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## Fellows 2026/2027

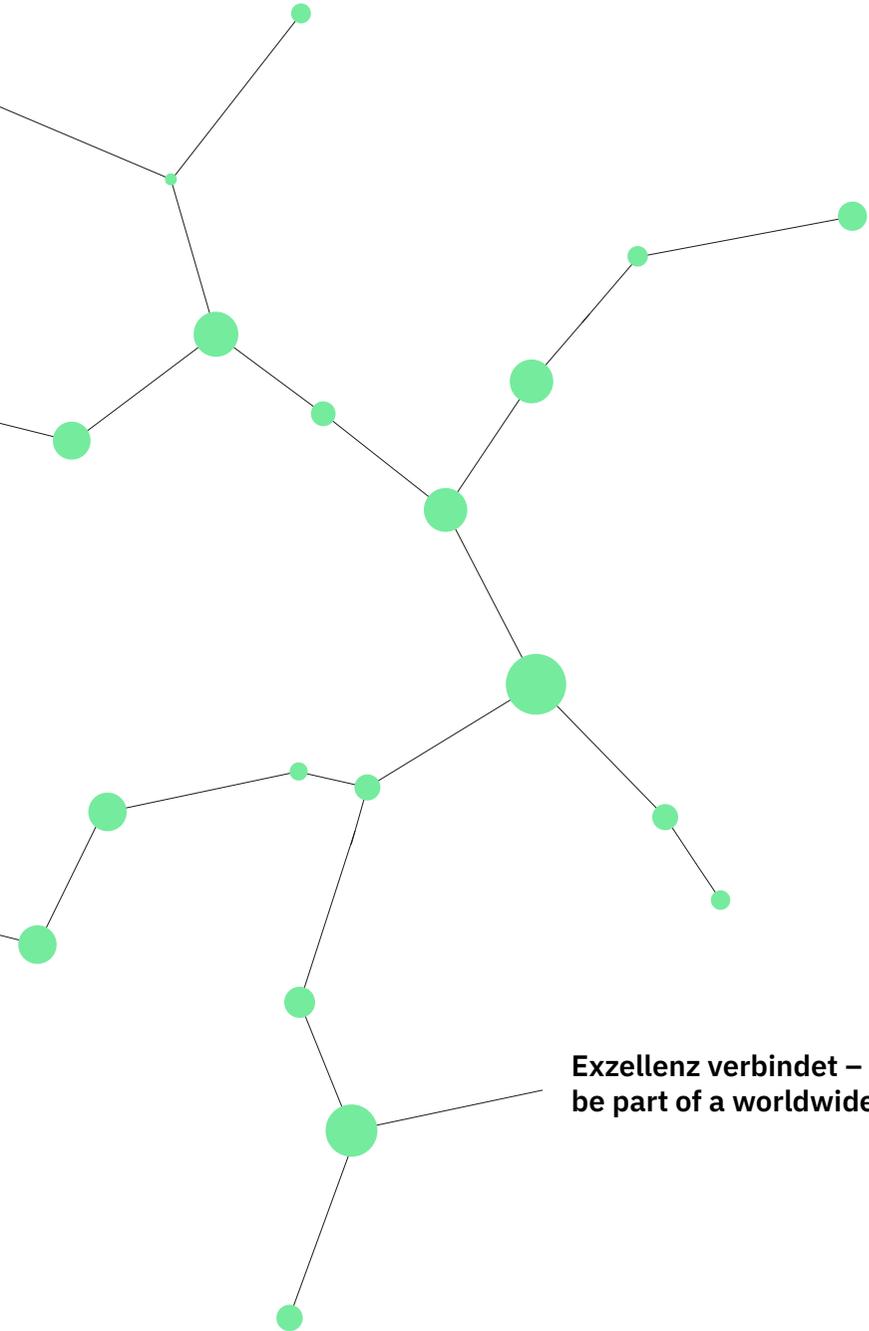
International Climate Protection Fellowship



## Stipendiatinnen und Stipendiaten

2026/2027

Internationales Klimaschutzstipendium



Exzellenz verbindet –  
be part of a worldwide network.

## Assessment of Above-Ground Mangrove Biomass and Blue Carbon Stocks in The Densu Delta Ramsar Site, Ghana



### Shamira Yakubu Abdulai

**Degree:** Master of Science | **Field:** Ecology and Biodiversity of Animals and Ecosystems, Organismic Interactions

**Home Institution:** Fisheries Commission, Accra, Ghana | **Host Institution in Germany:** Leibniz-Zentrum für Marine Tropenforschung (ZMT), Bremen | **Host:** Prof. Dr Martin Zimmer

Shamira Yakubu Abdulai wants to investigate the role of mangroves in climate change and further sharpen their role as climate guardians.

