Annual Report 2023-24

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IORA Ecological Solutions

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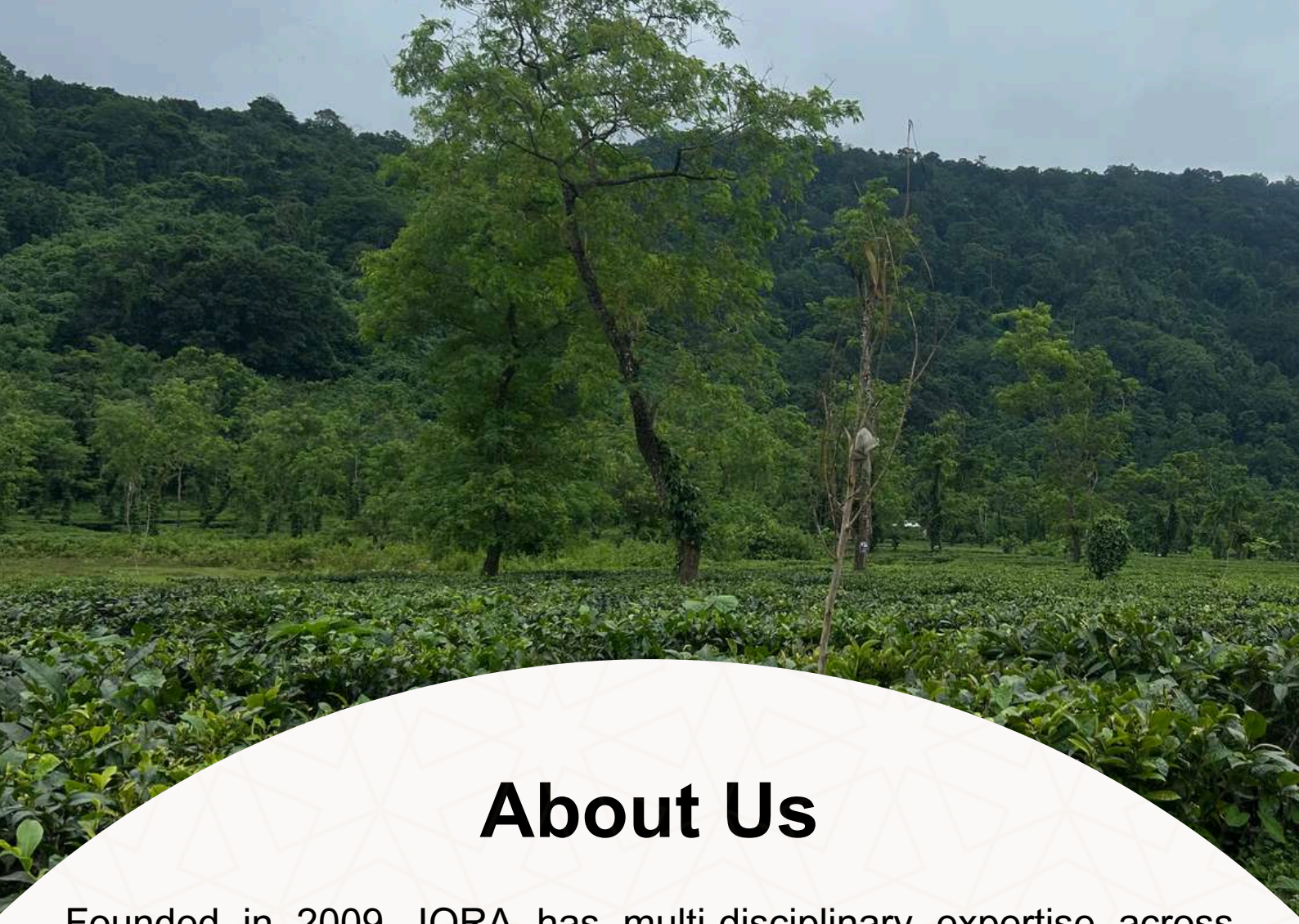


About Us

Founded in 2009, IORA has multi-disciplinary expertise across finance, program implementation, policy advisory and scientific research.

We are a leading environmental advisory firm in India, with expertise in natural resource conservation, climate change mitigation and adaptation.

We have extensive experience and proven ability to design and implement Nature-based Solutions (NbS) driven projects across the globe. This enables us to offer an integrated and effective NbS platform for large scale ecosystem conservation and climate action projects.

We leverage the collective expertise of these alliances to inform, initiate debates & discussions and influence policy and decision-making.

Our Purpose

We are committed to “Enabling Conservation of Natural Ecosystems and Developing Climate Resilient Communities through data-driven decision-making, convergent partnerships, and innovative financing mechanisms”. We aim to enable a global transition to NetZero and a climate-resilient economy through NbS.

