IORA
Ecological Solutions

2022 - 2023

# ANNUAL REPORT

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# Content Index

# About Us

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

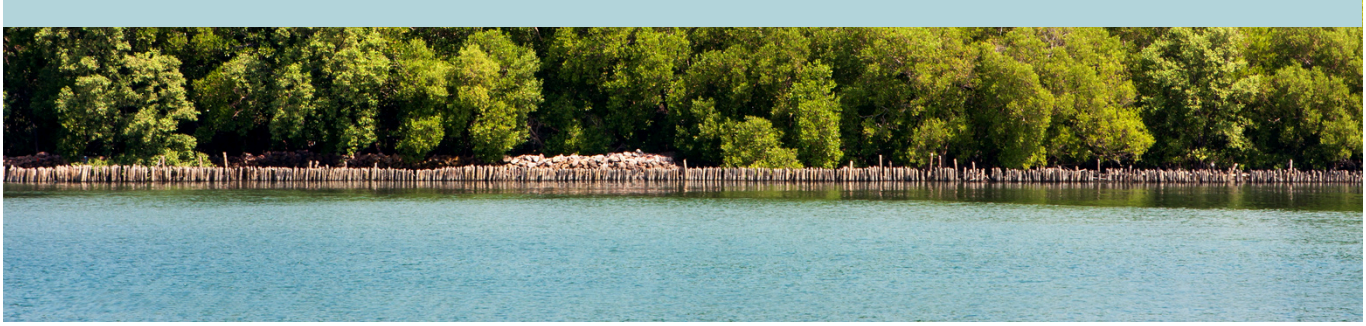
We are a leading environmental advisory firm in India, with expertise in natural resource conservation, climate change mitigation and adaptation. We have extensive experience and proven ability to design and implement Nature-based Solutions (NbS) driven projects across the globe. This enables us to offer 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.

# Vision

To design and implement integrated nature- based projects that lock-in carbon, protect biodiversity, empower communities and women, and create new livelihoods so that natural ecosystems can be restored and regenerated.

# Mission

To protect and enhance cultural, ecological and biological diversity of natural ecosystems through participatory approaches, built upon rigorous science and technologies, and bring sustainability.



# Our Purpose

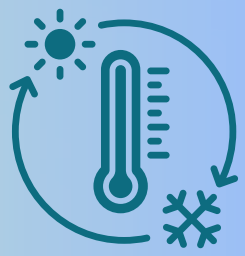
We are committed to “Enabling Conservation of Natural Ecosystems and Developing Climate Resilient Communities through data-driven decision making, convergent partnerships, and innovative financing mechanisms”. We aim to enable a global transition to NetZero and a climate-resilient economy through NbS.

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.

# 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

# Preface

The year 2022-23 was pivotal for IORA, as we continued to deepen our engagement with governments, institutions, and communities to advance climate resilience, biodiversity conservation, and sustainable development. With a steadfast commitment to science-backed strategies and Nature-based Solutions (NbS), our work this year reflects not only our evolving approach but also the growing recognition of integrated, inclusive, and locally relevant climate action.

From shaping national policy frameworks and climate finance roadmaps to enhancing field capacities across forest, aquatic, and agricultural landscapes, we expanded our efforts across multiple thematic areas. As a trusted knowledge partner to MoEF&CC and other key stakeholders, we contributed to India's long-term climate strategies, organised high-level dialogues, and led capacity-building initiatives that place communities at the centre of climate solutions.

Our cross-sectoral collaborations—with government bodies, research institutions, multilateral agencies, and private sector entities—underscored our belief that only through convergence can we address the triple planetary crisis of climate change, biodiversity loss, and pollution. This report captures the scope and significance of our initiatives over the past year, reflecting both our technical leadership and our vision for a sustainable future.

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# Policy Engagement & Climate Strategy

# IORA at COP27

In line with India's climate goals, the Hon'ble Minister of Environment, Forest and Climate Change, Shri Bhupender Yadav, submitted India's Long-Term Low Emissions Development Strategy (LT-LEDS) at COP27. The strategy outlines India's commitment to achieving Net Zero by 2070 and provides a roadmap to enhance forest and vegetation cover while balancing socio-economic and ecological priorities. Developed through extensive research and stakeholder input, LT-LEDS is supported by seven Task Groups, with IORA serving as a knowledge partner in Task Group 6, focused on promoting forest quality and coverage consistent with social and ecological needs.

At COP27, IORA collaborated with MoEF&CC to facilitate key discussions on climate change mitigation and sustainable development. In partnership with the World Bank, IORA organised the side event "Heatwaves in South Asia: Sustainable Cooling Solutions for Climate Resilience," presenting findings from the two-year study on India's Cooling Sector and highlighting investment opportunities aligned with the India Cooling Action Plan (ICAP).

