

2024-2025

ANNUAL REPORT



PREFACE

Progyan Foundation for Research and Innovation (PFRI) is a multidisciplinary research organization committed to advancing sustainable development through scientific inquiry, policy advocacy, and community-driven initiatives. Rooted in a vision of environmental stewardship, economic resilience, and social empowerment, Progyan integrates cutting-edge research with practical solutions to address some of the most pressing global challenges.

Our work spans diverse domains, including climate resilience, biodiversity conservation, sustainable agriculture, and eco-friendly technological innovations. By fostering collaborations with academia, industry, and grassroots organizations, we strive to create holistic interventions that not only generate knowledge but also drive tangible change. From pioneering agroforestry models in climate-vulnerable regions to implementing net-zero strategies for sustainable transport, Progyan remains at the forefront of evidence-based policy recommendations and on-ground transformation.

As an institution dedicated to bridging the gap between research and real-world application, PFRI places a strong emphasis on participatory approaches. By engaging local communities, empowering marginalized groups, and ensuring inclusive decision-making, we work toward creating a sustainable and equitable future. Our initiatives align with global sustainability goals while remaining deeply attuned to the specific needs of the regions we serve.

This annual research report showcases our ongoing projects and the impact they generate, reflecting our commitment to innovation, resilience, and a future where scientific progress leads to meaningful societal benefits. We invite stakeholders, researchers, and policymakers to collaborate with us in shaping sustainable solutions for a rapidly evolving world.

Contributions & ACHIEVEMENTS



I. Flagship Research Projects

- **Agroforestry for Climate Resilience (Dharashiv & Begusarai)**

Demonstrated climate-adaptive farming through float systems, soil restoration, and market-policy integration.

- **Float Farming in Sundarban**

Integrated aquaculture with floating agriculture to address salinity, storm impacts, and food insecurity

- **Net-Zero Transport Model (Sundarban)**

Piloted renewable-powered multimodal transport to cut emissions across all scopes



II. Biodiversity Conservation

- **Traditional Rice Varieties Revival**

Revived more than 50 native rice varieties through farmer-led conservation and seed exchange systems

- **Mangrove Restoration (Sundarban)**

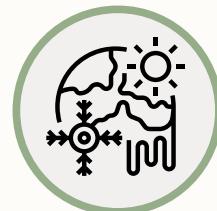
Restored more than 10 hectares with local communities to strengthen coastal resilience

- **Western Hoolock Gibbon Conservation (Arunachal)**

Created bamboo canopy corridors and empowered women-led teams for species protection

- **Horseshoe Crab Conservation**

Reduced poaching through community-based monitoring in coastal ecosystems



III. Climate & Urban Integration

- **Urban Climate-Biodiversity Planning (Assam)**

Revived more than 50 native rice varieties through farmer-led conservation and seed exchange systems

- **Tourism Carrying Capacity (Kodaikanal)**

Evaluated RCP scenarios to shape sustainable tourism strategies

- **ESPAR Project (South Asia)**

Mapped climate-agriculture policy gaps and developed decision tools and white papers.



IV. Services Delivered

- **Knowledge Tourism**

Revived more than 50 native rice varieties through farmer-led conservation and seed exchange systems

- **Green Audits**

Conducted 12 workshops across 4 states, training over 300 individuals in sustainability

- **Capacity Building**

Audited 3 institutions and helped cut emissions by up to 18%

- **Environmental & Social Impact Assessments**

Supported ESG-aligned projects through nature-based impact assessments

- **Socio-economic Policy & Governance**

Organized inclusive governance workshops in more than 25 villages for local policy inputs

The background of the entire page is a scenic landscape. It features a dense, green forest covering a hillside, with mist or low clouds hanging between the trees. In the foreground, there is a grassy field with a small, rustic wooden structure made of logs and planks. A herd of cattle is grazing in the field. The overall atmosphere is serene and natural.

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Progyan

About

Progyan – Foundation for Research and Innovation (PFRI) is a research-driven organization dedicated to fostering sustainable solutions through science, technology, and policy advocacy. With a strong commitment to environmental conservation, climate resilience, and socio-economic empowerment, Progyan bridges the gap between research and real-world applications. Our initiatives focus on pressing global challenges, including sustainable agriculture, biodiversity conservation, eco-friendly technological innovations, and climate adaptation strategies. By collaborating with academic institutions, government bodies, and grassroots organizations, we ensure that our research translates into actionable solutions that benefit both communities and ecosystems.

At Progyan, we believe that impactful research is one that not only generates knowledge but also leads to positive societal change. Our projects are deeply rooted in scientific inquiry, yet they remain adaptable to the evolving needs of the people and environments we serve. Through interdisciplinary approaches and stakeholder-driven strategies, we strive to create a sustainable future where innovation, policy, and community action work hand in hand.

History

Founded by a team of passionate researchers, environmentalists, and policy experts, Progyan was established with the vision of integrating scientific research with sustainable development practices. Recognizing the critical need for evidence-based solutions to environmental and socio-economic challenges, the foundation embarked on a journey to conduct high-impact research and implement transformative projects in key sectors. Progyan's early years were dedicated to studying climate resilience, particularly in vulnerable regions such as the Sundarban delta and the Indo-Gangetic plains. Over time, our focus expanded to include integrated pest management, agroforestry, sustainable transport models, and biodiversity conservation. Through strategic partnerships with government agencies, NGOs, and research institutions, we have developed and tested innovative models that promote long-term environmental and economic sustainability. Today, Progyan stands as a leader in sustainability research, driving change through a combination of scientific rigor, policy engagement, and community participation. Our history is a testament to the power of collaborative action, and as we move forward, we remain committed to shaping a world where science and sustainability go hand in hand.



Vision

To be a pioneering institution in research and innovation, driving sustainable solutions for environmental conservation, climate resilience, and socio-economic development. Progyan envisions a world where scientific advancements are seamlessly integrated with policy and community-driven actions to create a more equitable and sustainable future.

Mission

- a) To conduct cutting-edge research in climate resilience, biodiversity conservation, sustainable agriculture, and green technology.
- b) To bridge the gap between scientific research and policy implementation, ensuring data-driven decision-making for sustainability.
- c) To empower communities through knowledge transfer, capacity building, and inclusive stakeholder engagement.
- d) To foster collaborations between academia, industry, and government for the advancement of sustainable development practices.
- e) To promote innovation in eco-friendly solutions that mitigate environmental challenges and enhance climate adaptation strategies.

Objectives

- a) Scientific Research & Innovation – Conduct in-depth studies on climate resilience, agroforestry, sustainable energy, and ecosystem management to develop innovative solutions for global environmental challenges.
- b) Policy Advocacy & Implementation – Translate research findings into actionable policy recommendations, influencing government strategies for sustainable development.
- c) Community Engagement & Empowerment – Work closely with local communities, ensuring that research-based interventions align with their needs and contribute to long-term resilience.
- d) Sustainability & Conservation – Promote the conservation of biodiversity, protection of natural habitats, and responsible resource management through evidence-based approaches.
- e) Capacity Building & Knowledge Sharing – Organize training programs, workshops, and educational initiatives to disseminate knowledge and foster skill development in sustainable practices.
- f) Technology-Driven Solutions – Leverage technological advancements, including geospatial analysis, AI-driven research, and eco-friendly innovations, to enhance sustainability efforts.

From the **DIRECTOR'S DESK**

The year 2024–2025 was marked by significant scientific strides, grassroots impact, and meaningful partnerships, as well marked with important global events like the UN CBD COP16 in Cali, UNFCCC COP29 in Baku and UNCCCD COP16 in Riyadh that shifted the paradigm of environmental geopolitics. In the face of intensifying climate risks, fragile ecosystems, and socio-economic vulnerabilities, this year on one hand, has reaffirmed our belief that solutions rooted in science, when co-created with communities and guided by local knowledge, can lead to transformative change, on the other it has deployed intrinsic tools and targets to balance the freight and fights of climate crisis. At these cross roads, at Progyan, the needle of our compass has always pointed towards sustainability, resilience, equity and reciprocity but what gave it a potential momentum is our commitment to innovation, inclusion, and integrity.

Our ongoing efforts to bridge science and society were particularly evident in our work on policy-practice gaps. Through diagnostic tools, geospatial analyses, stakeholder workshops, and community-based research, we brought together farmers, policymakers, academics, and civil society to co-develop strategies for climate-resilient agriculture, biodiversity conservation, sustainable tourism, and urban ecological planning. The policy research project of Asian Pacific Network, Japan, entitled ESPAR, and our collaborative partnership with urban planners and forest officials in Assam stood out to be an examples of applied research that can shape policy thinking and influence systemic change at community-ecosystem interface.

This year, our work spanned across India's most climate-sensitive and ecologically diverse landscapes from the waterlogged plains of Begusarai in Bihar of Eastern India to the drought-prone terrain of Dharashiv, in Maharashtra of Western India, from the mangrove-lined coasts of the Sundarbans to the canopy-fragmented forests of Arunachal Pradesh, and further to the south in tourist-stressed ecosystems of Kodaikanal and Ooty. Each intervention whether it was agroforestry to combat climate extremes, float farming to restore agricultural livelihoods, conservation of endangered species like the Western Hoolock Gibbon and Horseshoe Crab, or the development of climate-sensitive tourism strategies in Kodaikanal was not just a project, but a participatory process of transformative change.

Another major stride has been the growth of our Capacity Building and Knowledge Tourism programs, through which we engaged hundreds of young professionals, students, farmers, and practitioners. Our training modules on climate-resilient aquaculture, apiculture, scientific documentation, and GIS based planning are not just educational tools they are catalysts for empowerment, helping communities adapt to change with skill and confidence.

The Green Audits and ESIA assessments we conducted further reflect our approach of working not just for, but with institutions to integrate sustainability into operational frameworks. And through our Internship Program, we have continued to mentor the next generation of environmental leaders young minds who bring passion, curiosity, and critical thinking to the pressing challenges of our time.

Throughout all of this, one element has remained consistent: that is teaming up and collaboration. None of our achievements would have been possible without the trust and support of our partners from local governance bodies to academic institutions, from grassroots organizations to donor agencies. We are especially grateful to the communities who opened their homes, shared their wisdom, and became co-creators in this journey.

As we look to the future, we recognize that the path to sustainability is not linear. It demands a systems approach one that embraces complexity, centers equity, and builds resilience at every level. At PFRI, we are committed to strengthening our role as a research-driven, community-anchored institution that not only studies the world but helps change it for the better.

