Impact Report from OPALS Impact Scholarship: Adapting to changing coastal hazards in Maputo, Mozambique

Project activity: September 2023 – September 2025

Impact Summary: November 2025

Project led by Oppenheimer Impact Scholar Minda Cossa

Supervisors: Dr Andrew Cunliffe, Dr Ricardo Safra de Campos, Prof. Gina Ziervogel, Dr Tom Powell.

We are pleased to report on the completion of the OPALS Impact Scholar Project, led by Minda Cossa from September 2023 to September 2025. Navigating challenging circumstances, the project advocated for improved access to climate hazard data for urban planning in Mozambique's coastal cities. Through targeted stakeholder engagement and the production of research outputs and advocacy materials in text and video formats, the projects outputs have already been accessed over 600 times.

Rapidly expanding cities on the East coast of Southern Africa face escalating risks from cyclones and sea level rise driven by climate change. Yet the integration of climate hazard information into urban planning remains extremely limited, leaving communities and infrastructure highly vulnerable. Building on previous activities supported by the UK government Global Challenges Research Fund (GCRF), this project this project sought to strengthen access to and use of hazard data by convening key actors in urban planning with institutions responsible for generating climate-risk information. Substantial reductions in capacity at the climate services organisation that we had initially engaged with for this project meant we had to switch to a broader engagement and advocacy focus, supported by partnership with University of Cape Town.

The second phase of the project, during which Minda was based in Maputo, coincided with a period of significant civil unrest, insecurity, and disruption to basic services through late 2024 and early 2025. These conditions made stakeholder engagement difficult, requiring a further revision of our objectives. Throughout this period, OPALS provided consistent support and security for Minda, enabling her to continue raising awareness of the critical need to integrate climate-hazard data into urban planning. She produced high-quality short videos in Portuguese and English that clearly articulate the consequences of this critical information gap and advocate for action.

The 24-month project combined technical training through a 12-month taught MSc in Global Sustainability Solutions at the University of Exeter, followed by a 12-month paid internship with University of Cape Town. From a human capital perspective this project was highly successful, providing advanced skills development and professional support for a talented emerging scholar. Minda gained substantial experience in stakeholder engagement, science communication, and translating complex climate information for policy and planning audiences. Her OPALS training and experience supported her progression to as a Teaching Assistant in Marine Ecology, Fisheries Biology and Aquaculture at Eduardo Mondlane University in Maputo where she shares her expanded expertise with undergraduate students, contributes to further capacity development, and continues to advance her own research career.

Project partners

- University of Cape Town, African Climate and Development Initiative (Prof. Gina Ziervogel)
- Centro Terra Viva
- Jive Media

Phase 2 of the project was delivered in partnership with the African Climate and Development Initiative (ACDI) at University of Cape Town, who acted as the formal host and contributed significant expertise in stakeholder engagement and collaboration towards climate adaptation through supervision by Initiative Director Professor Gina Ziervogel. Centro Terra Viva (CTV), a Mozambiquan NGO who advocate for civil society participation in environmental education and information, supported in network building and promotion of the project outputs. Jive media supported translation of our key findings into multi-lingual video formats designed to reach wider audiences.

Phase 1: MSc in Global Sustainability Solutions scholarship project

The studentship at the University of Exeter's Global Systems Institute enabled Minda to develop applied systems thinking skills and work across disciplines to address sustainability challenges. As part of an international cohort, she undertook training in systems change, policy engagement, and landscape dynamics. This culminated in a Master's thesis, "Informing adaptation to coastal hazards: Strengthening communication of sea level rise and cyclone risk in Maputo planning policy spaces", which drew on interviews with more than 30 stakeholders in climate science and urban planning in Maputo to identify examine barriers to integrating hazard information into planning processes. Minda found that insufficient funding, unreliable data, weak institutional coordination, and lack of capacity to translate and communicate complex scientific information hinder effective adaptation in rapidly expanding coastal cities. She highlighted the need for stronger collaboration among municipal and provincial authorities, scientific institutions and local stakeholders. Such engagement, combined with targeted training and locally relevant data, can significantly improve evidence based planning and climate adaptation. Her dissertation has been downloaded over 320 times, indicating the wider relevance and value of her work.