Mangrove ecosystems, recognized for their ecological importance, are increasingly vital in climate change discussions. Mangrove ecosystems, widely distributed along tropical and subtropical coastlines, stand at the nexus of ecological importance, climate change resilience, and community livelihoods. These unique coastal habitats, characterized by salt-tolerant trees and shrubs, play a pivotal role in regulating global carbon cycles, preserving biodiversity, and providing essential ecosystem services. Mangrove ecosystems having the ability to sequester carbon, buffer coastlines against storm surges, and nurture diverse marine life. They emerge as key players in climate change resilience.

Shamira Yakubu Abdulai's research aims to comprehensively investigate the role of mangroves in climate change mitigation and adaptation, specifically focusing on carbon sequestration, biodiversity conservation, and community resilience. She has identified current knowledge gaps such as the varying carbon sequestration rates across different mangrove ecosystems, the intricate relationship between climate change and biodiversity within them, as well as the effectiveness of community-based strategies in enhancing climate resilience. Her research will adopt a holistic approach encompassing field surveys, remote sensing techniques, ecological monitoring, and community engagement. Her goal is to delve deeper into the role of mangrove ecosystems as climate guardians and assess their potential as adaptive solutions in the face of a changing climate. Shamira will be supported by the Leibniz Centre for Tropical Marine Research in Bremen.

## Protecting Environmental Human Rights Defenders in Latin America and the Caribbean



### Alba Gabriela Alencastro Nunez

**Degree:** Master of Science | **Field:** Foreign Policy and International Systems

**Home Institution:** United Nations Development Program (UNDP), Quito, Ecuador | **Host Institution in Germany:** Hertie School, Berlin | **Host:** Prof. Dr Violeta Moreno Lax

Latin America and the Caribbean are two of the most biodiverse regions in the world and home to around 40% of global flora and fauna. At the same time, it is also the most dangerous region for Environmental Human Rights Defenders, who aim to protect these unique ecosystems against pressure from extractive industries. In 2023, 85% of documented murders of Environmental Human Rights Defenders occurred in this region, with mining being the main reason for the violence. The Escazú Agreement explicitly mandates the creation of a safe and enabling environment for Environmental Human Rights Defenders and aims to strengthen democracy, and access to justice and information in environmental matters in a region with high levels of violence and escalating socio-environmental conflicts. However, implementation gaps persist due to weak enforcement and limited trust in governments. Existing reports focus on documenting violence against defenders but lack a deeper analysis of the structural barriers to the implementation of regional frameworks such as Escazú.

Alba Gabriela Alencastro Nunez aims to answer the question, what are the main structural challenges to implementing the Escazú Agreement's Action Plan on human rights defenders in environmental matters in Latin America and the Caribbean. She seeks to address these gaps by combining the normative strength of human rights obligations with the contextual depth of socio-environmental conflict analysis, uncovering causes such as power asymmetries, weak enforcement, and systemic inequities. Alba's goal is to produce a policy paper with practical recommendations for decision-makers and stakeholders to strengthen national and regional frameworks, advancing the protection of Environmental Human Rights Defenders and ensuring alignment with the Escazú Agreement, while promoting biodiversity conservation. Alba will be supported by the Hertie School in Berlin.

Alba Gabriela Alencastro Nunez's goal is to strengthen the security situation of human rights activists, who are committed to protecting the environment and biodiversity in Latin America.

## Unveiling Climate Resilience: Assessing the Vulnerability and Adaptive Capacity of High Mountain Farmers in Gilgit-Baltistan



### Dr Iftikhar Ali

**Degree:** PhD | **Field:** Empirical Social Research

**Home Institution:** Karakoram International University Department of Development Studies, Gilgit, Pakistan | **Host Institution in Germany:** Leibniz Centre for Agricultural Landscape Research (ZALF) | **Host:** Dr Michael Spies

Dr Iftikhar Ali aims to assess the vulnerability and adaptive capacity of farmers in Gilgit-Baltistan in order to strengthen their preparedness for the challenges posed by climate change.

Climate change is evident in the Gilgit-Baltistan high mountain region, situated at the crossroads of the Himalayas, Karakoram, and Hindu Kush ranges. Over the years, farmers in Gilgit-Baltistan have observed a warming trend, with temperatures increasing by 0.1°C per decade. Consequently, this has led to climatic variations that have significantly impacted farming in Gilgit-Baltistan. Local farmers are highly vulnerable to climate change due to the fragile mountain ecosystem and low adaptive capacity. This situation is further exacerbated by inadequate livelihood opportunities and remoteness from markets. Additionally, farmers are unable to adapt due to insufficient land ownership and traditional farming methods. They are attempting to adapt to climate change by using pesticides, fertilizers, and new crop varieties, switching to horticulture, and breeding yaks for food production. However, these adaptation strategies are not sufficient to counteract the effects of climate change, and they often need external support and planned measures to strengthen their resilience. Despite considerable research on this topic, there is a lack of empirical evidence.

