IPE GLOBAL

Expanding Horizons. Enriching Lives.

Climate Change & Sustainability

Committed to advancing low-carbon and climate-resilient development through holistic, integrated solutions, we work to mitigate climate risks, strengthen adaptive capacities, and foster long-term environmental sustainability. With a forward-looking lens, our team operates across diverse sectors and geographies - aligning development initiatives with global frameworks like the Paris Agreement and the UN SDGs, while also supporting national priorities such as India's Long-Term Low Emissions Development Strategy (LT-LEDS) and updated Nationally Determined Contributions (NDCs).

Core Areas of Expertise

- Climate Risk & Adaptation
- Mobilising Climate Finance for Just and Inclusive Transition
- Climate Resilient Infrastructure Designs
- Maintreaming Low-carbon Pathways
- Mainstreaming Climate in Policy, Plans and Programmes
- Disaster Risk Reduction and Promotion of Nature based solutions
- Gender Mainstreaming in ECC Policies and Programmes
- Mainstreaming Climate Action for Sustainable Tourism
- Climate Smart Cities

Onboarding of High- Level International Advisory Group (HLIAG)

In our continued pursuit of impactful and inclusive climate solutions, we have onboarded a distinguished panel of international advisory members comprising global leaders and climate experts from across continents. This High-Level International Advisory Group (HLIAG) will guide our strategic direction on climate action, resilience, and sustainable development.

H.E KITOKO GATA NGOULOU

Minister of State, Minister of Women & Child Protection for the Republic of Chad

Chair of HLIAG

ERIK SOLHEIM

Former Minister of Climate and the Environment of Norway and Former Executive Director of UNEP

Co–Chair of HLIAG

IZABELLA KOZIELL

Deputy Director General, ICIMOD

Member

DR. OSVALDO LUIZ LEAL DE MORAES

Director for Research & Development Policy & Programs of the Ministry of Science, Technology & Innovation (MCTI) of the Brazil & BRICS Chair-Committee on Climate Change

Member

DR. ABDULLAH BELHAIF AL NUAIMI

Former Minister of Climate Change & Environment in the UAE, Former Minister of Infrastructure Development in the UAE

Member

ATUL BAGAI

Former Head of the United Nations Environment Programme India

Member

DR. OUSMANE NDIAYE

Director General of African Center of Meteorological Application for Development (ACMAD)

Member

PROFESOR N. VINOD CHANDRA MENON

Founder Member, National Disaster Management Authority (NDMA) India

Member

ASHWAJIT SINGH

Managing Director, IPE Global

Member

ABINASH MOHANTY

Global Sector Head – Climate Change and Sustainability, IPE Global

Convener

Impact & Reach

470.25+ Mn*
women expected to be reached

Support to mobilise
$170 Bn/year*
to meet 2030 targets

Improved climate resilience for
~970.85+ Mn*
people

Support to reduce
2.0-2.3 Gt CO_2e* by 2030

$194.2* Mn
quantum of loss & damage expected to be averted

** Conditional estimates*

We Thank Our Partners

International Funding Organisations

Multilateral Agencies

Bilateral Agencies

Philanthrophic Organisations

Private Sector Organisation

Others

Mobilising Climate Finance for Just and Inclusive Transition

Achieving climate goals requires not just ambition, but equitable access to financial resources. Our work focuses on mobilising climate finance that supports vulnerable communities, promotes social equity, and ensures no one is left behind in the transition to a low-carbon, climate-resilient future. We facilitate strategic partnerships, unlock innovative financing mechanisms, and align investments with national and global climate priorities to drive sustainable, inclusive development.

Developing Financing Pathways to Support Low-Carbon Targets Implementation, 2025-2026

Project Background

India's Greenhouse Gas (GHG) emissions continue to rise with sectoral variations and regional disparities shaping the country's transition to a low-carbon economy. As India strives to meet its climate commitments, this development aims to support sustainable growth, reduce emissions, and attract private investments through targeted financial interventions. At the national level, the project is currently developing a comprehensive financing framework to mobilise investments in renewable energy, energy efficiency and climate mitigation.

This framework will:

- Provide a structured approach to deploying financial instruments such as green bonds, carbon pricing and offset markets to attract private sector participation while fostering public-private partnerships for long-term sustainability.
- Ensure a just transition for communities reliant on carbon intensive industries, minimising livelihood disruptions and creating sustainable pathways for industries and workers to adopt clean energy technologies.
- Establish a climate finance readiness framework, identifying financial gaps in energy sector and designing mechanisms to bridge these gaps effectively.

Our Role

We are supporting the Department of Forest, Environment and Climate Change (DoFE&CC) Government of Odisha as a Technical Support Unit (TSU) in enhancing its climate finance readiness. By integrating innovative financing mechanisms, equity considerations and sustainability principles, the project plans to empower Odisha to attract climate investments, strengthen resilience and develop scalable models that harmonise industrial growth with climate action.

LUCA – Strategic Climate Finance Advisory Services, 2023-2024

Project Background

Leading Urban and Climate Action (LUCA) intends to receive consultancy services around strategic, process related and technical issues of climate finance, in particular the mobilisation of private capital as well as sustainable urban and infrastructure development.

Our Role

- Provided conceptual and strategic process support towards a global climate finance initiative aimed at systematically mobilizing private capital for climate-relevant investments in emerging markets and developing countries (EMDCs).
- Delivered technical advisory services on topics related to (subnational) climate finance, climate-resilient infrastructure, urban development, and climate policy.
- Supported advanced advisory inputs on existing BMWK-supported climate finance initiatives such as LUCI, CCFLA, NUCAP, the Gap Fund, and NDCP-ensuring their conceptual development and alignment with evolving priorities.
- Identified and promoted strategic interlinkages across climate finance instruments and mechanisms, enhancing coherence and impact across projects and global initiatives.

Monitoring, Evaluation and Learning Support for the Climate Action of a Resilient Asia (CARA) Programme, 2024-2029

Project Background

FCDO is supporting the Climate Action for a Resilient Asia (CARA) programme. Designed as a regional programme supporting governments, regional institutions, cities, vulnerable communities and the private sector across the Indo-Pacific to increase the resilience of economies and vulnerable communities to climate change; improve the health of natural ecosystems; and promote low carbon growth and development in the region. CARA intends to do this through six thematic partnerships centred around

Climate Finance, Policy and Planning	Community-Based Adaptation	Water Resource Management/Security
Nature-based Solutions (NbS) & Landscapes	Urban Resilience	Weather and Climate Information Services

Our Role

As the MEL Support Unit for the CARA programme, we are responsible for delivering seven key outputs aligned with the overarching objectives of enhancing climate resilience, strengthening evidence-based policymaking, and ensuring accountability for climate finance investments:

1. **Reviewing and refining the overall CARA level monitoring framework** — We are leading the review and refinement of the CARA monitoring framework during the Inception Phase to ensure its effectiveness in tracking portfolio-level outcomes, particularly those aligned with climate adaptation and mitigation goals under the ICF (International Climate Finance) framework.
2. **Reviewing results/ monitoring frameworks of individual CARA components** — Through a light-touch assessment of partner-level MEL systems, we are offering strategic inputs to align these frameworks with CARA's theory of change and with FCDO's climate finance priorities, ensuring partner interventions contribute coherently to overall CARA objectives and ICF KPIs.
3. **Independent Monitoring** — We are providing continuous support to CARA implementing partners to report annual data on results framework indicators, including FCDO's ICF KPIs (e.g., GHG reductions, resilience impacts, and finance mobilised). Also ensuring data quality, synthesised evidence into annual reviews, and enabled transparent and accurate climate finance reporting. Special attention was given to tracking gender equality and social inclusion (GESI)-responsive impacts of climate finance.
4. **Targeted, Need-based MEL support to CARA Implementing Partners** — We are delivering timely technical advice to implementing partners to ensure their MEL systems remained adaptive to evolving climate finance priorities and capable of demonstrating outcome-level changes. This advisory support helped optimise the impact of climate finance investments by enhancing the responsiveness and rigour of results measurement.
5. **Produce Evidence and Learning** — We are developing high-quality evidence products and knowledge outputs to assess what works in the delivery of climate interventions across CARA's thematic areas. Using systematic analytical approaches, IPE's learning products contribute to the global climate finance evidence base and inform more effective future investments. IPE also designed and implemented a Knowledge Dissemination Strategy to ensure wide accessibility of this learning.
6. **Sharing of Evidence and Learning** — We have designed and maintained the CARA knowledge portal to serve as a transparent platform for accessing programme information, results, and lessons learned. The portal supports FCDO's commitment to open, evidence-driven climate finance programming.
7. **Facilitate Coordination among CARA Components/Partners** — Playing a central role in convening partners, fostering coordination, we are encouraging cross-learning to ensure climate finance resources were deployed efficiently and strategically across CARA's portfolio. This coordination is helping avoid duplication, maximise synergies, and reinforce a shared vision for climate resilience.

Mapping Industrial Readiness to Climate Change, 2024-2025

Project Background

While the discourse on climate change impacts in India has gained momentum, evidence-based research focused on industrial resilience remains limited. This gap has hindered timely and informed actions by key stakeholders particularly within the manufacturing and infrastructure sectors and to integrate climate risk considerations into their strategic and operational planning.

This project aims to address this gap by evaluating physical climate risks to Indian industries using geolocation-based climate models, combined with financial risk mapping and climate scenario analysis. The initiative seeks to inform both policy and practice by highlighting how climate change could affect industrial assets, supply chains, and competitiveness particularly in climate-sensitive sectors.

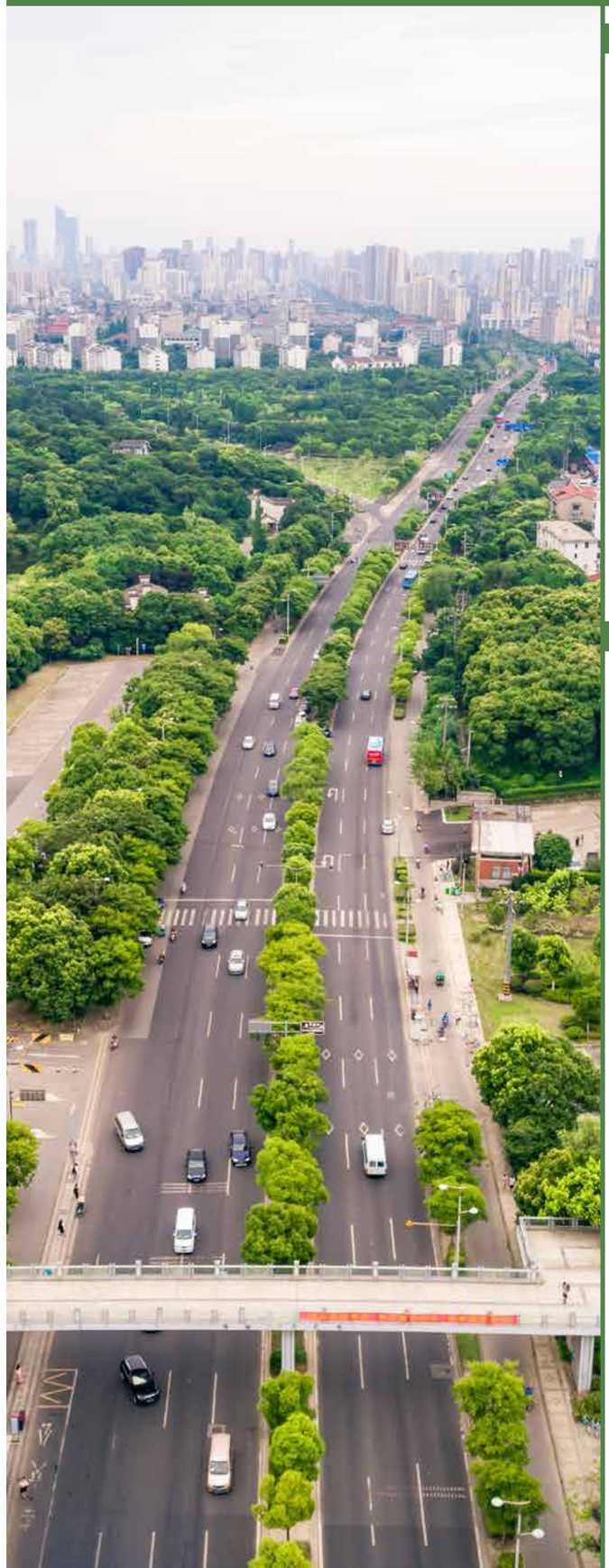
Our Role

We are leading this strategic assessment, and aims to:

- Map industrial vulnerability and readiness to climate change using spatially disaggregated physical climate risk data (floods, heatwaves, sea-level rise, etc.).
- Conduct climate scenario analysis and stress testing to assess potential disruptions to industrial operations under different global warming trajectories.
- Identify sector-specific and geography-specific risk hotspots, and recommend resilience measures tailored to India's industrial ecosystems.
- Integrate financial risk mapping to evaluate exposure to climate-related financial risks
- Propose strategic climate finance pathways, including:
    - Green industrial transition financing mechanisms to support retrofitting and resilience-building in MSMEs and industrial clusters.
    - Blended finance models to leverage concessional and commercial capital for industrial climate adaptation projects.
    - ESG-aligned investment frameworks and disclosure tools to help industries attract sustainable finance and meet compliance under BRSR (Business Responsibility and Sustainability Reporting).
    - Technical assistance on accessing international climate funds and private finance for resilience-enhancing technologies and infrastructure.

By combining physical risk analysis with climate finance strategy, we are enabling India's industrial sector to transition toward a climate-resilient and finance-ready future, aligned with national climate goals and global investor expectations.

Climate Readiness Index (India) – Sub National Decision Support System, 2024-2025



Project Background

As India advances its climate transition agenda, there is a growing need to assess the preparedness of states in adopting low-carbon pathways. However, existing data gaps, fragmented implementation, and limited decision-support tools have hindered sub-national climate action. This project seeks to bridge that gap by developing an evidence-based framework to measure, compare, and accelerate climate readiness across India's top 10 greenhouse gas (GHG) emitting states which includes Andhra Pradesh, Rajasthan, Gujarat, Chhattisgarh, Tamil Nadu, Odisha, Uttar Pradesh, Madhya Pradesh, West Bengal and Maharashtra.

