



**Alexander von Humboldt**  
Stiftung/Foundation

# Stipendiatinnen und Stipendiaten 2019/2020

Internationales Klimaschutzstipendium

Fellows 2019/2020

International Climate Protection Fellowship



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## Latin American responses to human mobility in the context of the adverse effects of climate change

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Climate change impacts human mobility and intensifies internal and cross-border displacements in the Americas. Extreme weather events have affected the continent and, combined with socioeconomic and geographic characteristics, have disturbed those who are vulnerable and exposed to climate hazards. Diogo Andreola Serraglio intends to examine the extent to which Latin American countries have developed and integrated legal recommendations from the international agenda to address human mobility due to the adverse effects of climate change in the region, enabling the investigation of options for climate finance and adaptation measures. With his research, Diogo aims to present a supportive arena for the acknowledgement of displacements related to climate change in these locations, which could lead to the endorsement of legal protective commitments and reinforce migration as a potential adaptation strategy.



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### Andreola Serraglio, Diogo

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**Degree:** PhD | **Field:** International environmental law | **Affiliation at the time of application:** Pontifical Catholic University of Paraná, Curitiba, Brazil

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**Host Institution in Germany:** Deutsches Institut für Entwicklungspolitik (DIE), Bonn | **Host:** Dr Benjamin Schraven

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## Modelling small-scale livestock systems in the context of climate change in Colombia

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In Colombia, more than 80% of livestock systems are developed by small farmers, who have less than 50 animals and are in climatic and socially vulnerable conditions. In tropical countries, with grazing-based feeding systems, it is considered that strategies such as silvopastoral systems, rotational management of pastures and the use of forage with secondary metabolites could be the most efficient actions to make livestock more sustainable and competitive, while reducing greenhouse gas (GHG) emissions. The purpose of Erika Andrea Angarita Amaya's work is to develop a model to analyse small-scale livestock systems in Colombia and its actions for mitigation and adaptation to climate change. It is expected to generate a multi-functional impact analysis for actions at farm level with the potential to adapt small-scale livestock systems to the climate, which is finally expressed in a sustainability index that is easy for farmers, stakeholders and policymakers to use.

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## Angarita Amaya, Erika Andrea

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**Degree:** Master of Science | **Field:** Livestock and climate change, animal ecology, biodiversity, ecosystem research | **Affiliation at the time of application:** AGROSAVIA – Corporación Colombiana de Investigación Agropecuaria, Antioquia, Colombia

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**Host Institution in Germany:** Johann Heinrich von Thünen-Institut – Bundesforschungsinstitut für Ländliche Räume, Wald und Fischerei, Institut für Betriebswirtschaft, Braunschweig | **Host:** Dr Claus Deblitz

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## Study on the optimisation and distribution of wind farm layouts and the expansion of renewable energy in Tunisia

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Climate change is one of the most pressing challenges of our society due to its adverse impact on the earth's ecosystem and on the world economy. Energy and climate change are intrinsically linked. The way we consume energy determines society's environmental impact. With its 11.2 million inhabitants and its positively growing economy, Tunisia has started to diversify its energy mix and to devise ambitious renewable energy plans to meet its growing energy demand in the future while contributing to climate protection. Due to favourable wind conditions in Tunisia, it is currently expected that almost 2 gigawatts of the newly installed energy capacity could be based on wind. Feasible wind energy potential in Tunisia should be investigated further. Faten Attig Bahar works on the optimisation and the distribution of wind farm layouts under realistic Tunisian wind energy scenarios using the meteorological survey data available for specific sites in the country. In addition, it is expected that the evaluation can be extended by taking into account the realistic integration of site-specific wind energy into the national Tunisian grid as well as socio-economic aspects.



