Role Description

Research Project Assistant (Fixed-term, FT / PT): Cambridge – UNDPPA Collaboration on Climate Security

Background

Cambridge Zero (CZ), together with the Cambridge Peaceshaping & Climate Lab at the Judge Business School, has an opportunity for a **Project Assistant (Fixed-term, Full-time or Part-time)** to support a new research collaboration on Climate Security, working with the Innovation Cell of the United Nations Department of Political and Peacebuilding Affairs (UNDPPA). The project will undertake exploratory research related to the use of AI, and other data science methodologies, in support of the UNDPPA's mandate. Importantly, this research will seek to employ data derived directly from the UNDPPA's *Geoguard* dashboard, as part of any associated research outputs. *Geoguard* was developed by the UNDPPA's Innovation Cell (IC) to monitor climate security over multiple decades at global scales, as part of accelerating empirical, data-driven decision-making on climate security impacts at the level of UN Missions and Country Teams as well as UN Member States across the Middle East and Africa. It is a tool for decision-makers seeking immediate insight on environmental risk factors throughout specified regions and snapshots in time, linked to trends in social unrest, and can visualize data at sub-national administrative levels.

The UNDPPA IC secured funding in 2023 from the Complex Risk Analytics Fund (CRAF'd) to expand its *Geoguard* dashboard across the Middle East and Africa. This funding is supporting the enlargement of *Geoguard's* database along with a series of exploratory research projects related to environmental and conflict modelling. In support of this effort, the IC hosted a modelling workshop in March which brought together relevant experts to discuss the application of modelling in the context of peace and security. This event provided the impetus for the IC to collaborate with various academics and institutions, including the current project with the University of Cambridge.

This role would ideally suit a PhD student looking to take on an additional project over the summer months, or a student who has just completed their PhD, or is nearing completion.

Role & Proposed Research

The Research Project Assistant will undertake exploratory research into how *Geoguard* data can be used as the basis of climate or other modelling efforts. This proposed research will directly support the UNDPPA's work, in particular the provision of enhanced data-driven decision-making in the context of climate resilience and environmental security. Specifically, it will provide exploratory research related to sand and dust storms (SDS), which are growing in frequency and impact and have substantial transboundary effects particularly in regions with a recent history of conflict. The project will seek to correlate the SDS model recently developed by the IC (together with technical partner *Element* 84) with other climatic variables to identify causes or precursors and use *Geoguard* data to understand what environmental factors lead to SDS.

While the specific focus of the collaboration is on SDS modelling, the research will aim to answer wider questions about how best to employ *Geoguard* data. As part of this role, the Research Project Assistant will be responsible for the research and modelling work - working closely with Cambridge academics, UNDPPA representatives, and Element 84 - as well as writing up the outputs in a report and potential journal publication.

A further potential avenue of research, if time allows, will be to identify source areas of SDS (the geographic locations from which SDS emerge), which can then be correlated with areas of conflict or climate vulnerability. This second stream of research will be undertaken in collaboration with the Cambridge Peaceshaping & Climate Lab, in particular its "spot and stop" workstream which aims to use emerging technologies to identify possible sites of conflict, build local resilience, and inform response.

Outputs
The primary output from this project will be a research report detailing how *Geoguard* data can be used as the basis of climate or other modelling efforts. An update report will be delivered in mid-September to provide preliminary results and ensure the work is on track.

Depending on the success of the project, the report may also be adapted into an article to be published in an academic journal or presented as a paper at a relevant conference of other fora. Because of the focus on SDS, it may also be possible to showcase the research at the forthcoming United Nations Convention on Combating Desertification COP in December 2024.

Timeline
- **Start date:** As soon as possible.
- **August:** Project Kick-off and finalization of research question(s) (UNDPPA/Cambridge)
- **mid-September:** Update report including initial results (Cambridge)
- **late-October:** Final report delivered. (Cambridge)

Responsibilities

The main responsibilities of the Research Project Assistant are:

- Undertake exploratory research into how *Geoguard* data can be used as the basis of climate or other modelling efforts, with a specific focus on the modelling of sand and dust storms and their impacts.
- Liaise closely with key project partners in the UNDPPA Innovation Cell, and relevant academic experts in Cambridge, to ensure the research meets the requirements and aims of the project.
- Deliver an interim update report with initial results by mid-September, detailing project progress.
- Deliver a final report summarising the findings of the project, by end of October 2024.
- [Optional/Desirable]: write up the outputs in a peer-reviewed academic journal publication.

Assignment details

- **Pay**: UoC Grade 7 equivalent: £17.81 per hour (for current PhD students) or £18.89 per hour (for applicants who have completed their PhD).
- **Duration & Hours:** funds are available for approximately 5 weeks at Full Time (37 hours per week), with potential to extend to 8 weeks, subject to confirmation of additional funding. Part Time working will be considered, e.g. for a student wishing to take on this role alongside their PhD. The University recommends that students limit working to maximum 10 hrs/week in addition to their studies.
- **Deadline –** midnight Sunday 11th August 2024
- **Email CV and Covering letter to info@zero.cam.ac.uk**

As this is a temporary assignment with limited funding, it will be administered through the University of Cambridge's Temporary Employment Service. Cambridge Zero will advertise the assignment and interview candidates and the successful candidate will be asked to register with TES.

All applicants are legally required to demonstrate the right to work / permission to work in the UK.

Requirements
The successful candidate will ideally have:

- Must be current or recent PhD students (graduated from their PhD within the last 12 months).
- This position is not degree specific, but applicants must have a knowledge of climate change and environmental issues as well as a passion for the subject.

- Applicants must have strong computational and analytical skills, including the ability to work with and manipulate large datasets, and apply modelling approaches. They must be able to collate, understand and draw conclusions from quantitative and qualitative information.
- Applicants must have experience with machine learning and/or artificial intelligence methods.
- [Desirable] Experience with computer vision algorithms or similar would be an advantage.
- Good written communication skills, able to synthesise evidence from multiple sources and write high quality outputs for a variety of audiences.
- Good visual presentation skills, experience of working with developing visual resources would be desirable.
- Good interpersonal skills; confident in meeting and working with people from a range of backgrounds and disciplines.
- Well-developed organisational skills.
- Ability to prioritise own workload as not continuously supervised.
- Competent in standard software packages e.g. Word, Excel, Powerpoint.
- The successful candidate must, by the start of their employment, have permission to work in the UK.