The study builds on a multi-dimensional understanding of climate preparedness capturing systemic, financial, and technological readiness while addressing critical questions around renewable energy adoption, policy bottlenecks, and climate finance mobilisation. The ultimate goal is to equip stakeholders at the sub-national level with actionable insights and tools to fast-track low-carbon transitions.

Our Role

We led the design and implementation of a comprehensive Climate Readiness Index (CRI) that integrates Low-Carbon Pathways through the Climate Readiness Index–Decision Support System (CRI-DSS) a first-of-its-kind, AI-powered, scenario-based platform. The CRI-DSS was developed to assess and accelerate the low-carbon transition across India's top 10 greenhouse gas (GHG) emitting states. This dynamic, data-driven tool enables policy and investment decision-making by evaluating sub-national readiness across the following three critical dimensions: Systemic Readiness, Technological Readiness, and Financial Readiness.

> **Systemic Readiness** – assessing the strength of governance structures, policies, and institutional coordination to implement climate strategies.
>
> **Financial Readiness** – analysing existing and potential climate finance mechanisms at both state and central levels to support renewable energy and low-carbon infrastructure.
>
> **Technological Readiness** – evaluating the technical capabilities of states, with a focus on solar infrastructure and workforce development.

Together, these dimensions offer a holistic understanding of each state's capacity to adopt renewable energy solutions and implement climate-resilient strategies.

Cities and Infrastructure for Growth Ghana (CIG Ghana): Scaling up and Improving Urban Services, 2022-2023

Project Background

The programme focused on addressing the growing challenge of urban flooding in Ghana by producing advanced flood modelling, identifying both soft and hard infrastructure interventions, and providing strategic guidance for mobilizing climate finance to support the implementation of resilient urban infrastructure. The initiative aimed to build long-term climate resilience in urban areas through technically sound and financially viable solutions.

Our Role

We provided technical assistance during the second phase of the CIG Ghana programme, with a specific focus on integrating climate finance into urban resilience planning. This involved conducting detailed flood risk assessments, designing targeted adaptation interventions, and identifying appropriate climate finance instruments to support the implementation of these solutions.

We offered strategic advisory services to enhance the climate finance readiness of infrastructure proposals, enabling them to align with the requirements of both international and domestic climate finance mechanisms (such as the Green Climate Fund, Adaptation Fund, and Ghana's national climate funds). Additionally, we worked to strengthen institutional capacities for structuring bankable and climate-resilient urban development projects, supporting Ghana's broader climate adaptation and infrastructure goals.

Second Strengthening Social Resilience Programme in Bangladesh 2024-2026

Project Background

The programme will conduct a comprehensive review of existing social protection programmes of Ministry of Disaster Management and Relief (MoDMR) Government of Bangladesh to assess their capacity to adapt to climate change and natural disasters. It will also analyse the policy and regulatory landscape to identify obstacles hindering the integration of climate adaptation into social protection programs.

Our Role

We are strengthening the climate resilience of Bangladesh's social protection programmes through adaptive planning, policy analysis, gender-responsive and pro-poor adaptation strategies, integration of early warning systems and disaster risk financing, capacity building, stakeholder engagement, and robust monitoring and evaluation. The initiative aims to build equitable, climate-resilient systems benefiting vulnerable communities, especially women.

As a part of this programme, we have led the planning and assessment of social protection systems for climate adaptation, analysed policy barriers, developed gender-responsive, pro-poor adaptation strategies, integrated early warning systems and disaster risk financing mechanisms, and designed capacity building modules. We have also conducted monitoring and impact assessments, facilitated multi-stakeholder knowledge exchange, and advanced climate finance readiness by identifying financing needs and opportunities, supporting the development of investment frameworks, and strengthening access to climate finance for social protection programming especially for the Employment Generation Programme for the Poorest (EGPP) workfare programme.

Ulaanbaatar Green Affordable Housing and Resilient Urban Renewal Sector Project (AHURP) Sustainable Green Finance Support (SCF), 2020-2024

Project Background

The Ulaanbaatar Green Affordable Housing and Resilient Urban Renewal Sector Project (AHURP) aims to transform the highly climate-vulnerable and heavily polluting peri-urban "ger" areas of Ulaanbaatar into low-carbon, climate-resilient, and affordable eco-districts. The project seeks to significantly reduce greenhouse gas emissions and air pollution, while enhancing the liveability, adaptive capacity, and climate resilience of Ulaanbaatar. A core component of the project is the establishment of a Sustainable Green Finance mechanism through the Eco-District Affordable Housing Fund (EDAF) to support green, inclusive, and climate-smart investments in the housing and urban renewal sectors.

Our Role

We provided technical assistance for the Sustainable Green Finance Support (SCF) component of the AHURP, with a strong focus on enabling climate finance readiness, institutional development, system strengthening, and capacity building. The engagement included the following key areas:

Phase 1-A: Establishment of EDAF

- Drafting policy and internal documents to operationalize the Eco-District Affordable Housing Fund (EDAF)
- Developing guidelines to ensure smooth and accountable flow of climate finance from EDAF to selected commercial banks

Phase 1-B: Project Implementation Support

- Providing institutional and operational support across financial and procurement systems to enable efficient deployment of climate finance
- Developing and regularly updating key internal policy documents (CAM, FAP, RMP, QACP) to align with climate finance standards
- Designing and implementing the EDAF Management Information System (EMIS) and monitoring frameworks (PPMS)
- Establishing robust quality assurance and control systems, risk management frameworks, and financial management tools
- Supporting procurement of climate-resilient goods, works, and equipment
- Ensuring environmental and social safeguards compliance, including preparation and reporting on gender and social action plans, ESG frameworks, and due diligence
- Conducting institutional and business process analyses and implementing targeted capacity development and training activities

Phase 2: Sector and Financial System Strengthening

- Supporting sector capacity development and policy reforms to integrate climate resilience and low-carbon development goals
- Developing and promoting green financial products (e.g., green mortgages, equity loans, securitization instruments) aligned with climate finance frameworks
- Designing an investor outreach strategy and a sustainable green investment label to mobilize private sector participation in climate finance
- Developing standards, guidelines, and regulatory frameworks for green project qualification and selection to ensure climate finance alignment

Assessing the Attributional Correlation between Heat Risks and Extreme Rainfall Events, 2024

Project Background

The study assessed current and projected population exposure to heat risks in India, with key findings presented in the issue brief "Managing Monsoons in a Warming Climate." developed by IPE Global and Esri, India. The Intergovernmental Panel on Climate Change (IPCC) underscores the rising climate vulnerabilities across India particularly in high-GDP states driven by intensified heatwaves and erratic monsoon patterns. These compound risks threaten infrastructure, health systems, and livelihoods, highlighting the urgency of robust climate adaptation planning.

Our Role

In partnership with Esri India, we conducted a pioneering multi-decadal regional climatological analysis to examine the attributional correlation between rising temperatures and extreme rainfall events. The study aimed to:

- Generate empirical evidence on how global warming–induced temperature increases are intensifying rainfall extremes, contributing to a deeper understanding of compound climate risks in India.
- Map emerging heatwave hotspots and identify climate-vulnerable zones using advanced geospatial and climate modelling tools.
- Highlight the accelerating rise in temperature and humidity levels, which are increasing the frequency, duration, and severity of heatwaves
- Recommend actionable policy measures, including the establishment of a Heat Risk Observatory (HRO) to monitor, forecast, and respond to heat-related health and infrastructure risks at a granular level.
- Propose innovative climate finance solutions to bolster resilience, such as:
    - Blended finance models combining public subsidies, philanthropic capital, and private investment for heat-resilient infrastructure and early warning systems.
    - Risk pooling mechanisms and climate insurance products to safeguard vulnerable communities and MSMEs.
    - Mobilising climate adaptation financing through multilateral channels and national green funds to support Heat Action Plans and city-level resilience strategies.
- Advocate for the appointment of Heat Risk Champions to promote cross-sectoral coordination, enhance local awareness, and strengthen community-based adaptation.

Through this integrated approach, we contributed to advancing India's climate resilience agenda by linking science-based evidence, policy innovation, and strategic climate finance mobilisation.

Sustainable Access to Market and Resources for Innovative Delivery of Healthcare (SAMRIDH): Improving Healthcare Services for the Vulnerable, 2020

Project Background

India's first healthcare-focused blended finance facility, SAMRIDH focused on catalysing market-based solutions and innovations to improve access to affordable and quality healthcare services for vulnerable populations. The initiative leveraged blended finance to address systemic barriers in the healthcare ecosystem and enhance resilience to future health and climate-related shocks.

Our Role

Through this initiative, we addressed critical supply-side gaps in healthcare infrastructure to respond to immediate, medium, and long-term health emergencies. We accelerated the scale-up and adoption of innovative, market-driven health solutions and mobilised public and private resources to support high-impact healthcare delivery models.

Recognising the interlinkages between health and climate resilience, we actively promoted climate-smart healthcare systems by integrating sustainability measures, supporting green infrastructure, and incorporating climate risk considerations into health system strengthening efforts and explored and mobilised climate finance mechanisms including green bonds and impact investment instruments to build resilient, environmentally sustainable healthcare systems that can withstand future climate related and public health shocks.

Mobilising Investment for NDC Implementation-Understanding the Ethiopian Regulatory Environment in Relation to Mini-Grids, Ethiopia (2018-2019)

Project Background

The Mobilising Investment (MI) project for NDC implementation focused on targeted interventions across seven countries-Bangladesh, Dominican Republic, Ethiopia, Kenya, Peru, Philippines, and Vietnam-supported by the Federal Government of Germany's International Climate Initiative (IKI). The overarching objective was to support both public and private sectors in creating enabling environments to mobilise private sector financing for NDC implementation. In Ethiopia, the project specifically aimed to de-risk investments, address institutional barriers, and scale up climate-aligned financing to accelerate the transition to low-carbon and climate-resilient development.

Our Role

As part of this study in Ethiopia:

- Conducted a detailed climate finance readiness assessment to support the development of an investment platform and pipeline aligned with the Ethiopia IKI MI workplan. This included mapping existing financing flows and identifying opportunities to mobilise and leverage additional public and private climate finance for the mini-grid sector.
- Identified institutional and capacity gaps within key agencies such as the Ethiopian Energy Authority (EEA), Ethiopian Electric Utility (EEU), and other relevant stakeholders that constrain access to climate finance and impede the development of bankable, low-carbon energy projects.
- Provided early-stage technical guidance for the design of de-risking instruments and innovative off-grid financial and business models to enhance the commercial viability of mini-grid projects. These models were geared toward unlocking climate finance from both domestic and international sources including blended finance instruments, green investment facilities, and concessional capital to support decentralised renewable energy solutions.

The work laid the foundation for sustainable financing structures that can attract long-term investments and foster scalable, climate-resilient energy transitions in Ethiopia.

LoCAL: Evaluating Local Climate Adaptive Living Facility in 14 countries across Asia, Africa and Asia-Pacific; Deep dives in Bhutan, Tanzania, Niger and Tuvalu, 2022

Project Background

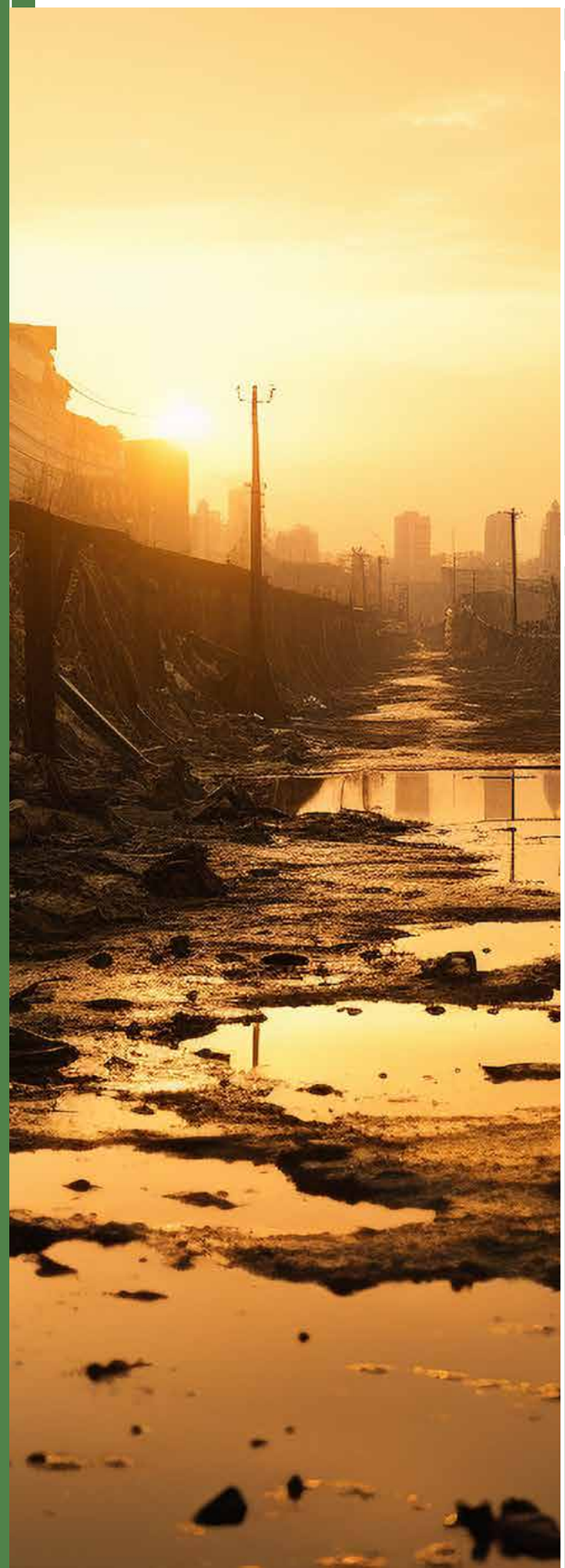
To build climate-resilient communities and promote local economies, the United Nations Capital Development Fund (UNCDF) designed the Local Climate Adaptive Living Facility (LoCAL) in 2011. The initiative aimed to channel climate finance directly to local governments in Least Developed Countries (LDCs), enabling them to plan and implement climate adaptation measures that respond to local needs.