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### Attig Bahar, Faten

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**Degree:** Master of Engineering | **Field:** Energy engineering and energy management | **Affiliation at the time of application:** University of Carthage, Tunisia Polytechnic School, La Marsa, Tunisia

**Host Institution in Germany:** Universität Rostock, Stiftungslehrstuhl für Windenergie-technik, Rostock | **Host:** Professor Dr Uwe Ritschel

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## Assessing the groundwater-related risks of climate change in support of sustainable water management in southern Nepal

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Groundwater depletion is a rapidly growing problem in many parts of the world. Nepal has also experienced an increasing demand for groundwater. The southern plain Terai region of Nepal, which constitutes 23% of the land area and about 50% of the population of the country, strongly relies on groundwater for domestic, industrial and agricultural use. Groundwater resource exploitation will remain sustainable only if the resource utilisation level remains in line with resource replenishment. Knowledge of the impact of climate change on groundwater resources is, therefore, very important to be able to develop groundwater resources in a sound manner in the context of the changing climate. In his research, Dilli Ram Bhattarai focuses on the southern region of Nepal and analyses the sensitivity of groundwater including groundwater recharge, groundwater table and flow dynamics, and groundwater discharge to surface water bodies as a result of climate change. The findings of the study will support informed decision-making by policymakers on sustainable groundwater management.

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## Bhattarai, Dilli Ram

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**Degree:** Master of Science | **Field:** Climate change | **Affiliation at the time of application:** Nepal Environmental Research Institute, Kathmandu, Nepal

**Host Institution in Germany:** Johann Wolfgang Goethe-Universität Frankfurt am Main, Institut für Physische Geographie, Frankfurt | **Host:** Professor Dr Petra Döll

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## Fostering urban climate adaptation and mitigation through green and blue infrastructure in Colombia

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Cities have the power to change life on earth: they represent only 2% of the planet's surface, consume 78% of the world's energy and produce 60% of the world's carbon dioxide. They can also be highly vulnerable to climate change due to rising sea levels, increasing floods, water scarcity and more periods of extreme cold and heat. Through green and blue infrastructure (GBI), urbanisation processes can be more resilient to climate change while providing several other benefits to urban dwellers.

While some efforts have been taken to include ecosystem services and climate risk management in the expansion cities, GBI remains largely underutilised in Colombia. In her research, Carolina Figueroa Arango aims to analyse the potential and limitations of GBI as a tool for supporting climate change adaptation and mitigation within the context of urbanisation and urban expansion in Colombia. This is how an opportunity for wider and more effective implementation under certain future urban expansion is being created.



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### Figueroa Arango, Carolina

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**Degree:** Master of Science | **Field:** Climate change adaptation and mitigation, urban planning and development, landscape, infrastructure planning, urban ecology and urban biodiversity | **Affiliation at the time of application:** World Wide Fund (WWF) Colombia, Bogota, Colombia

**Host Institution in Germany:** Ecologic Institute: Science and Policy for a Sustainable World, Berlin | **Host:** McKenna Davis

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## How good have our climate and hydrological models been so far? About the improvement of the assessment of the impact of climate change on water resources – a case study from Benin

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The degradation of water resources due to climate change affects many sectors such as economy, society, ecology and policy. So far, several studies have been undertaken to estimate the impact of climate change on water resources. Due to the uncertainties in the predictions, assessing the quality of past predictions will potentially help adjust the hypotheses and methodologies used, and provide a basis for future studies and decisions. Olayèmi Ursula Charlene Gaba intends to compare past predictions with what was observed. In her research, she elaborates a calibration-validation procedure – based on existing ones – for hydrological models complemented by a computer-aided visual inspection tool using machine learning. Finally, the future impact of climate change on water resources will be estimated. The anticipated results are to assess of the quality of past climate predictions and to develop a visual tool. Thusly, Olayèmi will lay out an assessment of the impact of climate change on water resources for 2020-2050 throughout Benin.