I thank each and every member of the PFRI team, our board members, our collaborators, and our supporters for your unwavering commitment. Let this report serve not just as a record of achievements, but as a reaffirmation of our shared purpose to innovate responsibly, act ethically, and strive for a future where science, community, and nature coexist in harmony.



Meet Our Team

C **DR. CHANDREYI SENGUPTA**
Specializes in political ecology and social research with a strong focus on community engagement.

B **DR. BHASKAR DEB BHATTACHARYA**
Specializes in marine and estuarine ecology, biodiversity, and eco-toxicology.

S **DR. SOUMIK SARKAR**
Specializes in GIS, remote sensing, and climate adaptation, with a focus on mangrove conservation, sustainability, and land-use analysis.

A **MR. ABHIJIT SARKAR**
Specialized in Implementation of sustainable innovation at science-society interface and address pressing environmental and social challenges.

T **DR. TURBAN KAR**
Specializes in biochemistry-driven research and data analysis to support climate resilience and environmental sustainability.

A **DR. ARITRA MUKHERJEE**
Specializes in sustainable agriculture and seed science with a focus on eco-friendly and climate smart farming innovations.

S **MR. SOMNATH SAMANTA**
Specializes in geospatial data analysis and mapping, turning complex spatial data into actionable insights for data-driven decision-making.

S **MS. SHREYA GHOSH**
Office & Facility Management

A **MS. ANOLITA SINGHO**
Communication specialist with expertise in social media management, video editing, graphic design, and field operations

A **MR. ABHAY DAS**
Finance Officer – Budgeting & Fund Management

Research



Salt-tolerant Rice





In an era marked by changing climate patterns and diminishing crop diversity, Progyan Foundation's salt-tolerant rice initiative is a vital response to safeguarding food security. This program focuses on conserving indigenous rice varieties that thrive in saline, drought-prone, and flood-affected conditions. These resilient strains offer an essential lifeline to farmers coping with increasingly erratic weather, ensuring continuity in cultivation where conventional high-yield varieties often fail.

At the heart of this initiative is the preservation of native seed heritage through community seed banks that currently house over 50 traditional rice varieties. Field trials, notably with varieties like JP 72, have validated the adaptability and nutritional richness of these cultivars. Farmer-led seed exchange programs have created vibrant local networks, revived long-lost agricultural wisdom and encouraged the transmission of knowledge across generations. The program has sparked renewed interest among young people in sustainable farming, reconnecting them with agrobiodiversity as a cultural and ecological asset.

The outcomes extend beyond crop yield and resilience. Communities now play an active role in conservation, supported by a growing awareness of the value of traditional practices. This model not only ensures the survival of resilient rice varieties but also contributes to long term food and nutritional security. By anchoring future farming in the strength of the past, the initiative builds an adaptive, community-centered response to climate stress.



Mangrove



Progyan Foundation's mangrove restoration project in the Sundarban is a compelling example of community-driven ecological resilience. In a region regularly battered by cyclones and rising sea levels, degraded mangrove ecosystems leave both biodiversity and human settlements exposed. This initiative addresses these vulnerabilities through a grassroots approach that integrates habitat restoration, local stewardship, and climate adaptation.

The program has mobilized community members particularly women and youth to participate in extensive plantation drives, resulting in the restoration of over 10 hectares of mangrove forest using native species. Nursery infrastructure has been established to support the consistent supply of saplings, and awareness campaigns have educated residents about the ecological services mangroves provide from storm surge mitigation to supporting fisheries and carbon sequestration.

Stakeholder engagement has been central to the project's success. Training sessions and participatory mapping activities have empowered local residents to take on active roles in conservation planning and monitoring. The result is a growing sense of environmental ownership that strengthens both ecological and social resilience. By linking restoration efforts to livelihood benefits and disaster preparedness, the initiative has created a sustainable model for mangrove conservation in vulnerable coastal regions.





Rainforest & Hoolock Gibbon



In the biodiverse terrain of Arunachal Pradesh's Lower Dibang Valley, Progyan Foundation is leading a pioneering effort to conserve rainforest fragments and protect the endangered Western **Hoolock Gibbon**. These canopy-dwelling primates are crucial indicators of forest health, but their survival is jeopardized by habitat fragmentation from logging, shifting agriculture, and infrastructure expansion. Most of these forest patches lie outside protected areas, increasing the risk of local extinction.

The initiative employs a comprehensive ecosystem-based approach to conservation. One of its innovative strategies includes building bio-corridors using bamboo and native liana species to mimic natural canopy pathways, allowing gibbons to move safely between isolated forest patches. These interventions are supported by geospatial assessments, threat mapping, and participatory resource planning conducted in collaboration with local communities.

A unique feature of the project is the formation of women-led 'Gibbon Guardian' groups that combine conservation with alternative livelihood support. These groups champion traditional ecological knowledge (TEK) and integrate it into contemporary habitat management strategies. Policy advocacy and habitat suitability modeling further amplify the project's impact, informing future biodiversity planning and reserve design. By weaving together scientific research, local stewardship, and gender-inclusive conservation, this initiative aims to preserve not only a species but an entire socio-ecological system. It stands as a replicable model of coexistence that bridges cultural heritage and biodiversity protection.

Horseshoe Crabs





In the coastal ecosystems of the Indian Sundarban, the ancient horseshoe crab one of Earth's oldest surviving species is under threat from habitat degradation and human activity. Progyan Foundation's conservation initiative responds with a grassroot strategy that blends community science, education, and ecological monitoring to safeguard this keystone species.

The project has built a foundation of local awareness through targeted outreach, especially among women, youth, and fishermen who interact most closely with the species' habitat. Regular ecological surveys and breeding ground assessments now provide vital data on the crabs' life cycles and migratory behavior. This empirical understanding informs habitat protection plans while promoting a conservation ethic within the community.

Training programs and sensitization campaigns have significantly reduced poaching incidents and increased local engagement. Young people are participating in citizen science efforts, learning to document breeding activities and advocate for the crabs' protection. By positioning conservation as a shared community responsibility, the initiative reinforces the role of traditional knowledge and localized stewardship in long-term ecological sustainability. This work contributes not only to preserving an ancient species but also to strengthening coastal biodiversity and resilience against climate threats. It is an exemplary case of how grassroots involvement can yield tangible gains in conservation.



ESPAR: Mainstreaming Climate-Resilient Agriculture





The Enabling Stakeholder Participation and Applied Research (ESPAR) project addresses one of South Asia's most urgent climate challenges bridging the gap between policy frameworks and on-the-ground agro-farming practices. As climate impacts threaten to reduce regional GDP and food productivity, the project provides diagnostic tools and policy guidance for integrating climate-resilient strategies into national agendas.

The project utilizes a Multi-Criteria Decision Advice Matrix (MADAM) to identify trade-offs and synergies across agricultural practices and climate policies in vulnerable coastal landscapes. Through policy reviews, gap analysis using heatmaps and SWOT tools, and empirical field studies in socio-ecological landscapes, the initiative provides robust, evidence-based insights for decision-making.

Community engagement is integral to the process. Participatory rural appraisals, vulnerability indexing, and stakeholder interviews offer real-world perspectives that anchor policy advice in lived experience. The project also supports capacity-building through science-policy interface workshops, white paper development, and regional knowledge-sharing events. By fostering collaboration between planners, farmers, and policymakers, ESPAR enables more coherent, responsive, and locally tailored agricultural adaptation strategies. Its contribution lies not only in academic outputs but in the creation of actionable roadmaps for climate resilience across South Asia.

Urban Biodiversity

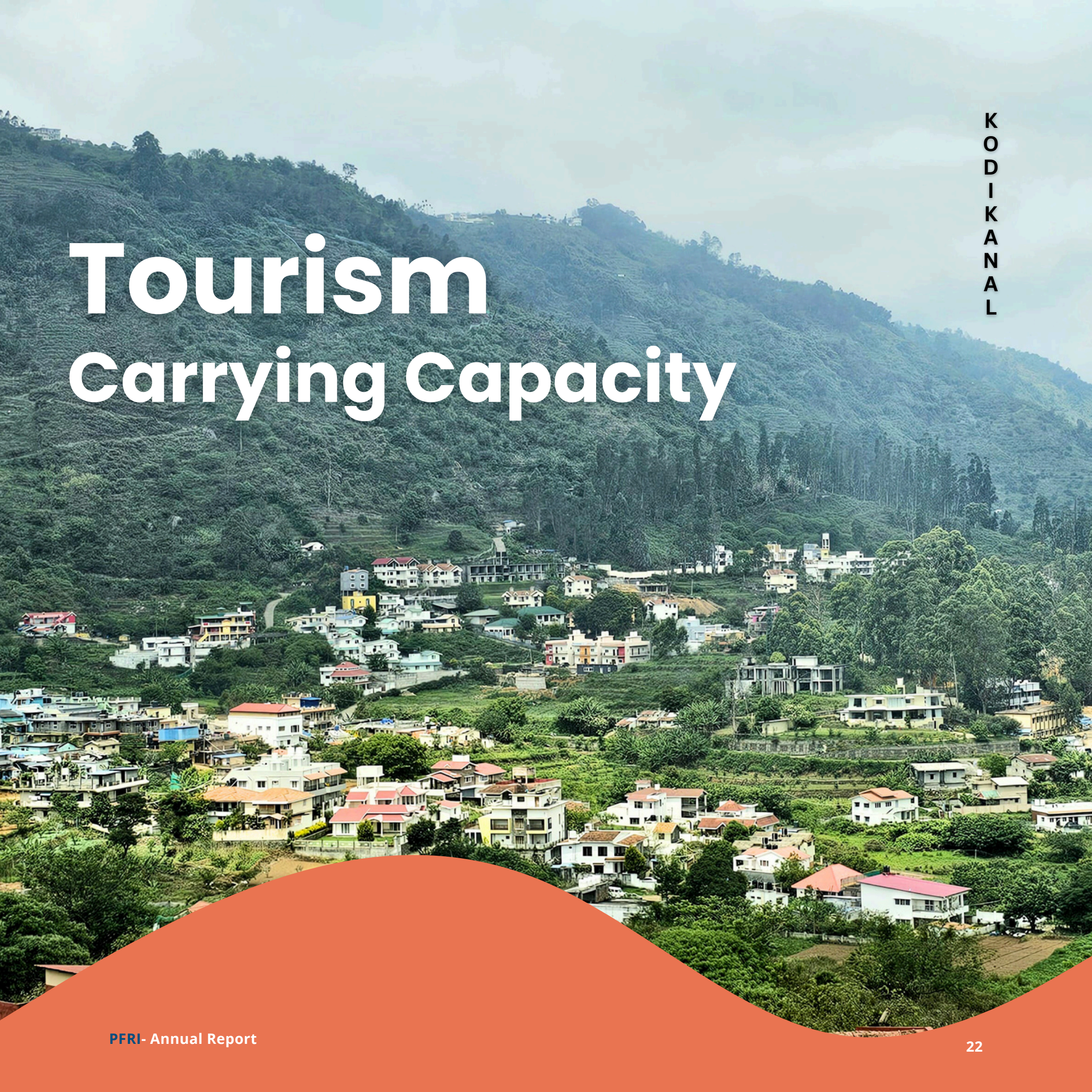


As Assam's urban landscapes evolve, so must the planning frameworks that shape them. This project brings together city planners, forest officials, and development stakeholders to build the capacity required for biodiversity-conscious and climate-resilient urban design. It seeks to bridge the longstanding division between ecological stewardship and urban development.