Dr Iftikhar Ali aims to fill this gap by empirically assessing the vulnerabilities and adaptability of farmers across Gilgit-Baltistan using the IPCC's Vulnerability Framework. His study aims to compare them across different valleys and districts to identify spatial variations, as well as assess high mountain farmer's adaptive capacity to climate-induced adverse impacts. Iftikhar hopes to uncover challenges and opportunities and promote tailored, evidence-based measures to drive the development of innovative, climate-resilient agricultural practices and improve farmers' preparedness. Iftikhar will be supported by the Eberswalde University for Sustainable Development.

## Climate Litigation as a Tool for the Preservation of the Cerrado Biome

### Livia Chaves Marcolin

**Degree:** Bachelor of Law | **Field:** Public Law

**Home Institution:** Global Center on Adaptation, Rotterdam, Netherlands | **Host Institution in Germany:** International Union for Conservation of Nature (IUCN), Bonn | **Host:** Boris Erg



Livia Chaves Marcolin intends to analyze climate litigation as a legal tool to combat the environmental impacts of agricultural expansion to protect the Cerrado.

The Cerrado, known as the „cradle of Brazil's waters“ is the country's second largest biome and one of the most biodiverse savannahs in the world. However, it is also the most endangered, as deforestation and monoculture agriculture are destroying the habitat. Around 50% of its original vegetation has been lost, with 10.700 km<sup>2</sup> deforested in 2022 alone. This degradation endangers species like the maned wolf and the giant anteater and contributes significantly to Brazil's greenhouse gas emissions. In addition, deforestation of the Cerrado affects rainfall in the Amazon region, highlighting the interconnectedness of Brazil's biomes.

Livia Chaves Marcolin's research focuses on climate litigation as a legal tool to combat deforestation, strengthen accountability, and mitigate the environmental impacts of agricultural expansion. She aims to analyze legal frameworks to assess how litigation can reduce deforestation, limit emissions, and protect biodiversity. Livia's study intends to drive innovation in environmental law through predictive modeling and interdisciplinary approaches. Her goal is to develop innovative legal strategies to improve the effectiveness of litigation in reducing deforestation and greenhouse gas emissions. Also, she plans to compare German case law with Brazilian law in order to extract lessons learned to improve accountability mechanisms. By linking biodiversity conservation with international trade policies, Livia hopes that her research will help to influence trade agreements and corporate environmental responsibility. Livia will be supported by the International Union for Conservation of Nature in Bonn.

## Upscaling Nature-based Solutions in African Cities



### Dr Chrispo Babila Dingha

**Degree:** PhD | **Field:** Physical Geography

**Home Institution:** University of Bamenda, Department of Geography and Planning, Bambili, Cameroon | **Host Institution in Germany:** Rheinische Friedrich-Wilhelms-Universität Bonn, Zentrum für Entwicklungsforschung (ZEF), Bonn | **Host:** Prof. Dr Lisa Biber-Freudenberger

Dr Chrispo Babila Dingha aims to create a holistic, Africa-specific framework for scaling inclusive nature-based solutions that enhance climate resilience, biodiversity, and local livelihoods while addressing environmental and social injustices.

More than 50% of Africa's population lives in urban areas, projected to grow to 70% by 2050. This rapid increase in population and urbanization is accompanied by changes in land usage and severe biodiversity decline. Biodiversity is the basis for local livelihood, and its environmental relevance is now needed more than ever. Increasingly, actions to protect, restore, and sustainably manage ecosystems, known as Nature-based Solutions, have been implemented across African Cities as a cost-effective and efficient approach to address climate change and biodiversity loss while providing social benefits. This implementation has not only remained insufficient and fragmented but has also neglected the interest of local communities. Additionally, the implementation of Nature-based Solutions has not been adequately evaluated vis-à-vis frameworks such as the Sustainable Development Goals.

Dr Chrispo Babila Dingha's goal is to develop a holistic framework and practical guidelines for scaling up nature-based solutions in Africa. To achieve this, his research project will examine initiatives, that have already been implemented in African cities and look at their contributions to climate change mitigation and adaptation, the local economy and biodiversity conservation. He will then evaluate these initiatives to identify inconsistencies and gaps, as well as success factors and barriers to scaling up to other African cities. His last step will be developing an integrated approach that is adapted to the African context. Chrispo hopes his research is a first step towards offering a new method for reviewing, designing and scaling inclusive nature-based solutions to advance and reduce (in)justice beyond conventional anthropocentric narratives. Chrispo will be supported by the Center for Development Research at the Rhenish Friedrich Wilhelm University of Bonn.