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## Gaba, Olayèmi Ursula Charlene

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**Degree:** PhD | **Field:** Hydrology, climate change | **Affiliation at the time of application:** University of Abomey-Calavi, National Institute of Water, Abomey-Calavi, Cotonou, Benin

**Host Institution in Germany:** Rheinische Friedrich-Wilhelms-Universität Bonn, Geographisches Institut, Bonn | **Host:** Professor Dr Bernd Diekkrüger

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## Implications of incorporating the electricity sector in the emission trading system of Mexico

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Mexico is developing an emission trading system (ETS) to comply with the nationally determined contribution. By including the electricity sector in this carbon pricing instrument, most greenhouse gas emissions will be covered. However, electricity is critical to our modern economies and has often been subject to strict regulation, which could inhibit the price signal that an ETS is trying to deliver. Mexico has deregulated the sector and mandated a renewable portfolio standard. This poses a challenge on policymaking to set the rules of operation of the ETS. Carolina Inclan Acevedo conducts her research at her host institute Adelphi with the aim of analysing the experiences and challenges of regulatory implications on the sector in other countries and jurisdictions that have implemented it successfully. She will provide recommendations to ensure complementarity with existing electricity policy instruments and illustrate the impact of a different policy design on reaching climate goals.



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### Inclan Acevedo, Carolina

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**Degree:** Master of Science | **Field:** Economics in energy and climate change | **Affiliation at the time of application:** The Carbon Trust, Mexico City, Mexico

**Host Institution in Germany:** International Carbon Action Partnership (ICAP), Berlin | **Host:** William Acworth

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## Off-grid but online: assessing the role of information access in off-grid solar electricity usage

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With national grid access standing at levels as low as 5% in Burundi, Liberia and other African countries, off-grid solar energy systems are proving themselves to be a reliable technology towards a solution for many of Sub-Saharan Africa's energy access problems. Investments in the off-grid industry have grown 15-fold since 2012 to \$276 million in 2015 with pay-as-you-go companies taking over 87% of the investments. It is estimated that one in three off-grid households globally will use off-grid solar by 2020. However, the off-grid system still suffers from problems, the main ones being capacity limitation, and ensuring energy efficiency (EE) amidst operation and maintenance or user errors. By boosting the efficiency of production, storage and distribution processes, EE frees up currently wasted energy resources and facilitates climate change adaptation. In light of this situation, Tonny Kukeera intends to explore ways in which electricity consumption information access can be made transparent, understandable and accessible in off-grid household electricity users. By informing users of their energy consumption, he anticipates that energy awareness is enhanced, thereby influencing users' behaviours and hence promoting EE. While utilising open source software and hardware resources, Tonny develops a low-cost real-time SMS feedback tool. Ultimately, this would be key for policy makers and the off-grid solar industry at large, to develop sustainable models which not only focus on the business side but also encourage energy efficiency and users' understanding.

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### Kukeera, Tonny

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**Degree:** Master of Science | **Field:** Energy access and efficiency, climate change and energy-water-food nexus | **Affiliation at the time of application:** National University of Lesotho, Energy Research Centre, Maseru, Lesotho

**Host Institution in Germany:** MicroEnergy International GmbH, Berlin | **Host:** Noara Kebir

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## Unlocking circular economy potential in the bioeconomy of developing countries – the case of Brazil

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According to the United Nations Development Programme, nature-based strategies such as restoration can account for more than a third of the cuts in emissions necessary to keep global temperature rises under two degrees. However, despite the large apparent benefits, land restoration and carbon-positive agriculture are still being overlooked as viable solutions receiving just two per cent of climate finance. Scientists say that deforestation in the Amazon rainforest will reach the “point of no return”, if deforestation exceeds 20 per cent of its original area. Today it has reached about 17 per cent of its vegetation. The urgent need for better food and water security, more secure livelihoods among forest communities and the growing demand for forest products and bioenergy all underscore the need to massively scale up current restoration efforts. With her project, Adriana Marchiori Silva establishes an innovative business model framework that promotes the benefits of forests and trees. She seeks to engage all stakeholders in creating innovative solutions to local challenges and becoming capable of bringing competitive products and services to the market. This shall respond to basic needs while building social capital and enhance mindful living in harmony with nature’s evolutionary path. Adriana hopes to disrupt current thinking and actions, and to shift the stagnant business-as-usual stalwarts in order to open up for new opportunities. This means to apply the circular economy’s success model for textiles and waste to a current, failed governance model to forest conservation towards a bioeconomy driven development and great acceleration of disruptive solutions.