The initiative adopts a co-design model for curriculum development, shaped by a thorough assessment conducted through interviews and stakeholder surveys. The training modules, co-created with subject experts, address the interlinkages between biodiversity, ecosystem services, climate resilience, and sustainable infrastructure. They include interactive sessions, cross-sectoral dialogues, and field-based learning to enhance the practical understanding of complex land-use systems.

Over 150 urban and forestry professionals have participated in these workshops, which emphasize collaborative governance and integrated planning. Special focus is given to traditional knowledge systems and local community engagement, adding depth and cultural relevance to planning models. Outputs include a practical toolkit for nature-sensitive urban growth and policy briefs to guide implementation at multiple governance levels. This project not only builds capacity but also fosters a culture of cooperation across departments an essential shift for creating cities that are both livable and ecologically sound.





Tourism Carrying Capacity



Kodaikanal's ecological charm draws thousands of tourists each year, but unchecked tourism is placing growing pressure on its fragile ecosystems. Progyan Foundation's tourism carrying capacity (TCC) project provides a science-based framework for balancing ecological preservation with economic activity, using climate-responsive indicators and stakeholder input.

The project assesses physical, real, and effective carrying capacities across different climate scenarios by integrating GIS mapping, environmental monitoring, and socio-economic data. Biodiversity surveys and participatory zoning help identify ecologically sensitive areas, while scenario planning highlights the impacts of climate variables on tourism dynamics. This holistic methodology ensures that conservation is not compromised by short-term economic incentives.

Stakeholder engagement has been pivotal. Local authorities, businesses, and residents have contributed to zoning strategies, awareness campaigns, and capacity-building sessions. The findings are feeding into local policy dialogues and infrastructure planning, shaping guidelines that support eco-sensitive tourism models. This initiative is more than an environmental audit it is a governance tool. It aims to create scalable templates for tourism planning in other hill stations, where the balance between nature and recreation must be vigilantly maintained.

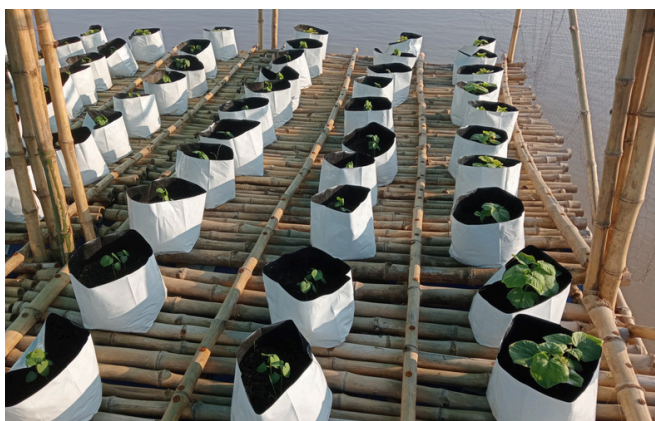




Climate-Resilient Agriculture

In the agro-climatically diverse districts of Dharashiv (Maharashtra) and Begusarai (Bihar), climate vulnerability is a daily challenge. Progyan Foundation, in partnership with IITM, is implementing an integrated framework to build adaptive, resilient agricultural systems that merge traditional ecological knowledge with cutting-edge science.

Long-term rainfall data and climate models have been used to assess future risks under various RCP scenarios. These insights informed field-based strategies such as floating agriculture for flood resilience, no-tillage millet farming for soil conservation, and pouch planting for water retention in agroforestry. Drip irrigation systems further enhance water-use efficiency.



Geospatial mapping and sociometric surveys have helped align interventions with ground realities, identifying areas for targeted support. Extensive capacity-building programs ranging from citizen science workshops to participatory training have empowered farmers and built institutional convergence across governance levels. Policy recommendations are being shaped through stakeholder consultations and documented in district-level planning reports. By demonstrating scalable, science-backed interventions tailored to local conditions, the project offers a replicable model for climate-resilient agriculture in India's vulnerable districts. The initiative turns climate risk into an opportunity for innovation and sustainability in rural livelihoods.



Major
EVENTS



Assessment and Management Strategies for Bortir Bil Wetland (West Bengal): A Comprehensive Study of Wetland Dynamics, Challenges, and Sustainability

From April 10th-19th, a visit was made to Bortir Bil Wetland to assess its challenges, including rapid degradation due to pollution, reclamation, and poor drainage, and the need for urgent management, government action, and community engagement for sustainable restoration.

Stakeholder meetings at Dharashiv, Maharashtra for implementation of agroforestry projects

After proper mapping of stakeholder the stakeholder meetings under the PFRI-IITM collaborative project were held in Dharashiv from 18th to 24th April 2024. Participants shared insights on agricultural and village development models, as well as relevant government schemes. Stakeholders expressed interest in future collaboration and confirmed their participation in upcoming workshops.

Induction of interns for sociometric survey at Dharashiv, Maharashtra

As part of the PFRI–IITM collaborative project, interns from TISS and SSP were engaged in field implementation activities in Dharashiv. Their responsibilities included data collection from selected field sites and administrative blocks. The interns underwent orientation and received training in various survey methodologies and project-related procedures to support effective fieldwork execution.

Visiting sites for intervention at Dharashiv, Maharashtra for implementation of agroforestry projects

The PFRI–IITM collaborative project conducted site visits in Dharashiv district, India, from 18th to 25th April 2024 for land selection to implement project activities. Suitable plots were identified, and selected beneficiaries agreed to participate and collaborate in the project.

Community meetings for intervention at Dharashiv, Maharashtra

Community meetings were held (18th- 25th April) to address climate and agriculture-related challenges on the selected project sites. The objective was to promote climate-resilient agricultural practices and to encourage the adoption of integrated farming systems.

Landshaping in Maipit, Indian Sundarban

On 21st April 2024, land shaping commenced at the Field Research Centre for agro-farming in Maipit, Indian Sundarban. This initiative aims to enhance climate-resilient agriculture through improved water management and soil conservation





Land selection in Begusarai, Bihar

On 22nd May 2024, a formal land agreement was executed at Begusarai, establishing a collaborative framework between the project team and local beneficiaries. The agreement signifies a strategic partnership aimed at facilitating site-specific interventions under the PFRI-IITM collaborative initiative. The involvement of local stakeholders ensures participatory engagement and enhances the scope for sustainable implementation of land-based agro ecological models.



Focus group discussion in Begusarai, Bihar

A community meeting was held on 22nd May 2024 in Begusarai to identify site-specific challenges in the selected project areas. The meeting focused on facilitating the implementation of climate-resilient agricultural practices and promoting the adoption of integrated farming systems to enhance sustainability and livelihood resilience.

Focus group discussion in Begusarai, Bihar

A community meeting was held on 22nd May 2024 in Begusarai to identify site-specific challenges in the selected project areas. The meeting focused on facilitating the implementation of climate-resilient agricultural practices and promoting the adoption of integrated farming systems to enhance sustainability and livelihood resilience.

Field visit for the internship program by IIFM interns

On 24th May 2024, a field visit was conducted to Santigachi and Tipligheri to initiate the internship programme. The interns visited to engage with local farmers and community members for participatory communication and data collection.

Data collection of paddy, water & soil parameters in Tipligheri, Indian Sundarban

Data collection efforts continued, focusing on key environmental and agricultural parameters. Field teams conducted systematic monitoring of paddy growth, soil and water quality, and fish data. These activities play a crucial role in supporting evidence-based decision-making and enhancing the understanding of local agro-ecological dynamics.

Maintenance of mangrove nursery, seed bank and lab at Tipligheri, Indian Sundarban

During the monthly field visit to Tipligheri, Sundarbans, attention was given to the maintenance of key infrastructure supporting project activities. This included the upkeep of the salt-tolerant paddy seed bank, regular nurturing of the mangrove nursery, and maintenance of the on-site laboratory facility. These components are essential for ensuring the sustainability and readiness of field resources necessary for ongoing and future interventions.

Sociometric Surveys

Begusarai and Dharashiv: Sociometric surveys were conducted on May 23 and June 3, 2024, in Begusarai, and on May 21, 2024, in Dharashiv. These surveys aimed to assess social structures and networks within the communities to inform intervention strategies.





Green Audit survey at Dr. Bhupendra Nath Dutta Smriti Mahavidyalaya

On 07 June 2024, the Progyan Foundation for Research and Innovation (PFRI) conducted a Green Audit survey at DBNSM College, Burdwan. The objective was to assess the institution's environmental practices through data collection on resource consumption, waste management, biodiversity, and sustainability measures. This initiative is part of PFRI's ongoing efforts to promote environmental accountability and eco-friendly campus practices.

Focus Group Discussion at Bortir Bill, West Bengal

From 06 to 11 June 2024, Progyan conducted a series of Focus Group Discussions (FGDs) with local communities around Bortir Bill, alongside meetings with the Gram Panchayat. The objective was to identify key challenges, assess existing agricultural models and production systems, and understand local weather patterns affecting the wetland ecosystem. These interactions are part of Progyan's initiative to promote community-based wetland conservation, with a focus on sustainable livelihoods and ecological resilience.



Freshwater aquaculture in Field Research Centre, Maipit, Indian Sundarban

On 08 June 2024, Progyan commenced freshwater aquaculture activities at its Field Research Centre located in Maipit, within the Indian Sundarban. The initiative involved the introduction of multiple fish species into two natural ponds situated on-site. The species introduced include *Labeo rohita* (rui), *Puntius sophore* (sorol puti), *Anabas testudineus* (koi), and *Liza parsia* (parse). This activity marks a step towards sustainable aquaculture development and ecosystem-based fishery practices in the Sundarbans region. The program involves regular monitoring of fish growth, scheduled feeding, and systematic collection of water and soil quality parameters to evaluate pond health and productivity. Upon attaining marketable size, the fish are harvested and sold in collaboration with local beneficiaries, promoting sustainable freshwater aquaculture practices and supporting community-based livelihood enhancement.