As we strive to reduce GHG emissions, promote sustainable forest management, and steer towards a healthy planet, all our initiatives are in sync with global goals, calling for urgent economic and environmental transformation. We work to tackle the triple planetary crisis of climate change, biodiversity loss, and pollution by addressing local realities through a combination of policy congruence, incentivising conservation, securing finance, and developing capacities to support sustainable development.

IORA Ecological Solutions

Preface

To protect our natural ecosystems and tackle climate change, we need interdisciplinary strategies. The foundational framework upheld by IORA offers comprehensive solutions for ecosystem preservation and climate change mitigation.

IORA's research and development wing has been at the forefront of creating cutting-edge technologies for resource conservation. Our AI-driven environmental monitoring systems has transformed the methods of data collection and analyses, enabling more precise and efficient decision-making.

Key Sectors

Nature Based Solutions for Climate Action

Forest Management and Conservation

Climate Policy and Advisory

Integrated Remote Sensing and GIS Solutions

Agriculture Research and Advisory

Digits of 2023

20

Million USD Leveraged from Public and Private Sources towards Climate Change Mitigation and Adaptation

150+

Projects implemented across 27 states and 2 UTs of India

02

Million Trees Inventorised in the last decade

12

Million Ha Forest Management and Climate Risk Assessment

18

Million- Carbon Credits Traded

6+

Applications and Portals developed for carbon forestry, climate change, forest management, and biodiversity management

70+

Strong partnerships established with agencies to provide highly cost-effective and operationally efficient environmental solutions.

8000+

Government officials, public and private sector and NGO personnel trained for Forest Management and Climate Risk Assessment

26+

formulation of policies at national, subnational, and state level been supported

Workshops/ Sessions

Workshop On Environmental Economics: Economic Valuation of Ecosystem Services

We collaborated on a key dialogue series focused on the economics of ecosystem valuation, organised by Mongabay-India in partnership with the Indian Society for Ecological Economics (INSEE). Our Senior Economic Advisor, Dr. Madhu Verma, led thought-provoking sessions on “Putting Economic Valuation to Practice” and “Valuation as a Base for Economic Instruments.”

Designed for journalists and copy editors, the workshop offered a comprehensive understanding of the methodologies used to assess the economic value of ecosystem services. It aimed to strengthen the integration of these values into policymaking, institutional frameworks, and market-based interventions.

This engagement contributed meaningfully to the broader discourse within the environmental media space, highlighting the critical importance of incorporating economic perspectives into sustainable development planning and policy formulation.
Let me know if you want it shorter, more impact-driven, or tailored to a specific theme (e.g., capacity building, media engagement, etc.).

Connect Karo 2023, Session on "Transforming the Yardstick to Measure Benefits from the Farm Sector: Moving Beyond Per-Hectare Yield"

Reinforcing the importance of knowledge exchange in driving sustainability solutions, WRI's flagship event **Connect Karo** brought together stakeholders from India and abroad to address critical challenges for people, nature, and climate. Centered around the theme "For People, Nature, and Climate", the event provided a platform for insightful discussions and collaborative initiatives. A key highlight was the launch of IORA's working paper, "Transforming the Yardstick to Measure Benefits from the Farm Sector: Moving Beyond Per-Hectare Yield", which proposed new approaches to improving farmers' income by valuing agro-ecological elements, addressing hidden costs associated with subsidies, and incentivising unaccounted environmental benefits.

The discussions and deliberations following the paper launch focused on the potential to scale such studies to the landscape level, supporting the development of suitable policy interventions, economic instruments, partnerships, and investments, with the overarching aim of advancing farmer welfare and promoting sustainable agricultural practices.

Mid-Career Training Programme Sessions at LBSNAA

Our CEO, Swapan Mehra, conducted sessions addressing a variety of current environmental challenges at the Lal Bahadur Shastri National Academy of Administration (LBSNAA). This was part of the Mid-Career Training Programme for Indian Administrative Service (IAS) officers.

Key Topics Covered:

- Climate change
- The role of institutions in managing carbon credits to reach net-zero targets
- Community-based strategies for mitigating and adapting to climate change
- Carbon trading and green credits
- Budget 2023 implications for investments in nature and climate solutions

The training program aimed to equip officers with essential knowledge and skills for their future positions as Joint Secretaries to State Governments and Deputy Secretaries to the Government of India. This ensures that sustainability and climate resilience are incorporated with policymaking and governance frameworks.

Workshop on "Measuring Shift to Regenerative Agricultural Practices and Soil Organic Carbon Through Remote Sensing Technologies"

Highlighting the intersection of technology and sustainable agriculture, IORA participated in a workshop organised by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on "Measuring Shift to Regenerative Agricultural Practices and Soil Organic Carbon through Remote Sensing Technologies". The workshop aimed to inform stakeholders about recent technological advancements in measuring and monitoring the impact of regenerative agriculture practices and soil organic carbon (SOC).

