

Annual Report 2024-2025

Centre for Research and Community Action (CeRCA)



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FOREWORD

The year 2024–2025 has underscored, more than ever, the critical role that natural ecosystems play in safeguarding our coasts and communities. When Cyclone Dana struck with unprecedented intensity, many regions faced devastating winds, storm surges, and flooding. Yet, where mangrove forests stood resilient, the damage was measurably reduced. These natural guardians acted as living breakwaters, dissipating wave energy, stabilizing shorelines, and shielding countless lives and livelihoods from catastrophe.

This experience reaffirms a truth we cannot afford to overlook: mangroves are not merely trees growing along tidal zones; they are frontline defenders against climate-induced disasters. Their dense root systems protect against erosion, while their canopies nurture biodiversity that sustains local fisheries and communities alike. The survival stories emerging from the aftermath of Cyclone Dana illustrate the urgent need to strengthen and expand mangrove cover across vulnerable coastlines.

However, global trends show that mangroves continue to face alarming rates of degradation due to urban expansion, aquaculture, and unregulated exploitation. Every hectare lost is a buffer diminished and a community exposed to greater risk. In this context, mangrove plantation is not an option—it is an imperative. Large-scale restoration, community-led stewardship, and policy-backed protection must form the backbone of our collective response to the climate crisis.

As we look forward, our commitment to mangrove conservation must be both strategic and uncompromising. The lessons of 2024–2025 remind us that investing in nature is investing in resilience. Let this report serve as a call to action: to restore, protect, and expand mangrove ecosystems so that when the next storm arrives, our coasts stand prepared—not in vulnerability, but in strength.

Dr. Shakuntala Pratihary
Founder CeRCA

RESEARCH

Our research during 2024–2025 continues to demonstrate the unparalleled value of mangrove ecosystems as natural infrastructure. Through field observations, modelling studies, and post-cyclone assessments, it has become increasingly evident that mangroves are not just ecological assets, but also cost-effective and sustainable solutions to natural disaster mitigation.

One of the most striking findings comes from the impact analysis of Cyclone Dana. In regions where mangrove belts were intact, the destructive force of



storm surges was drastically reduced. Wave energy was absorbed by the dense root and canopy systems, lessening the extent of flooding and preventing widespread damage to settlements. In some areas, mangroves effectively mitigated cyclone impacts altogether, acting as the first line of defence and offering communities precious time and safety.

Beyond cyclone protection, our research establishes that mangroves play a pivotal role in soil stabilization along rivers and coastal zones. Their intricate root networks bind and anchor sediments, thereby reducing soil erosion and preventing the gradual loss of valuable land. This process safeguards not only agricultural areas and properties but also critical infrastructure near vulnerable waterways. Mangroves function as natural barriers against the relentless forces of tides, currents, and river dynamics protecting landscapes from degradation that would otherwise demand costly engineering interventions.

Our findings reinforce the urgent need to view mangrove conservation and plantation as both an environmental priority and a socio-economic strategy. The dual benefit—shielding communities from extreme weather while preserving land from erosion—positions mangroves as a cornerstone of climate resilience.

Moving forward, our research will continue to focus on quantifying the long-term economic savings generated by mangrove ecosystems, assessing their carbon sequestration potential, and developing scalable models for mangrove restoration. By integrating science, policy, and community engagement, we aim to strengthen the case for mangrove expansion as a sustainable defence against the challenges of climate change and natural hazards.



In this regard, CeRCA has established four Field Stations to continue action research to facilitate community awareness to carry forward this mangrove conservation and ecosystem restoration activities. This action research further highlights the fact that out of five hundred seventy-five kilometres of coastline, two hundred and eighty kilometre is suitable for mangroves in the mudflats of six estuaries. Rest of the areas are sandy beaches and needs other varieties of coastal vegetation for stabilisation and protection of the sand dunes. This action research will help the coastal communities to address the issues of coastal vulnerabilities of Odisha.

COMMUNITY MOBILISATION



Community mobilisation has emerged as a cornerstone of successful mangrove plantation and conservation efforts. Local communities are not only the primary beneficiaries of resilient coastlines but also the most effective stewards of these ecosystems. When people are directly engaged in plantation drives, monitoring, and protection initiatives, the sense of ownership ensures long-term sustainability.

Knowledge shared through local networks, cultural practices, and participatory workshops has proven pivotal in building collective responsibility toward mangrove preservation. By empowering communities with information on the ecological and socio-economic benefits of mangroves—such as storm protection, prevention of soil erosion, and support for fisheries—we create a ripple effect of awareness that extends beyond immediate participants. The community led mangroves ecosystem conservation and restoration work would not only address their vulnerabilities but also ensure sustainable livelihoods arising out of the enhanced capacity of the marine ecosystem.

COLLABORATION



The success of our mangrove conservation and plantation initiatives during 2024–2025 has been greatly strengthened through collaboration with partner organizations. Building resilient ecosystems requires a collective effort, and partnerships have played a crucial role in bringing diverse expertise, resources, and perspectives together.

Knowledge support from Sustainable Green India Foundation (SGI) has been instrumental in shaping our strategies. Their contributions to scoping studies provided critical insights into site selection, ecological priorities, and long-term sustainability, ensuring that plantation efforts are both scientifically sound and context-specific.

