihoods in coastal districts. These media publications have played a pivotal role in highlighting the project's key activities, innovative solutions, and community engagement efforts, ensuring greater visibility and awareness at local, national, and global levels.

Among the notable interventions covered by media outlets are seagrass and saltmarsh restoration, which are critical for carbon sequestration, biodiversity conservation, and coastal ecosystem health. Similarly, the adoption of seaweed culture and farming has been spotlighted as a sustainable livelihood initiative, offering coastal communities an alternative income source while contributing to marine ecosystem balance. The project's groundbreaking research on greenhouse gas (GHG) estimation from paddy fields has also garnered attention, as it provides crucial data for developing climate-smart agriculture practices that reduce emissions and enhance sustainability.

Beyond ecosystem restoration and climate adaptation, the media has extensively reported on collaborative livelihood programs that integrate local knowledge with scientific advancements. These include technical training sessions for self-help groups (SHGs), fisherfolk, and farmers, enabling them to adopt climate-resilient farming and fishing techniques. By featuring success stories of individuals and communities benefiting from these interventions, the media has helped inspire more local participation and mobilize support from policymakers, researchers, and funding agencies.

Media coverage has also been instrumental in educating the general public, including school children, about climate resilience and sustainable development. Various awareness campaigns, workshops, and outreach programs have been highlighted, fostering a sense of environmental responsibility and encouraging future generations to actively engage in climate action. By bridging the gap between technical experts, communities, and decision-makers, media reports have strengthened the project's visibility, helping to mainstream climate resilience into broader policy and governance frameworks.

As a result of these extensive media efforts, the ECRICC project has set an example of how climate adaptation and community-driven initiatives can be successfully implemented and scaled up. The widespread documentation of its achievements not only supports ongoing implementation but also paves the way for replication in other vulnerable coastal regions, ensuring long-term sustainability



Govt signs key pacts to address climate change



Odisha government joins hands with

IIT-Bhubaneswar, WFP, and CEEW to focus on areas include coastal restoration, resilient farming, and a net-zero roadmap

PSIN & AGENCIES

Bhubaneswar, Jan 22: The Odisha government Wednes-day signed agreements with IIT-Bhubaneswar, the World Food Programme (WFP), and the Council on Energy, Envi-ronment and Water (CEEW) to address climate change, sup-port sustainable livelihoods, and protect the state's biodi-

and protect the state's blodi-versity and coastal ecosystems, The Forest, Environment, and Climate Change (FE&CC) de-partment signed two MoUs and a Lettor of Understanding (LoU)

with the institutions in preof department Minister Ganesh Ram Singhkhuntia here. Ram Singhkhumtin here. The first MoU signed with IIT under the Enhancing Climate Resilience of India's Coastal Conumnities (ECRICC) proj-ect focuses on restoring critical rotatial coosystems, including seagrass beds and salt marshes, which are vital for biodiversity, carbon sequestration, and coast-al protection, an official said. Designated as the technical support agency (TSA) for the restoration, protection and

restoration, protection and sustainable management of sea-grass and saltmarsh ecosystems along Odisha coast, IIT-Bhubaneswar will provide technical

baneswar will provide technical support for implementing sus-tainable strategies to manage these ecosystems, he said. Minister Singlikhuurtin said the collaboration would pave the way for enhanced research opportunities and community engagement initiatives to pro-mole sustainable coastal man-



this five-year initiative aims to strengthen the resilience of vulstrengthen mersons and the second sec nerable farming communities

carbonisation strategies across key sectors such as industry, power, transport, and agriculpower, transport, and agricul-ture. This partnership marks a significant step in aligning Odisha's economic growth with India's 2070 net-zero targets, Minister Singhkhuntia said.

Collectively, these initiatives strengthen the state's Vision Odisha 2006, advancing its goals of sustainable development, biodiversity conservation, and cli-mate resilience, he added.

MAPPING THE GHGs EMISSION IN SRI & TRADITIONAL PADDY CULTIVATION

Puri, (TNB): A Scientific on-field demonstration of mapping emission of Green House Gases has been initiated today at Kathuaredi Village of Rebenanuagaon GP under ECRICC Project. The Department of Forest, Environment & Climate Change has partnered with ICAR-NRRI, Cuttack for carrying out this piloting. The experiment includes fixing 3 sample Gas Chambers each in Sri & Non-SRI fields of each Block under ECRICC Project. The Women Climate Champions are trained by Dr Anjani Kumar, Sr Scientist from NRRI on fixing of boxes, collection of Gas samples and packing. Everv week this collection will be done by the Climate Champions under the supervision of the ECRICC dedicated project staff

and sent to NRRI Campus. This will continue till Harvesting. This will establish the correlation of SRI with

reduction of GHG emission. Being the Paddy growing area in Puri, such experiments will enable us to sensitise the farmers to shift towards improved practices of paddy cultivation, stated by the Sarpanch.