During the session, IORA shared key findings and perspectives on measuring the emission reduction potentials of various sustainable and regenerative agricultural practices. The discussion also addressed critical challenges within carbon markets and provided insights into recent developments, including forthcoming green bond policies to be issued by the Government of India. By highlighting the essential role of regenerative agriculture in combating climate change, the workshop served as a platform for exchanging knowledge on the use of remote sensing technologies to promote sustainable agricultural practices.

Conferences

27th World Investment Conference on "Unlocking the Potential of Climate FDI: Strategies for IPAS”

Bringing together representatives from more than 50 developing nations, IORA delivered a noteworthy Masterclass on "Unlocking the Potential of Climate Foreign Direct Investment: Strategies for IPAs". This event, a focal point at the World Investment Conference, facilitated crucial discussions on climate FDI issues. The Masterclass was organised in collaboration with InVest India and the World Association of Investment Promotion Agencies (WAIPA).

IORA provided a thorough analysis of the current financing gaps in climate adaptation. We underscored the substantial gap between current levels of climate finance and the amount required to meet global targets by 2050, which is estimated to be nearly $200 trillion. To address these challenges, we collaborated with InVest India to develop a comprehensive toolkit to assist developing and emerging economies, while navigating the complexities of climate foreign investments.

The Masterclass concluded with a call for countries to adopt robust policies to attract climate finance, positioning themselves for sustainable development and resilience.

Stakeholder Roundtable on “Ease of Doing Climate Investments in India”

In partnership with InVest India, Dalberg, and Bloomberg, IORA organised a significant roundtable discussion titled "Ease of Doing Climate Investments in India" on July 28, 2023. This roundtable was curated to address the imminent climate crisis and identify opportunities for increasing investments in this space. The discussion featured distinguished experts and thought leaders who shared their insights on pressing issues. The interactive nature of the roundtable fostered interdisciplinary collaboration among stakeholders, scientists, and policymakers. The session Iora Ecological Solutions, Swapan Mehra, focused on facilitating access to public and private finance and identifying FDI opportunities for implementing climate adaptation, mitigation, clean technology, and nature-based solutions.

These discussions led to the formation of working groups on key themes:

- Ease of Doing Business,
- Ease of Access to Finance,
- Ease of Access to Investible Projects

These groups will develop clear, actionable plans for sustainable climate finance.

IORA at COP28

With a focus on accelerating practical climate solutions, IORA took part in COP28 UAE, engaging across platforms to promote nature-based investments, climate-resilient agriculture, and innovative approaches to green credit systems. A major highlight was IORA's role in conceptualising and implementing the Green Credit Programme, aimed at advancing scalable solutions for climate mitigation and sustainability.

We also contributed to a key discussion at the UK Pavilion under the theme **"Moving Towards Thriving Nature Markets",** which explored the growing significance of nature markets as platforms for channeling investments that deliver benefits for people, the climate, and ecosystems. The session focused on envisioning pathways for building thriving, inclusive nature markets to support global sustainability goals.

Additionally, we engaged with climate experts from India and Brazil during the COP28 event titled "**Unlocking Financing Opportunities for Climate-resilient, Sustainable Agriculture in India and the Global South**", organised in collaboration with the Shakti Sustainable Energy Foundation. The discussions highlighted the transformative role of climate finance in addressing agricultural vulnerabilities. Additionally, we engaged with experts from India and Brazil on financing sustainable agriculture, highlighting the need for better incentives in the carbon market to promote resilience and biodiversity alongside emissions reduction.

Assessment/ Monitoring

Baseline Study of Regenerative Production landscape: People, Nature and Economy in Madhya Pradesh and Odisha

To establish a robust baseline for sustainable production, ecosystem protection, and social inclusion outcomes, IORA has been commissioned to undertake a study following the Production, Protection, and Inclusion framework conceptualised by IDH. The study aims to collect and analyse data across three core dimensions: sustainable production of agro-commodities, protection and restoration of ecosystems, and socio-economic inclusion, forming a comprehensive foundation for monitoring and evaluating program impacts.

IORA supported the study by identifying relatively homogeneous farming systems and control groups, drawing on biophysical, socio-economic, and agricultural parameters. Their performance was assessed through household surveys, field sampling, and expert consultations, focusing on both agronomic and environmental outcomes.

The study also explored the program's geographic context through the lens of environmental sustainability and ecosystem services. It mapped household income levels, identified non-mainstream systems such as NTFPs, and applied an inclusion lens to understand the participation of women, youth, and vulnerable groups in production and governance.

Additionally, we conducted Land Use Land Cover (LULC) classification in accordance with IPCC Good Practice Guidance, establishing carbon baselines, estimating carbon sink capacities, and developing methodologies for tracking changes in carbon stocks. High-resolution multispectral satellite imagery is being used to characterise areas suitable for afforestation and reforestation. A climate change vulnerability index for farming systems and farm households is also being developed. In collaboration with CSL, an area profile is being created using secondary data, GIS, remote sensing, and soil health analyses. The final baseline report will consolidate field survey and FGD data, quantify carbon sinks and emissions, and integrate findings from village-level scoping studies to support the design and scaling of future interventions.