Our Role

We played a pivotal role in supporting the evaluation of LoCAL by strengthening the capacity of UNCDF's partner LDC governments in climate finance governance, public financial management for adaptation, and climate-responsive local planning. We also contributed to documenting good practices and lessons learned across the 14 countries, with deep dives in Bhutan, Tanzania, Niger, and Tuvalu.

These insights helped refine UNCDF's global strategies for Local Development Finance and informed future programming and resource mobilisation efforts to scale up climate finance for local adaptation.

South Sudan: Assessing Urban Disaster Risks and Investment Options for Urban Disaster Risk Reduction, 2024- 2025



Project Background

This project focused on evaluating climate-induced hazards and urban disaster risks in South Sudan, with the objective of informing resilient development planning. It involved identifying high risk regions and vulnerable populations, and analysing how climate related shocks such as floods, droughts, and extreme weather events pose threats to urban development outcomes. The study was designed to generate evidence-based insights through a structured assessment of climate hazards, exposure, vulnerability, and risk, followed by a comprehensive review of adaptation needs and resilience-building opportunities.

The outputs aim to support the World Bank and other stakeholders in mainstreaming climate resilience into urban planning, strengthening institutional capacities, and guiding the design of strategic investment plans, including those supported by climate finance.

Our Role

As part of this initiative, we

- Conducted a detailed climate hazard, exposure, vulnerability, and risk assessment, integrating geospatial and socio-economic data to identify urban hotspots most at risk of climate-related disasters.
- Delivered a comprehensive adaptation and resilience assessment, outlining priority measures to reduce climate and disaster vulnerability across urban systems such as housing, water infrastructure, drainage, and social services.
- Assessed investment options for disaster risk reduction and climate adaptation, focusing on scalable and context-specific interventions aligned with national priorities and World Bank frameworks.
- Integrated climate finance dimensions by:
- Identifying blended finance mechanisms and results-based financing opportunities to fund urban resilience investments.
- Proposing access pathways to global climate funds (such as the Green Climate Fund and Adaptation Fund) for urban infrastructure projects.
- Recommending de-risking instruments and concessional finance structures to attract private capital into urban climate resilience efforts.
- Supporting the design of climate-smart investment pipelines that align with both donor and domestic financing frameworks.

Through this work, we contributed to strengthening the climate resilience of urban systems in South Sudan, enabling the World Bank and its partners to make informed, finance-ready decisions for long-term urban disaster risk reduction.

The Climate Change and Sustainability (CCS) practice at IPE Global is committed to climate proofing a low carbon future for a cleaner and healthier world by providing solutions to manage environmental liabilities, strengthening resilience and adapting to climate change.

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Scan for Climate Deck

Climate Risk and Adaptation

Building climate resilience isn't optional - it's essential for safeguarding lives, livelihoods, and ecosystems. The increasing risks from climate change-such as rising temperatures, extreme weather events, and socio-economic disruptions-are placing lives, infrastructure, and ecosystems under growing stress. These risks demand urgent action and are the basis for building resilience and adaptive capacity. We focus on designing and implementing locally grounded, evidence-based adaptation solutions that prioritise the most vulnerable. From strengthening early warning systems through hyper-granular risk assessment to mainstreaming climate resilience in policy and infrastructure, our work is rooted in equity and long-term resilience building. We collaborate with governments, communities, and global partners to embed climate resilience across sectors, ensuring adaptation finance reaches those who need it most. Because climate adaptation is not just a response - it's a responsibility.

Developing a Multi-Hazard Risk and Vulnerability Atlas for Mumbai (MHVRA), 2023-2024

Project Background

Mumbai, one of India's largest and most densely populated coastal megacities, faces a complex and growing array of climate and disaster-related risks. The city's vulnerability stems from both its geographic exposure and expanding urban footprint. Recurrent hazards such as floods, landslides, cyclones, fires, and chemical spills have repeatedly tested the resilience of its infrastructure and communities.

With climate change accelerating the intensity and frequency of extreme events, the need for a scientific and integrated risk management framework has never been more urgent. In response, in collaboration with Esri India, we were commissioned by UNDP and the Brihanmumbai Municipal Corporation (BMC) to develop a Multi-Hazard Risk and Vulnerability Atlas (MHVRA) for the city. By translating climate risk into localised, actionable intelligence, this initiative paves the way for mainstreaming adaptation into disaster management, urban governance, and infrastructure planning - making Mumbai a safer and climate-resilient city.

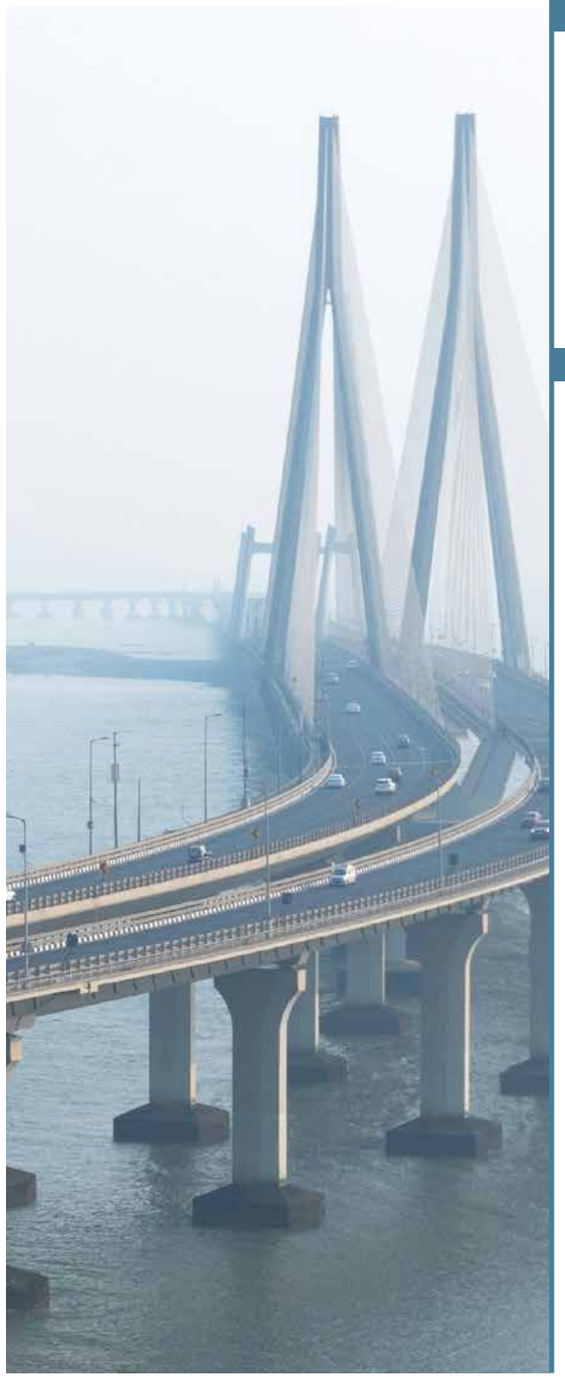
Our Role

As the lead technical partner, we played a pivotal role in designing and delivering the risk atlas with a strong climate adaptation lens. Key contributions included:

- **Integrated Climate Risk Modelling:** Incorporated past hazard events and projected climate scenarios (based on IPCC pathways) to map future risks and exposure hotspots in the city.
- **Vulnerability Assessment: Conducted multi-dimensional assessments** that combined socio-economic indicators with spatial hazard data to identify vulnerable populations and infrastructure at risk.
- **Climate Adaptation Planning: Developed actionable recommendations for adaptation** - such as early warning systems, green-blue infrastructure planning, and climate-resilient housing - to inform BMC's disaster risk reduction and climate resilience strategies.
- **Data-Driven Decision Support: Leveraged GIS and advanced spatial analytic**s (in partnership with Esri India) to build a dynamic, visual platform that enables city officials to plan, respond, and invest more effectively in resilience.
- **Institutional Strengthening:** Enabled capacity building within BMC and aligned the outputs with national frameworks such as the National Disaster Management Plan (NDMP) and the State Action Plan on Climate Change (SAPCC).

The Multi-Hazard Risk and Vulnerability Atlas is more than just a mapping tool - it is a strategic climate adaptation instrument. It strengthens Mumbai's institutional readiness for managing compound climate risks, enhances the integration of climate science into urban planning, and equips decision-makers with a real-time, spatially explicit platform for resilient development.

Scenario-Based MHVRA Integration into Mumbai's Command-and-Control System (CCS), 2025-Ongoing



Project Background

As climate-related hazards intensify, real-time, data-driven decision support systems are essential for building resilient urban governance. Building upon the foundation of Phase I (Mumbai's Multi-Hazard Risk and Vulnerability Atlas), Phase II integrates scenario-based hazard modelling directly into the Command-and-Control System (CCS) at the Brihanmumbai Municipal Corporation (BMC) headquarters. This critical advancement transforms risk assessment into operational intelligence-enabling anticipatory, responsive, and adaptive disaster management.

Our Role

We lead the technical design and integration of the hazard simulation and risk analysis platform into Mumbai's CCS, using advanced GIS tools and live data processing systems in collaboration with Esri India. Our contributions include:

- **Real-Time Climate Hazard Modelling**: Using remote sensing and GIS-based scenario modelling to simulate the spatial and temporal impact of hazards like floods, cyclones, heatwaves, and landslides under projected climate conditions.
- **Automated Impact Scenarios:** Embedding dynamic hazard impact simulations that auto-generate response-ready dashboards and reports within the CCS.
- **Live Data Feeds Integration:** Enabling authorities to monitor, evaluate, and respond to rapidly evolving hazard conditions using weather, tidal, and rainfall telemetry systems.
- **Decision Support for Emergency Response:** Creating algorithms to identify cascading impacts and suggest prioritised interventions across critical infrastructure, transport, health, and vulnerable populations.
- **Adaptation Strategy Alignment:** Supporting city-level climate resilience plans with scenario-informed mitigation and adaptation strategies aligned with IPCC projections and national frameworks.

Outcomes & Impact

Enhanced Decision-Making: Institutionalizes data-driven and anticipatory risk governance in Mumbai.

Real-Time Crisis Management: Enables city authorities to shift from reactive to proactive response models.

Resilience Mainstreaming: Strengthens long-term disaster preparedness through actionable forecasting.

Community-Level Impact

30,85,410+
people expected to benefit from improved preparedness

16,84,600+
women reached through gender-sensitive risk analysis

$49 billion+
in estimated loss and damage averted by 2070 (based on IPCC sea-level rise projections)

Program Management and Design Consultancy – Himachal Pradesh Disaster Risk Reduction and Preparedness (HPDRRP) Program, 2025-Ongoing

Project Background

The Himachal Pradesh Disaster Risk Reduction and Preparedness Program (HPDRRP) is a flagship initiative of the Government of Himachal Pradesh (GoHP) supported by the Agence Française de Développement (AFD). HPSDMA is the nodal implementing agency for the project. The program aims to strengthen disaster and climate resilience among state systems and local communities, while transitioning Himachal Pradesh toward a comprehensive risk reduction framework. Its focus is on resilient infrastructure, strengthened governance, and community preparedness.

The program is structured around 20 projects under three core components:

- Enhancing Disaster Risk Governance – strengthening institutional capacities, risk understanding, and knowledge management for specific hazards like floods, glof, landslides, cloudburts among others.
- Strengthening Disaster Preparedness – scaling up early warning systems and enhancing emergency response capacities.
- Promoting Mitigation Measures – deploying eco-DRR strategies and nature-based solutions (NbS) to effectively mitigate risks.

Our Role

We as the program management and design consultancy agency ensure the design, management, and delivery of the program across all three components. Our role spans technical support, procurement, compliance, reporting, and institutional capacity building.

Core responsibilities include:

Technical, Design & Management Support

- Daily project management and coordination with the Program Management Unit (PMU) and Project Implementation Units (PIUs) for enhancing climate resilience
- Support for preparation of Detailed Project Reports (DPRs) for such as HCDRR, supporting EWS, Supported by GIS based DSS. Support in drafting tender documents, Terms of Reference (ToRs), and technical specifications for procurement of goods and works, that supports CRI/DRI.

Compliance & Safeguards

- Ensuring adherence to GoHP procurement policies and AFD requirements, including environmental and social safeguards.
- Maintaining and updating Environmental & Social Management Plans (ESMPs).
- Implementing the Gender Action Plan and producing gender implementation reports to support CRI/DRI.

Capacity Building

- Providing on-the-job training to PIU staff for improved program delivery.
- Enhancing institutional capacities to sustain program outcomes beyond the project lifecycle.

Program Financial Management

- Planning and monitoring expenditures against allocated budgets.
- Supporting transparent financial reporting to GoHP and AFD.

District Disaster Management Plans - Uttar Pradesh, 2025-26

Project Background

Uttar Pradesh's vast geographic spread and dense population make it acutely vulnerable to a wide range of natural and human induced hazards, including riverine floods, droughts, earthquakes, heatwaves, lightning, storms, snakebites, etc. These risks are amplified by rapid urbanisation, stressed infrastructure and services, and pronounced socio economic vulnerabilities among women, children, the elderly, and persons with disabilities.

To strengthen a culture of preparedness and promote risk-informed development, the Government of Uttar Pradesh, under the aegis of UNDP and the Office of the Relief Commissioner, has initiated the development of District Disaster Management Plans (DDMPs) across 25 high-priority districts in the eastern and northeastern plains. This initiative aims to translate the Disaster Management Act, 2005 and NDMA guidelines into actionable, district-level frameworks. Through a structured approach, the DDMPs will enable local administrations to systematically map hazards, assess vulnerabilities and capacities, and establish clear, implementable protocols for preparedness, response, mitigation, and recovery. By institutionalising these processes at the district level, the project seeks to build resilient systems, enhance coordination among stakeholders, and ensure that disaster risk reduction is embedded within local development planning. This assignment aims to transform DDMPs from static compliance documents into living, digital blueprints for building community resilience , continuously updated through a state MIS to guide everyday decision making, investments, and emergency operations.