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### Marchiori Silva, Adriana

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**Degree:** Bachelor of Science | **Field:** Circular economy, bioeconomy, restoration economy | **Affiliation at the time of application:** Amata S.A., São Paulo, Brazil

**Host Institution in Germany:** Wuppertal Institut für Klima, Umwelt, Energie GmbH, Abteilung Kreislaufwirtschaft, Wuppertal | **Host:** Dr Henning Wilts

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## Monitoring, reporting and verification of greenhouse gas emissions from land use, land use change and forestry: opportunities for improvement in Uganda’s forestry sector

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Uganda is still using the IPCC Tier 1 method and national datasets for reporting. These have gaps and inconsistencies, and lead to high uncertainty about the reliability of emission estimations from deforestation and forest degradation. The accuracy and quality of emission calculations is low due to unstandardised measurement methods leading to errors. This is compounded by the fact that the baseline setting and development of allometric equations needed for proper accuracy of carbon stock estimation from forests is still problematic. Against the background of the current circumstances in Uganda, Michael Mugarura aims at acquiring practical skills and knowledge from his experience in Germany that will contribute to the establishment of Uganda’s forestry monitoring, reporting and verification system for tracking greenhouse gas (GHG) emissions. Carbon stocks shall be estimated accurately through enhanced skills. In this way, emissions from the forestry sector can be monitored and accurate allometric equations will be developed. Uganda’s forestry inventory will be linked to the national GHG inventory management system.

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## Mugarura, Michael

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**Degree:** Master of Science | **Field:** Climate modelling and greenhouse gas emissions analysis | **Affiliation at the time of application:** Ministry of Water and Environment, Climate Change Department, Kampala, Uganda

**Host Institution in Germany:** Johann Heinrich von Thünen-Institut, Bundesforschungsinstitut für Ländliche Räume, Wald und Fischerei, Institut für Waldökologie und Waldinventuren, Eberswalde | **Host:** Professor Dr Andreas Bolte

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## Demand-side assessment and optimisation of a solar PV-diesel hybrid swarm electrification system

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The climate change debate for developing economies always centres on methods for economic growth while reducing the carbon footprint. This is a challenge as most of the installed energy infrastructure in these countries runs on fossil fuels. Renewable energy offers a low-cost option to increase power supply and combat climate change. Hence, the initial investment still poses a hurdle, especially for the population who need it the most. Nigeria is a country with a population estimated at 180 million. The country's electricity generation fluctuates between 2,000–3,500 MW bringing the per capita electricity usage to approximately 142 kWh. In 2011, grid-connected customers suffered an average of 28 blackouts per day forcing many Nigerians to turn to self-generation. In 2009, the total capacity of individual power sources from petrol and diesel generators was conservatively estimated at 6,000 MW. These figures illustrate that innovative solutions are needed which offer better reliability, reduce costs and promote a more positive environmental impact. Ogechi Vivian Nwadiaru will explore a bottom-up energy planning approach known as swarm electrification. Swarm electrification supports interconnecting existing small, distributed renewable energy generation systems into microgrids. It reduces dependence on diesel powered generators. Ogechi Vivian will identify opportunities for powering economic activities in Nigeria by leveraging the geographic distribution in centres of economic activities while reducing emissions.