Organisational Capacity Assessment of Aga Khan Foundation, Tajikistan in Climate Resilient Programming

As part of its broader climate resilience ambition, the Aga Khan Foundation (AKF) has commissioned an organisational assessment of AKF Tajikistan to strengthen internal capacities for integrating climate resilience across all programmatic areas. Covering Agriculture and Food Security, Work and Enterprise, Civil Society Strengthening, Education, Early Childhood Development, Health and Nutrition, and Climate Resilience, the initiative seeks to embed climate-responsive approaches throughout AKF Tajikistan's projects, ensuring that both communities and ecosystems are better equipped to withstand and recover from climate-related impacts.

IORA undertook this assessment to map AKF's existing capabilities through the lens of its Green Growth and Climate Resilience Framework and to identify areas for further development. It is also formulating short-, medium-, and long-term strategies to support AKF in achieving its climate resilience goals, defining necessary knowledge and skills, designing capacity-building approaches using internal and external resources, and recommending structural adjustments. The assignment further includes mapping key stakeholders in Tajikistan's climate space, aligning efforts with national legislation and international commitments, and identifying financing opportunities to scale up resilience programmes across the region.

Integrated Assessment Of Land-Based Interventions for Strategic Mitigation and Economic Sustainability

Land-based climate mitigation measures (LBMs) are vital for meeting global climate goals while strengthening ecosystem and community resilience. With rising land-use pressures from agriculture and population growth, managing and enhancing the mitigation potential of land systems has become increasingly urgent.

Against this backdrop, IORA has been engaged to support the strategic planning and implementation of LBMs across India, with a focus on agro-economic zones. This includes identifying, mapping, and stratifying LBM solutions using region- and sector-specific indicators to assess ecological, social, and economic impacts. We are also analysing the prioritised interventions through data collection and value chain mapping, to evaluate risks, indirect emissions, and mitigation or adaptation potential. These insights will inform the development of replicable and scalable intervention models.

The project will also deliver a roadmap for scaling LBMs, region- and theme-specific case studies, and integrated solutions to maximise mitigation outcomes. A business case outlining public and private financing options will be prepared to support investment and adoption. Finally, workshops, interactive case studies, and knowledge-sharing sessions at the state and national levels will help build technical capacity and raise awareness of LBMs' potential.

Assessing the Feasibility for the Development of Carbon Mitigation Project Under Sustainable Management of Forest Ecosystem Services

Implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in India on behalf of the German Federal Ministry for Economic Cooperation and Dev Sustainable Management of Forest Ecosystem Services' project focuses on the development of carbon mitigation projects. As part of this initiative, a study was undertaken to assess the technical and financial feasibility and social acceptance of three project sites in Himachal Pradesh and the Bundelkhand region of Uttar Pradesh.

IORA led this assessment, developing draft Terms of Reference (ToRs) for the identified sites to guide partner agencies in Project Design Document (PDD) development. It evaluated the potential of the Forest Ecosystem Services (FES) approach using carbon standard methodologies.

The project sites included Kangra and Chamba districts in Himachal Pradesh, where plantation activities were carried out under the KfW project, and Jhansi, Mahoba, and Lalitpur districts in Uttar Pradesh, where plantations were undertaken as part of the Government of Uttar Pradesh–ICRISAT agroforestry initiative in 2018-19.

In consultation with the Forest Departments of Himachal Pradesh and Uttar Pradesh and the Ministry of Environment, Forest and Climate Change (MoEF&CC), IORA identified the most suitable carbon methodologies based on mitigation potential and ease of implementation. It conducted a scoping exercise, followed by a carbon trade-off analysis to determine social acceptance, and a cost-benefit analysis to evaluate financial feasibility. Field assessments were carried out in collaboration with key stakeholders.

We also reviewed the existing institutional structure to provide recommendations for the most appropriate implementation model, including identification of potential risks. Additionally, it compiled a list of national agencies engaged in Project Design Document (PDD) development in India to support future collaborations.

Learnings from Infrastructure for Climate-Resilient Growth (ICRG), FCDO'S TA Programme in India

The Foreign, Commonwealth and Development Office (FCDO) of the UK Government, in partnership with the Government of India, launched the ICRG programme to strengthen climate resilience among vulnerable populations and support low-carbon development. Implemented by partners including UNDP, Partnering Hope Into Action Foundation (PHIA), and International Institute of Environment and Development (IIED), the programme focused on enhancing the effectiveness of natural resource management (NRM) infrastructure built under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) to support farm-based livelihoods.

IORA, with Vertiver Pvt Ltd, were engaged to undertook an assessment exercise to document the impact of interventions implemented under the ICRG programme. As part of this effort, we identified and documented 20-25 interventions across Odisha, Bihar, Chhattisgarh, and Madhya Pradesh, developing case studies to highlight their impacts. These were finalised in consultation with FCDO, programme partners, and key stakeholders to represent diverse agro-climatic zones and landscapes.