Our Role

We are providing end to end technical assistance to design and operationalise 25 comprehensive, MIS enabled DDMPs, strengthening risk governance, preparedness, and recovery systems across Uttar Pradesh's most hazard prone districts.

Our work includes:

- **District Specific Risk Diagnostics: Conducting multi hazard HRVCA for each district, integrating historical disaster data, climate trends, socio economic vulnerability, critical infrastructure, and livelihood risks, using NDMA aligned methods and GIS analysis.**
- **Participatory Plan Development: Co creating DDMPs through a three tier consultation process: strategic meetings with DDMAs and district leadership, sectoral sessions with key line departments, and ground level engagements with community representatives to ensure ownership and local relevance.**
- **Institutional and SOP Frameworks: Defining the roles of district DRM institutional architectures (DDMA, DEOC, IRTs, ESFs) and preparing hazard specific, action oriented SOPs including decision points, and stepwise actions for preparedness, early warning, response, and recovery.**
- **Data Driven Resource and Finance Planning: Developing detailed resource inventories and contact databases compatible with IDRN, and analysing disaster related expenditure, financing gaps, and innovative risk financing options to inform phased, costed resilience investment plans.**
- **Mainstreaming DRR into Development: Identifying entry points to embed DRR and climate resilience into District Development Plans, GPDPs, and flagship schemes (e.g., Jal Jeevan Mission, Amrit Sarovar, livelihood missions), ensuring DDMP actions leverage existing programmes and funding streams.**
- **Capacity Building and Simulation: Delivering targeted workshops, table top exercises, and mock drills for district officials, PRIs, ULBs, frontline workers, and CSOs, using district specific scenarios to test SOPs and strengthen coordination and decision making.**
- **Digital Integration with State MIS: Structuring all DDMP content, GIS layers, resource inventories, and indicators for seamless integration into UPSDMA's cloud based MIS, enabling real time monitoring of plan implementation through dashboards, alerts, and colour coded progress tracking.**

By integrating robust risk analytics, inclusive field engagement, and robust digital systems, this engagement will culminate in a scalable, institutionalised model for district-level disaster risk management in Uttar Pradesh, enhancing preparedness in the immediate term while laying a sustainable foundation for long-term, climate-resilient, risk-informed development.

Ghana Urban Risk Observatory (GUO) 2026-Ongoing

Project Background

Ghana's cities are growing rapidly. With urban populations projected to account for the majority of the country's residents within a generation, the pace and pattern of urbanisation presents both an urgent governance challenge and a transformative opportunity. Accra, Kumasi, Tamale, and other urban centres are experiencing mounting pressures on infrastructure and services, while simultaneously confronting escalating climate risks including flooding, urban heat, and drought that threaten the livelihoods of millions of residents, particularly the urban poor.

Despite growing recognition of these challenges, urban planning and investment decisions across Ghana continue to be constrained by fragmented data ecosystems, limited spatial analytics capacity, and the absence of a unified platform for evidence-informed decision-making. National and local authorities often operate in data silos, lacking the tools to systematically monitor service delivery performance, assess climate vulnerabilities, or track progress against urban development indicators.

To bridge this critical gap, the European Union-AFD-in partnership with key national institutions – has commissioned the design and development of the Ghana Urban Risk Observatory (GUO): a centralised, multi-layered data and analytics system that will fundamentally transform how urban insights are generated, shared, and acted upon across Ghana. The GUO will function as the country's primary infrastructure for evidence-informed urban planning, enabling stakeholders to monitor urban service delivery, assess climate risks and vulnerabilities, conduct scenario analysis, and track progress on urban development indicators from the national level down to individual cities and communities.

This initiative positions Ghana at the forefront of data-driven urban governance in West Africa, establishing a scalable and institutionalised model for urban intelligence that can support long-term resilience, investment prioritisation, and sustainable urban development likely to avert loss and damages around USD 108 million and additionally more than 40 per cent of Ramsar sites can be restored.

100+
municipalities covered under the observatory framework

15,10,900+
women across the 6 target cities benefiting from improved urban services and climate-resilient planning

$108 million+
in potential annual Loss and Damage costs projected to be avertedplanning

More than **40%**
of Ramsar sites can be restored

Our Role

We are providing end-to-end technical assistance to design, develop, and operationalise the Ghana Urban Observatory Digital Platform, building the country's first integrated urban data and analytics infrastructure to support evidence-informed planning, climate resilience, and sustainable urban development.

Our work includes:

- **Urban Data Architecture and Integration:** Designing a centralised data management system that consolidates spatial, statistical, and climate data from national and subnational sources, integrating with existing platforms including the District Development Data Platform (DDDP), LUPMIS, and third-party earth observation datasets.
- **Service Level Indicator Platform:** Developing an interactive digital map portal and dashboard that visualises urban service performance at neighbourhood, municipal, and national scales, enabling intra-city and inter-city assessments based on a suite of urban service indicators.
- **Spatial Planning Module:** Building advanced geospatial and spatial analysis tools including GIS-based overlays, proximity analysis, and earth observation integration to help planners visualise service gaps, land use patterns, and infrastructure distribution.
- **Climate Resilience Module:** Integrating a climate risk dashboard with AI/predictive modelling capabilities for hazard mapping across flooding, heat stress, and drought, enabling local authorities to overlay climate data onto the urban database and support anticipatory planning.
- **Urban Foresight and Scenario Modelling:** Delivering tools that allow stakeholders to create, modify, and evaluate future urban growth scenarios, assess spatial impacts, and develop proactive strategies for resilient infrastructure investment.
- **City Performance Reporting and Knowledge Repository:** Developing city scorecards, customisable report templates, and a research repository to support biennial State of Cities reporting, inter-city comparison, and access to urban research, policy briefs, and capacity building resources.
- **System Testing, Training, and Post-Deployment Support:** Conducting functional, integration, and user acceptance testing across all modules; delivering targeted training and providing post-deployment technical support.

By combining robust urban data integration, cutting-edge spatial analytics, and AI-enabled climate intelligence with inclusive capacity building and institutional embedding, this engagement will deliver Ghana a world-class urban observatory infrastructure one that transforms fragmented urban data into actionable knowledge, accelerates evidence-informed planning and investment, and lays a durable foundation for climate-resilient, sustainable urban development across the country.

Developing Model Heat Action Plan for Patna District, 2025–Ongoing

Project Background

Heatwaves in India are becoming increasingly frequent, intense, and prolonged due to climate change, with Bihar among the worst-affected states. In 2024 - one of the hottest years on record - Patna district faced extreme heat stress, resulting in severe health risks, loss of lives, and widespread disruption to daily life.

To address this, the Government of Bihar, in partnership with the United Nations Development Programme (UNDP), has launched the development of a Model Heat Action Plan for Patna district. This plan will provide district-specific, data-driven strategies to enhance resilience and preparedness for extreme heat events.

Our Role

We are leading the technical development of this pioneering Heat Action Plan by:Our work includes:

- **Hyper-Granular Risk Mapping:** Using AI/ML-driven climatological and meteorological models to produce real-time, sub-district heat risk data from satellite and local monitoring inputs.
- **Discomfort Index Estimation:** Incorporating temperature, humidity, and urban heat island effects to assess human health vulnerabilities across Patna.
- **Forecasting & Early Warning:** Developing predictive tools and protocols to enable timely responses and reduce heat-related casualties.
- **District-Level Action Framework:** Designing tailored, cross-sectoral response plans involving health, urban planning, disaster management, and community outreach.
- **Stakeholder Engagement & Capacity Building:** Conducting consultations and training to strengthen readiness among local authorities and first responders.

This initiative will not only enhance Patna's departmental disaster response capacity but also serve as a model for replication in other Indian states seeking to embed disaster resilience within departmental governance structures.

Strategy Support for Policies and Investments; India, Bangladesh & Sri Lanka, 2022-2024

Project Background

South Asia's agri-food systems are increasingly vulnerable to climate change, especially affecting smallholder farmers who are the primary food producers. Despite national commitments to adaptation, regional policy maturity varies, and investments remain heavily skewed toward mitigation.

To address this, the project focuses on strengthening the regional climate adaptation ecosystem specifically in agriculture by mapping investment landscapes, policy gaps, and partnership opportunities. The effort is designed to position climate-smart agriculture as a core adaptation strategy to ensure food and nutrition security in a warming world. The project also contributes t**o regional cooperation on climate and disaster risk resilience,** supporting forward-looking strategies for adaptation financing and implementation in **India, Bangladesh, and Sri Lanka.**

Our Role

We are leading the strategy support by:

- **Conducting a comprehensive climate adaptation scoping study** focused on agriculture and food systems in South Asia, particularly Bangladesh.
- **Mapping national and sub-national policies**, platforms, and entry points for climate-smart agriculture integration.
- **Providing investment-ready recommendations** for adaptation strategies across India, Bangladesh, and Sri Lanka to inform BMGF's long-term engagement.
- **Identifying opportunities for convergence** with global and regional climate financing mechanisms and multilateral cooperation.
- Facilitating consultations with public institutions, private investors, and civil society to catalyze **cross-sector partnerships** in support of smallholder resilience and food system adaptation.

By aligning policy landscapes with on-ground vulnerabilities and innovation pathways, we are enabling a systems-level transformation of agri-climate resilience efforts across the region.

Multi-Hazard Risk Mapping for 9 Pilot Cities/ MMDA's in Ghana, Green Cities and Infrastructure Programme, 2024–2025

Project Background

Ghana's urban centres are facing the twin pressures of rapid urbanisation and escalating climate risks. Unplanned growth, infrastructure deficits, and vulnerable informal settlements especially in the northern regions make cities highly susceptible to floods, heatwaves, and other hazards. To address these challenges, the Green Cities and Infrastructure Programme (GCIP), under the UK Foreign, Commonwealth & Development Office (FCDO) urban portfolio, is supporting transformative urban resilience planning.
The initiative seeks to build inclusive, sustainable, and climate-resilient cities by strengthening early warning systems, risk-informed planning, and investments in climate-resilient infrastructure. It is anchored within the Ghana Urban Risk Observatory, a strategic effort to institutionalise urban resilience through data-driven governance.

Our Role

As a core technical partner, alongside PwC UK and Triple Line Consulting, we are leading the development and operationalisation of a multi-hazard climate risk assessment framework in pilot cities of Northern Ghana. Our work includes:

- **Designing a Robust Risk Mapping Methodology:** Developing an evidence-based framework to identify hazard-prone areas, climate vulnerabilities, and exposure of infrastructure and populations.
- **Building a Dynamic Climate Risk Dashboard:** Developing an AI- and predictive analytics-powered city-level dashboard to visualise evolving risks and support proactive urban decision-making, fully integrated into the Ghana Urban Risk Observatory platform.
- **Training & Capacity Building:** Producing user-friendly toolkits and delivering training to equip local institutions to conduct climate risk assessments and use the dashboard for planning and response.

1,89,33,711+
people expected to benefit from enhanced climate resilience

36,39,573+
women targeted through inclusive urban risk planning

USD 300 million+
in potential annual Loss and Damage costs projected to be averted

Climate Proofing of Social Resilience Program, 2024-2025

Project Background

Bangladesh remains one of the most climate-vulnerable countries globally, with increasing climate-induced shocks threatening the wellbeing of its most vulnerable populations. Recognizing that social protection systems must evolve to address these risks, ADB's Second Strengthening Social Resilience Program (SSRP) aims to integrate climate and disaster resilience into national safety nets.

The project supports the Ministry of disaster management and relief (MoDMR) Government of Bangladesh in designing climate-proofed social protection programs that can proactively respond to hazards through anticipatory action, early warning systems, and inclusive program design. Special emphasis is placed on empowering women, enhancing institutional capacity, and embedding resilience into policy and operational frameworks.

Our Role

As technical lead, we are working closely with MoDMR and ADB to embed climate adaptation into Bangladesh's social protection workfare program, especially, on the EGPP (Employment generation program for the poorest). Our key contributions include:

- **Policy & Institutional Analysis:** Reviewing national policies to identify gaps and recommend actionable measures for mainstreaming climate adaptation.
- **Program Design for Climate-Resilient Safety Nets:** Designing inclusive, risk-informed social protection programs with early warning systems, disaster preparedness, and anticipatory actions.
- **Gender-Responsive Adaptation Planning:** Crafting targeted strategies to address vulnerabilities of women and marginalised groups, ensuring equitable resilience-building.
- **Capacity Building & Community Engagement:** Training government stakeholders, local institutions, and communities - especially women-led groups - on climate action and disaster response.
- **Stakeholder Consultations:** Leading inclusive dialogues with national and subnational actors to co-create locally grounded solutions.

Quezon City Cooling Energy Roadmap, 2025-Ongiong

Project Background

Quezon City, one of the largest and most densely populated urban centers in the Philippines, faces intensifying climate challenges driven by rising temperatures and rapid urbanisation. Heat stress is already affecting public health, exacerbating energy poverty, and increasing demand for cooling - particularly among vulnerable groups, low-income households, and the informal sector.

In response, the Quezon City Cooling Energy Roadmap has been commissioned by C40 Cities to provide the city with a structured, evidence-based plan to manage cooling demand in a sustainable and inclusive manner. The initiative, running from June to December 2025, has two central objectives:

- To assess the impacts of rising urban heat on residents' health, energy access, and demand for cooling.
- To develop a comprehensive cooling strategy and roadmap that is fully integrated into the Local Climate Change Action Plan (LCCAP), ensuring that cooling interventions contribute to broader climate resilience and low-carbon development goals.

The project places special focus on informal settlements, social housing, and public infrastructure, ensuring that solutions address the needs of the most vulnerable while strengthening the city's overall climate resilience.