Land preparation for paddy farming in Maipit, Indian Sundarban

Starting from 10 June 2024, Progyan initiated land preparation for organic salt tolerant paddy cultivation at its Field Research Centre in Maipit, Indian Sundarban. Comprehensive assessment and adjustment of key soil parameters—including pH, nutrient content, and moisture levels—were conducted to optimize conditions for sustainable, chemical-free paddy farming. This initiative supports Progyan's commitment to eco-friendly agriculture and soil health management.



Preparation of salt tolerant paddy seed bed at Field Research Centre Maipit, Indian Sundarban

On 16 June 2024, Progyan commenced the salt tolerant paddy seed bed at its Field Research Centre at Maipit, Indian Sundarban as part of its ongoing initiative in organic salt tolerant paddy production. The seeds were introduced following soil preparation and parameter optimization to ensure ideal conditions for chemical-free cultivation. This marks a critical step toward promoting sustainable agriculture and enhancing agro ecological practices in the region.



House Hold Survey by the interns from Baruipur College at Bortir Bill, West Bengal

On 26 June 2025, the Progyan Foundation for Research and Innovation (PFRI), in collaboration with SAFE, conducted a household survey internship programme at the Bortir Bill wetland area. Interns from Baruipur College participated in the fieldwork, collecting primary socio-economic and environmental data from local residents. This initiative aimed to enhance student research capacity while contributing to a deeper understanding of community-wetland interactions and informing sustainable wetland management strategies.



Mangrove day celebration at Maipit, Indian Sundarban

On 26th July 2024, PFRI, in collaboration with SAFE and the Rotary Club of Calcutta Camaraderie, organized World Mangrove Day at the PFRI Field Research Centre in Maipit, Sundarban. The event witnessed active participation from government officials, local communities, and other stakeholders. As part of the celebration, mangrove saplings were planted at the research Centre by representatives from all participating groups. The initiative aimed to promote mangrove conservation and community engagement in ecosystem restoration.





Tiger Day celebration

a) Asit Baran High School Sundarban quiz competition:

On 27th July 2024, the PFRI, in collaboration with the Sundarban Tiger Reserve (STR) and several non-governmental organizations (NGOs), organized a quiz competition and extempore speech event at Asit Baran High School, located in the Indian Sundarbans. The event aimed to enhance environmental awareness and conservation literacy among students. Selected students from designated classes actively engaged in the competition. Winners of the event qualified for the final round, which was scheduled to be held at the STR headquarters on 29th July 2024.



b) Final day celebration and Tiger day celebration with Sundarban Tiger Reserve:

On 29 July 2024, Progyan commemorated World Tiger Day at the Sundarban Tiger Reserve (STR) with active participation from selected students of various schools, NGOs, STR officials, and Joint Forest Management Committee (JFMC) members. The event aimed to promote awareness of tiger conservation within the unique ecological context of the Sundarbans. A quiz competition on biodiversity and wildlife was conducted, where Asit Baran High School emerged as the winner. STR personnel presented an overview of the floral and faunal diversity of the Indian Sundarbans, a critical mangrove ecosystem and tiger habitat. The event also marked the release of the STR Annual Report, highlighting on-going conservation strategies, biodiversity status, and management outcomes.



Workshops and Seminars

a) Climate-Resilient Livelihoods Workshop in Dharashiv:

On July 8, 2024, a multistakeholder workshop was held at Hotel Pushpak Park, Dharashiv, organized by CACS IITM and PFRI in association with the Department of Agriculture, Dharashiv, Government of Maharashtra, and funded by IndusInd Bank. The focus was on creating climate-resilient and sustainable livelihoods for communities in aspirational districts.



b) Climate-Resilient Livelihoods Workshop in Begusarai:

On July 12, 2024, a similar workshop took place at Kargil Bhavan, Begusarai, addressing sustainable livelihood interventions.

c) 'APN Multistakeholder Webinar on "Policy Comprehension to Mainstream Climate Resilient Agro-farming Practices in India & other countries":

On July 16, 2024, a multistakeholder webinar discussed policies to mainstream climate-resilient agro-farming practices in India, Sri Lanka and other countries.

d) 'APN Multistakeholder Webinar on "Policy Comprehension to Mainstream Climate Resilient Agro-farming Practices in Indian Sundarban":

On July 19, 2024, a workshop at Hotel De Sovrani, Kolkata, focused on policy comprehension to mainstream climate-resilient agro-farming practices in the Indian Sundarban.



Celebrating Independence Day At Maipit and Tipligheri, Indian Sundarban

The Progyan Foundation for Research & Innovation (PFRI) celebrated the 78th Independence Day at its research centers in Tipligheri and Maipit in the Indian Sundarban. Members from the Kolkata office joined online and spoke about the significance of independence in the context of the work done by the organization to commemorate this day. By continuously upholding its commitment to the community and environment through its various innovative projects and interventions in various parts of the country, PFRI seeks to honour the essence of independent India as envisioned by those who fought for it.



Celebrating Rakhi with the Mangroves at Maipit, Indian Sundarban

Rakhi Tied to Mangrove Saplings: A heartfelt bond of protection and love for our green siblings. An initiative by our Moipit Research Centre, Progyan Foundation for Research and Innovation.

Implementing nutrition garden at Maipit, Indian Sundarban

An organic nutrition garden has been developed at Progyan's Field Research Centre, Maipit, using entirely natural farming methods without the application of any inorganic fertilizers or chemical inputs. A diverse range of vegetables is being cultivated under organic management practices. The garden demonstrates remarkable productivity, showcasing the potential of sustainable agriculture and organic farming in enhancing soil health and food security.

Data collection of freshwater aquaculture, salt tolerant agro farming, nutrition garden, soil & water parameters

As part of its ongoing research and conservation initiatives, the Progyan Field Research Institute (PFRI) conducts monthly field visits to Tipligheri and Maipit. During these visits, comprehensive data are collected on freshwater aquaculture systems, paddy cultivation, and vegetable farming. In addition, physicochemical parameters of water and soil are systematically monitored. Field surveys are also carried out to ensure effective implementation and coordination of sustainable agricultural practices. These efforts aim to support biodiversity conservation and promote environmentally sound livelihoods in rural areas of the Indian Sundarbans.

Float Farming site visit at Begusarai, Bihar

On 28th August 2024, a site visit was organized to the float farming demonstration plot in Begusarai, Bihar. The initiative, part of the IITM–PFRI project showcased flood-resilient agricultural practices using low-cost, soil-less float modules. These modules are designed to withstand monsoon inundation, providing year-round cultivation opportunities in waterlogged and low-lying regions.



Capacity Building workshop at Begusarai, Bihar

As part of the broader initiative on climate-resilient agriculture and agroforestry, a five-day capacity building workshop was held in Begusarai, Bihar, from 28th July to 1st August 2024. This workshop aimed to strengthen community-level knowledge and practical skills in sustainable agriculture, agroecological techniques, and ecosystem-based adaptation strategies. Participants included local farmers, field officers, self-help group members, and representatives from agricultural extension services. Key sessions covered topics such as:

- Float farming systems for flood-prone regions
- Tunnel and pouch agroforestry methods
- Climate data interpretation using automated weather stations

Citizen science applications for ecological monitoring

Workshops and Seminars

Workshop in Sri Lanka: On August 8, 2024, a multistakeholder workshop was held to discuss policies for mainstreaming climate-resilient agro-farming practices in Sri Lanka.

Stakeholder's Workshop 'Securing Climatic Resilient Agricultural Production Systems in Ganges Delta' With ICAR – Central Soil Salinity Research Institute RRs, Canning Town, West Bengal

Held at ICAR–CSSRI RRS, Canning Town, West Bengal, this workshop brought together agricultural scientists, NGOs, government officials, and community leaders to discuss climate-resilient agricultural systems in the Ganges Delta. The focus was on integrating saline-tolerant crops, traditional ecological knowledge, and decentralized adaptation strategies.

Mangrove nursery preparation in Maipit, Indian Sundarban

In Maipit, West Bengal, a community-based mangrove nursery preparation drive was undertaken to support restoration of degraded mangrove areas in the Sundarban. Activities included collection of propagules, nursery bed preparation, and early sapling management.

Webinar on policy gap in implementing climate smart agriculture

Co-hosted by PFRI and regional partners, this policy webinar addressed implementation gaps in climate-smart agriculture in Bangladesh's coastal ecologies. Recommendations emphasized regional policy harmonization and adaptive capacity-building.



Agroforestry Plantation at Begusarai, Bihar

A large-scale agroforestry plantation drive in 4 villages in Begusarai, Bihar was conducted, with over 5,000 saplings of multipurpose native species planted. The drive aimed to reduce flood vulnerability and enhance soil stability.

Agroforestry Plantation in Dharashiv, Maharashtra

On 26th September 2024, PFRI facilitated an agroforestry plantation program in Dharashiv, Maharashtra, introducing pouch plantation and tunnel funnel methods. These models enhance carbon sequestration and support diversified farming.



Webinar on policy gap in implementing climate smart agriculture

Co-hosted by PFRI and regional partners, this policy webinar addressed implementation gaps in climate-smart agriculture in Bangladesh's coastal ecologies. Recommendations emphasized regional policy harmonization and adaptive capacity-building.

Webinars and workshops

Webinar on Agricultural Policy in Bangladesh: On September 26, 2024, a multistakeholder webinar addressed policy gaps in implementing climate-smart agriculture in coastal areas of Bangladesh.

Webinar on APN project

The webinar hosted under the Asia-Pacific Network (APN) project focused on policy gaps in implementing climate-smart agriculture in coastal and flood-prone areas of Bangladesh. It facilitated dialogue among experts from India, Bangladesh, and Sri Lanka.

Focus Group Discussions (FGDs)

Sagar Block, West Bengal: FGDs were conducted on September 5, 2024, at Bagbazar and Mandirtala, and on September 6, 2024, at Champatala and Patharpratima, focusing on community perspectives on climate-resilient agriculture.

Kultali and Rampur Gram, West Bengal: On September 9 and 10, 2024, FGDs took place at Gorankathi, Kultali, and Purba Gopalganj, Rampur Gram, to gather insights on local agricultural practices.

Dongajora: An FGD was held on September 11, 2024, in Dongajora to discuss community challenges and opportunities in agriculture.

Shamshernagar, Kumirmari, Tipligheri: Between November 13 and 16, 2024, FGDs were conducted in these regions to understand local agricultural dynamics.