Phase 2: Dissemination and advocacy

Lack of institutional capacity with our original partners and the political unrest and insecurity in Mozambique significantly constrained our planned activities in engagement and translation of climate hazard data for Phase 2 of this project. However, the research in Phase 1 demonstrated a critical knowledge gap and desire for solutions among stakeholders of the risks posed by cyclones and sea level rise ,which could in part be addressed through communication and advocacy activities. We therefore focused on these for the remainder of the project with support from ACDI and CVT.

Minda, supported by her supervisory team and by Jive Media, scripted, filmed, and professionally produced short videos in English and Portuguese as communication tools to widen the reach of key messages from her research. They are intended to raise awareness of the importance of integrating evidence-based adaptation strategies in coastal urban development, and to advocate for multi-stakeholder collaboration to facilitate effective planning processes.

The videos have been disseminated through the communication channels of the University of Exeter, Centro Terra Viva, and Oppenheimer Generations Research and Conservation. Our partnership with CTV as a trusted local messenger with strong pre-existing institutional partnerships in Mozambique helps ensure the communication is as impactful as possible with limited resources. Beyond this project, the outputs from Minda's work continue to be used in CTV's suite of advocacy tools as they seek to improve civil society participation in environmental information sharing, and in their focus on legislative change to support this.

Personal Reflection: Minda Cossa, Oppenheimer Impact Scholar

The OPALS Impact Scholarship has been a transformative journey, connecting my academic research with practical action to strengthen coastal resilience in Southern Africa. This experience has allowed me to explore how scientific knowledge can be translated into decision-making tools that help governments, planners, and communities adapt to sea-level rise, storm surges, and other climate-related risks in coastal cities.

One of the key highlights of my work was to raise the need of addressing coastal hazards and establishing initiatives to integrate them into urban planning in Mozambique.

During my internship, working to establish partnerships in Mozambique was both challenging and rewarding. Building bridges with institutions required patience, negotiation, and persistence, but I had the chance to make meaningful connections that will serve as a foundation for future collaborations. Through interviews with different stakeholders, I was exposed to diverse perspectives on coastal hazards and possible solutions. These conversations helped me understand how underrepresented these issues still are, especially in the field of urban planning. This realization has fueled my determination to contribute more actively to this field in Mozambique: to ensure that sustainable planning is implemented and that science is effectively communicated to decision-makers. While the challenges are real, I now also hold the initial building blocks to move this work forward.

Despite the fact I couldn't travel to Cape Town for the originally planned internship, the outputs produced during this phase gave me valuable new skills. One of the most impactful experiences was creating a professional scientific video to share research findings. This exercise taught me the power of bringing information in a different format, making science more accessible and engaging and was a powerful reminder of the importance of communication in advancing climate adaptation.

During my MSc at the University of Exeter, I faced the most difficult personal phase of my life. Beyond learning about sustainability solutions, I also learned resilience—resilience as a student, as an early career researcher, and as a person who chose not to give up. This period shaped me not only academically but also personally, reinforcing that building sustainable futures goes hand in hand with cultivating inner strength.

A turning point in this journey was the Oppenheimer Research Conference (ORC), where I faced one of my greatest fears: public speaking. Presenting my research on such a stage was both daunting and empowering. It gave me the opportunity to share my work with a wider audience, to listen and learn from other researchers, and to make my contributions visible within a global community. Overcoming that challenge gave me new confidence and strengthened my belief in the importance of making science public and accessible.

I am deeply grateful to OPALS and OGRC for this life-changing opportunity. The scholarship has empowered me with knowledge, networks, and practical experience that I continue to apply in strengthening climate resilience and advancing sustainable coastal solutions across the Western Indian Ocean region.