## Enhancing cost-efficient emissions reductions with the Brazilian Emissions Trading System



### Carolina Grangeia

**Degree:** Master of Science | **Field:** Economic Policy, Applied Economics

**Home Institution:** Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil | **Host Institution in Germany:** International Carbon Action Partnership (ICAP), Berlin | **Host:** Stefano De Clara

Oil and gas production is caught between the pressure to phase out and the need for energy security. Without a clear strategy, these climate protection mechanisms are weakened – especially in developing and emerging countries. As carbon pricing is considered one of the most efficient instruments for reducing greenhouse gas emissions, Brazil recently introduced its own emissions trading system and is working on its concrete implementation. However, a key issue is how Brazil will incorporate existing policies and incentives, such as the Fuel of the Future Program and the National Biofuels Policy (RenovaBio). RenovaBio requires fuel retailers to purchase decarbonisation credits and is based on life-cycle assessments, while Fuel of the Future sets its own standards for low-carbon fuels.

Thus, Carolina Grangeia's project addresses the question of whether RenovaBio should be integrated into the Brazilian emissions trading system or rather retained as a companion measure and adapted to the Fuel of the Future program. She aims to examine the implications of each scenario with a focus on maintaining integrity and cost-effective mitigation. In addition, Carolina wants to explore alternatives, such as the development of a standalone emissions trading system for the transport sector, similar to the future European emissions trading system, as well as other options. She hopes that her findings will serve as a guide and raise public awareness of carbon pricing mechanisms and the impact of the policy mix. Carolina will be supported by the International Carbon Action Partnership in Berlin.

Carolina Grangeia focuses on how Brazil should align its existing low-carbon fuel policies with its new emission trading system, to ensure the most effective policy design without undermine its core objectives.

## Integrated Livestock-Enset-Based Agroforestry Systems in Southern Ethiopia



### Mitiku Ayele Handiso

**Degree:** Master of Science | **Field:** Ecology of Land Use

**Home Institution:** Southern Agricultural Research Institute (SARI), Jinka, Ethiopia | **Host Institution in Germany:** Friedrich-Schiller-Universität Jena, Institut für Geographie, Jena | **Host:** Prof. Dr Roland Zech

Mitiku Ayele Handiso aims to combine the fight against challenges of climate change with a stable agricultural output by exploring agroforestry systems based on livestock farming and enset plants.

Ethiopia, the second-most populous country in Africa, relies heavily on agriculture. This sector is highly vulnerable to climate change, facing issues such as soil degradation, deforestation, and unsustainable farming practices. The country's growth in population intensifies the demand for land and creates food security problems as well as environmental sustainability challenges. The challenges center on balancing climate change mitigation with stable agricultural output, developing strategies that enhance soil fertility and carbon storage while supporting sustainable livelihoods for smallholders in a changing climate. Agroforestry systems, particularly integrating livestock with enset – a perennial and drought-resistant crop native to Ethiopia, known as the “tree against hunger” – offer promising solutions. They enhance soil health, improving carbon sequestration, and diversifying the livelihoods of smallholder farmers, all within a small area of land. The integrated livestock-enset-based home-garden agroforestry method used in Southern Ethiopia to adapt to climate change aligns well with local conditions.

Mitiku Ayele Handiso's research aims to contribute empirical evidence on the combined ecological and socio-economic impacts of integrated livestock and enset-based systems. He seeks to explore the ecological and socio-economic impacts of these systems, including food security, income, and resilience against climate variability. Mitiku plans to investigate the benefits as well as challenges of adopting these systems. Mitiku's study, thus, identifies scalable solutions and policy recommendations for sustainable agroforestry practices in Ethiopia and similar regions. Mitiku will be supported by the Department of Geography of the Friedrich Schiller University in Jena.

## Socio-Economic Challenges of Marginalized Communities in Satkhira, Bangladesh



### A B M Hasanuzzaman

**Degree:** Master of Social Science | **Field:** Empirical Social Research

**Home Institution:** Uttaran, Jigatala, Bangladesh | **Host Institution in Germany:** German Institute of Development and Sustainability (IDOS), Bonn | **Host:** Dr. Aparajita Banerjee

A B M Hasanuzzaman seeks to examine the challenges faced by marginalized communities in Satkhira, Bangladesh, using an intersectional approach.

Climate change is particularly noticeable in Bangladesh, especially in coastal communities such as rural Satkhira, a coastal district in south-western Bangladesh. This community suffers from severe climate impacts including cyclones, floods et cetera. Around 29% of residents are landless and over 27% belong to Dalit communities, which have historically been marginalized. Socio-economic privileges and inequalities intersect and shape local power dynamics, leading to unequal access to disaster risk reduction and climate change adaptation initiatives. These inequalities ultimately determine their climate vulnerability. Therefore, understanding the concept of intersectionality is crucial for climate risk management in Bangladesh and other parts of the world facing similar social and environmental challenges.