Attending COP 16 at Cali, Colombia

COP 16 in Cali, Colombia, concluded with mixed outcomes. Key achievements included guidelines on invasive alien species, frameworks for Indigenous inclusion, and benefit-sharing for digital genetic data. However, opaque negotiations—especially on Digital Sequence Information (DSI)—strained trust among parties. India’s launch of its National Biodiversity Strategy and Action Plan (NBSAP) aligned with the Kunming-Montreal Framework, but silence on contentious issues like the Nicobar development and Forest Rule Amendments raised concerns. Shifts from national to international leadership in NBSAP planning also sparked debate over the role of local expertise. The proposed Biodiversity Credits framework, backed by global actors, drew criticism for sidelining Indigenous stewardship and offering limited benefits to communities. PFRI also participated in the event, contributing to India’s scientific and conservation dialogue. As implementation begins, the focus must shift to transparency, equity, and inclusive participation.



Paddy Data collection Tipligheri_16.11.2024

On 16th November 2024, the Progyan Foundation for Research and Innovation (PFRI) conducted systematic data collection on indigenous salt-tolerant paddy varieties at the CRACK Centre in Tiplipighery, Indian Sundarbans. The data encompassed agronomic parameters such as plant height, panicle length, grain count, and yield metrics, contributing to the evaluation of varietal performance under saline conditions. This effort is part of an ongoing initiative to document and promote climate-resilient crop practices for enhancing food security in ecologically vulnerable coastal regions.

Field Visit WBBB at Tipligheri

Members of the West Bengal Biodiversity Board conducted a monitoring visit to Tiplipighery in the Indian Sundarban to evaluate the performance of indigenous salt-tolerant paddy fields and the functioning of the community-managed seed bank. The assessment included field-level observations of crop health, yield productivity, and conservation practices. The Board members expressed strong satisfaction with the quality and sustainability of the paddy production and the systematic preservation of genetic diversity through the seed bank, recognizing it as a model for biodiversity conservation and climate-resilient agriculture.

COP29 Summit Participation

The Progyan Foundation for Research and Innovation (PFRI) participated in COP29 in Baku, focusing on sustainable development and climate resilience. They are committed to supporting COP29's vision for resilient communities, particularly in vulnerable regions. PFRI's work on climate resilience, food security, and environmental sustainability is showcased at the COP29 exhibit. The Foundation also participated in the Standards Pavilion, a collaborative platform for advancing sustainable food systems.

Baku, Azerbaijan: From November 11 to 20, 2024, PFRI participated in the COP29 summit in Baku, contributing to global discussions on climate change and sustainable development.

ISO 14001:2015 Final Surveillance Audit

A scheduled ISO surveillance audit was conducted at the PFRI office on 26th November 2024 as part of the organization's annual audit cycle. The audit team executed the assessment in accordance with established ISO standards and audit protocols, ensuring comprehensive documentation of findings and adherence to procedural rigor. Members of the PFRI actively participated in the audit process, demonstrating compliance with the applicable management system requirements and a commitment to continuous improvement. The surveillance audit plays a critical role in maintaining ISO certification by verifying the ongoing conformity and effectiveness of the implemented management system. It provides objective evidence of system integrity, risk management efficacy, and alignment with international best practices.

Field Visit at Maipit and Tipligheri in Indian Sundarban

A routine monthly field visit was conducted by the Progyan Foundation for Research and Innovation (PFRI) to the Field Research Centre in Maipit and the CRACK Centre in Tipligheri, Indian Sundarbans. The primary objectives included monitoring ongoing field activities, performing infrastructure maintenance, and collecting empirical data relevant to ongoing research projects. Field researchers and PFRI members collaboratively carried out systematic observations, data logging, and technical assessments to ensure the continuity and scientific integrity of research operations in this ecologically sensitive region.





Paddy Harvesting at Maipit and Tipligheri, Indian Sundarban

From 5th November 2024, the Progyan Foundation for Research and Innovation (PFRI) conducted the harvesting of indigenous salt-tolerant paddy varieties at Field Research Centre in Maipit and CRACK Centre in Tiplipigheri in the Indian Sundarban. This activity marked the culmination of a climate-resilient cultivation cycle aimed at promoting sustainable agriculture in saline-prone coastal ecosystems. The harvesting was carried out with women of the local community participation under scientific supervision, ensuring the collection of agronomic data for yield analysis and varietal performance evaluation. This initiative supports food security, biodiversity conservation, and traditional knowledge systems in the Sundarbans delta.



Paddy threshing at Maipit and Tipligheri, Indian Sundarban

Starting from 25th November 2024, paddy threshing activities were undertaken at the Field Research Centre in Maipit and the CRACK Centre in Tiplipighery, Indian Sundarban, under the coordination of the Progyan Foundation for Research and Innovation (PFRI). Indigenous salt-tolerant paddy varieties, cultivated as part of climate-resilient agriculture initiatives, were threshed using traditional methods by local community women. This process not only facilitated seed recovery and yield assessment but also reinforced the role of women in sustainable agro-ecological practices and the preservation of indigenous knowledge systems.



Tourism Carrying Capacity visit to Kodai kanal, India

A stakeholder meeting involving government officials, local authorities, and field experts was conducted in Kodaikanal to discuss the assessment and implementation of tourism carrying capacity in the region. The initiative included preliminary field surveys to evaluate ecological sensitivity, infrastructure load, and visitor impact. This multidisciplinary effort aims to develop a sustainable tourism framework by balancing environmental conservation with socio-economic development. The carrying capacity analysis will inform policy decisions to mitigate ecological stress and ensure long-term sustainability of tourism in the fragile hill ecosystem.

Monitoring and Evaluation

Begusarai: Between November 29 and December 4, 2024, monitoring and evaluation activities were conducted to assess the progress of ongoing projects. Dharashiv Plantation: From December 16 to 21, 2024, plantation activities were monitored in Dharashiv to evaluate ecological restoration efforts. Citizen Science Programs: Citizen Science programs were conducted on December 3, 2024, in Mohanpur and Lakshmipur, Begusarai, and on December 4, 2024, in Lakho, Begusarai, focusing on climate preparedness, ecological, and economic sustainability.



Seed bank Preparation at Maipit, Indian Sundarban

A community-based seed bank has been established in Maipit, located in the Indian Sundarban, to conserve indigenous salt-tolerant paddy varieties and traditional vegetable seeds. The conservation strategy utilizes eco-friendly mud pots for seed storage, which help maintain optimal temperature and humidity conditions, thereby enhancing seed viability. A dedicated infrastructure has been developed to support systematic seed preservation, documentation, and access. This initiative contributes to agrobiodiversity conservation, climate resilience, and food security in a saline-prone ecosystem.

Paddy boil and drying Maipit, Indian Sundarban

The Progyan Foundation for Research and Innovation (PFRI) facilitated the traditional parboiling and drying of indigenous salt-tolerant paddy varieties at Maipit, Indian Sundarban. This post-harvest operation, crucial for enhancing rice shelf-life and nutritional quality, was carried out using locally adapted techniques involving controlled boiling and sun-drying. The process was successfully implemented by local community women, highlighting the role of indigenous knowledge systems in sustainable food processing. This initiative supports climate-resilient agriculture, women's empowerment, and the preservation of traditional rice processing practices.





Celebrating Netaji Jayanti at PFRI office & Maipit, Indian Sundarban

On 23rd January 2025, the Progyan Foundation for Research and Innovation – PFRI commemorated Netaji Subhas Chandra Bose Jayanti at its offices in Kolkata and Maipit, Indian Sundarban. The event emphasized the integration of scientific temper with patriotic values, reflecting Netaji's vision of a self-reliant and progressive India. Programs included lectures on science-led nation-building, community interactions, and youth engagement to inspire scientific awareness and national responsibility. The dual-site celebration underscored the importance of promoting science and sustainability in both urban and rural settings.

"Our land is rich in resources, but its real strength lies in its people and their unity. Protecting the beauty of nature is not only a duty but a responsibility towards our future generations."





Celebrating World Wetland Day at Maipit, Indian Sundarban

On 2nd February 2025, the Progyan Foundation for Research and Innovation (PFRI) celebrated World Wetlands Day at Field Research Centre, Maipit in the Indian Sundarbans through a targeted plastic waste removal drive along local riverbanks. Aligned with the 2025 theme, "Protecting Wetlands for Our Common Future," the initiative aimed to mitigate anthropogenic pressures on fragile wetland ecosystems. PFRI members and field staff actively participated in collecting and disposing of non-biodegradable pollutants—including plastic bags, bottles, and glass wine containers—that pose significant threats to wetland biodiversity, hydrology, and ecological function. This conservation effort reinforces the importance of community-led action in sustaining wetland health and resilience in the face of environmental degradation.



Indian Biodiversity Preservation Excellence Award from CMAI, New Delhi

Progyan Foundation for Research and Innovation received the Indian Biodiversity Preservation Excellence Award at the India Climate Samman 2025, a prestigious initiative celebrating "Sustainers of Nature" on 6th February 2025. The award acknowledges Progyan's efforts in biodiversity conservation, climate resilience, and sustainable innovation. The event, organized by the Carbon Markets Association of India (CMAI), was held on the eve of India Climate Week. The theme of the event was "Uniting the World for Climate Action."

Progyan Day Celebration and Grand Opening of Field Research Centre in Maipit

The Progyan Foundation for Research and Innovation celebrated its 3rd anniversary in Maipit, Kultali, Kishorimohanpur, India, on February 9th. The event attracted guests from India and the local community, who pledged to conserve mangroves and wetlands for a sustainable future. The event also marked the official opening of a Field Research Centre, which includes a Seed Bank for Indigenous Paddy and Vegetables and a Solar Water Plant. A Coffee Table Book showcasing these indigenous paddy varieties was launched during the celebration. The foundation expresses gratitude to those who have supported its mission towards sustainability and resilience. The event was a significant milestone in the organization's efforts towards a sustainable future.



Multistakeholder Workshop on ENTRUST at Kolkata, West Bengal

The South Asian Forum for Environment (SAFE) and Progyan Foundation for Research & Innovation (PFRI) held a multi-stakeholder workshop on the project 'ENTRUST- Energy Neutral Transport for Rivers & Uplands of Sundarban Terrain under Gosaba block' on 19th February 2025. The event was attended by the Honourable Minister of Sundarban Affairs, Shri Bankim Chandra Hazra, and respected Upadhyaksha, Shri Animesh Mandal. The workshop also featured esteemed guests from various organizations, discussing the challenges and opportunities in decarbonizing public transport in ecologically sensitive areas. The workshop also highlighted the feasibility of renewable energy adoption, emission reduction strategies, and the importance of community engagement for long-term success. The project aims to transform the Sundarban islands into a vibrant sustainable ecosystem by piloting e-rickshaws and solar-powered boats, resulting in a cumulative reduction of nearly 320 kg CO2 equivalent emissions.