The study assessed the effectiveness of interventions in promoting community engagement, enhancing livelihoods, and building climate resilience. It also evaluated how adaptive capacities to climate change have evolved since the programme's implementation. The findings and recommendations will inform future strategies to scale climate-resilient development and better support vulnerable communities.

Third Party Evaluation of Works Undertaken During the Period 2019-20 to 2021-22 Under Haryana Compensatory Afforestation Fund Management and Planning Authority (CAMPA) in the State of Haryana and Telangana

To ensure the effectiveness and impact of CAMPA (Compensatory Afforestation Fund Management and Planning Authority) initiatives, two independent third-party evaluations have been undertaken by IORA, in collaboration with the forest departments of Telangana and Haryana.

Telangana Evaluation:
Under CAMPA, the Telangana State Forest Department (TSFD) has undertaken significant efforts for the conservation and development of natural forests, including afforestation, forest protection, and wildlife management. To evaluate these initiatives and guide future planning, TSFD engaged IORA as a third-party evaluator to assess CAMPA works executed across the state from 2019-20 to 2021-22.
The evaluation involves site visits to all concerned forest areas, with physical verification of works using GPS, measuring tape, and other tools. A 10% sample from each component or sub-component is selected for evaluation. We will be compiling the findings, supported by geo-tagged photographs and standardised evaluation formats, into a comprehensive report that assesses both the quality and quantity of works completed under CAMPA. The assessment is conducted in coordination with forest officials including Range Officers, ACFs, DCFs, CFs, and CCFs, as needed.

Haryana Evaluation:
Similarly, the Haryana Forest Department engaged IORA through a national open competitive bidding process to conduct a third-party technical evaluation of CAMPA activities implemented during 2019-20 to 2021-22, specifically within the Central and South Circles.
A stratified random sampling approach is being used to determine the number of sites and volume of work to be evaluated under each CAMPA component across various forest divisions. Field verification is carried out using GPS and other measurement tools, and findings are recorded in a prescribed evaluation format. This process is carried out in coordination with Range Officers, Divisional Forest Officers (DFOs), Conservators of Forests (CFs), and Chief Conservators of Forests (CCFs). IORA will analyse the data and prepare a detailed report highlighting key insights and recommendations for strengthening the implementation of future CAMPA initiatives in the state.

Carbon Projects

Colombia Green Carbon Project

Expanding our global footprint, IORA has launched its first project in Latin America through a 100,000-hectare carbon forestry initiative in Colombia. In collaboration with the Codrin Group, IORA is supporting the development of a large-scale project aimed at restoring degraded lands, enhancing biodiversity, and sequestering carbon. As part of the initiative, IORA co-conducted a detailed site visit and stakeholder consultation process, engaging landowners, nature investors, forestry and carbon industry associations, and government representatives.

By leveraging IORA's expertise, the project aims to restore degraded lands, enhance biodiversity, and sequester carbon. This initiative not only addresses environmental challenges but also contributes to the global efforts in combating climate change. We are committed to achieving resounding success using IORA's integrated forestry approaches and making a positive impact on Colombia's landscapes and communities.

Carbon Budgeting Exercise for the Project ‘From Local to Global - Creating a Model for Eco-Villages in Punjab and Uttar Pradesh’

Advancing efforts to create climate-resilient communities, IORA is undertaking a carbon budgeting study for the project "From Local to Global – Creating a Model for Eco-Villages in Punjab and Uttar Pradesh". The study focuses on analysing the carbon footprint of existing water and waste management practices and assessing potential reductions through project interventions, aiming for a 10% decrease in greenhouse gas emissions per unit of energy produced by the communities.

IORA conducted a comprehensive carbon budgeting exercise for current practices across four project locations, developing scenarios to estimate emission reductions, and providing orientation to the project team on carbon budgeting within the defined project boundary. Reference methodologies and documents are being shared to support independent analysis of planned activities.

This study will support the creation of water-positive, zero-waste, and carbon-neutral communities, contributing to an integrated development approach aligned with the Sustainable Development Goals (SDGs).

Project Management Consultancy for Afforestation to develop Carbon Sink in area of 850 Ha at Rajasthan & Gujrat

Aiming to enhance carbon sinks, restore ecosystems, and build climate resilience, Cairn, a Vedanta company, is collaborating with the Governments of Rajasthan and Gujarat to plant two million trees by 2030. As part of this initiative, Cairn has committed to planting 0.35 million trees in Rajasthan and establishing mangrove plantations across 150 hectares in Surat, Gujarat. The project seeks to reduce emissions, promote biodiversity, and strengthen the adaptive capacity of local communities against climate change impacts.