Our Role

We, through Triple Line (as Lead JV partner), are leading the technical design, analysis, and stakeholder engagement for this assignment, supported by a team of five multi-disciplinary experts.
Our role spans the full project cycle:

Strategic Analysis & Knowledge Generation

- Undertaking institutional and governance assessments related to cooling.
- Mapping the links between urban heat, energy poverty, and health outcomes.
- Developing evidence-based models of future energy demand associated with cooling.

Cooling Strategy & Roadmap Development

- Designing an actionable roadmap structured across four thematic areas:
  - 1. Policy and Institutional Strengthening
  - 2. Infrastructure and Technology
  - 3. Data and Monitoring Systems
  - 4. Awareness and Capacity Building
- Developing evidence-based models of future energy demand associated with cooling.

Stakeholder Engagement & Inclusion

- Facilitating broad consultations with city officials, civil society, and communities.
- Ensuring gender equality, disability, and social inclusion (GEDSI) are integral to planning and implementation.
- Building ownership of the roadmap through co-creation with local stakeholders.

Project Leadership & Oversight

- Coordinating delivery through a diverse expert team including a GIS and economic modelling specialist, a GEDSI expert, an energy efficiency expert, and researchers, under the leadership of Pepe Monroy (Team Leader).

State of Extreme Events Across India, 2024

Project Background

Climate extremes are intensifying across India, disrupting lives, livelihoods, and infrastructure with growing frequency and unpredictability. To address the urgent need for a high-resolution, science-driven view of these risks, we partnered with Esri India to conduct a pioneering district-level assessment of climate extremes nationwide.

Our study, "State of Extreme Events," examined the pentad to decadal trends of heatwaves, floods, droughts, and cyclones over 50 years (1973 - 2023), using the AI-enabled Climate Risk Observatory (CRO) platform we developed with Esri India. This dynamic tool provided detailed, spatial-temporal insights into the frequency, intensity, and shifting patterns of climate disasters at the sub-regional level. The study revealed that:

- **85% of India's districts** are exposed to one or more extreme climate events.
- **45% of districts** are experiencing a swapping trend between droughts and floods, underlining growing climate volatility.

The findings underscore the urgent need for:

- **National-level Climate Risk Observatory (CRO)** to facilitate real-time, risk-informed decision-making.
- Dedicated **Infrastructure Climate Fund (ICF)** to finance resilient and adaptive infrastructure.
- Nature-based solutions include the **revival and protection of mangroves, wetlands, and forest ecosystems.**

Our Role

We led the **technical design, spatial analysis, and multi-decadal modelling** for this study in collaboration with Esri India. Specific contributions included:

- **Development and application of the CRO platform** integrating climate models, ensemble simulations, and downscaled projections to assess district-level climate hazards.
- **Compilation of a 50-year catalogue** of climate extremes, offering insights into historical baselines and future vulnerability pathways.
- Identification of **non-linear trends and emerging compound hazards** using advanced data science and GIS analytics.
- **Production of the evidence-based issue brief:** State of Extreme Events - which serves as an advocacy and planning tool for national, state, and district authorities.

Through this landmark study, we are helping shape India's climate resilience discourse by bridging science, data, and policy to inform better planning, investment, and climate governance.

Infrastructure for Climate Resilient Growth (ICRG) Programme, 2016–2020

Project Background

The ICRG Programme was a 43-month Technical Assistance (TA) initiative commissioned by the UK Foreign, Commonwealth and Development Office (FCDO) (formerly DFID) to support the Ministry of Rural Development (MoRD), Government of India. The programme was embedded within the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), India's flagship rural livelihoods scheme.

Implemented across 103 blocks selected from over 2,500 special-focus blocks, the programme targeted the most climate-vulnerable geographies in the states of Bihar, Odisha, and Chhattisgarh. Its core objective was to climate-proof rural infrastructure while building community-level resilience to extreme climate events like floods, droughts, and heatwaves.

ICRG promoted climate-smart design principles, enhanced frontline capacities, and supported long-term risk reduction through convergence with other rural development and environmental schemes.

Our Role

As part of the consortium delivering ICRG, we were responsible for implementing the programme across several key geographies. Our contributions included:

- **Training 35,000+ community members** and over **18,000 government functionaries from MGNREGA** and **allied line departments on climate-resilient infrastructure design and planning.**
- **Developing 27 training modules** and guidebooks on climate risk assessment, resilient rural asset creation, and community-based planning.
- **Integrating climate data and local knowledge into the preparation of durable and adaptive MGNREGA asset** designs.
- **Facilitating field-level capacity building and technical backstopping** through trained Climate Resource Persons and Panchayat-level planning.

Through ICRG, we directly contributed to mainstreaming climate resilience into MGNREGA implementation, ensuring more robust infrastructure and improved livelihoods for climate-sensitive rural populations.

Swiss Agency for Development and Cooperation (SDC), Embassy of Switzerland Preparation of Climate Adaptive Plans for 5 Districts in Madhya Pradesh, Uttarakhand, and Sikkim, 2019–2020

Project Background

Recognising the heightened vulnerability of communities to climate change, SDC launched a programme to embed climate resilience into state-level planning in India. Targeting three climate-sensitive states - Madhya Pradesh, Uttarakhand, and Sikkim - the initiative aimed to strengthen institutional capacity and promote district-level adaptive planning that informs state action.

The programme integrated sectoral climate adaptation strategies into government plans and schemes, directly benefiting vulnerable populations reliant on climate-sensitive sectors such as agriculture, water, and livelihoods.

Our Role

As the lead technical partner, we prepared Climate Resilient Development Plans for five pilot districts, setting the groundwork for scalable climate action.

- Madhya Pradesh: Tikamgarh, Dewas, and Gwalior
- Uttarakhand: Pauri Garhwal
- Sikkim: West Sikkim

Key contributions included:

- **District-Level Climate Vulnerability Assessments:** Identified region-specific climate risks and their impacts on communities, livelihoods, infrastructure, and natural resources.
- **Formulation of Climate Adaptive Plans:** Developed actionable, locally relevant climate resilience plans for each district, focusing on sectors such as agriculture, water resources, health, and biodiversity.
- **Capacity Building:** Conducted training and knowledge-sharing workshops for state nodal agencies and sectoral departments to strengthen their institutional capacity in climate adaptation planning.
- **Mainstreaming Resilience into State Planning:** Facilitated integration of climate adaptive strategies into existing development schemes and planning processes to ensure long-term sustainability.

Departmental Disaster Management Plans (DDMPs) – Nagaland, 2025

Project Background

Nagaland's geographic and climatic profile makes it highly susceptible to a range of natural hazards such as earthquakes, landslides, floods, cyclones, forest fires, and drought-like conditions. These hazards, particularly severe during monsoon seasons, frequently disrupt infrastructure, public services, and livelihoods across the state.

To institutionalise disaster preparedness and mainstream risk-informed governance, the Government of Nagaland, in line with the Disaster Management Act, 2005, is strengthening departmental capacities by developing tailored Departmental Disaster Management Plans (DDMPs). These plans aim to ensure that every department can effectively anticipate, prepare for, and respond to disasters in a coordinated and timely manner.

Our Role

We are delivering technical expertise to design 10 robust District Disaster Management Plans (DDMPs), strengthening preparedness and response capacities across critical state departments.

Our work includes:

- **Department-Specific Risk Assessments:** Mapping historical and emerging risks relevant to each department's operations using district-level data and hazard profiles.
- **SOP Development and Emergency Protocols:** Outlining clear standard operating procedures (SOPs) for preparedness, early warning, response, and recovery.
- **Institutional Role Mapping:** Defining roles and responsibilities of departments during different phases of the disaster management cycle to ensure coordinated action.
- **Inventory & Resource Mapping:** Developing resource directories and emergency mobilisation plans, including personnel, logistics, and assets.
- **Template-Based Scale-Up:** Supporting all remaining departments in populating a standardised DDMP template, ensuring scalability and institutional capacity building across government.

This initiative will both enhance Nagaland's departmental disaster response capacity also serve as a model for replication in other Indian states seeking to embed disaster resilience within departmental governance structures.

Technical Advisory Services on Green Infrastructure Design – Scaling up Urban Upgrading Project (SUUP), Vietnam, 2019-2021

Project Background

Vietnam's rapidly growing provincial cities face increasing risks from climate-induced water hazards such as floods, sea-level rise, and storm surges. To support sustainable and climate-resilient urban growth, the World Bank initiated SUUP aimed at integrating green infrastructure and resilience principles into urban development strategies across seven secondary cities.

The project sought to mainstream climate adaptation into city master planning and infrastructure development, ensuring that investments were not only environmentally sustainable but also responsive to evolving climate risks.

Our Role

As key technical advisor, we undertook the following:

- **Conducted a multi-hazard vulnerability and risk assessment** to understand city-specific exposure to climate risks, with a focus on water-related hazards.
- **Reviewed and provided inputs on city master plans,** recommending integration of green infrastructure and climate-resilient urban design principles.
- **Developed climate-resilient infrastructure design guidelines** tailored for each city, aligning with the best global practices.
- **Led targeted capacity development efforts** for urban planners and municipal staff to enhance long-term institutional readiness for climate-resilient urban development.

Through these efforts, we helped embed sustainability and resilience at the heart of Vietnam's urban development trajectory, ensuring that vulnerable cities can better withstand future climate shocks.

Managing Monsoons in a Warming Climate, 2024

Project Background

In response to India's growing vulnerability to climate extremes, we led a pioneering study with Esri India to conduct a multi-decadal regional climatological assessment. Our research examined the complex linkages between rising temperatures, heatwaves, and extreme rainfall events, providing empirical evidence of how global warming is intensifying both heat-related stress and high-intensity rainfall - particularly in economically critical regions. Despite growing awareness among climate experts, we identified a significant gap in sector-wide and industrial understanding, which is limiting timely climate resilience actions - especially in India's major economic hubs.

Key highlights include:

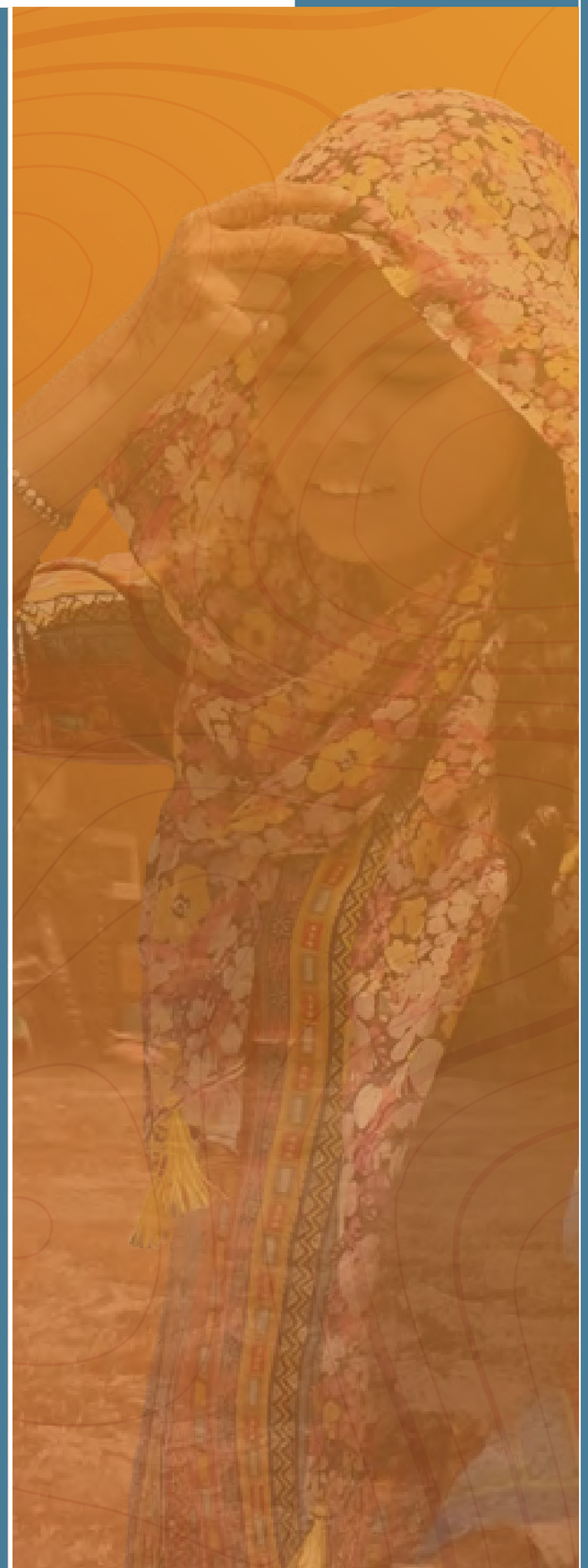
- Mapping of **heatwave hotspots and futuristic population exposure** to heat risks.
- Identification of attributional correlations between **temperature rise** and extreme precipitation.
- Emphasis on spatial variability of physical climate risks using **geolocation-specific modelling.**

Our Role

We spearheaded the design and execution of the assessment, applying dynamic climatological models to simulate future risk scenarios. This included:

- **Designing India's first evidence-based heatwave and rainfall correlation model,** aligned with IPCC projections.
- Facilitating high-level stakeholder engagement with **government ministries, industry groups**, and civil society, including a strategic buy-in from **the Ministry of Commerce**.
- Advocating for the establishment of a **Heat Risk Observatory (HRO)** to support localised heat risk surveillance and forecasting.
- Recommending appointment of **Heat Risk Champions** to drive on-ground awareness and coordinated response.
- Promoting innovative financing options, including **blended finance mechanisms**, to enhance industrial and community resilience to heat and monsoon-linked risks.

This initiative has laid the foundation for a national-level strategy on industrial climate readiness, encouraging data-driven investments in resilience-building and adaptation measures.



