

Request for Proposals (RFP)

Understanding the potential impacts of Solar Radiation Modification (SRM) on Sub-Saharan Africa

Motivation and Background

Global temperatures continue to rise, and our current emissions trajectory puts humanity at further risk from increasing temperatures and extreme weather events in the coming decades. This has led to a growing scientific interest in solar radiation modification (SRM), also known as solar geoengineering or climate cooling. These are approaches that could reduce global temperatures by reflecting a small portion of sunlight back to space.

SRM is not a substitute for decarbonisation, which remains the only long-term solution to tackling climate change. It also raises a number of complex scientific, social, and governance questions. We do not currently have a sufficient understanding of how different SRM scenarios might affect regional climates, extreme weather, food systems and health, or how society might responsibly govern these approaches and the ethical challenges they surface.

Communities in the Global South, including across Sub-Saharan Africa, are often especially exposed to climate change. Rising temperatures, shifting rainfall patterns, and extreme weather events are already exacerbating existing social, environmental, agricultural and health pressures in the region. SRM could also have unique regional impacts across Sub-Saharan Africa, with different scenarios impacting monsoons, precipitation patterns, and regional temperatures; however, the magnitude and details of these impacts are not well understood.

SRM research has often been shaped by institutions and perspectives from the Global North, despite the fact that many of the regions most exposed to climate risks are in the Global South. There is a need, therefore, to scientifically interrogate how SRM could affect the climate of Sub-Saharan Africa, and how this might interact with existing climate risks and regional challenges. This includes improving our scientific understanding of how SRM scenarios could shape outcomes related to food security, human health, displacement, renewable energy, and extreme weather.

In April 2026, The Alliance for Just Deliberation on Solar Geoengineering (DSG) and the Climate System Analysis Group at the University of Cape Town organised a workshop in South Africa on the subject of *Empowering New Voices in SRM*. Over two days, physical and social scientists and representatives of civil society organisations from across Africa and beyond met together to discuss the knowledge gaps and open research questions related to SRM and its impacts on their region. One of the primary outputs of this workshop was a compilation of co-designed research questions that the delegates considered most pressing. Surfacing these questions helped inform the basis of this call for proposals, which broadly extends to a Sub-Saharan context and seeks to understand how SRM may interact with the research domains highlighted below.

Research Focus

Proposals must address at least one of the following five research domains:

1. **The effect of SRM on climate displacement and security.** Climate change has highlighted Sub-Saharan Africa as a potential displacement hotspot, with significant rural-to-urban migration internally, and an influx of migrants from neighbouring climate change-impacted countries. How might SRM under different scenarios affect climate-induced displacement, host-community pressures, and security in defined Sub-Saharan African contexts? Applications should justify the drivers of displacement and security that are selected for study.

Potential research questions:

- What is the relationship between SRM deployment scenarios and climate-induced displacements? How might this impact security and peace in affected countries?
 - How would SRM shape local, regional, and global climate-induced conflicts?
2. **The effect of SRM on the just transition and renewable energy.** Solar radiation modification could have implications for conventional climate change mitigation efforts, fossil fuel phase-out, renewable energy progress, energy sovereignty, and existing just transition commitments. How might SRM research or policy-support scenarios interact with the just energy transition trajectory in Sub-Saharan Africa (including mitigation commitments, renewable energy development, energy access, and justice outcomes), and with the continent's efforts more broadly? How might SRM deployment scenarios

affect these things? Applications should justify which countries or regions in Sub-Saharan Africa have been selected for study.

Potential research questions:

- Can we assess South Africa's (or other relevant country) progress and 10-year projected trajectory under a just energy transition pathway to inform ethical and policy implications of SRM?
- How might regional climate change and shifting precipitation from SRM impact renewable energy output in Africa? How would this compare to a climate change scenario without SRM?
- How does SRM alter surface solar irradiance and photovoltaic (PV) electricity output across African regions under different deployment scenarios?