A B M Hasanuzzaman's research aims to demonstrate how multi-layered identities, shaped by structural determinants such as class, caste, and gender influence the climate vulnerability of marginalized groups. His project will examine the particular challenges of marginalized communities and how they address these through an intersectionality framework. The research will highlight that a lack of understanding of local dynamics limits the ability of policymakers and development practitioners to effectively address climate change. A B M will also develop a strategy to integrate their subjective needs, ensuring equitable and needs-based climate action. The study challenges the “one size fits for all” principle and will encourage policymakers worldwide to pursue more subjective, inclusive and responsive strategies that are consistent with the principle of “nothing about us, without us.” A B M will be supported by the German Institute of Development and Sustainability in Bonn.

## Towards Environmental Peacebuilding: Reimagining the Climate-Security Discourse in India and Germany



### Zakir Hussain

**Degree:** Master in Liberal Studies | **Field:** Social Psychology

**Home Institution:** Ashoka University, Sonapat, Haryana, India | **Host Institution in Germany:** Adelphi, Berlin | **Host:** Janani Vivekananda

Zakir Hussain aims to explore how communities are embracing rapprochement and dialogue in the face of climate threats in order to find solutions together.

Regions like Jammu and Kashmir, as well as Northeast India, long marked by deep historical conflicts, are now experiencing growing environmental stress. While climate change is often framed as a “conflict multiplier,” emerging research challenges this view, emphasizing its potential to foster cooperation and resilience. Shared environmental pressures such as resource scarcity or displacement can encourage joint action, build trust, and support lasting peace. In this context, the often-overlooked climate adaptation practices of remote tribal and indigenous communities in India offer valuable insights for sustainable coexistence.

Zakir Hussain seeks to explore how climate vulnerabilities can act as a catalyst for reconciliation, foster dialogue across divides and unite communities in collective climate action. He is planning to use participatory methods such as focus groups, storytelling, and trust-building dialogues, to highlight grassroots knowledge and lived experience. His project will examine how shared climate vulnerabilities can encourage communities to overcome political and ideological divisions and move toward a paradigm of environmental peacebuilding. Zakir’s goal is to promote a more inclusive, equitable, and systemic approach to climate security, one that prioritizes cooperation over hierarchical or conflict-driven models. He aims to build a network of think tanks and civil society organizations to co-create integrated frameworks for climate- and conflict-sensitive adaptation strategies while strengthening knowledge exchange on climate adaptation within civil society ecosystems in Germany and India, where the climate justice conversation is slowly gaining momentum. Zakir will be supported by Adelphi in Berlin.

## Integrating the Gender Equality and Social Inclusion Perspective into Energy Policy Planning in Pakistan



### Sadia Ishrat

**Degree:** Master of Science | **Field:** Political Science

**Home Institution:** Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan | **Host Institution in Germany:** ECOLOG-Institut für sozial-ökologische Forschung und Bildung GmbH, Lüneburg | **Host:** Dr Lars Holstenkamp

Sadia Ishrat examines how Pakistan’s energy policies can better integrate gender equality to improve women’s access to energy, participation, and empowerment.

In recent years, many countries have faced serious disruptions in their energy supply chains. Even so, the International Energy Agency expected global electricity demand to rise sharply in 2024 and 2025. This growth must not deepen existing energy inequalities; instead, it should support a fair distribution of clean, renewable energy in line with the principles of energy justice. Energy policies should be designed with a clear focus on the most vulnerable and often excluded groups, including women and other marginalized communities. In countries such as Pakistan, Gender equality and social inclusion are not part of energy policy formulation and implementation, while some of the EU countries have such a perspective. Current energy policies in Pakistan are inadequate in addressing the unique needs and hurdles faced by women, resulting in significant gaps in targeted interventions for enhancing their access to energy.

Sadia Ishrat aims to integrate a framework for Gender equality and social inclusion into Pakistan’s key energy sector policies. She plans to analyze the adaptation of Gender equality and social inclusion in energy policies in Germany and to identify best practices, that may be applicable to Pakistan. She will then assess how effective existing energy policies in Pakistan are regarding their inclusivity and women’s access to energy. After an analysis of the obstacles women are experiencing when it comes to energy services and policies, she will create gender-sensitive policy interventions to enhance women’s access to energy and promote sustainable practices within the energy sector. Her goal is to evaluate the impact of such integrated energy policies on improving women’s access to energy, participation in decision-making, and overall empowerment within the energy landscape in Pakistan. Sadia will be supported by the ECOLOG-Institute in Lüneburg.

## Bridging Policy and Practice: Guidelines for Voluntary Carbon Market Contributions in Agriculture, Forestry, and Land Use



### Monalisa

**Degree:** Bachelor of Arts | **Field:** Economic Policy, Applied Economics

**Home Institution:** Good Forest Indonesia Foundation, Sebangau Kuala, Indonesia | **Host Institution in Germany:** unique land use GmbH, Freiburg | **Host:** Dr Till Pistorius

Monalisa's goal is to develop a framework to help investors navigate Indonesia's carbon market.