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### Nwadiaru, Ogechi Vivian

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**Degree:** Master of Science | **Field:** Electrification and energy planning | **Affiliation at the time of application:** African Union Commission, Department of Infrastructure and Energy, Addis Ababa, Ethiopia

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**Host Institution in Germany:** MicroEnergy International GmbH, Berlin | **Host:** Noara Kebir

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## Salinisation in a large river delta: drivers, impact and adaptation strategies

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Delta systems are the low-lying, complex interfaces of rivers and marine environments. Deltas have been recognised as some of the most vulnerable coastal environments. Understanding the vulnerabilities and impact of environmental change such as the effects of salinisation on health in hotspots such as river deltas is one of the most important research challenges of our time. It is currently estimated that over 600 million inhabitants of coastal zones may be affected by progressive salinisation globally, including a very large population in low-lying river deltas, such as Bangladesh. With his project, Mohammed Mofizur Rahman seeks to deepen our understanding of the relative importance of drivers of salinisation, the health consequences of raising salinity, and adaptation strategies to protect life and livelihood from the adverse effects of salinity. He will synthesise existing knowledge, predict the future risk from salinity and generate strong evidence of the association between salinity and public health challenges.

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## Rahman, Mohammed Mofizur

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**Degree:** Master of Science | **Field:** Health consequences of climate change in the low-lying river delta | **Affiliation at the time of application:** International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh

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**Host Institution in Germany:** Technische Hochschule Köln, Institut für Technologie und Ressourcenmanagement in den Tropen und Subtropen (ITT), Köln | **Host:** Professor Dr Lars Ribbe

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## Monitoring, assessing and projecting soil moisture drought by using a hydrometeorological model in South Asia

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South Asia is highly vulnerable to climatic hazards. The subcontinent experiences a wide range of natural hazards such as floods, droughts, storms and rising sea levels. Droughts are recurrent in South Asia. Their impact on regional agriculture, food storage and livelihoods is enormous. Although the economy in the region is highly dependent on agriculture, and although agricultural drought has a severe impact on the economy, society, health and water resources, the prediction system of soil moisture drought in South Asia has not been advanced. With the purpose of improving the drought monitoring and forecasting system throughout South Asia, Toma Rani Saha intends to contribute to working towards better adaptation solutions with her studies in Germany. She aims to introduce an appropriate hydrometeorological model for successful soil moisture assessment and the monitoring of agricultural droughts in the region focused on. This will be accomplished by estimating historical droughts based on climate data and satellite observations cross-referenced with existing records of drought parameters. Toma Rani's study outputs will offer realistic, high-resolution data and information on soil moisture and droughts. Furthermore, an electronic data platform shall be made accessible allowing the scientific community to conduct in-depth research at micro level and to generate projection at local to regional scale. Policymakers will then be able to formulate proper planning and take mitigation measures in societal sectors.



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### Saha, Toma Rani

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**Degree:** Master of Science | **Field:** Hydrometeorology | **Affiliation at the time of application:** Oxfam in Bangladesh, Dhaka, Bangladesh

**Host Institution in Germany:** Helmholtz-Zentrum für Umweltforschung – UFZ, Leipzig | **Host:** Dr Luis Samaniego

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## Designing the Philippine transition pathway towards sustainable development goal 13 in the context of sustainable cities using systems dynamics and lessons from German Green City models

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Cities are key to unlocking the transition towards achieving the sustainable development goals (SDG), particularly SDG no. 13. Cities demonstrated the potential to take individual actions at the COP21 and the 9th World Urban Forum. With two thirds of the global population projected to be living in urban centres by 2050, there is a heightened challenge to design sustainable cities. In the Philippines, the national government crafted the National Climate Change Action Plan and the Philippine National Framework Strategy on Climate Change 2010–2022. While complementary programmes and institutional strengthening among local government units are in place, there is still a gap in the coherent articulation of goals and the transition towards the attainment of SDG13. Tieza Mica Santos intends to develop a transition process tool and evaluation matrix in designing a pathway to achieve SDG13 targets through a sustainable city framework. She posits that there is no best-fit model of a sustainable city, let alone a SDG13 transition pathway. Conceptually, Tieza Mica will use the system dynamics framework to understand the relationships among elements and how they make a city sustainable. Tieza Mica will generate information from explorative interviews and a case study analysis and identify lessons from Germany, which can be transferred to second-tier cities in the Philippines for developing a transition process tool and evaluation matrix for Philippine policymakers and relevant stakeholders.