Vedanta has commissioned a study to develop the carbon project through restoration of arid ecosystems and degraded wetlands via afforestation. IORA's scope includes establishing project and carbon baselines, aligning activities with recognised carbon standards, and conducting risk assessments and financial viability analyses. The work involved quantifying greenhouse gas (GHG) emission reductions using species-specific data, performing cost-benefit analysis, and recommending investment strategies.

During the planning phase, project parcels will be identified, mapped using GIS tools, and assessed to develop ecological, carbon, and socio-economic baselines. Appropriate native species will be selected to suit the landscape. The implementation phase will involve executing plantation activities, ensuring maintenance, and facilitating the registration of the carbon project. IORA will also manage ongoing monitoring and reporting to assess carbon gains, with a strong focus on transparent community benefit-sharing mechanisms.

Project Development, Monitoring and Credit Issuance for Tata Coffee Limited (TCL)

Strengthening its commitment to sustainable practices, TCL has partnered with IORA to develop carbon credit projects across its tea and coffee estates in India, aiming to transform plantation activities into significant contributions toward global climate action.

Under the project scope agreed between TCL and IORA, the services include the identification, finalisation, and mapping of project boundaries, beneficiaries, and land parcels; development of project baselines and socio-economic assessments with informed community consent; and preparation of project documentation in line with Verra standards. IORA will also be responsible for selecting and coordinating with a Validation and Verification Body (VVB), facilitating project validation, registration with the concerned authority, and overseeing monitoring, reporting, and verification cycles. Carbon credits will be issued every four years, with an expedited issuance of the first credits targeted by the end of the project's second year, leveraging TCL's existing data for faster evaluation.

The project will initially cover plantations established from 2020 onwards, with provisions for including new plantations each year. Depending on the success of this initiative, TCL and IORA may further explore additional opportunities, including projects focused on improving soil organic carbon and promoting sustainable land management practices.

Consultancy and Advisory and Other Services Relating to Projects/ Activities Eligible for Carbon Credit

Recognising the growing importance of carbon markets in driving sustainable business practices, Amalgamated Plantations Pvt. Ltd. (APPL) has engaged IORA to assess and develop projects eligible for carbon credit certification. The assignment focuses on evaluating APPL's existing activities through a carbon footprint assessment, identifying new opportunities for carbon credit registration and trading, and supporting the full development, monitoring, and issuance of carbon credits.

- In Phase 1, IORA will evaluate existing projects for carbon credit eligibility, conduct a carbon footprint assessment using available APPL data, and carry out a feasibility study to identify potential new projects. Each project will be assessed for technical feasibility, financial viability, and associated risks, along with the development of mitigation strategies and implementation guidelines. A Greenhouse Gas (GHG) emission reduction profile, covering both current and future eligible projects, will also be prepared.

- Phase 2 focuses on carbon project development, monitoring, and credit issuance for projects identified during the feasibility stage. Activities include mapping project boundaries, beneficiaries, and land parcels; developing baselines and socio-economic assessments; preparing project documentation in line with Verra standards; and selecting a Validation and Verification Body (VVB).

IORA will manage project validation, registration, monitoring, and the issuance of carbon credits, with third-party verification conducted once every four years.

Analysis and Business Case Development Report Preparation on Tree Plantation and Carbon Credit Assignment for Adani Group

The Adani Group, having pledged at the World Economic Forum's 1t.org initiative to grow 100 million trees by 2030, has commissioned IORA to support this ambitious objective. This commitment includes the 39 million trees—both mangrove and terrestrial—already planted by the Group, with an annual plantation plan in place to reach the 100 million target. The study aims to conduct a comprehensive assessment of the carbon sequestration potential of existing plantations and to analyse the carbon sequestration capacity of upcoming plantations, while also developing a business case for carbon development aligned with national and global climate goals.

The assignment is structured in two phases:

- Phase 1 focuses on assessing the retrospective carbon sequestration potential of the existing 39 million plantations and projecting the carbon sequestration potential of 61 million additional trees planned by 2030. For existing plantations, data provided by Adani—covering species composition, location, area, and densities—will be verified through random ground-truthing to assess growth rates and performance. IORA will prepare a carbon inventory, quantify plantations eligible for carbon credits, and document enhancements in green cover and carbon sequestration performance for stakeholder reporting.

- Phase 2 involves developing a business case for carbon development specifically for Adani Ports and Special Economic Zone (APSEZ) Limited. This includes the preparation of a carbon management plan and a species listing suited to different climatic zones, focusing on both terrestrial and mangrove plantations to optimize carbon sequestration potential.

Eco-Restoration/ Agro-Ecology

Scoping Study and Pilot Implementation for Building Sustainability and Climate Resilience in the Tea Sector in Assam

The Assam Climate Change Management Society (ACCMS) is working to build sustainability and climate resilience in Assam's tea sector, which has faced declining production and growth over the past decade. As the State's economic backbone and largest employment generator, revitalising the sector is critical. In this context, IORA has been engaged to conduct a scoping study aimed at enhancing sustainability and climate resilience, followed by a pilot implementation.