Additionally, in partnership with UNDP India, IORA convened a side event titled "Mainstreaming Climate Risk in Corporate Investing – The Role of Financial Disclosures." This event focused on integrating climate risk assessments into corporate investment decisions to support decarbonisation and resilience. Experts from SEBI, ICAI, Tata Steel, JBM Group, and UKGI shared insights on the challenges and opportunities in climate risk disclosure and policy frameworks in India.


# Interactive Dialogue on Roadmap for Development of Six Interdisciplinary Research Centres in Haryana to support Mission LiFE

As part of its 2022–23 budget, the Government of Haryana announced plans to establish six interdisciplinary research centres across State universities and colleges. These centres will focus on key environmental themes—Jal (Water), Vayu (Air), Prithvi (Land), Jangal (Afforestation and Ecology), Urja (Energy), and Waste to Wealth (Conversion of waste to usable products). The initiative aims to enhance the state's resilience, adaptive capacity, awareness, education, and research in climate change and environmental sustainability.

In this context, the Haryana State Forest CAMPA Authority engaged IORA to facilitate an interactive dialogue on the prospects of setting up these centres. The first workshop was held at Maharishi Dayanand University, Haryana, bringing together representatives from universities, institutes, and bi-/multi-lateral funding agencies to explore collaboration and research opportunities under the identified thematic areas.

To further this initiative, IORA facilitated a second workshop in New Delhi with academic institutions and funding agencies, aimed at developing a framework for establishing the proposed research centres. The state government envisions these centres as pioneers in research and innovation on key environmental themes, serving as models for climate action and sustainability.


# Launch of Report - “Climate Investment Opportunities in India’s Cooling Sector”

IORA played a pivotal role in the development of the report, “Climate Investment Opportunities in India’s Cooling Sector”, which was officially launched by the World Bank at a press conference held in New Delhi. This comprehensive report was prepared to facilitate the implementation of the India Cooling Action Plan (ICAP) and is focused on devising actionable strategies for sustainable cooling across critical sectors. These sectors include Space Cooling in Buildings; Cold-Chain and Refrigeration in Agriculture and Health; Passenger Transport Air-Conditioning; and Refrigerants.

The initiative was undertaken with the support of the World Bank and in collaboration with our esteemed partners Energe-se, Tessol, and Vertiver. The report outlines the significant potential for India’s cooling strategy to mitigate risks to public health and livelihoods, reduce greenhouse gas emissions, and position the country as a leading global hub for the manufacturing of green cooling technologies. Furthermore, the report identifies eight key opportunities for concessional financing and private sector investment to further accelerate the realisation of ICAP objectives and promote the adoption of sustainable cooling solutions nationwide.

# Capacity Building & Training

# Training Course on Significance and Scope of REDD+ for Indian Forests

IORA continued its efforts to foster an enabling environment for the implementation of REDD+ (Reducing Emissions from Deforestation and Forest Degradation) initiatives in India, with a focus on enhancing community stewardship. To this end, IORA organised a specialised training course titled “Significance and Scope of REDD+ for Indian Forests” targeted at officers of the Indian Forest Service (IFS) from multiple states across the country.

The training programme was conducted from 11th to 15th July 2022 at Van Vigyan Bhawan, New Delhi, and aimed to build the capacities of participating officers to effectively design and implement REDD+ projects within their respective forest landscapes. The course was well received by the participants, as reflected in the positive feedback obtained. An evaluation conducted by the Ministry of Environment, Forest and Climate Change (MoEFCC) based on participant responses awarded the programme an overall score of 83%, underscoring the relevance and impact of the training in strengthening REDD+ project implementation capabilities.

# Technical Consultation Workshop – Development of Training Needs Assessment (TNA) Package, Including Development of Selected Training Modules Aiming at Conservation and Sustainable, Climate-Resilient Management of Fish and Invertebrate Stocks in the North Eastern Region of India

IORA extended its expertise to support GIZ's NERAQ project (Protection and Sustainable Management of Aquatic Resources in the North-Eastern Himalayan Region of India) in the development of a comprehensive curriculum aimed at enhancing knowledge and management capacities for the conservation and climate-resilient, sustainable management of fish and invertebrate stocks in the project states. The curriculum, structured across four detailed modules, is designed to enable a nuanced understanding of climate-resilient management, protection, and sustainability of aquatic resources in Assam, Meghalaya, Nagaland, and Manipur.