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## Santos, Tieza Mica

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**Degree:** Master of Science, Master of Arts | **Field:** Urban planning, sustainable cities | **Affiliation at the time of application:** World Wide Fund for Nature (WWF) Philippines, Manila, Philippines

**Host Institution in Germany:** Fraunhofer-Institut für System- und Innovationsforschung (ISI), Competence Center Nachhaltigkeit und Infrastruktursysteme, Karlsruhe | **Host:** Professor Dr Rainer Walz

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## An analysis of key beliefs, policy support and willingness to pay for mangrove-centred ecosystem-based adaptation (EbA) in the Gulf of Guayaquil, Ecuador

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Guayaquil is one of the most populous and economically important cities in South America. It is Ecuador's largest city and its most important port accounting for over 25% of Ecuador's GDP and comprising over 3 million inhabitants. The city is located next to the Guayas River and is the largest estuarine ecosystem in the Pacific coast of South America situated in the Gulf of Guayaquil. Industry and commerce have benefitted greatly from the highly productive lowlands and waters of its surroundings, but their growth has been at the expense of existing ecosystems. Deforestation and degradation of forests and mangroves in upland and intertidal watersheds have been the result of unsustainable agriculture and aquaculture expansion. It is this strategic location, along with the unrestricted growth of the city's infrastructure and industry, which explains the current vulnerability to the impacts of anthropogenic climate change. Mangrove ecosystems, which have been lost at alarming rates and originally populated the Gulf of Guayaquil, could protect the city from coastal flooding and rising sea levels. However, there are currently no policy schemes in action. Through his research Michael Tanner aims to measure the support of mangrove-based adaptation schemes for the city of Guayaquil employing an experimental economics approach for eliciting Guayaquil's citizens willingness to pay for such schemes. Its results would aid in developing a greener climate change adaptation policy for the city and also highlight the value of both mangrove conservation and restoration through the lens of an interdisciplinary approach.



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### Tanner, Michael

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**Degree:** Master of Science | **Field:** Economics, experimental economics, ecosystem-based adaptation | **Affiliation at the time of application:** Charles Darwin Research Station, Puerto Ayora, Galapagos, Ecuador

**Host Institution in Germany:** Universität Heidelberg, Alfred-Weber-Institut, Heidelberg | **Host:** Professor Dr Timo Goeschl

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## Planning regional adaptation strategies to support high-altitude wetland management in Arunachal Pradesh, India

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High-altitude wetlands are becoming increasingly important due to the possible consequences of global climate change. Yet, they have received little attention, so far, in terms of conservation and water resource management. While a baseline for a conservation plan and management strategies are lacking for most high-altitude wetland areas, it is undeniable that the overall understanding of the approaches and methods of wetland management is also extremely poor, particularly in the Eastern Himalayan region. There is an urgent need to formulate comprehensive climate change mitigation and adaptation studies for the conservation and management of high-altitude wetlands. In her studies, Jaya Upadhyay considers the case of Arunachal Pradesh, a state situated in the northeastern part of India that comprises of approximately 1,672 high-altitude wetlands. She seeks to generate information and prioritise the sustainable management of high-altitude wetlands for conservation and climate adaptation. The main outcome of her research will be to formulate recommendations of initial priorities and direction for high-altitude wetland management and its integration in local adaptation plans. Relevant stakeholders in the state of Arunachal Pradesh will be involved.

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## Upadhyay, Jaya

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**Degree:** Master of Science | **Field:** Public policy and management, natural resource management, community engagement | **Affiliation at the time of application:** World Wide Fund for Nature (WWF) India, New Delhi, India

**Host Institution in Germany:** Leibniz-Institut für ökologische Raumentwicklung (IÖR) e.V., Dresden | **Host:** Professor Dr h c Bernhard Müller

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## The role of financial institutions in emission trading and the implications for China

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Financial institutions (FIs) are a critical element of a functioning and efficient carbon market. They have been playing various roles such as reducing transaction costs, enhancing market liquidity, and providing more opportunities for risk sharing and diversification. In addition, with the rapid development of green finance in both developed and emerging markets, more opportunities and potential for financial institutions to support the carbon market are unlocked. In the European Union's (EU) Emission Trading Scheme, FIs are active. However, they have played a rather passive role in the Chinese carbon market, intensifying the existing challenges of liquidity deficiency and carbon price volatility.