The study focuses on assessing the potential of climate-smart technologies and practices to reduce emissions in tea estates, conducting stakeholder consultations with estate managers, and performing a cost-benefit analysis of proposed interventions. Based on these inputs, IORA will develop a large-scale proposal for strategic climate action in the sector, with pilot strategies implemented and refined through stakeholder feedback.

The study is guided by four impact pathways: creating a climate-smart, high-productivity tea sector; improving livelihoods and living conditions of plantation communities; and strengthening the enabling environment through active stakeholder engagement. IORA will prepare a desk review and inception report to conduct a feasibility study on climate and sustainability indicators, and developing a monitoring and evaluation framework. Based on the research and consultations, a sustainable tea cultivation strategy will be created, pilot sites selected, and an implementation action plan finalised. A small demonstration pilot will be established at one tea garden site, with a strong focus on community-based monitoring and evaluation to inform future scaling.

Eco-Restoration of Exotic and Invasive Infested Areas of Kerala

Between the 1950s and 1980s, Kerala's natural forests were extensively cleared to facilitate rapid industrialisation, resulting in the establishment of exotic monoculture plantations such as Eucalyptus, Acacia, Mangium, and Wattle. At present, approximately 27,000 hectares of exotic monoculture plantations and 90,000 hectares of Teak plantations exist in Kerala's forests.

This study aims to develop a blueprint for the eco-restoration of exotic and weed-invaded sites in Kerala by assessing species composition, site health conditions, species availability, field performance, and underlying causes of weed invasion. The blueprint adopts a people-centric approach to provide long-term livelihood benefits to local communities.

Key activities include preliminary analysis of sites based on secondary literature, stakeholder consultations, and GIS-based mapping; assessment of site health using indicators such as erosion, soil quality, plant composition, compaction layer, survival rates, and litter amount; identification of the causes of invasion and associated ecological processes that are not functioning, with reference to natural and human-led disturbances; and preparation of eco-restoration designs by applying ecological principles in consultation with stakeholders.

The project involves developing a detailed eco-restoration blueprint, including an implementation and monitoring plan, to be submitted to the Government of Kerala. Additionally, systematic stakeholder engagement and communication support are being provided to the Government through the dissemination of study findings via white papers, reports, concept notes, and stakeholder consultations.

Development of Transition Risk Management Framework for Land based Emission Mitigation

Supported by the American Friends of EdelGive Foundation (AFEF) in collaboration with the India Climate Collaborative (ICC) Alliance and the IKEA Foundation, IORA is providing technical support to estimate a GHG emissions baseline for 2020 to aid in setting targets for 2030 and 2047. Contributing to India's broader net zero goal by 2070, the project lays the foundation for equitable land-based climate actions through socio-economic assessments and strategic stakeholder collaboration.

IORA's work includes identifying priority land-based climate strategies for the Agriculture, Forestry, and Other Land Use (AFOLU) sector, estimating the 2020 national GHG emissions baseline across land-based sectors and value chains, and establishing mitigation goals for 2030 and 2047. Key deliverables include a GHG inventory report for the baseline year, a goal-setting report for land-based climate measures, and a report assessing the potential for land-based climate actions in India.

Additional outputs comprise a risk assessment report on implementing climate measures, blog and print media articles on project learnings, and two policy briefs on climate goals and associated risks.

Support in the Development of the Draft Guidelines and Portal for Green Credit Programme

Aiming to enhance and incentivise positive environmental actions, The Ministry of Environment, Forest, and Climate Change (MoEF&CC) announced the Green Credit Programme (GCP) on June 23, 2023. The initiative was formally launched by Hon. Prime Minister Narendra Modi during COP 28 in the UAE.

In its initial phases, the GCP will focus on activities such as tree plantation, land parcel registration, and water conservation, with potential for further development over time. Three technical committees have been established to develop draft guidelines for the allocation of green credits: tree plantation, water conservation, and the development of a portal for the registry, issuance, and trading of green credits. IORA, possessing expertise in all these areas, actively participated in all three committees of GCP. IORA has been providing support and technical recommendations to formulate draft guidelines for the registration, certification, issuance, and verification of tree plantation and water conservation-based green credits.

Oversee and Monitor the Work Undertaken by UKPL and Carry Out Project Development Under the Carbon Unit Purchase Agreement

Covering 3,112 hectares since 2020, mostly tribal farmers in varied Indian states, Urvara Krsi Private Limited (UKPL) was a pioneer in promoting agroforestry with small and marginal. IORA, commissioned by BB Energy to oversee and monitor the work undertaken by UKPL, carried out project development under the Carbon Unit Purchase Agreement. The project involved agroforestry plantations by UKPL, which will be monitored by IORA over the next 20 years.