Receiving oats seeds from BLDO officer of Maipit, Indian Sundarban

Dr. Basudeb Dutta, Block Development Officer of Maipit, Indian Sundarbans, collaborated with the Progyan Foundation for Research and Innovation (PFRI) by providing oat seeds to support ongoing agricultural research on 25th February 2025. This initiative aims to assess the adaptability and performance of oats in saline-prone environments, contributing to crop diversification and sustainable livelihood options in the region. The collaboration strengthens research-community linkages and promotes climate-resilient farming practices in vulnerable coastal ecosystems.



Women's Day Celebration

On 8th March, the Progyan Foundation for Research and Innovation (PFRI) celebrated International Women's Day at its Kolkata office, fostering dialogue on gender identity, empowerment, and personal resilience. Women of diverse age groups actively participated, sharing personal narratives that reflected their journeys through societal and familial challenges. The event highlighted the theme of self-assertion and identity, symbolized by the color pink—"Once we learn to say 'no,' we become unstoppable" (Dr. Dipayan Dey). The program underscored the role of self-awareness and community support in advancing gender equality and mental well-being.

Field visit to Assam, India

During the first visit to Assam on 18th to 21st March, meetings were conducted with various line departments involved in the project. These included the Forest Department, local urban bodies of Guwahati city, Assam Industrial Development Corporation (AIDC), Agriculture Department, Fisheries Department, Assam Science Technology and Environment Council (ASTEC), and local NGOs. Invitations were extended to all relevant stakeholders. The meetings served as an introductory platform to discuss departmental roles, explore opportunities for collaboration, and gather initial inputs to shape the direction of the project.



National workshop at Dharashiv, Maharashtra

The two-day review workshop in Dharashiv began with a field verification of interventions implemented over the past year. Using structured review tools, project beneficiaries, agricultural experts, social workers, and partner organization representatives assessed the impact of climate-resilient agroforestry practices on local livelihoods. On the second day, an in-person workshop facilitated rich discussions and feedback from stakeholders. The collective insights will inform the refinement of strategies for the upcoming year, enhancing the effectiveness of climate adaptation efforts in the region.



National Workshop at Begusarai, Bihar

Held shortly after the Dharashiv workshop, the Begusarai session followed a similar two-day format. Day one focused on ground-level verification of ongoing interventions with active participation from local farmers and experts. Day two brought together project stakeholders for an in-depth workshop to evaluate successes, identify challenges, and gather community feedback. The diverse perspectives shared during the workshop will play a critical role in shaping a more responsive and inclusive action plan for the next phase of the project in Begusarai.

SERVICES





Knowledge Tourism

Progyan Foundation for Research and Innovation has launched the Knowledge Tourism initiative to connect individuals with sustainability practices through immersive field experiences. These include guided visits to agroforestry sites, mangrove ecosystems, and climate-resilient farming models, enabling meaningful interactions with farmers, researchers, and community leaders. The program encourages an exchange of traditional and scientific knowledge, tailored for students, policymakers, and professionals.

In FY 2024–25, exposure visits are planned across various ecoregions, with participants ranging from tourists and students to development practitioners and administrators. The initiative aims to transform understanding into action by showcasing grassroots innovations and real-world conservation strategies, fostering a deeper appreciation of nature-based solutions.

*Bridging Science, Nature, and
Communities through Experiential
Learning*



Capacity Building

Progyan Foundation's Capacity Building programs are designed to bridge the gap between scientific knowledge and on-ground implementation. Through focused training in climate-resilient agriculture, aquaculture, apiculture, and GIS, these programs strengthen community resilience and support sustainable development. Emphasis is also placed on scientific writing and ESIA to build practical, future-ready skills.

During FY 2024–25, over 300 individuals from Bihar, Maharashtra, Arunachal Pradesh, and West Bengal were trained through 12 workshops. Toolkits and resources were developed to promote local adaptation and knowledge retention, ensuring that participants are equipped to address climate challenges through informed and innovative practices.

Empowering Communities and Professionals for a Sustainable Future



Socio-economic Policy & Governance

Progyan Foundation engages in policy research and community-based dialogue to enhance governance systems and inform socio-economic decision-making. Activities include participatory surveys, institutional analysis, and stakeholder convergence to promote inclusive development and climate-resilient livelihoods.

In FY 2024–25, the Foundation worked with local governance bodies in Aspirational Districts, conducted assessments in 25+ villages, and organized multi-stakeholder workshops. By grounding policy advocacy in field realities, Progyan ensures equitable and context-sensitive approaches to development and governance.

*Informing Policy, Strengthening Institutions,
and Empowering Communities*



Green Audit

Progyan Foundation provides Green Audit services to help institutions and industries evaluate and improve their environmental performance. These audits cover energy and water efficiency, waste management, biodiversity conservation, and regulatory compliance. The goal is to support sustainability transitions aligned with both national and global goals.

In FY 2024–25, audits were conducted in three institutions across West Bengal, leading to strategies that could reduce carbon footprints by up to 18%. These interventions not only improve resource efficiency but also foster environmental responsibility and awareness among stakeholders.

Promoting Sustainability through Evidence-Based Environmental Audits



Environmental and Social Impact Assessment

Progyan Foundation delivers comprehensive Environmental and Social Impact Assessment (ESIA) services that guide sustainable project development. These assessments include baseline studies, impact predictions, community consultations, and risk mitigation planning, ensuring alignment with EIA notifications and ESG frameworks.

In FY 2024–25, Progyan led ESIA studies focused on nature-based solutions in coastal and agrarian landscapes. The process supported stakeholder engagement and informed decisions for sustainable infrastructure and agroforestry projects, embedding ecological integrity and social equity into project design.

Science-led Assessments for Sustainable Development



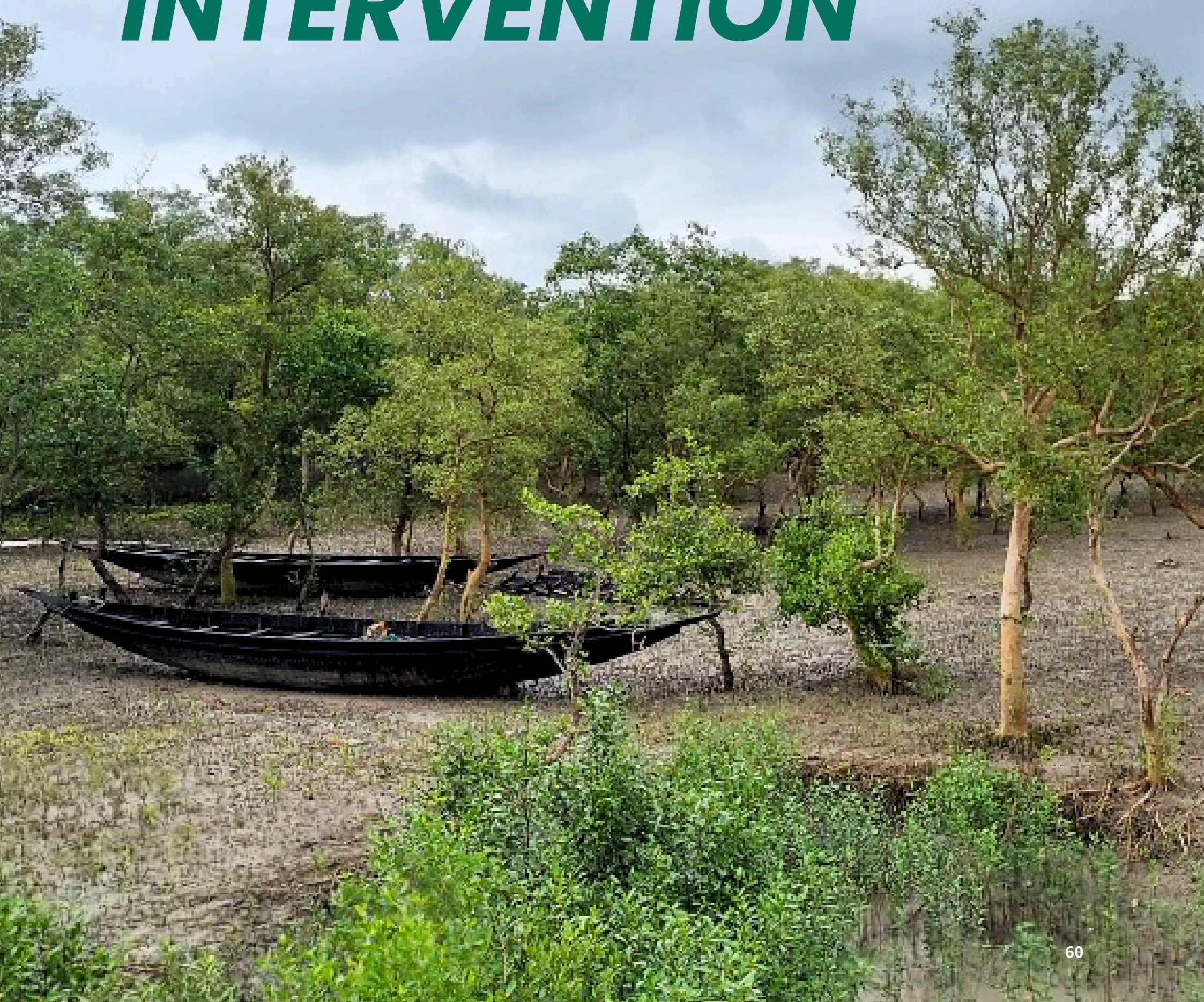
Internship

The Internship Program at Progyan Foundation offers hands-on experience to students and early-career professionals in areas like climate-resilient agriculture, biodiversity conservation, GIS, and water management. Interns work closely with mentors on live projects and field assignments.

In FY 2024–25, the program hosted over 15 interns from reputed institutions who contributed to field surveys, community outreach, and knowledge product development. This initiative cultivates a new generation of sustainability leaders with real-world exposure and interdisciplinary insight.