Indonesia remains one of the world's largest carbon emitters, despite the country's efforts towards reducing greenhouse gas emissions through its Enhanced Nationally Determined Contribution. The agriculture, forestry, and other land use sectors offer immense potential for emissions reductions. Reforestation alone could save up to 247 million tons of CO<sub>2</sub> annually, underscoring Indonesia's opportunity to take a leading role in regional climate action through nature-based solutions. Innovative financing mechanisms are needed to achieve these goals, and the voluntary carbon market offers a promising pathway. By capitalizing on Indonesia's extensive resources, reforestation, afforestation, and sustainable land use could be promoted. These initiatives could conserve ecosystems, empower local communities, and bring significant economic benefits. The voluntary carbon market serves as a crucial mechanism to mobilize large-scale private sector investments and direct resources into the land use sector.

Monalisa's research aims to develop a comprehensive framework to help stakeholders navigate Indonesia's voluntary carbon market in the area of land use. She will address regulatory and operational barriers, analyze policy gaps, and make recommendations for alignment with global carbon market standards. By promoting scalable nature-based solutions such as reforestation and sustainable land management, the research aims to reduce greenhouse gas emissions and restore ecosystems. It emphasizes collaboration among various stakeholders and empowers local communities with tools and knowledge to ensure equitable benefits and strengthen the role of the voluntary carbon market in advancing Indonesia's climate and sustainability goals. Monalisa will be supported by unique land use in Freiburg.

## Strengthening Food Security and Climate Adaptation in Madagascar with Forecast-based Financing



### Helinoro Lantoniaina Hasina Razafindrakoto

**Degree:** Master of Arts | **Field:** Economic Policy, Applied Economics

**Home Institution:** GREEN NGO, Antananarivo, Madagascar | **Host Institution in Germany:** United Nations University Institute for Environment and Human Security (UNU-EHS), Bonn | **Host:** Sinja Buri

Climate change disproportionately affects poor and vulnerable communities, exacerbating the frequency and severity of climate-related disasters and food insecurity worldwide. Forecast-based financing has emerged as an innovative approach to dealing with these threats. Despite its growing recognition as a tool for proactive climate adaptation, its implementation, however, particularly in drought-prone regions of developing countries, remains limited. This is due to financial uncertainties, weak policy integration, and challenges in linking early warning systems to financing mechanisms. Expanding coverage, improving data collection, and integrating it into long-term climate adaptation strategies are essential steps forward.

Helinoro Lantoniaina Hasina Razafindrakoto's research will focus on how forecast-based financing can be made financially stable and effectively integrated into food security and climate adaptation frameworks. She plans to identify the financial barriers that stand in the way of sustainable implementation and evaluate potential financing solutions. She will examine how forecast-based financing can be better integrated into Madagascar's national disaster risk reduction and climate adaptation policies. She aims to assess how effective early warning systems are in triggering anticipatory financing and how to improve food security outcomes in the context of climate adaptation. Additionally, her study will explore the potential for linking forecast-based financing with risk financing and insurance models by strengthening public-private partnerships. Helinoro will be supported by the United Nations University Institute for Environment and Human Security in Bonn.

Helinoro Lantoniaina Hasina Razafindrakoto will examine how forecast-based financing can strengthen Madagascar's food security and climate adaptation policies.

## Leveraging Remote Sensing and Drone Technology to Mitigate Flooding in Vulnerable Fijian Communities



Lanieta Vereivuna Rokotuiwakaya seeks to use remote sensing technologies to analyze the impact of flooding caused by illegal logging.

### Lanieta Vereivuna Rokotuiwakaya

**Degree:** Bachelor of Arts | **Field:** Geodesy, Photogrammetry, Remote Sensing, Geoinformatics, Cartography

**Home Institution:** GHD Engineering, Architecture & Construction Services, Suva, Fiji | **Host Institution in Germany:** Albert-Ludwigs-Universität Freiburg, Fakultät für Umwelt und natürliche Ressourcen, Freiburg | **Host:** Prof. Dr Teja Kattenborn

Flooding caused by illegal logging is a significant hazard for vulnerable and displaced communities in Fiji, leading to the relocation of over 20 villages in the next three years. Remote sensing technology can be used to analyze and mitigate these impacts. However, recent methods are limited in accuracy and usability, which hinders monitoring of illegal logging and its consequences. A year ago, the Deadtrees platform was launched, an open database for accessing, contributing, analyzing, and visualizing remote sensing-based tree mortality data. This platform can also track illegal logging through forest cover time series, with drone images serving as reference data for supervised satellite-based deep learning models. This big data approach overcomes the common shortage of ground-based reference data.

Lanieta Vereivuna Rokotuiwakaya's primary aim is to develop a comprehensive understanding of the relationship between illegal logging and flooding in Fiji. She plans to use the spatially and temporally continuous products of the Deadtrees database for her research as it promises a significant enhancement in correlating tree removal to flooding, providing annual data from 2016 to the present. By integrating remote sensing data with on-the-ground drone imagery, Lanieta aims to create predictive models that can inform disaster risk reduction strategies and support sustainable community development. Additionally, she seeks to expand the Deadtrees platform's coverage in the South Pacific, contributing valuable data to the global archive and fostering international collaboration. Lanieta will be supported by the Faculty of Environment and Natural Resources at Freiburg University.