IORA provided Identification, finalisation, and mapping of project land parcels, along with project baseline development, community informed consent, and socio-economic baseline. Preparation of project documents in line with the Verified Carbon Standard followed by the selection and appointment of a validation and verification body (VVB) was done by IORA.

IORA will monitor, manage, report, verify, and issue the carbon credits (including third-party costs), once every four years.

Development of SDG Monitoring Dashboard for the State of Assam

As part of Assam's ongoing efforts to achieve the Sustainable Development Goals (SDGs), IORA has been engaged to support the development of a web-based SDG Monitoring Dashboard specifically focused on SDG-13: Climate Action. The primary objective of this assignment is to monitor the progress of departmental activities aligned with fulfilling Assam's SDG-13 targets by 2030.

The project involved close coordination with the developers and IT Department managing Assam's current reporting tools, as well as government departments, agencies, and data sources responsible for tracking the State's Nationally Determined Contributions (NDCs). The dashboard will track inputs, outputs, and outcomes based on the State Indicator Framework (SIF) and District Indicator Framework (DIF) developed by the Transformation and Development Department of Assam. IORA is responsible for producing a Draft Software Requirement Specification (SRS) document to guide the dashboard's technical development.

Additionally, the project aims to strengthen the resilience and adaptive capacity of the State to climate-related hazards and natural disasters. IORA will also provide ongoing technical support, including assistance with administrative functions, data entry, and maintenance work across all relevant departments of the Government of Assam, ensuring smooth operation and sustained monitoring capacity.

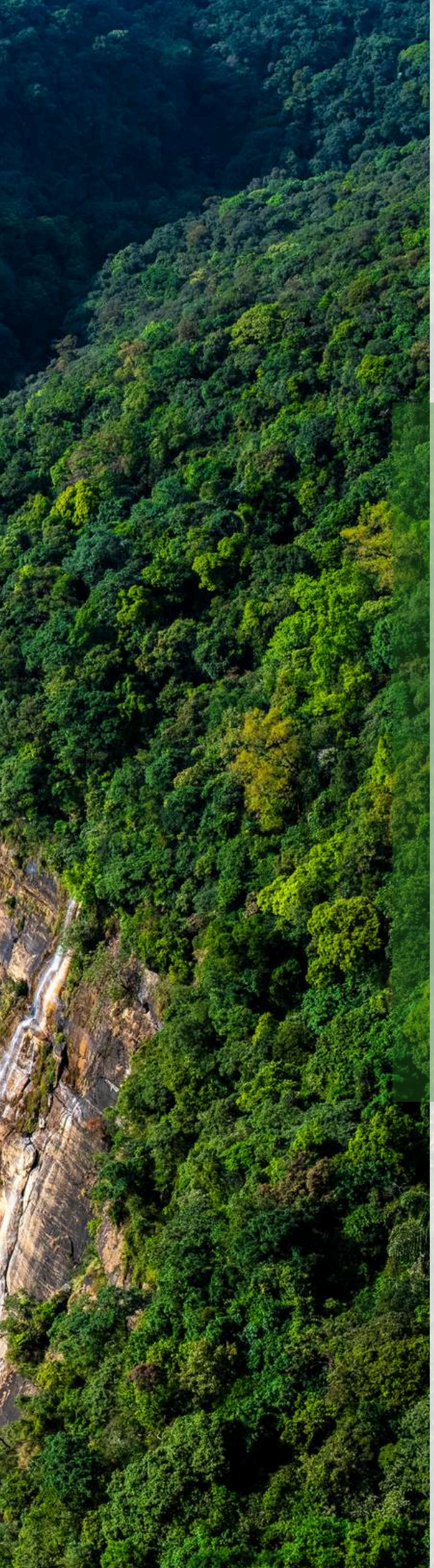
Epilogue

Throughout the year, we have focused on advancing initiatives in carbon forestry, landscape restoration, climate change adaptation, forest management, biodiversity conservation, and sustainable agriculture. These initiatives have been supported by state-of-the-art remote sensing and geospatial tools, enabling us to deliver impactful solutions and drive meaningful change.

By leveraging these advanced technologies, we have been able to monitor and analyse environmental conditions with unparalleled precision. This has not only improved our understanding of ecosystem dynamics but also allowed us to implement targeted interventions that yield tangible benefits for both nature and local communities.

Our efforts in carbon forestry have led to significant reductions in greenhouse gas emissions, while our landscape restoration projects have revitalised degraded lands, enhancing their ecological and economic value. In the realm of climate change adaptation, we have developed strategies that bolster the resilience of vulnerable populations and ecosystems, ensuring they can withstand and thrive amidst changing climatic conditions.

By engaging closely with stakeholders and local communities, we have co-developed and implemented interventions that not only restore ecosystems and reduce emissions but also enhance livelihoods and climate resilience. As we look ahead, we remain dedicated to deepening these partnerships and scaling solutions that deliver lasting value for both people and the planet.



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