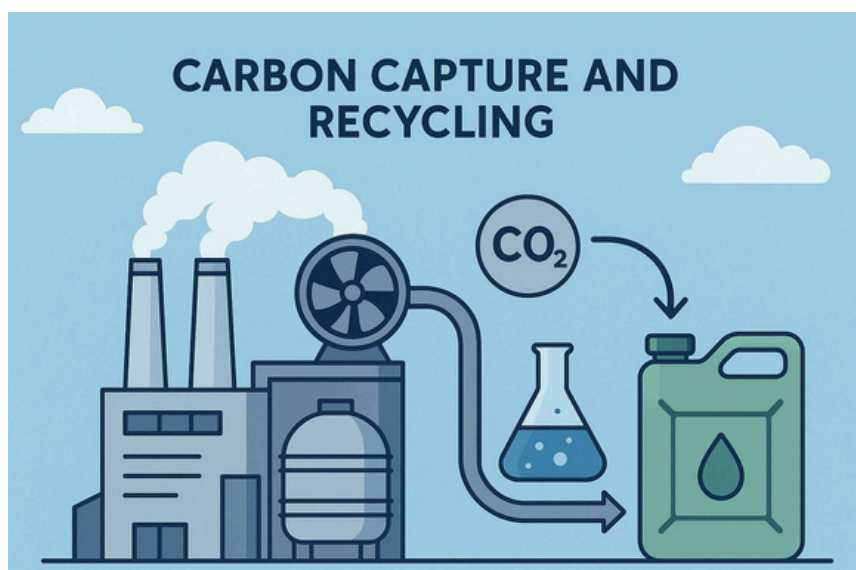
*Nurturing the Next Generation of
Environmental Leaders*

TARGET INTERVENTION



Carbon Harvesting: *The New Horizon of Climate Action*

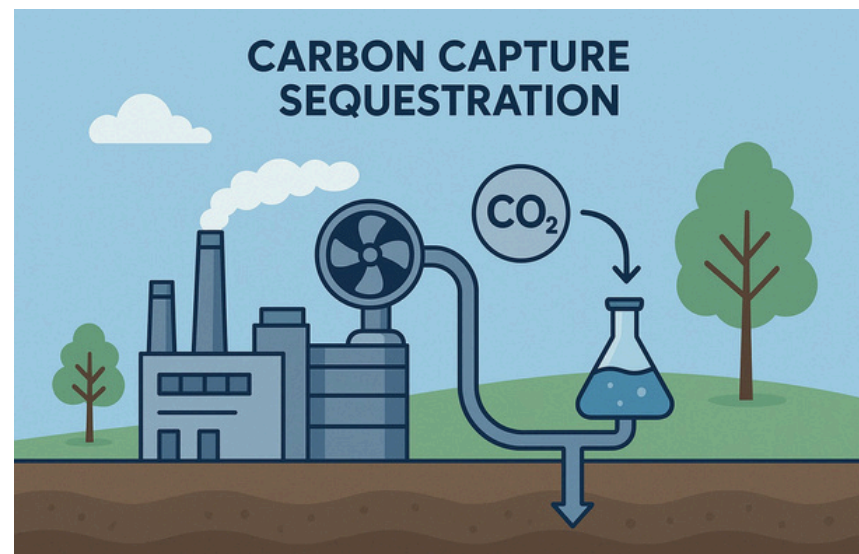
Different options to try to reduce overall CO₂ emissions are being investigated, but the main way to reduce CO₂ emissions from large industrial sources is called carbon capture and storage, or CCS. CCS involves capturing carbon dioxide (CO₂) at emission sources, transporting and then storing or burying it in a suitable deep, underground location. CCS can also mean the removal of CO₂ directly or indirectly from the atmosphere. Fossil fuel-related CO₂ emissions reached 32 Gigatonnes in 2010. These emissions come from industrial processes and stationary emission sources, such as power stations, cement production and refineries. About 50 per cent of the total anthropogenic (human-made) CO₂ emissions between 1750 and 2010 have been produced in the last 40 years.



As a part to this end, carbon capture and recycling (CCR) offers a promising solution to mitigate CO₂ emissions. Unlike traditional carbon capture and storage, CCR uses green hydrogen and natural gas infrastructure to enhance process efficiency, capturing over 90% of CO₂. By converting CO₂ and hydrogen into methane, the system provides a low-carbon alternative to natural gas. CCR is cost-effective and scalable, with reduced risks of long-term CO₂ storage. However, challenges like hydrogen production and economic viability remain, requiring further research. CCR could be key in achieving carbon neutrality and addressing future energy demands. Nature-based solutions (NBS) for carbon sequestration leverage natural processes like photosynthesis and soil carbon storage to remove and store carbon dioxide from the atmosphere. These solutions include reforestation, agriculture, mangroves, seagrass, and seaweed farming. By protecting and restoring natural ecosystems, NBS can effectively capture and store carbon, contributing to climate change mitigation. Nature-based solutions to climate change, sometimes called “natural climate solutions,” involve conserving, restoring, or better managing ecosystems to remove carbon dioxide (CO₂) from the atmosphere. Examples include allowing forests to regrow, restoring coastal wetlands, and switching to restorative agricultural practices, such as cover crop rotation, that support healthy soils. These ecosystems reduce climate change by capturing CO₂ from the air and sequestering it in plants, soils, and sediments. They also provide a wide range of other important benefits, such as cleaner air and water, economic benefits, and increased biodiversity. Some nature-based solutions, such as conserving existing wetlands, serve mainly to prevent greenhouse gas emissions.

Others, such as restorative agriculture and regrowing clear-cut forests, actively remove CO₂ from the atmosphere. This makes them a form of carbon removal. (Many nature-based solutions both prevent emissions and remove carbon, so the distinction is fuzzy.) Nature-based forms of carbon removal are often portrayed as distinct from “engineered” approaches, such as bioenergy with carbon capture and storage (BECCS), direct air capture with carbon storage (DACCS), and ocean alkalization. The distinction between nature-based solutions and engineered approaches, which some scholars have contested, has important implications for the politics of carbon removal: publics are generally more supportive of approaches perceived as “natural.”

Due to the limited amount of material recycling, the current carbon flow for the production, use, and disposal of polymer-based products is mostly linear, moving from the lithosphere to the atmosphere. Material recycling rates are rather low. This article explores the options for advancing carbon recycling (C-REC). This is done because of the anticipated limitation in the future supply of biomass. The main focus in the production of polymers is the capture and utilization of carbon dioxide (CO₂) to synthesize platform chemicals. It is possible to capture CO₂ from exhaust gases produced during the burning or fermentation of garbage to create an internal C-REC system inside the techno-sphere. It is feasible to create an external carbon removal and storage system as a sustainable option by extracting CO₂ directly from the environment. Renewable methane, sometimes referred to as synthetic natural gas, is expected to have a significant impact.

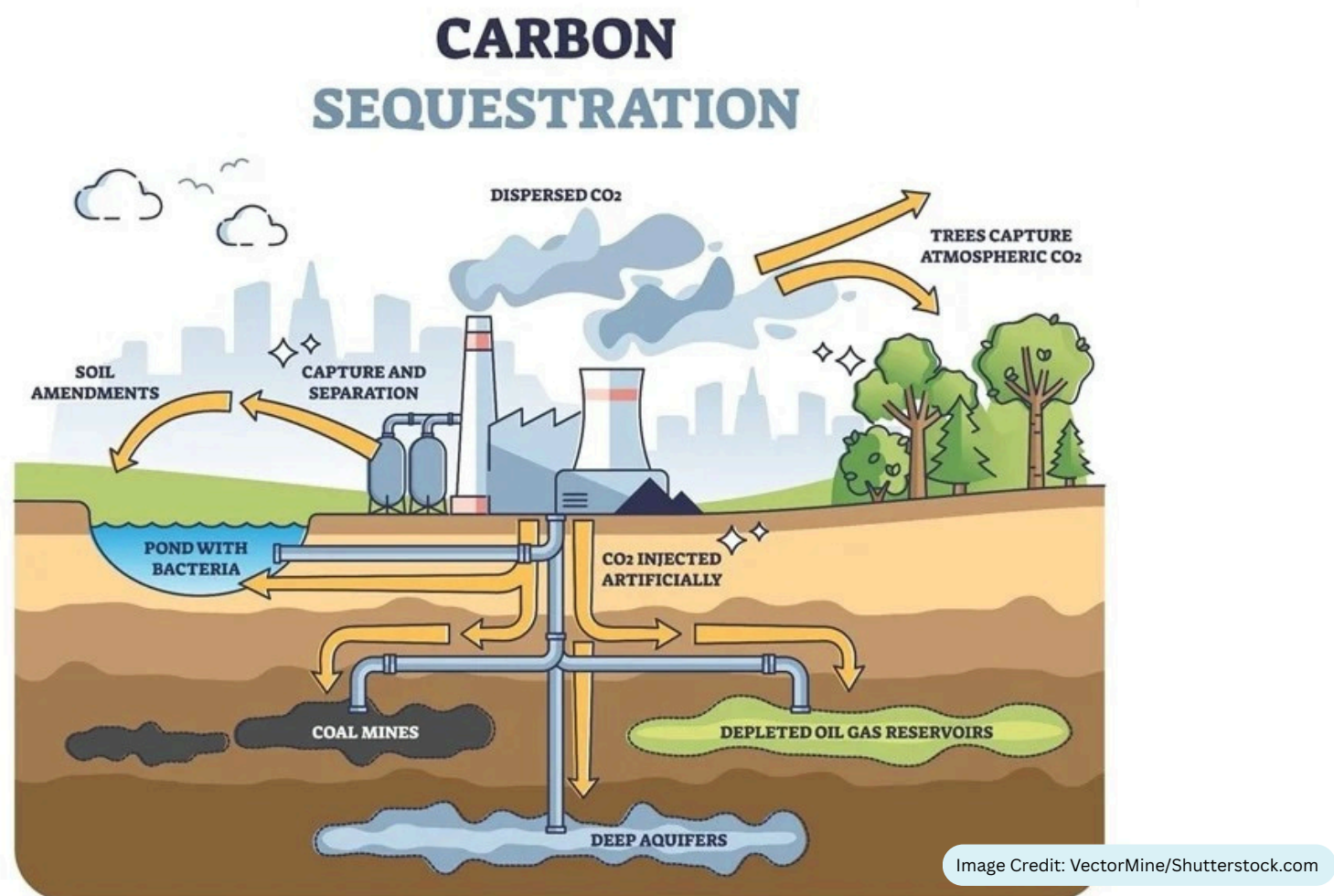


This particular kind of methane is now being quickly used for energy storage and transportation. However, it also has the potential to be exploited for providing renewable carbon in the area of chemistry. The C-REC processes get their energy from wind and solar systems, namely the electricity needed to produce hydrogen. This hydrogen is then combined with CO₂ to create a range of hydrocarbons. The bulk of the necessary technological components for the system already exists. The article presents an overview of the potential for the system to undergo further development in the medium to long term, shifting from a supplementary flow system to a self-sustaining recycling system. This system can function as the fundamental support for the resources and energy requirements of forthcoming societies. Contrary to the cost of carbon capture, it seems that the limitation in the amount of renewable energy available is the main obstacle in this case. While traditional CCS systems primarily focus on CO₂ storage, the gap remains in effectively recycling captured carbon for sustainable use.