Integrated Urban Flood Management for the Chennai-Kosasthalaiyar Basin with ADB / Greater Chennai Corporation / Municipal Administration & Water Supply Department (Government of Tamil Nadu), 2023-2027

Project Background

Chennai, one of India's most flood-prone metros, is experiencing increasing frequency and intensity of extreme weather events due to climate change. Recurrent urban flooding - particularly in the Kosasthalaiyar Basin-threatens lives, livelihoods, infrastructure, and economic productivity.

To address this, the Government of Tamil Nadu, with support from the Asian Development Bank (ADB), has launched the Integrated Urban Flood Management for the Chennai-Kosasthalaiyar Basin Project. The project aims to:

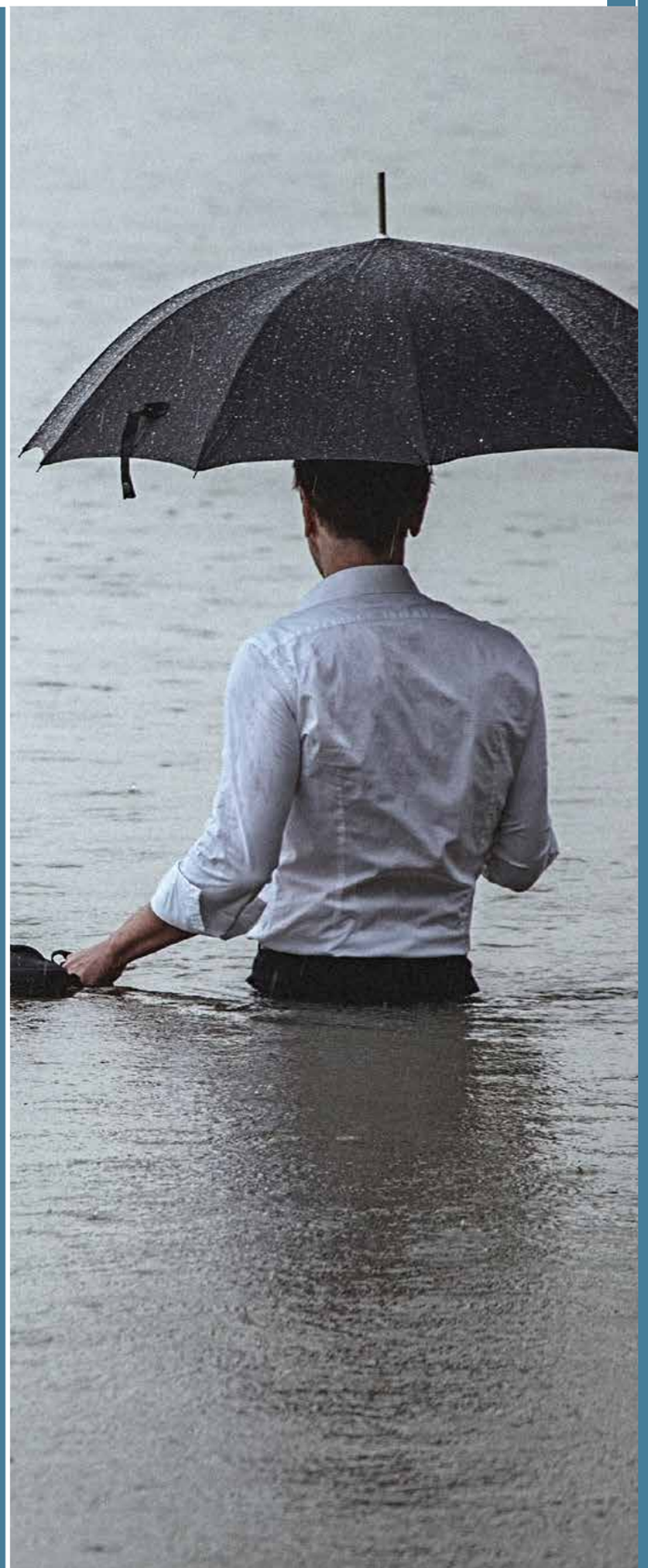
- **Upgrade flood protection infrastructure** while enabling groundwater recharge.
- **Improve institutional preparedness of the Greater Chennai Corporation (GCC)** and local communities for urban flood events.
- **Ensure long-term sustainability** through strengthened operation and maintenance (O&M) systems for urban drainage infrastructure.

Our Role

We are engaged as the Institutional Strengthening and Reform Consultant to:

- **Integrate climate risk profiling and future climate scenarios** into the planning and implementation of flood management strategies.
- **Support policy-level interventions** that align with regional climate resilience frameworks and disaster mitigation cooperation.
- **Identify institutional gaps within GCC** and design a comprehensive roadmap to enhance capacity for flood preparedness, response, and system maintenance.
- **Facilitate cross-sectoral collaboration** across municipal, state, and multilateral agencies to ensure climate-adaptive, inclusive, and sustainable outcomes.

Through our work, we are enabling GCC to move from reactive flood response to proactive, risk-informed flood management - grounded in long-term resilience and institutional readiness.



Capacity Building on Sector-wise Climate Change Impacts and Adaptation – Mizoram, India, 2019

Project Background

As part of the Indo-German bilateral cooperation programme *CCA-NER*, the project aimed to strengthen climate resilience among rural communities in Northeast India. Under this initiative, GIZ partnered with the Ministry of Development of Northeastern Region (MoDoNER) and the state governments of Meghalaya, Nagaland, Sikkim, and Mizoram to operationalise climate adaptation plans aligned with India's Nationally Determined Contributions (NDCs) and the SDGs.

Our Role

We led the capacity-building efforts in Mizoram, with the following key responsibilities:

- **Design and development of comprehensive training modules** on sector-specific climate change impacts, vulnerabilities, and adaptation strategies tailored to the Mizoram context.
- **Multi-level capacity-building workshops** for state government stakeholders across line departments and administrative levels.
- **Orientation on the revised State Action Plan on Climate Change (SAPCC 2.0)** with emphasis on mainstreaming adaptation into local governance, planning, and budgeting processes.
- **Development of locally relevant adaptation strategies** linked to Mizoram's climate-sensitive sectors such as agriculture, water resources, and forests.

Through this initiative, we helped institutionalise climate knowledge and planning capabilities within state departments - paving the way for more informed, climate-resilient policy decisions across Mizoram.

Action Plan to Enhance Climate-Resilient Health Facilities in Madhya Pradesh, 2019

Project Background

With healthcare facilities increasingly vulnerable to the effects of climate change such as extreme heat, floods, water scarcity, and vector-borne diseases this project aimed to assess climate risks and propose adaptation strategies for public hospitals in Madhya Pradesh.

The project focused on mainstreaming climate resilience into the health infrastructure and operations at district and block-level facilities. The goal was to ensure uninterrupted healthcare services during climate-induced emergencies while reducing the sector's vulnerability to future risks.

Our Role

- Conducting climate risk assessments for healthcare infrastructure and essential services such as power supply, water, sanitation, and waste management.
- Identifying key vulnerabilities and gaps across infrastructure, staffing, emergency preparedness, and logistics.
- Developing a **practical guidance framework** for district and block-level hospitals to improve resilience in critical areas including:
    - Infrastructure and energy systems (backup power, cooling)
    - Water supply and sanitation
    - Medical waste disposal and infection control
    - Food supply and cold chain management
- Supporting knowledge dissemination and stakeholder engagement through capacity-building tools.

The action plan served as a **climate-smart operational blueprint** for strengthening Madhya Pradesh's public health system in the face of rising climate-related threats.

Forest Governance and Climate Change – MEL, 2017-2020

Project Background

Forests 2020, an initiative under the UK Space Agency's **International Partnerships Programme** (IPP), was a transformative effort aimed at protecting and restoring up to **300 million hectares of tropical forests.** Led by Ecometrica and a global consortium, the programme harnessed advanced satellite data and Earth observation tools to enhance forest monitoring and governance in six developing countries.

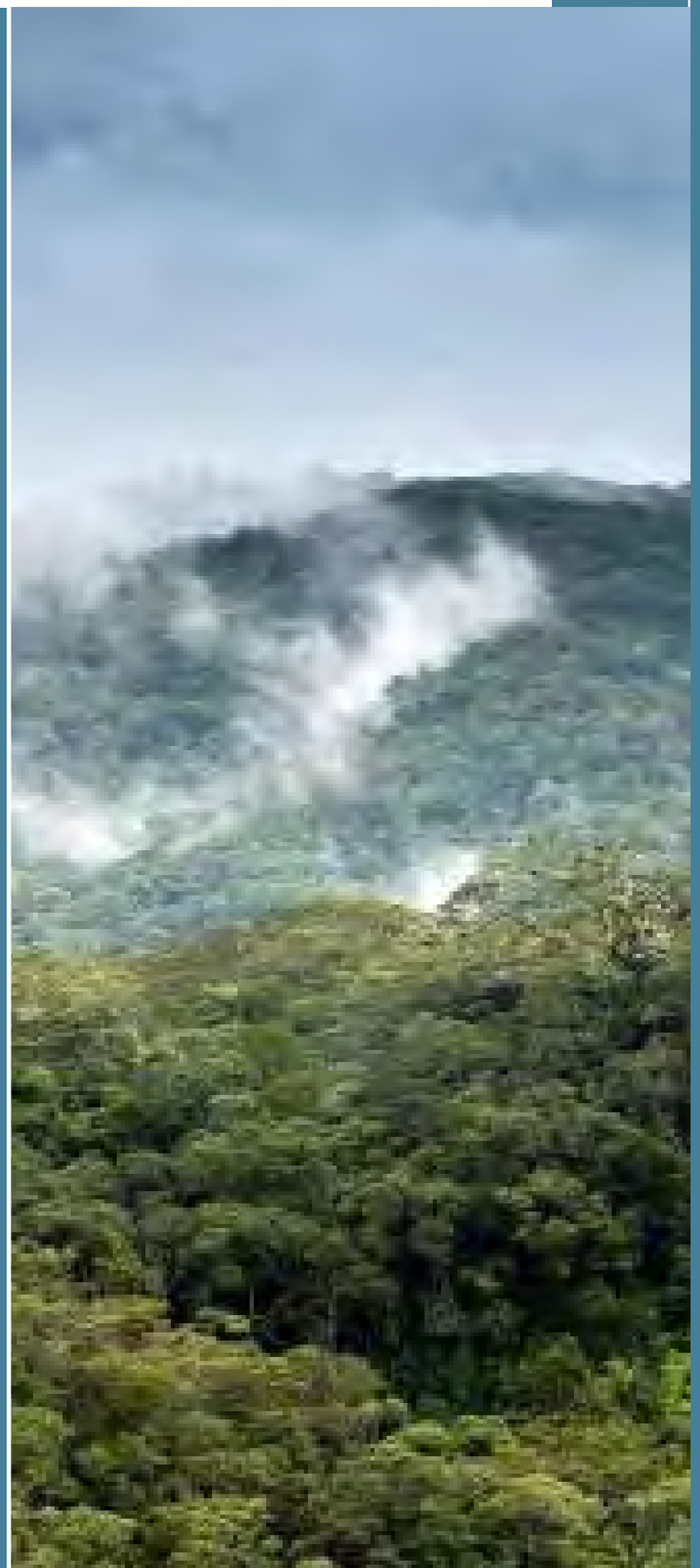
The project directly supported global climate and conservation mechanisms like **REDD+, FLEGT,** and national forest policies, aiming to reduce deforestation, improve biodiversity protection, and support climate change mitigation.

Our Role

IPE Triple Line led the **Monitoring, Evaluation, and Learning (MEL)** function for the Forests 2020 programme. Our core responsibilities included:

- **Designing and executing baseline, mid-term, and final evaluations** aligned with the programme's theory of change.
- Developing and tracking a results framework to assess progress against **key performance indicators.**
- Supporting outcome mapping for forest change monitoring, risk modelling, and institutional uptake of improved systems.
- Ensuring the integration and alignment of Forests 2020 with **International Climate Finance (ICF)** forestry initiatives, especially in Indonesia.
- Synthesising learnings to inform **forest governance policy** dialogues and long-term capacity building within national forest monitoring agencies.

Through these efforts, IPE Triple Line contributed to evidence-based decision-making, helping institutional partners better leverage space-based technologies for sustainable forest management.



Preparation of Integrated Coastal Zone Management Plan (ICZMP) and Shoreline Management Plan, 2015-2017

Project Background

Odisha's 480 km-long coastline is ecologically diverse and economically vital, but also highly vulnerable to cyclones, coastal erosion, and climate change. Recognising the need for sustainable and risk-informed development, the ICZMP project was initiated to ensure a balanced approach to coastal zone protection, biodiversity conservation, and livelihood sustainability. The project aimed to:

- Promote conservation of sensitive ecosystems such as **Bhitarkanika National Park and Chilika Lagoon** (both Ramsar sites),
- Improve **resilience to extreme weather events,** and
- Enable **sustainable livelihood options** such as coastal fisheries and eco-tourism, through active community participation and institutional capacity building.

Our Role

We played a pivotal role in the planning, design, and operationalisation of Odisha's Integrated Coastal Zone Management Plan and Shoreline Management Plan. Key contributions included:

- **Development of integrated spatial plans** for coastal management using GIS tools, climate risk modelling, and land-sea interaction analyses.
- Preparation of **shoreline management strategies** to address erosion, sediment transport, and infrastructure vulnerabilities in high-risk zones.
- Design and implementation of **eco-sensitive tourism and fisheries management frameworks**, aligned with community needs and biodiversity protection.
- Capacity building of **Project Executing Agencies** (PEAs) on ICZMP principles, planning protocols, and environmental governance.
- Integration of **climate adaptation and disaster risk reduction** into land-use and natural resource management policies.

The plan provided a strategic foundation for long-term coastal sustainability and became a model for integrated planning and ecosystem-based management, contributing to India's national coastal resilience agenda.

The Climate Change and Sustainability (CCS) practice at IPE Global is committed to climate proofing a low carbon future for a cleaner and healthier world by providing solutions to manage environmental liabilities, strengthening resilience and adapting to climate change.