Around 28 women SHG members from SRI farming group, GPLF representatives have actively listening to the process and rationale of this experiment deliberated by DPMU and NRRI Team. The Forest Range Officer from Brahmagiri also facilitated the program with contemporary need of

such scientific experiments. CDAO, Puri has expressed deep satisfaction on such initiatives of the ECRICC Project as the State of Odisha is quite focused towards Climate Resilient Agriculture Practices. As detailed out the Scientist from NRRI, such initiatives along with capacity building of ground cadres will be the focus of this collaboration with ECRICC. NRRI will provide all state-of-the-art scientific support to ECRICC to establish a concrete result of SRI initiative through the Project. 29 Dec 2024

ଉନ୍ନତମାନର ଧାନଚାଷ ପ୍ରଶିକ୍ଷଣ କର୍ମଶାଳା

କ୍ଷପ୍ତସାଦ,ତା୩ ।୧(ପିଏନଏସ) ଜିଲ୍ଲା କଷ୍ପପ୍ରସାଦ ପରୀ ବୁକ ଅନ୍ତର୍ଗତ ପଣସପଦା ପଞ୍ଚାୟତରେ ଉନ୍ନତମାନର ଧାନ ଚାଷ ପଣାଳୀ ଦ୍ୱାରା ବିଶ୍ୱ ଉତ୍ତାପନକ୍ର ନିୟନ୍ତ୍ରଣ କରିବା ଉପରେ ଏକ କ୍ଷେତ୍ର ପଦର୍ଶନୀ କର୍ମଶାଳା ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । ଏକ୍ରିକ ପ୍ରକଳ୍ପ ଓ ହମରା ବଚପନ ଟ୍ରଷ୍ଟ ପକ୍ଷରୁ ପଣସପଦା ପଞ୍ଚାୟତ ଅଧନସ୍କ ଚାଷ ଜମିରେ ଏହି କାର୍ଯ୍ୟକମ ଆୟୋଜନ କରାଯାଇଥିଲା । ଏହି କାର୍ଯ୍ୟକ୍ରମରେ ବ୍ଳକ କୃଷି ଅଧିକାରିଶୀ ରାଚ୍ଚଲକ୍ଷା ସାହୁ, ଗ୍ରାମ୍ୟ କୃଷି କର୍ମଚାରୀ ଜିତେନ୍ଦ୍ର ନାୟକ, ଏକ୍ରିକ ପ୍ରକନ୍ଧ ଜିଲ୍ଲା ସଂଯୋଜକ ଦେବାଶିଷ ପତି, ଏକ୍କିକ



ପ୍ରକଳ୍ପ କୃଷି ବିଶେଷଜ୍ଞ ହିମାଦୀ ନାଥ ସାହ, ଦଳପତି କିରଣବାଳା ଶତପଥା. ଜୀବିକା ସଂଯୋଜକ ପକାଶ ଚନ୍ଦ୍ର ନାୟକ ଏବଂ କୃଷ୍ଣର ସଂଯୋଜକ ସମେତ ହମରା ବଚପନ ଟ୍ରଷ୍ଟର ଜଳବାୟ ସାଥୀ ୟମାନେ ଉପସ୍ଥିତ ଥଲେ । ପରିବେଶକ୍ର ସହାଇଲା

ଭଳି ଧାନଚାଷ ପଦ୍ଧତିକୁ ପ୍ରଚାର ପସାର କରିବା ସହିତ ସାସ୍ତାହିକ ତଥ୍ୟ ପ୍ରଦାନ କରିବା ପାଇଁ ପରାମର୍ଶ ଦିଆଯାଇଥିଲା । ସ୍ୱଙ୍ଘ ସହାୟିକା ମହିଳା ଗୋଷ୍ପୀମାନଙ୍କ ସହିତ ଅଗୁଣୀ ଚାଷୀମାନେ ଏହି କାର୍ଯ୍ୟକମରେ ସାମିଲ ହୋଇଥିଲେ ।

and resilience against climate change impacts.

9. Conclusion: Advancing Climate Resilience in Coastal India

The ECRICC (Enhancing Climate Resilience of India's Coastal Communities) project has made remarkable progress in strengthening climate resilience and sustainable development across India's vulnerable coastal regions. Over the past year, the project has implemented a range of innovative, science-based interventions that address the twin challenges of environmental degradation and socio-economic vulnerability. Key initiatives, including seagrass and saltmarsh restoration, seaweed culture and farming, and greenhouse gas (GHG) estimation from paddy fields, have contributed significantly to ecosystem restoration, carbon sequestration, and biodiversity conservation. These nature-based solutions are not only mitigating the effects of climate change but also enhancing local livelihoods through sustainable resource management and alternative income-generation opportunities.

A defining aspect of ECRICC's success has been its multi-stakeholder collaboration and participatory approach, ensuring that local communities, government agencies, research institutions, and NGOs are actively engaged in decision-making and implementation. Through capacity-building programs, technical training, and knowledge-sharing initiatives, the project has empowered coastal communities with the skills and tools necessary to adapt to climate-induced challenges. This bottom-up approach has fostered community ownership, ensuring the long-term sustainability of interventions.

Beyond on-ground implementation, extensive media outreach and awareness programs have played a crucial role in highlighting the project's impact. By disseminating best practices, success stories, and policy recommendations, ECRICC has engaged a diverse range of stakeholders, including policymakers, researchers, industry leaders, and young learners, fostering a broader dialogue on climate resilience. These communication efforts have not only raised awareness but also created a scalable and replicable framework for similar climate-resilient projects across coastal regions in India and beyond.

As the project advances, sustained efforts in policy integration, community-driven innovation, and scientific research will be essential to ensuring long-term sustainability. Strengthening institutional mechanisms, fostering cross-sectoral partnerships, and expanding climate-adaptive solutions will be critical in scaling up impact and building resilient coastal ecosystems. The progress achieved so far serves as a strong foundation for future climate adaptation initiatives, reinforcing a long-term commitment to safeguarding India's coastal communities and ecosystems from the adverse impacts of climate change.







Enhancing Climate Resilience of India's Coastal Communities

Contact

State Project Management Unit Gol - GCF - UNDP - GoO Project

ECRICC Project Office Administrative Building, 1st Floor, RPRC Campus, Bubaneswar-15 Website: www.ecricc.org Email- ecriccodisha@gmail.com