Yinshuo Xu aims to investigate the existing functions of FIs in the EU Emission Trading Scheme and what further roles are expected from FIs to improve the performance of the carbon market. In her project, she will also explore under what conditions – systems guaranteeing the FI's functions – these further roles can function well, and how FIs and other actors in the carbon market can most effectively coordinate and collaborate. Implications for the roles of FIs in the national Emission Trading Scheme in China will be investigated too.



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### Xu, Yinshuo

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**Degree:** PhD | **Field:** Sustainable finance | **Affiliation at the time of application:** Central University of Finance and Economics, Beijing, China

**Host Institution in Germany:** International Carbon Action Partnership (ICAP), Berlin | **Host:** Dr Constanze Haug

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## Low carbon urban development in China and Germany: a comparative study of low carbon city development planning

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In both Germany and China, cities have largely contributed to economic development, wealth and personal prosperity. At the same time, cities are hotspots of various environmental degradations including greenhouse gas (GHG) emissions. Thus, low carbon urban development is key for climate mitigation. In her research project, Shu Yang aims to achieve a better understanding of low carbon city planning in China and Germany. She will investigate three dimensions in both countries: planning methods such as data management for GHG inventory and policy impact assessment; the planning process, especially, multi-stakeholder participation and how science contributes to the planning process; and the underlying governance structure. A comparative analysis of low carbon city planning in China and Germany will be conducted, through which key success factors can be identified. In addition, both countries' national governance and policy framework for low carbon development will be compared and analysed as to how the national contexts affect local actions. Finally, Shu will identify areas for mutual learning and potential collaboration between Germany and China, and provide a set of best practices in the above case studies. The expected results of the project will contribute to mutual learning and to organising further collaboration potential between the two countries in the context of low carbon urban pathways. The insight will also offer lessons to cities in other developing countries.

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## Yang, Shu

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**Degree:** Master of Science | **Field:** Low carbon development, political science, economic and social policy | **Affiliation at the time of application:** China Quality Certification Centre, Guangzhou Branch, Guangzhou, China

**Host Institution in Germany:** Wuppertal Institut für Klima, Umwelt, Energie gGmbH, Wuppertal | **Host:** Dr Chun Xia

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## On the use of mobile phone services to build smallholder farmers' resilience to climate change: a pilot randomised controlled trial in North Benin

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Most of the existing socio-economic literature on climate change adaptation is descriptive or explanatory. Although the current evidence base is valuable to understanding the ongoing adaptation-related dynamics and opportunities, more policy-oriented research is required. In that respect, Rosaine Yegbemey conducted a pilot clustered randomised controlled trial (RCT) in six villages in northern Benin. Following the RCT design, three villages were randomly assigned to the treatment group and the other three to the control group. Farmers in the treatment group received weather forecast information on a regular basis through mobile phone short message service (SMS). Farmers in the control group received no intervention. Along with the experiment, surveys were conducted at baseline (before the onset of the rainy season), monthly, and at endline (at harvest). During his stay in Germany, Rosaine Yegbemey will use the reach dataset of the pilot RCT to explore and test the potential impact of providing smallholder farmers with weather-related information through SMS on the production decisions and performance. Rosaine Nérice's project has the potential to generate preliminary evidence on the design of a context-specific intervention that can be implemented and scaled-up to build the resilience of smallholder farmers.



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**Yegbemey,  
Rosaine Nérice**

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**Degree:** PhD | **Field:** Adaptation to climate change |  
**Affiliation at the time of application:** University of Parakou, Faculty of Agronomy, Department of Agricultural Economics, Parakou, Benin

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**Host Institution in Germany:** Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI), Essen | **Host:** Professor Dr Jörg Peters

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