3. **The effect of SRM on extreme weather events.** Climate change means that Sub-Saharan Africa is increasingly subject to extreme weather events such as flooding, droughts, wildfires, and heat waves. How might solar radiation modification scenarios alter extreme weather risks in Sub-Saharan Africa, compared with climate change scenarios in which there is no solar radiation modification? What would any changes mean for vulnerable communities and adaptive capacity? Applications should justify which countries or regions, climate zones, and types of extreme weather have been selected for study.

Potential research questions:

- How would SRM affect, or interact with, African Earth system tipping points?
- Does Africa (or selected subregions/countries/territories) have capacity to adapt to extremes under climate change, and how is this impacted by SRM?
- How do extreme events change under climate change, how might SRM interact with these events, and what does this mean for Sub-Saharan African lives?
- Can we quantify the loss and damages from extreme weather events affecting Sub-Saharan African subregions under climate change and SRM deployment?

4. **The effect of SRM on food security and agriculture.** Climate change is placing additional pressures on agricultural systems through extreme weather, increased climate variability, and ecological degradation. How might SRM affect the climate across Sub-Saharan Africa, and what would these changes mean for farmers, organic and conventional agriculture, soil and air quality, water systems, livestock, and nutrition? How

might these changes compare to a future climate without solar radiation modification? Applications should justify the agricultural systems and geographic focus selected.

Potential research questions:

- What might the localized effects of climate change be on agricultural practice with or without SRM deployment?
- How might SRM affect agricultural practices and operations?
- What are the impacts of SRM on organic farming techniques versus conventional farming in Sub-Saharan African sub-regions, compared to climate change without SRM?

5. **The effect of SRM on human health.** Climate change exacerbates public health challenges. Heat-related illness, air quality, water access, and disease transmission are all affected by increasing temperatures and shifting regional weather extremes. How might solar radiation modification, through its impacts on weather and climate, affect human health? In Sub-Saharan Africa, how might a changing climate influence the spread of communicable diseases, and how might SRM influence this?

Potential research questions:

- How might SRM impact the severity of heat-related health conditions, such as heat-stroke, cardiovascular illness, and respiratory diseases, in Sub-Saharan Africa?
- How might climate-related shocks - such as drought, flooding, heat extremes, food insecurity, displacement, or health-system disruption - affect the transmission of communicable disease, such as HIV-AIDS, and vector-borne diseases such as malaria, in Sub-Saharan African contexts? How might these pathways differ under climate-change and SRM scenarios?

It will be the responsibility of the applicants to show how their proposed research fits within these research domains. Applicants may, if appropriate, propose research that sits across more than one of these domains.

All proposals must:

- Include community knowledge and avoid extractive research.
- Clearly communicate uncertainty and limitations.
- Compensate or appropriately resource community partners.

- Return findings in useful formats that shape future research design.
- Support communities in interpreting and disseminating the findings.

Methods

Projects may use climate model output, impact models, statistical models, qualitative or participatory methods, or integrated mixed methods approaches. However, proposals should clearly identify:

- SRM scenarios used
- Datasets used and access method
- Variables of interest
- Treatment of uncertainty and limitations of data
- Validation approach
- How model outputs will be translated into domain-relevant impacts

Data Availability

To support researchers, Earth System Model simulation output from UKESM of stratospheric aerosol injection (SAI) and marine cloud brightening (MCB) will be made available (G6-1.5K-SAI, G6-1.5K-HiLLA, and G6-1.5K-MCB), along with the background scenario with no SRM (the moderate GHG emissions scenario, SSP2-4.5). Simulations have been performed up to the year 2085. Data will be made available at the native N96 model resolution and will not be down-scaled; down-scaling may be an objective of the proposed research.

University of Exeter will run office hours every two weeks to provide support relating to the use of this data. University of Exeter will not be able to provide support on data usage beyond these datasets. Researchers are also welcome to use free resources such as the [Reflective Cloud](#) and/or the ESGF nodes to access SAI simulations from alternate models and run analyses.

Researchers will be expected to outline in their application which simulation outputs they plan to use, and how they will use them, to answer their chosen research question(s).

Open Access Requirements

We require all work to be published open-access, subject to ethical, legal, data protection, community ownership, and safety constraints. Any results, data, or supporting code, must be made publicly available on an open-access repository such as Zenodo. All successful applicants

and their team members will need to sign the [Future Proofing our Climate and Weather Intellectual Property Pledge](#) in order to receive funding. This approach is designed to enhance the public good by maximising the accessibility, usability, and collaborative potential of the funded projects, ensuring that the benefits extend to a wider community, and fostering a culture of open innovation.