As part of this initiative, IORA organised a stakeholder workshop in Guwahati, Assam, on 8th December 2022. The workshop facilitated the dissemination of key findings from the baseline report and prioritisation of thematic areas for the curriculum modules. The event further provided an opportunity to solicit participant feedback on the proposed content, refine the module outlines for future integration into aquatic biodiversity-related courses, and identify potential partners for the institutionalisation of curriculum delivery. The engagement also helped in validation of the target audience groups for the programme.

IORA additionally undertook a comprehensive stakeholder mapping and conducted extensive consultations across the four NERAQ states as part of a TNA. Key sectoral stakeholders in the aquatic resources domain were identified, and their roles and existing gaps in knowledge dissemination assessed through focused consultations. This process informed the development of a baseline report that outlined the prevailing climate-related challenges in the region. A SWOT analysis was undertaken, and a scoring matrix was developed to facilitate the selection of institutions best suited for the development and delivery of the proposed training, thus strengthening capacity in aquatic resources management and sustainable utilisation.

Furthermore, IORA staff participated in a five-day training programme titled “Documentation of Traditional Knowledge”, organised by the NERAQ project in Poilwa village, Nagaland, from 14th to 18th February 2023. The training was led by Dr Rajindra Puri from the University of Kent, an eminent expert in indigenous knowledge systems. Participants engaged in interactive and practical sessions on methods and tools for documenting traditional and local knowledge, including a field exercise with the Zeliang tribe focused on traditional community fishing techniques. Insights gained from this capacity-building activity will contribute in the development of the curriculum modules, ensuring the integration of traditional knowledge into climate-resilient strategies for the sustainable management of aquatic ecosystems.

# Natural Resource Management & Biodiversity Conservation

# Establishment of Baseline for Biodiversity Conservation Interventions by ITC's Mission *Sunehra Kal*

IORA undertook a comprehensive assessment of biodiversity-focused interventions implemented by ITC under its Mission *Sunehra Kal* initiative. The study spanned diverse geographies across Maharashtra, Rajasthan, Andhra Pradesh, Madhya Pradesh, Karnataka, Tamil Nadu, and Telangana, covering forests, community lands, and private holdings. For a more nuanced analysis, the mission landscapes were categorised based on land-use types, agroclimatic zones, and the nature of interventions carried out.

A detailed biodiversity and livelihood survey was conducted using standardised methodologies to establish a robust ecological baseline. The assessment captured data on a wide range of ecological and socio-economic parameters, including the diversity of mammals, birds, pollinators, tree species, understorey vegetation, and soil characteristics, along with metrics reflecting community dependence on natural resources.

This baseline will serve as a reference to monitor changes over time and evaluate the impact of ongoing biodiversity enhancement efforts. The findings will also recommend best practices for biodiversity conservation and landscape restoration across project sites.

# Biodiversity Assessment of TATA Motors Plant at Pant Nagar and Proposed Biodiversity Park Area

As part of TATA Motors' commitment to its Environmental Policy, IORA was engaged to carry out a situational biodiversity assessment at the Pantnagar plant.

Using standard ecological survey methods—including Line Transects, Camera Traps, Point Counts, and Biodiversity Walks—we documented the presence of key faunal groups such as birds, mammals, and butterflies. The assessment also facilitated the identification of invasive plant species affecting the site.

An evaluation of seedlings and saplings present within the plant premises provided insights into the site's restoration potential. Based on the findings, a set of targeted recommendations was developed to enhance the management of both floral and faunal diversity, and to promote the regeneration of native species in the proposed Biodiversity Park.

# Research, Monitoring & Nature-based Solutions

# New Transitions in Smallholder Agricultural Systems that Promote Increased Tree Cover Outside of Forests

The India State of Forests Report, 2021 (ISFR 2021) shows an increase in tree cover outside of forests across India. Our ongoing NASA-funded project – New Transitions in Smallholder Agricultural Systems that Promote Increased Tree Cover Outside of Forests, being implemented in a partnership with Michigan State University, seeks to identify factors contributing to the the increase in Trees Outside Forests (ToF), as well as its ecological and socio-economic benefits to communities.

As part of this project, we are carrying out remote sensing analysis to identify ToF in project areas, and carrying out ground-truthing of satellite imageries through an extensive field exercise. Last year, our team visited Odisha to determine the factors driving these trends and ascertain the correlation between the increase in tree cover and the high financial valuation of Ecosystem Services.

Continuing the work, our team recently visited Telangana and conducted field surveys and tree biometric data collection in selected landscapes across Siddipet, Medchal & Medak districts and six districts in Odisha - Bargarh, Bolangir, Kalahandi, Koraput, Malkangiri and Nuapada. The field team also interacted with different line department officials, panchayat members, and farmers, and conducted village- and household-level socio-economic surveys to identify factors driving the trend of increasing ToF systems.

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