## Fire-Resistant Biocomposites Made of Agricultural Waste to Reduce Greenhouse Gas Emissions



### Dr Kusum Saini

**Degree:** PhD | **Field:** Construction Material Sciences, Chemistry, Physics

**Home Institution:** Department of Civil Engineering, Indian Institute of Technology (IIT) Delhi, New Delhi, India | **Host Institution in Germany:** Fraunhofer-Institut für Holzforschung – Wilhelm-Klauditz-Institut (WKI), Braunschweig | **Host:** Prof. Dr Libo Yan

The construction industry accounts for 13-15% of annual greenhouse gas emissions. Additionally, in many countries, stubble burning contributes significantly to greenhouse gas emissions and air pollution, exacerbating the climate and health crisis. To promote sustainable development, it is crucial to explore strategies that reduce emissions from both the construction industry and stubble burning. The use of agricultural waste in biocomposites as substitutes for conventional construction materials offers a promising solution (a) to mitigate air pollution, (b) to reduce construction and agricultural waste, and (c) to combat climate change. However, the potential applications of biocomposites for structural reinforcement, building components, and alternatives to wood-based composites remain insufficiently researched. Moreover, there are limited standard practices and design guidelines for biocomposites and their behavior under extreme hazard conditions. Addressing these limitations is crucial to prevent catastrophic failures and unlock the potential of biocomposites for sustainable civil infrastructure.

Dr Kusum Saini's project aims to develop novel biocomposite building units with adequate strength and functionality under fire and extreme weather conditions. The proposed biocomposites will be made of agricultural waste or plant-based natural fibers such as wheat, rice, sugarcane, and hemp reinforced in polymeric and bio-based binders. The most suitable biocomposites for modular structures will be identified based on the performance and environmental impacts. Kusum's results will contribute to affordable housing and effective thermal insulation in extreme climates. Kusum will be supported by Fraunhofer Institute for Wood Research in Braunschweig.

Dr Kusum Saini seeks to expand the research on biocomposites made of agricultural waste to reduce greenhouse gases and contribute to affordable housing.

## Impact of Unbearable Heat on Urban Outdoor Workers' Health in Latin American Cities



### Maria Sol Saliva

**Degree:** Master of Arts | **Field:** Public Health, Health Services, Research and Social Medicine

**Home Institution:** Ambiente Sano, Neuquen, Argentina | **Host Institution in Germany:** United Nations University, Institute for Environment and Human Security, Bonn | **Host:** Dr Simone Sandholz

Maria Sol Saliva aims to determine the best indicators and research methodologies to analyze and monitor the impact of extreme heat on informal urban outdoor workers' health in Latin American cities.

Climate change acts as a health-risk multiplier, affecting social and environmental determinants of health, especially for those with high exposure due to their livelihoods as outdoor workers. They spend long hours in increasingly hazardous weather conditions. In 2023, 30,8% of the working age population of low Human Development Index countries worked outdoors. Research has focused mostly on agricultural workers and how to measure productivity losses. However, much has still to be understood about the interlinkages between climate change, health and livelihood impacts with multidimensional poverty and informal urban settlements.

Maria Sol Saliva's project aims to investigate the impacts of extreme heat on work-health risks, contributing to an innovative and growing insight into urban transformation. She will identify, analyze, and compare existing indicators measuring the health impacts of extreme heat exposure on informal urban outdoor workers. Furthermore, she will examine the extent to which interventions and indicators take a gender perspective into account and what data challenges might facilitate or limit their inclusion. Finally, she seeks to develop and deliver knowledge for local, national and international policymakers, trade unions and civil society organizations. Maria will specifically look at five cities in three countries: Buenos Aires in Argentina, Leon and Naucalpan in Mexico, and Teresina and Recife in Brazil. These cities are part of the Transformative Urban Coalitions, a central project of the Institute for Environment and Human Security of the United Nations University in Bonn, who will support Maria in her endeavors.

## Are Rights and Autonomy Enough to sustain the Indigenous Organizations and Traditional Management Practices?



### Preety Sharma

**Degree:** Bachelor of Technology | **Field:** Empirical Social Research

**Home Institution:** GroundUp Conservation, Pune, India | **Host Institution in Germany:** Humboldt-Universität zu Berlin, Geographisches Institut, Berlin | **Host:** Prof. Dr Jonas Ostergaard Nielsen

Indigenous communities have protected biodiversity for generations through traditional systems of land and resource management. However, conventional conservation frameworks often fail to take these systems into account, leading to the marginalization of indigenous peoples' contributions and the loss of traditional knowledge. Article 371(A) of the Indian constitution recognizes tribal autonomy of Nagaland, India. It provides a unique opportunity to align indigenous governance with modern conservation goals of the communities. This has been implemented through landscape level conservation efforts, restoration activities, monitoring of hunting bans and socioeconomic solutions to the impacts of climate change through modern agroforestry, support for watershed restoration measures, and promotion of innovative methods to support local livelihoods.