On the ground, organizations such as APOWA, Sattvic Soul Foundation and Sradha have provided invaluable technical and implementation support. Their expertise in nursery development, community training, and plantation techniques has enabled effective execution of large-scale restoration activities. Moreover, their experience in community engagement has helped strengthen local participation, ensuring that mangrove protection is not just a project but a shared responsibility. These collaborations underscore the importance of working together toward a common goal. No single organization can address the complex challenges of climate resilience and ecosystem restoration alone. By leveraging complementary strengths,

we have been able to achieve outcomes that are larger in scope, more impactful, and deeply rooted in both science and community action.

As we look ahead, strengthening these partnerships and fostering new ones will remain central to our approach. Together, we can scale up mangrove conservation, enhance coastal protection, and build a resilient future for communities and ecosystems alike. CeRCA continues to engage with different stakeholders and the collaborative initiative with Sattvic Soul Foundation has been very successful in initiating mangroves plantation on the mudflats of the Mahanadi estuary ecosystem of Paradeep. This is a youth driven programme and bears the testimony that the youths of today are keen to contribute for climate action and Sattvic Soul Foundation team members have demonstrated it in the true sense of the spirit.



ADVOCACY

Advocacy and the active involvement of policymakers remain essential to ensuring the long-term success of mangrove conservation and restoration. While community participation and organizational collaboration drive implementation on the ground, it is through supportive policy frameworks that these efforts gain scale, sustainability, and permanence.

Engaging policymakers helps to integrate mangrove protection into broader climate adaptation, coastal management, and disaster risk reduction strategies. Well-informed leaders can enact and enforce regulations that safeguard mangrove ecosystems from unsustainable exploitation, while also prioritizing funding and incentives for restoration initiatives. By bridging scientific evidence with policy action, advocacy ensures that the ecological, economic, and social benefits of mangroves are recognized at the highest levels of decision-making.

Furthermore, the involvement of policymakers amplifies awareness and strengthens accountability. When government representatives champion mangrove initiatives, it creates a ripple effect—mobilizing resources, attracting institutional support, and embedding conservation into regional and national development agendas.



Looking forward, sustained advocacy will continue to be pivotal in securing strong policy commitments, fostering inter-agency collaboration, and creating enabling environments for large-scale mangrove plantation and protection. By ensuring that mangroves remain a policy priority, we not only protect ecosystems but also safeguard communities, livelihoods, and future generations.

CeRCA continues to engage with the important stakeholders in highlighting the struggle and success of the coastal communities. Our founder shared the publications with the former Governor of Chhattisgarh and the Honourable speaker of Odisha Legislative Assembly to highlight the fact that the conservation and rebuilding of different ecosystem in Odisha will ensure a better living for the communities.

Further to this, it is essential that a multi-stakeholder's engagement is required to facilitate community awareness to ensure that the communities must take the responsibility of protecting the ecosystems not only for their safety but also contributes in creating a testimony for the larger society to care for our environment. This shared vision will ensure shared responsibility and CeRCA will continue to work in the same direction.



INTERNATIONAL MANGROVES DAY



On 26 July 2024, *International Mangroves Day* was celebrated as one of the flagship events of the year, reaffirming the global and local commitment to conserving these vital ecosystems. The event provided an important platform for dialogue, reflection, and knowledge sharing on the role of mangroves in climate resilience, biodiversity conservation, and community well-being. It brought together a wide spectrum of stakeholders policymakers, researchers,

environmental organizations, grassroots community leaders, and youth symbolizing the collective effort required to protect and restore mangrove landscapes.

The discussions during the event were structured around key themes central to the mission of mangrove conservation. Policymaking emerged as a vital area, with speakers highlighting the urgent need for stronger regulatory frameworks and integrated coastal zone management strategies to ensure that mangrove ecosystems are legally protected against unchecked degradation. Policymakers acknowledged the necessity of aligning national and regional development agendas with international climate commitments, placing mangroves at the forefront of adaptation and mitigation strategies.

In the area of research, the event showcased findings from recent studies demonstrating how mangroves serve as natural defence against cyclones, floods, and soil erosion, while also providing long-term carbon sequestration benefits. Researchers presented evidence of reduced storm damage in areas where mangrove belts remain intact, underscoring the economic and ecological value of restoration and preservation.

Equally emphasized was community mobilisation, with inspiring accounts of how local communities—particularly fisherfolk, women's groups, and youth collectives—have been at the heart of plantation drives and protection initiatives. Their stewardship ensures that conservation is not only about planting trees but about fostering a sense of shared ownership and responsibility.

Collaboration and implementation were also key themes, with partner organizations sharing their technical expertise, nursery development practices, and field-level innovations. Many organisations shared their experience and agreed that advocacy with policy makers is required to elevate mangroves within broader climate and development policies, ensuring continued visibility and prioritization at decision-making levels.

The celebration concluded with a strong call to action: mangrove conservation cannot succeed in silos. It requires an integrated approach where science informs policy, policy supports implementation, and communities serve as custodians of these ecosystems. This continues to serve as a reminder that protecting mangroves is not only an environmental necessity but also a social and economic imperative for safeguarding lives, livelihoods, and landscapes in the face of a changing climate.



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