This research addresses this gap by proposing a carbon capture and recycling (CCR) system that not only captures CO₂ but also recycles it into methane using green hydrogen, offering an integrated solution for both carbon reduction and energy generation. By leveraging existing natural gas infrastructure, the CCR system enhances scalability and efficiency, positioning itself as a viable alternative for regions heavily reliant on natural gas. Future research must further investigate the system's scalability, the energy demands of green hydrogen production, and potential environmental impacts.

Progyan Foundation for Research and Innovation, being itself a ISO 14001: 2015 standard organizations and as well member to the ISO Net-Zero International Committee, is actively engaged in both CCS and CCR at community-ecosystem interface. The prime objectives of PFRI in this regard, remains to be

- A. GHG Emission and Carbon Audit (ISO 14064: 2018 guidelines)
- B. Net Zero Compliance and assessment.
- C. Design, Develop and Deploy (3-D) carbon beneficial interventions like agroforestry, mangrove conservation, hydroponic and aquaculture, regenerative agro-farming etc.



Financial Report

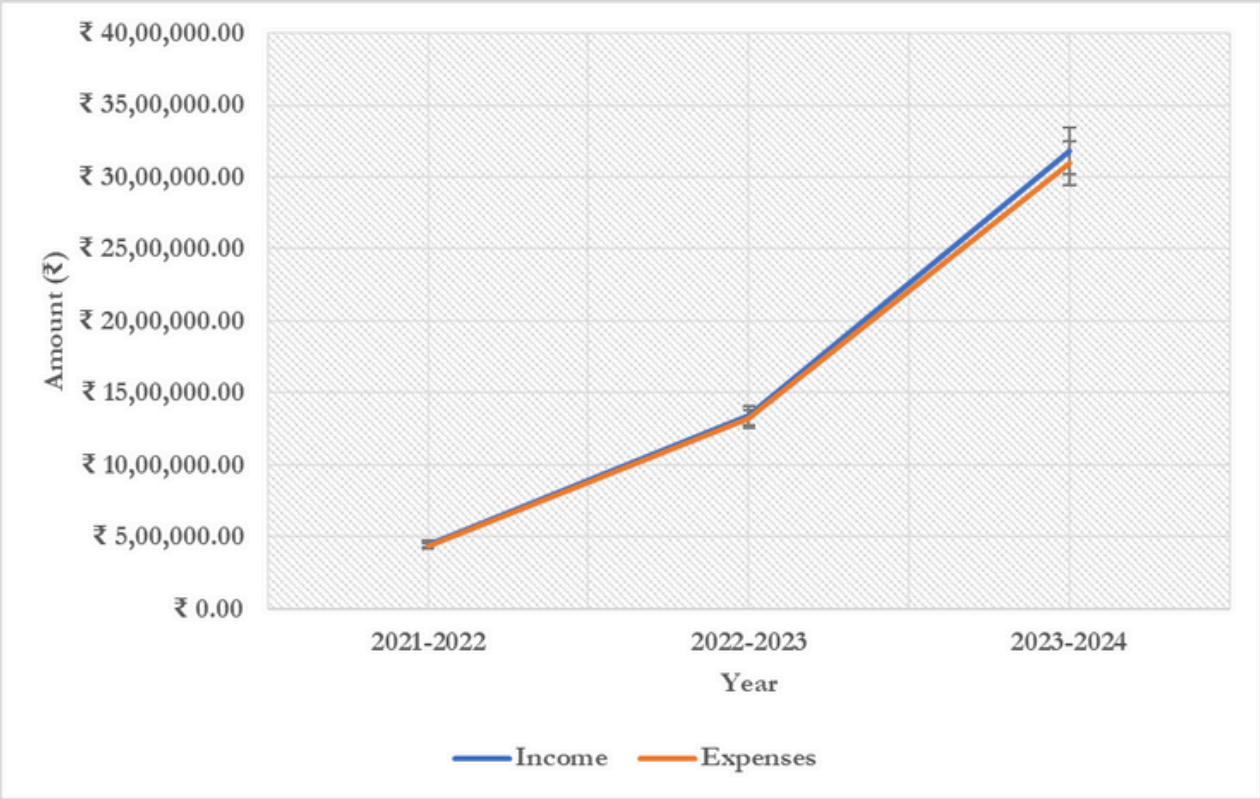


Fig: Annual Income vs. Expenditure Trend (2021–2024)

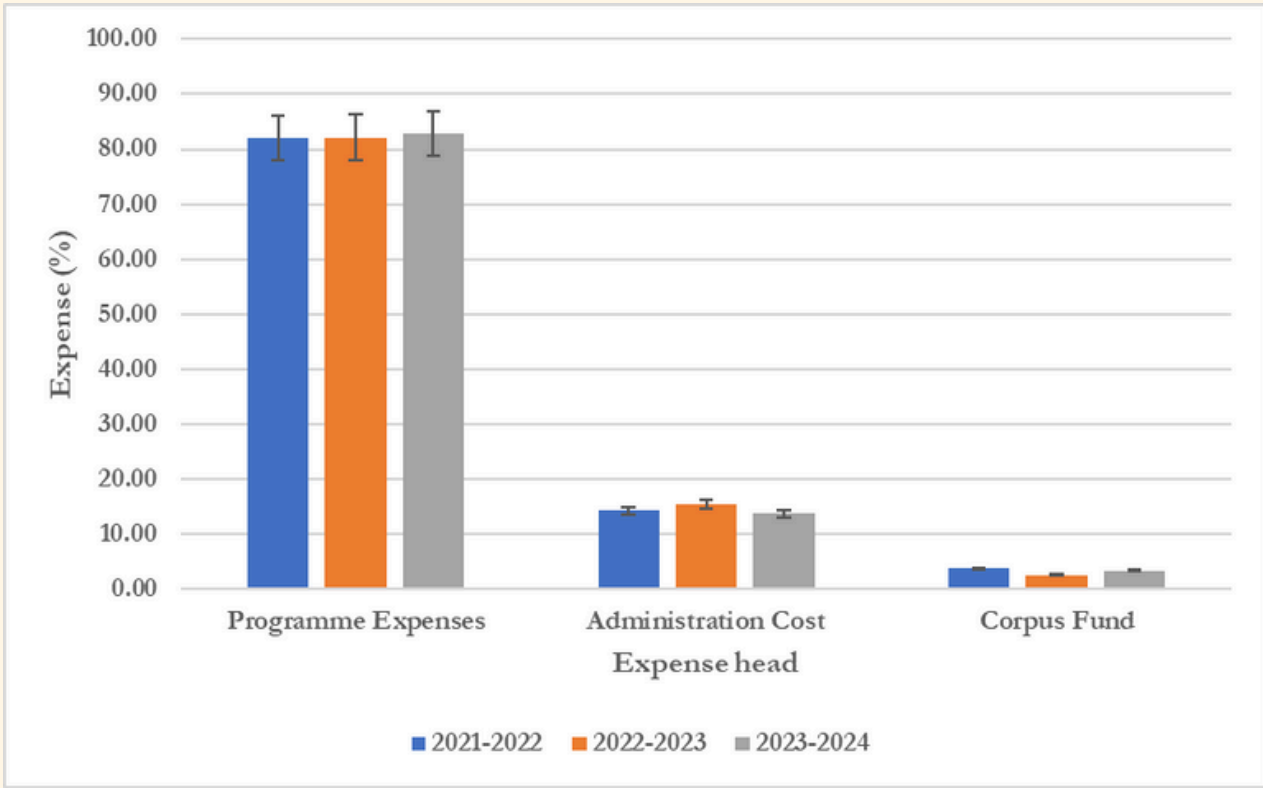


Fig: Allocation of Funds: Programme, Administration, and Corpus (2021–2024)

PFRI Legal Folio

Sec 8 Company Reg no. - CINU80301WB2022NPL251470

MCA (CSR- 1) No. - CSR00084622

12 AB Reg no - AAMCP6596ME20241 & 80G Reg no. - AAMCP6596MF20241

Niti Ayog no. WB/2024/0468997

Affiliation

CANSA- Climate Action Network South Asia

UNEP- United Nations Environment Programme

UNCCD- United Nations Convention to Combat Desertification

UFFCCC- United Nations Framework Convention on Climate Change

United Nations Department of Economic and Social Affairs (ECOSOC)

IPBES- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

IPCC- Intergovernmental Panel on Climate Change

UNDP- United Nations Development Programme

UN Women

Collaborator & Knowledge Partner

Asia-Pacific Network, Japan

Asian Institute of Technology, Thailand

South Asia Rainwater Network (SARNET), Sri Lanka

Asia Pacific Adaptation Network

Prince Bernhard Nature Fund (PBNF)

Global Alliance for Future of Food

The Economics of Ecosystems and Biodiversity

SABAL, NEPAL

Onushandhani Creeds Ltd.

Zoological Survey of India

Botanical Survey of India

Central Pollution Control Board, India

Indian Institute of Technology, Madras, India

Indian Institute of Technology, Guwahati, India

Assam Agriculture University, India

Sundarban Tiger Reserve, West Bengal, India

Sundarban Development Board, West Bengal, India

Jadavpur University, West Bengal

University of Calcutta, West Bengal

West Bengal Biodiversity Board

West Bengal Forest Department

Indian Council of Agricultural Research(ICAR)- Sasya Shyamala

Krishi Vigyan Kendra, Kolkata

ICAR- Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith

ICAR- Krishi Vigyan Kendra, Lower Dibang Valley, Arunachal Pradesh

ICAR- Krishi Vigyan Kendra, West Kendra, Arunachal Pradesh

ICAR- Krishi Vigyan Kendra, Dharashiv

ICAR- Krishi Vigyan Kendra, Begusarai

ICAR- Central Soil Salinity Research Institute, Canning

ICAR- Central Inland Fisheries Research Institute, Barrackpur

ICAR - Central Institute of Fisheries Education, Kolkata

SPG - School of Policy & Governance



Life thrives where diversity survives



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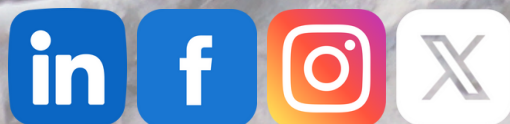
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