Preety Sharma's research aims to identify the specific challenges faced by indigenous youth organizations, particularly the student unions in Nagaland, in their efforts to engage in biodiversity conservation and mitigating climate change. The study will assess the gaps in support, resources, and information, and explore how these student unions balance traditional knowledge with modern approaches. Her goal is to develop recommendations that can help resource providers and governmental bodies to better support the aspirations of indigenous youth, ensuring that their efforts are aligned with both cultural preservation and sustainable development. Preety will be supported by the Geography Department of the Humboldt-Universität zu Berlin.

Preety Sharma examines the challenges indigenous youth unions in Nagaland, India, face in blending traditional knowledge with modern conservation efforts and how to better support their role in biodiversity and climate action.

## Developing a Policy Framework for Market Stability Mechanisms in Intensity-based Emissions Trading Systems



### Subham Shrivastava

**Degree:** Master of Public Policy | **Field:** Economic Policy, Applied Economics

**Home Institution:** Institute for Energy Economics and Financial Analysis (IEEFA), Central Delhi, India | **Host Institution in Germany:** International Carbon Action Partnership, Berlin | **Host:** Stefano De Clara

Subham Shrivastava aims to develop a comprehensive framework for designing and implementing market stability mechanisms in intensity-based emissions trading systems.

Developed economies typically operate emissions trading systems with absolute emission-reduction targets. In contrast, many like-minded developing countries are developing intensity-based designs that tie emissions to economic output. This makes the systems vulnerable to an oversupply of allowances, because emissions fluctuate with production cycles - especially in the early phases when the target intensities are accommodating. Early oversupply leads to price volatility and weak incentives, undermining the system's effectiveness. The EU's emissions trading system faced exactly this in its first two phases, with major price collapses caused by surplus allowances. In response, market stability mechanisms were introduced to adjust allowance supply based on market conditions, stabilizing prices and improving overall performance.

Subham Shrivastava aims to develop a comprehensive framework for designing and implementing market stability mechanisms in intensity-based emissions trading systems, specifically tailored for like-minded developing countries. Given that India's carbon credit trading scheme is set to launch in 2025, with the first trading period in 2026, India serves as a prime case study. By analyzing how market stability mechanisms have been implemented in other emissions trading systems, his research will extract pertinent lessons and contextualize them. Additionally, Subham will examine intertemporal flexibility mechanisms, like banking and borrowing, to understand their interaction with market stability mechanisms. Subham will be supported by the International Carbon Action Partnership in Berlin.

## Enabling Equitable Governance: The Case of Water and Climate Resilience in Pakistan



### Zainab Zahid

**Degree:** Master of Science | **Field:** Empirical Social Research

**Home Institution:** Global Resilience Partnership (GRP), Cape Town, South Africa | **Host Institution in Germany:** Collective Leadership Institute (CLI), Potsdam | **Host:** Dominic Stucker

Zainab Zahid develops practical strategies for more equitable water and climate-resilience governance by analyzing stakeholder dynamics in climate-vulnerable contexts like Pakistan.

Equity and justice are fundamental yet largely unexplored issues. This is particularly true in the context of water and climate resilience, especially in Pakistan, where vulnerable communities are disproportionately affected by climate change. While local adaptation measures can address these needs, they often raise questions about social impacts and equity, especially in multi-stakeholder settings. The transformative nature of adaptation often requires skills that stakeholders do not yet possess, which compromises their ability to ensure equitable outcomes.

Zainab Zahid's research examines how equity can be strengthened in water and climate-resilience initiatives by analyzing stakeholder networks, collaboration patterns, and decision-making processes, particularly in climate-vulnerable countries, such as Pakistan, where financial, social, and environmental pressures are high. Zainab plans to use the Collective Leadership Institute's collective leadership compass as a diagnostic tool to identify challenges, strengths, and practical strategies for more equitable water governance. Grounded in the lived experiences of stakeholders, the study will highlight key dimensions of equity and pinpoint governance incentives that can support fairer water-resilience efforts. As part of this work, Zainab will gather insights from stakeholders and co-develop recommendations for effective and just water management and climate adaptation. The project aims to deepen the understanding of the role of equity and justice in climate resilience and to address systemic barriers. By assessing current engagement practices, action networks, strategies, and coordination mechanisms, it will also propose concrete steps to promote equitable outcomes in water management and climate adaptation. Zainab will be supported by the Collective Leadership Institute in Potsdam.

**Imprint:**

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Typesetting and printing: Kulturidee GmbH