Estimated Funding and Duration

The maximum award size per project will be up to £70k for a period of up to 18 months, with approximately 3–5 projects funded. Projects may start on a date agreed during contracting but must be completed no later than 31st July 2028.

Eligibility

Applicants may be based anywhere. However, we encourage applications from researchers based in Africa, either as individuals or through their primary employing or host institution. Projects must focus on impacts on Sub-Saharan Africa. Projects can focus on one or more Sub-Saharan African countries, regions, ecosystems, or communities, but should justify the geographic focus and explain its relevance to SRM impact assessment.

International collaborators may be included where they bring relevant expertise or data access. Applicants will be expected to explain each team member's role and how the project will avoid extractive research practices.

Applicants must be able to receive grant or contract funding directly or identify a host institution able to receive and manage the award on their behalf.

We encourage applications from researchers at all stages of their career. Early-career applicants do not need to hold a permanent post, provided they can identify an appropriate host institution or arrangement for receiving and managing funds.

The Application

We have designed a short and straightforward application process that we hope is easy to complete. Download the Application Form and follow the application guidance at www.srmimpactsrfp.info.

Application questions	Word Limit
1. How does your project fit to the call, and what key questions does it seek to answer?	500
2. How will you answer these questions and what methods will you use?	500
3. How will you communicate your results?	300
4. What datasets will you use in your project?	500
5. Who is on your team and why is your team qualified to do this work?	500
6. What will your project cost and how long will it last?	500
[Optional] You can include diagrams or graphics as part of your proposal.	

Please note: Supporting data, preliminary data, journal articles, blogs, code or other materials are not required, but may be referenced or linked to in the submission if they directly support your application. However, ensure that your proposal stands on its own.

Evaluation Criteria

Once you have submitted your application, it will pass through an initial review to ensure it is within the scope of the call. **If a submission is not considered to be within scope of this RFP, it will be rejected prior to full review and will not be eligible for funding.**

We will then score the proposals according to the answers given to questions 1-5 above. Question 6 on project costs is compulsory, and must be completed, but will not be scored. Further sub-questions are included in the Application Form to guide your answers.

Application Timeline

This request for proposals will be open for applications as follows (subject to change):

Applications open	3rd July 2026
Application deadline	7th August 2026 (14:00 BST)
Proposal review	10th August - 21st August 2026
Pitch interviews arranged with shortlisted applicants	By 28th August 2026
Pitch interviews held remotely	31st August - 8th September 2026
Due diligence form submission deadline (shortlisted applicants only)	8th September 2026
Applicants notified of outcome	18th September 2026
Contracting period	21st September - 16th October 2026
Contract signature deadline/award date	16th October 2026

Review and Award Process

Proposal review (10th–21st August 2026)

All eligible and in-scope applications will be reviewed by the assessment panel against the evaluation criteria set out above.

Pitch interviews (31st August–8th September 2026)

A shortlist of the strongest applications will be invited to a 30-minute virtual interview. Interviews will assess the proposed research, team capability, feasibility, and alignment with the objectives of the call. Further details will be provided to shortlisted applicants.

Due diligence (by 8th September 2026)

All shortlisted applicants will be required to submit a completed Due Diligence Form by 8th September 2026, prior to final funding decisions. Funding decisions will be contingent upon satisfactory completion of due diligence and any required contracting discussions.

Notification of outcome (18th September 2026)

Applicants will be informed whether or not they have been selected for funding. Funding offers will be conditional upon successful completion of due diligence and agreement of final project scope, budget, milestones, and contracting arrangements.

Contracting period (21st September–16th October 2026)

During this period:

- Due diligence findings will be reviewed and resolved.
- Project activities, milestones, and budgets may be refined.
- Grant and contract terms will be agreed.
- All required documentation must be completed.

Award date (16th October 2026)

Contracts must be signed by this date. Funding offers may be withdrawn if agreements cannot be executed by the deadline.