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Scan for Climate Deck

Mainstreaming Low-Carbon Pathways

Mainstreaming low-carbon pathways is critical to achieving a sustainable, climate-safe future. We work to integrate decarbonisation strategies into policies, programmes, and investments, ensuring that economic growth aligns with environmental stewardship. Our approach combines climate-smart planning, clean technology adoption, and innovative financing to drive measurable emissions reductions while enabling inclusive development. From advancing renewable energy transitions to embedding low-carbon considerations, we champion solutions that deliver both local benefits and global impact. Because shifting to a low-carbon future is not just an ambition - it's an imperative.

Mapping Climate Readiness Index (India) to Mainstream Low-carbon Pathways at a Sub-national Level, 2024-2025

Project Background

As India advances its climate transition agenda, there is a growing need to assess how prepared are states for low-carbon pathways. However, data gaps, fragmented implementation, and limited decision-support tools have slowed sub-national climate action. This project aims to bridge that gap by creating an evidence-based framework to measure, compare, and accelerate climate readiness in India's top 10 GHG-emitting states - Andhra Pradesh, Rajasthan, Gujarat, Chhattisgarh, Tamil Nadu, Odisha, Uttar Pradesh, Madhya Pradesh, West Bengal, and Maharashtra.

The study takes a multi-dimensional view of preparedness - systemic, financial, and technological - while tackling questions on renewable energy adoption, policy bottlenecks, and climate finance mobilisation. Our goal is to give state-level stakeholders actionable insights and tools to fast-track low-carbon transitions.

Our Role

We served as the technical anchor for conceptualising, designing, and rolling out India's **first-of-its-kind AI-ML based Climate Readiness Index (CRI).** Demonstrating sector-leading expertise in climate analytics and transformative digital systems, we developed the CRI as an integrated assessment framework and digital platform tailored to India's state-level decarbonisation challenges. Through advanced analytics, stakeholder-driven metrics, and close collaboration, we positioned the CRI as a central evidence base for evaluating how well India's top greenhouse gas-emitting states are prepared to pursue equitable low-carbon growth. The team worked closely with partners across government, industry, and civil society to co-create an intuitive, scenario-driven across three key dimensions - Systemic, Financial, and Technological Readiness. This holistic approach has guided climate investment, just transition planning, and renewable energy adoption.

Aligned with national climate strategies, the CRI equips states with actionable intelligence, scaling innovation and accountability in India's transition to a climate-resilient, low-carbon future.

- **Systemic Readiness:** Assessing the strength of governance structures, policies, and institutional coordination to implement climate strategies.
- **Financial Readiness:** Analysing existing and potential climate finance mechanisms at both state and central levels to support renewable energy and low-carbon infrastructure.
- **Technological Readiness:** Evaluating the technical capabilities of states, with a focus on solar infrastructure and workforce development.

Mapping Industrial Readiness to Climate Change, 2024-2025

Project Background

India's industrial sector faces growing climate risks but lacks detailed, evidence-based assessments for resilience planning. To bridge this gap, we, in partnership with CSI and key stakeholders like FICCI, are mapping industrial climate readiness using geospatial analysis and physical climate models. Our goal is to boost adaptive capacity and enable climate risk-informed decisions for long-term, low-carbon, and resilient growth for hard-to-abate sectors.

Our Role

Our work includes geospatial risk mapping, scenario analysis, and stress testing to assess industrial vulnerabilities and quantify financial risks. We map direct, indirect, and spill over climate impacts on industrial clusters, link climate data with business operations, and promote blended finance solutions. While the focus is on climate adaptation, our analysis of financial and operational risks tied to carbon-intensive operations also drives transition responses - such as process decarbonisation, clean tech shifts, and emission-linked disclosures. This approach bridges adaptation and mitigation, showing how climate risk exposure can push industry toward low-emission, resilient models.

Preparation of Organic Waste Strategy and An Enabling Framework of Maximised Recycling for Climate Mitigation and achieving Circular Economy Models in Delhi, 2022-2023

Project Background

Organic waste comprises 50-50% of total municipal solid waste in Delhi. The primary aim of this project is to improve the efficiency of organic waste management by

- Establishing comprehensive mapping of organic waste fractions generated across Delhi.
- Analysing the existing organic waste system value chain focussing from generation to collection, transportation till processing/dumping.
- Carrying out quantification and characterisation of different organic waste streams.
- Providing technical support by analysis of suitable technology for adoption and implementation for organic waste recycling.
- Providing detailed recommendations and roadmap for developing an enabling framework for improving the organic waste handling.
- Promoting efficient recycling and management of organic waste, thereby reducing emissions from landfills, and enhancing circular economy practices in urban waste systems.

Our Role

We carried out a comprehensive review of Delhi's municipal solid waste management (MSWM) system, covering all three municipal authorities. Our work included:

- Reviewing MSWM master plans, technical guidelines, judicial submissions, and regulatory reports.
- Forecasting current and future organic waste generation from mixed waste.
- Quantifying and characterising waste at key points - collection sites, Dhalaos, transfer stations, processing plants, and dumpsites.
- Visiting all organic waste facilities to document handling, processing, and disposal.
- Mapping major generation hotspots - mandis, parks, slaughterhouses - and assessing leakage risks to water bodies.
- Analysing PPP contracts and engaging stakeholders to improve management.
- Studying pollution impacts, dumpsite fire trends, and GHG emissions.
- Conducting SWOT and financial analyses of the value chain.
- Evaluating CER potential to attract future PPP investments in SWM projects.

Creating Capacity-building Material on Climate Mitigation and MGNREGA for Uttarakhand, 2022

Project Background

As the world's third-largest carbon emitter, after China and the US, India faces severe climate impacts on health, livelihoods, and infrastructure, with Uttarakhand at a comparative disadvantage versus rest of states. Considering Uttarakhand's comparative disadvantage in these terms, the State required knowledge about practical solutions to tackle this problem. We worked to integrate climate agendas into the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) - a flagship programme supporting millions of rural households- thus contributing to the economy.

Our assignment focused on creating a climate-focused training module for the state, collating and contextualising capacity-building materials on mitigation and adaptation activities under MGNREGA. The module guided policymakers, implementing staff, women leaders, PRIs, and local communities on sectoral climate-resilient practices in agriculture, water, land use, and infrastructure, while advancing Green Recovery and Build Resilience (GRBR) goals.

Our Role

We developed climate change adaptation and mitigation training modules for PRIs and other MGNREGA stakeholders in Uttarakhand. The material included:

- Framework for integrating adaptation and mitigation into MGNREGA.
- Sector-specific activities and technologies in agriculture, water, land use, and infrastructure linked to climate action.
- Thematic sessions with corresponding PPTs tailored to MGNREGA's sectoral priorities.
- Criteria and weightages for evaluating MGNREGA activities.
- Final training resources and workshop notes on climate adaptation and mitigation.

Project Management Consulting Services for Solar Microgrids Project, 2016-2019

Project Background

The Solar Microgrids Project, funded by HCL Foundation under its flagship rural development initiative Project Samuday, aimed at transforming rural energy access in Hardoi District, Uttar Pradesh. With a vision for holistic development across key sectors, the project addressed the acute need for reliable, affordable, and sustainable electricity in remote villages, where grid connectivity is often limited or absent.

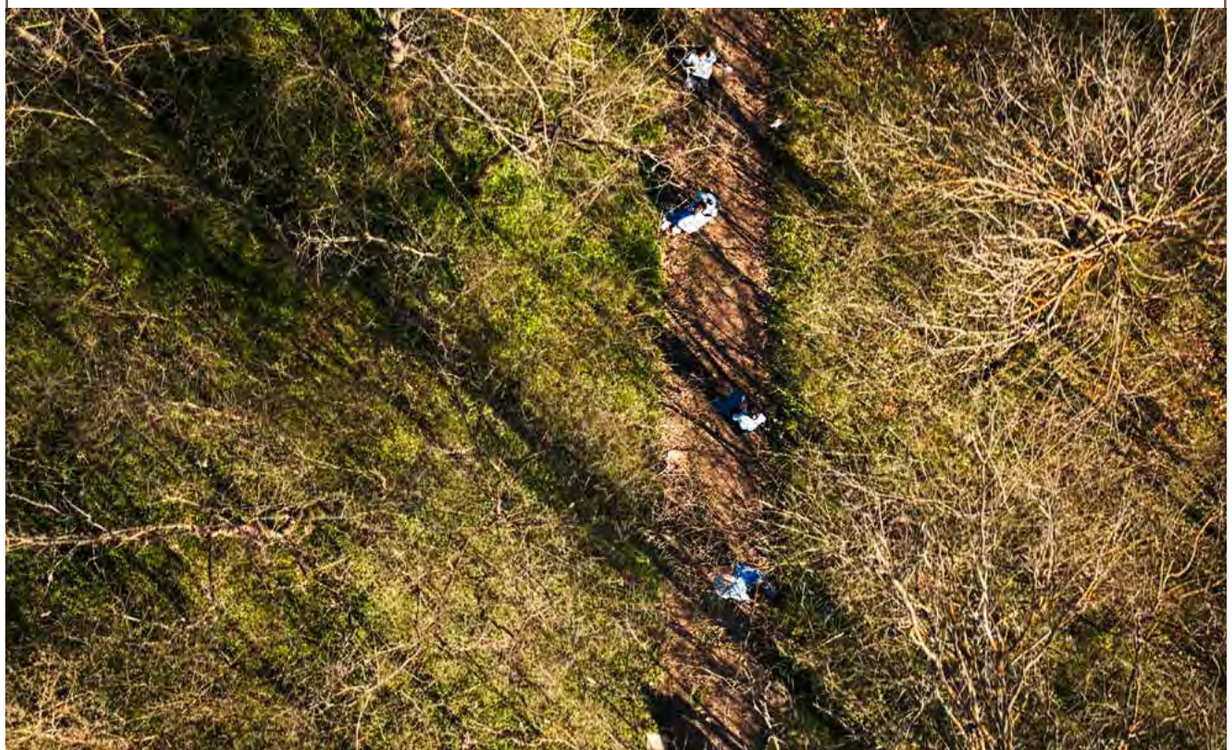
Central to this intervention was the design and deployment of solar photovoltaic (SPV) mini and microgrid systems, distributed networks, and household connections, moving communities away from reliance on fossil fuels and polluting energy sources. By shifting the rural energy landscape toward renewables, the project directly supported a transition to a low-carbon development pathway - reducing greenhouse gas emissions, cutting local pollution, and enhancing community resilience to climate change.

Our Role

As Project Management Consultant (PMC) for the project, we provided end-to-end technical and management expertise to ensure successful design, implementation, and sustainable operation of low-carbon solar solutions. Key responsibilities included:

- Comprehensive assessment of energy needs, load profiles, and socioeconomic context in selected villages, followed by designing technically robust, context-appropriate solar microgrid systems.
- Preparation of Detailed Project Reports with technical specifications, cost estimates, and implementation frameworks to guide the roll-out of SPV systems.
- Development of bid documents, vendor selection, and contract management to ensure quality and cost-effectiveness.
- Overseeing all aspects of grid installation, commissioning, and stabilisation - ensuring timely delivery, adherence to technical standards, and operational sustainability of the systems.
- Ensuring that choice of technologies, grid designs, and operational protocols advanced the project's low carbon objectives - optimizing renewable penetration, maximizing fossil fuel substitution, and embedding long-term energy resilience in rural communities.
- Facilitating training, awareness, and participation at the village level to ensure local ownership and effective maintenance of the new energy infrastructure.

By integrating SPV microgrids into rural power supply, the project not only electrified underserved communities but also set a replicable model for low-carbon rural electrification, directly contributing to climate mitigation, improved livelihoods, and sustainable rural development in India.



Evaluation Management Unit for the Forestry, Land Use and Governance (FLAG) Programme, Indonesia, 2015-2018

Project Background

Indonesia possesses some of the world's largest remaining tropical forests and peatlands - resources essential for both global biodiversity and climate stability. However, these ecosystems have faced mounting pressure from deforestation, unsustainable land use, and peatland degradation, making Indonesia one of the world's top greenhouse gas emitters, with over 80% of its emissions linked to land use change and forestry.

To address these urgent challenges and transition towards a more low-carbon development pathway, the Forestry, Land Use and Governance (FLAG) Programme was launched by the UK's Department for International Development (DFID) as a three-year (2015–2018), £32.5 million initiative. FLAG aimed to support Indonesia's efforts to reduce forest and peatland loss by strengthening land use governance, promoting cross-sectoral partnerships, and driving reforms for more transparent, sustainable, and low-carbon resource management. The programme directly contributed to global priorities on climate mitigation, low-carbon sustainable development, and poverty reduction by empowering Indonesian stakeholders with better tools, information, and incentives to manage forests and land more sustainably.

This project supported climate mitigation by contributing to the lowering of emissions from deforestation and peatland degradation through improved land use governance, sustainable resource management, and strengthened institutional capacity in one of the world's most critical carbon sink regions, accelerating a shift toward a low-carbon future for Indonesia.

Our Role

As the Evaluation Management Unit (EMU) for the FLAG Programme, we led the design and roll-out of an evaluation framework central to effective delivery and learning. Robust monitoring and evaluation systems were developed to address FLAG's complex, multi-stakeholder objectives - driving evidence-based decision-making to reduce greenhouse gas emissions, promote low-carbon land use practices, and curb deforestation in Indonesia.

The framework integrated quantitative and qualitative data collection, real-time progress tracking, and comprehensive outcome assessments across all programme components. This enabled timely analysis of which interventions were most effective - not only in tackling deforestation and peatland degradation, but also in advancing Indonesia's transition to a low-carbon land use sector. Critical governance, finance, and policy levers were also identified as essential for systemic, climate-resilient change.

We ensured that evaluations were closely aligned with DFID and UK Government priorities on climate mitigation, low-carbon pathways, and poverty reduction. By enabling adaptive management and generating actionable insights, the work strengthened FLAG's accountability, learning, and impact - supporting Indonesia's long-term low-carbon development agenda.

Consultancy Services for Knowledge Exchange Programme (KEP) of Officials and Elected Representatives from KMC to Build their Capacity on Climate Smart Interventions at Municipal Level under the UK-KMC MoU on Low Carbon and Climate Resilient, Kolkata, 2015

Project Background

Kolkata faces acute climate risks - sea-level rise, flooding, and extreme weather events - intensified by rapid urbanisation and infrastructure pressures. Recognizing these challenges, the MoU aimed to foster a low-carbon, climate-resilient city by embedding climate change mitigation and adaptation into municipal planning and governance.

Through this partnership, KMC committed to integrating climate-smart interventions and strengthening institutional capacity among municipal officials and elected representatives. These efforts were designed to reduce greenhouse gas emissions, enhance resilience to climate impacts, and unlock sustainable economic opportunities, while enabling the delivery of climate-responsive municipal services across sectors.

The Knowledge Exchange Programme (KEP) was conceived to facilitate the transfer of knowledge and best practices on climate-smart urban development from UK experts and institutions to KMC stakeholders. This program supported the implementation of a strategic Roadmap for Low Carbon and Climate Resilient Development of Kolkata to advance the objectives of the UK-India bilateral collaboration in urban sustainability.

Our Role

We played a key advisory and technical role in the Knowledge Exchange Programme by conducting comprehensive reviews of Kolkata's existing climate risks, energy consumption patterns, and institutional readiness. Building on this analysis, we developed a detailed roadmap to guide KMC's transition towards low-carbon and climate-resilient urban development.

Additionally, we designed and developed an innovative GIS-based web portal that served as a real-time virtual resource centre. This platform facilitated interaction between citizens and private service providers, offering climate-related information, and integrating a help-desk facility to support climate awareness and responsive service delivery.

Through capacity-building workshops, technical support, and digital tools, we enabled KMC officials and elected representatives to enhance their understanding of climate-smart municipal interventions, improve governance frameworks, and implement practical adaptation and mitigation measures across the city. This technical assistance contributed to strengthening KMC's institutional capability to realize the goals of the UK-KMC MoU and position Kolkata as a pioneer in India's climate-smart urban agenda.

IGEN-Access - Scoping Study for Agriculture-Energy Nexus in Rural Areas of Delhi, 2018-2019

Project Background

IGEN-Access is a bilateral cooperation initiative jointly implemented by GIZ GmbH (on behalf of BMZ, Government of Germany) and India's Ministry of New and Renewable Energy (MNRE). The programme fosters an enabling ecosystem for rural renewable energy enterprises to provide clean, affordable, and reliable energy - driving sustainable, low-carbon rural development.

With a strong focus on the agriculture - energy nexus, it leverages renewable energy to make agricultural practices more sustainable while enabling livelihood diversification. In 2018 -19, a scoping study in Kapashera and Najafgarh (Delhi) assessed local agriculture, livelihoods, and energy use patterns. It identified renewable energy–driven opportunities for sustainable farming, new income streams, and reduced carbon footprints.

By integrating renewable energy into rural livelihoods, the project advances climate change mitigation - reducing fossil fuel dependence, cutting GHG emissions, and promoting sustainable, low-carbon growth in agriculture and allied sectors.

Our Role

We were engaged to conduct a comprehensive scoping study that assessed the agriculture-energy nexus in the rural areas of Delhi under the IGEN-Access programme.

The study involved detailed analysis of existing agricultural practices, livelihood profiles, and energy consumption patterns, with a view to identifying viable renewable energy interventions that could enhance productivity and income diversification.

Based on this assessment, we provided evidence-based recommendations on promoting sustainable agricultural and allied livelihood practices powered by renewable energy solutions. The study emphasised renewable energy incorporation to improve the share of clean energy in the rural energy mix, thereby advancing environmental sustainability and economic resilience.

Our work also contributed to creating a knowledge base that supports market development for rural energy enterprises, informs policy formulation, and guides future investments aimed at integrating renewable energy into agriculture-driven rural economies. This role aligned with IGEN-Access's broader objectives of expanding rural energy access and enabling low-carbon growth pathways in India's rural sectors.

Technical Assistance to better Recover, Recycle, Re-use, Construction & Demolition (C&D) Waste in India, 2020

Project Background

The Foreign, Commonwealth & Development Office (FCDO), UK, provided strategic support to the Central Public Works Department (CPWD), Ministry of Housing and Urban Affairs (MoHUA), Government of India, for developing a National Strategy on Construction & Demolition (C&D) Waste Management. The strategy aimed to enhance the applicability, uptake, and scale of C&D waste recycling and utilisation across India.

The purpose of this technical assistance mandate was to equip CPWD with the knowledge, systems, and international best practices, including proven approaches from the UK - to maximize recovery, recycling, treatment, and effective reuse of C&D waste nationwide. By strengthening institutional frameworks and operational processes, the initiative worked to:

- Lower energy consumption by substituting virgin resources with recycled materials.
- Minimize environmental pollution from unmanaged C&D waste.
- Improve resource efficiency and promote material circularity.
- Optimize waste disposal and management practices.

This collaborative effort underpins India's broader climate mitigation goals by reducing greenhouse gas (GHG) emissions from the construction sector-largely through improved resource efficiency, energy savings, and the promotion of circular economy principles in the use of construction materials. The integration of global best practices not only positions India to manage its rapidly growing C&D waste stream more sustainably but also catalyzes systemic change towards a low-carbon, resource-efficient built environment.

Our Role

Under this project, we undertook the following activities:

- Drafted a comprehensive national strategy for management of Construction & Demolition (C&D) waste through stakeholder consultations, secondary research, and integration of international best practices, including from the UK. The following were being included in the draft strategy:
  - Assessment of the current C&D waste ecosystem - types, quantities generated, demand projections, existing material sciences and technologies, recycled product types and uses, value chain analysis for top recycled materials, and quality parameters with potential for wider adoption.
  - Ways to improve increase the scope of reuse of C&D waste in India, by identifying new categories of recycled products that could be introduced in India and ways to increase the range of products currently in use.
  - Conduct a detailed cost-benefit analysis of using Recycled C&D Waste in new construction and renovation works.
  - Review and report on national policy developments, including the Draft National Resource Efficiency Policy 2019.
  - Advise on viable delivery models (PPP and non-PPP) and incentives to enhance adoption.
  - Recommend standards, specifications, and technical parameters to the CPWD for inclusion of relevant recycled products in the Delhi Schedule of Rates (DSR).
  - Support CPWD in policy framework development to promote use of recycled C&D waste in future infrastructure and public works projects.
- Organised a knowledge exchange workshop in Delhi with participation of at least four international experts / organisations, including from the UK, who have expertise in the field of efficient management of C&D waste to (a) discuss the draft report and share expertise and international best practice, including from the UK, with stakeholders like Govt. Depts. (MoHUA, CPWD, MoEFCC etc.), civil society, construction and infrastructure companies, C&D waste handling companies etc. Key lessons learnt and relevant feedback and suggestions received from the workshop were factored in to refine the draft strategy.
- Developed a revised strategy based on workshop feedback and additional consultations with CPWD and relevant government agencies.
- Finalised and submitted the strategy incorporating all stakeholder inputs.
- Conducted a national knowledge dissemination workshop to share lessons, findings, and recommendations with stakeholders such as State PWDs, MoEFCC, industry, and civil society.

Climate Change & Sustainability (CCS)

Our Mission

To embed low-carbon pathways and sustainability at the heart of development agendas - delivering impact that's both globally relevant and locally transformative, addressing the trinity of jobs, growth & sustainability that builds resilient communities and economies.

Driving Transformation across Sectors & Geographies

As a partner of choice for governments, donors, and the private sector, the CCS Practice embeds climate policy, finance, and technology across sectors - health, infrastructure, agriculture, and urban development - ensuring every project is climate-relevant and context-specific.

The Practice provides end-to-end system & technological solutions for governments, donors, and the private sector to address the crisis - spanning climate policy integration, finance mobilisation, low-carbon transitions, circular economy, nature-based solutions, disaster risk reduction, and just transitions for vulnerable communities.

Impact & Reach

470.25+ Mn*
women expected to be reached

Support to mobilise
$170 Bn/year*
to meet 2030 targets

Improved climate resilience for
~970.85+ Mn*
people

Support to reduce
2.0-2.3 Gt CO_2e* by 2030

$194.2* Mn
quantum of loss & damage expected to be averted

** Conditional estimates*

The Climate Change and Sustainability (CCS) practice at IPE Global is committed to climate proofing a low carbon future for a cleaner and healthier world by providing solutions to manage environmental liabilities, strengthening resilience and adapting to climate change.

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Selected Flagship Initiatives

Mainstreaming Hyper-granular Risk Assessment that Enhances Urban Resilience

Development of first-of-its-kind Mumbai's Multi-Hazard Risk and Vulnerability Atlas - integrating hyper-granular climate projections at short-term time-scale with spatial and socio-economic AI-ML based analytics for city-level disaster risk governance, enhancing climate resilience. Similar assignment is also carried for selected cities in the Northern region of Ghana.

Devicing Low-carbon Pathways through Mapping Climate Readiness Index (CRI) for India

Conceptualisation and roll out of a pioneering AI-ML based state-level decision support system, bridging systemic, technological, and financial readiness to mainstream low-carbon transitions across India's top-emitting states.

Climate-Resilient Infrastructure

Technical lead for the Infrastructure for Climate Resilient Growth (ICRG) Programme supported by FCDO- mainstreaming climate-smart asset creation and adaptation in India's rural livelihoods flagship (MGNREGA). As PMDC, we are providing technical and management support to HPSDMA under the aegis of AFD, aims to strengthen disaster and climate resilience across Himachal Pradesh through resilient infrastructure and improved governance, benefiting both state systems and local communities.

Climate Finance & Industrial Readiness

Implementation of advanced climate finance frameworks and undertaking sectoral risk mapping for hard-to-abate sectors and urban systems in India, Ghana, Vietnam, Ethiopia, and Mongolia.

Inclusive Risk Governance

Institutional capacity strengthening and development of climate-smart policies for vulnerable geographies across Bangladesh, Indonesia, and South Sudan among others.

Looking Ahead

Poised for accelerated growth, the CCS Practice is leading proactive engagements, pioneering innovative tools like the Climate Readiness Index and Climate Risk Observatory that drive measurable low-carbon initiatives, hyper-granular climate risk assessments, financial mobilisation, and system-wide resilience.

Scan to know more about CCS

A Testament of our On-ground Impact in the Global South

Climate efforts of the Global South are commendable but, climate change is a global crisis. We can't solve it with local actions alone. The Global North must take responsibility, lead mitigation, and provide the financing the Global South urgently needs.

H.E. Dr. Abdullah Belhaif Nuaimi
Former Minister of Climate Change and Environment in the UAE; Former Minister of Infrastructure Development in the UAE

Africa and India share common climate challenges - and through this partnership, we can strengthen early warning systems and deliver localised, timely climate information to protect lives and livelihoods.

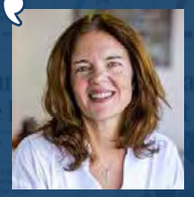
Dr Ousmane Ndiaye
Director General, African Centre of Meteorological Application for Development (ACMAD)

The foundation of a truly effective disaster management system is all about three M's for three R's i.e. Mapping, Monitoring, and Mitigation must drive Rapid Assessment, Rapid Response, and Resilient Recovery.

Mr. Safi Ahsan Rizvi, IPS
Advisor (Mitigation), National Disaster Management Authority and Executive Director, National Institute of Disaster Management (NIDM)

Climate action should not be seen as a burden - it's a powerful economic opportunity. From rooftop solar in India to green investments in Africa, the Global South is leading the way."

Mr. Erik Solheim
Former Minister of Climate and Environment of Norway and Former Executive Director of UNEP



The Hindu Kush Himalayas are warming twice as fast as the global average. This decade is our last real window to act - and we must protect this third pole before it's too late.

Ms. Izabella Koziell
Deputy Director General, ICIMOD

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We are all together in this mission of supporting the governments, supporting communities in implementing disaster risk reduction strategies, and IPE Global and UNESCO's partnership is going to fast-track climate literacy at all levels

Tim Curtis
Director & Representative, UNESCO, Regional Office for South Asia

IPE's pioneering hyper-granular risk assessments are of utmost importance in mapping hazard, risk, and vulnerability at the district and city level and further below and are supporting NDMA in managing disasters in the context of climate change. NDMA intends to engage more in such endeavours from institutes like IPE Global in building community resilience that can avert loss and damage

Dr Krishna S Vatsa,
Member Secretary, National Disaster Management Authority

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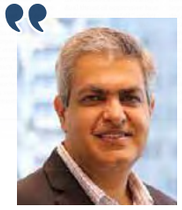

I am glad to hear about the hypergranular data and analysis undertaken by IPE Global; it is offering precise insights that can guide resilience planning and mitigation strategies effectively. CDRI-as coalition is trying to see how we can bring solutions to address risks from disasters to infrastructure, and IPE's work is of immense importance and should be scaled to more vulnerable regions.

Amit Prothi
Director General, Coalition for Disaster Resilient Infrastructure (CDRI)

We need to do a lot more work in terms of improving our climatological and meteorological databases and improving our response capacity that will support in making early warnings more people-centric. IPE's Climate Risk Observatory work complements to IMD's efforts of democratising climate data and information.

Dr Mrutyunjay Mohapatra
Director General of India Meteorological Department

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Expanding Horizons. Enriching Lives.

Founded in 1998, IPE Global is one of the largest South-Asia based development & social sector advisory organisations working across Asia, Africa, and Europe. Headquartered in New Delhi, India with 6 international offices in Cambodia, Ethiopia, Germany, Kenya, Philippines, and United Kingdom, IPE Global has successfully undertaken over 1200 assignments with bilateral & multilateral agencies, governments, and private sector in over 120 countries for partners like USAID, FCDO, World Bank, ADB, JICA, WHO, NITI Aayog, UN agencies, EU etc. and impacted 600 million+ lives globally. The Group offers a range of integrated, innovative, and high-quality consulting services across several sectors and practices like Health, Nutrition, Education & Skills Development, Climate, Urban, Tourism, Social & Economic Empowerment, and Monitoring & Evaluation among others.

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