

# REACH

Improving water security for the poor



# Application of UV-LED to rural water systems

## Applicant Guidance Note

### 1. Summary

REACH is a global research programme to improve water security for the poor by delivering world-class science that transforms policy and practice. The seven-year programme (2015-22) is led by the University of Oxford, funded by the UK Department for International Development, and brings together a consortium of global leaders in water science, policy and practice. REACH Partnership Funding calls are designed to support novel approaches to water security and poverty research and policy that complement the core research conducted by the REACH programme.

This document provides general guidance for the REACH 'UV-LED to Rural Water Systems' Grant which is commissioned under the REACH Partnership programme. This study provides the recipient with an opportunity to develop their research in water quality and in partnership with the REACH programme. Their research will co-build knowledge on appropriate disinfection systems for professionally maintained rural water supplies in Kenya.

Awards will be made up to a maximum of £50,000 for the entire period.

Proposals must be submitted to [reachfunding@ouce.ox.ac.uk](mailto:reachfunding@ouce.ox.ac.uk) by 17:00 BST, 31 August 2020. All queries can be addressed to [reachfunding@ouce.ox.ac.uk](mailto:reachfunding@ouce.ox.ac.uk).

### 2. The REACH programme

#### 2.1. Background and context

The REACH programme aims to make five million poor people 'water secure' by 2022.

Water security is widely referred to as "the process of ensuring sufficient quantity and quality of water for health, productive uses and the environment, with an acceptable level of water-related risks to people, environments and economies" (Grey and Sadoff 2007). REACH is advancing this conceptual understanding using a risk-based framework for research to understand trade-offs and interactions between water resources and water services.

A water security for the poor requires decision making across alternative and often competing choices with different outcomes at a range of scales. A risk-based definition of water security embeds the management of natural variability and associated political, economic and social uncertainties as the basis for interdisciplinary decision making.

## 2.2. Objectives of the programme

REACH is generating improvements in the way that national and global sector actors plan, implement or monitor aspects of water security.

At the heart of the REACH programme is its global science-practitioner partnership. Aligning research design and activities with practitioner interventions will enable the programme to have a significant and material impact. REACH's projects are expected to deliver both *academic impact* (eg. globally-outstanding journal papers, theoretical advances, methodological innovations) and pathways to significant and sustainable *development impact*.

REACH aims to generate improvements in water security for the poor by working at the interface of water security risk and poverty reduction research and practice, spanning across the themes of resource sustainability, inclusive services and sustainable growth. Gender forms a critical element of the programme, as it is a vital building block for enhancing and maintaining water security for all.

## 3. Programme design

Core research is conducted in Water Security Observatories' ('Observatories'). An Observatory is a research location where significant but uncertain trajectories of change – such as urban growth, migration, or climate risks – are predicted over the next decade or even longer time spans. In each Observatory we're carrying out an in-depth, long-term and interdisciplinary study on water security and poverty. The eight Water Security Observatories are outlined on the REACH website: <https://reachwater.org.uk/research/where-we-work/>, with more information available through the Resources webpage.

Core research is complemented by partnership funding which is intended to either a) extend the thematic and geographical scope of the programme, or, as in case of this study, b) enrich the existing studies by conducting qualitative in-depth research on particular social phenomena.

### Application of UV-LED to rural water systems

Ultraviolet light emitting diodes (UV-LED) technology has demonstrated potential to provide disinfection in water supplies, however the potential to deliver improvements in water quality in more remote areas will be constrained by practicalities such as supply chains, water flow regulation, access to energy, maintenance expertise, and acceptance by the community.

In rural areas in Kenya, access to safe water is difficult when groundwaters have geogenic contamination. Rainwater collection tanks are common in institutions, but without treatment, increase the risk of spreading diarrhoeal diseases.

The purpose of this call is to explore the feasibility of UV-LED point-of-collection disinfection systems for rural water supplies in Kenya. This action-research will design and implement appropriate disinfection

systems for professionally maintained rural water supplies, and explicate the socio-technical barriers to the use of UV-LED disinfection systems to deliver sustained improvements in drinking water safety. Specifically, the research questions are:

- What are the socio-technical barriers to uptake of novel water treatment technologies by professional rural water supply maintenance companies?
- Under what conditions can UV-LED point-of-collection disinfection systems improve rural drinking water safety?

The research will be delivered in partnership with the professional maintenance team in Kenya. Sites for installation will be agreed between the Kenyan maintenance providers, Oxford team members and the successful applicant, but will likely focus on schools or healthcare facilities with tank water storage. The professional maintenance team will provide specifications on flow rate, water quality and other parameters. The successful applicant will provide training of, and support for, local maintenance providers. Remote management of installation, testing and maintenance may be considered.

## 4. Application process

The following documents will be required as part of your proposal:

- A proposal to address the research questions (maximum 4 pages) including deliverables with associated timelines.
- CVs of applicants (2 pages maximum per CV).
- A detailed budget and justification of resources, specifying the number of days committed by each researcher and lead.

### 4.1. Budget

The budget template appended to this guidance note should be completed. The justification of resources should state the full cost of the project and explain why the requested resources are needed, including identifying why the proposal represents value for money. In other words, you must demonstrate why you are requesting the funds you seek, and how they will be used to deliver the research.

The budget should also specify how much time would be allocated to different members to specific study tasks.

## 5. Proposal guidelines and rules

### 5.1. Who may apply for funding?

Applications from researchers or research team that can fulfil the aims of the programme, including civil society organisations, research institutions, regional organisations, think tanks, governmental organisations and the private sector.

### 5.2. Due Diligence

Successful applicants will need to provide evidence that they have the resources, systems and processes in place to enable them to manage the funds that they are requesting. They will be required to complete

the due diligence checklist which should be downloaded and submitted as part of this application to demonstrate that they:

- have internal controls that provide reasonable assurance that the use of resources is consistent with all relevant laws, regulations, and award terms; and
- are able to safeguard resources against waste, loss, and misuse; and will obtain, maintain, and fairly disclose reliable data in reports.

The University of Oxford reserves the right to audit the projects of all successful grant recipients throughout the life of the project.

### 5.3. Duration

The project is expected to begin as soon as possible after award, with preliminary findings to be communicated in February 2021, and the project completed by May 2021.

### 5.4. Funding

- Funding available for this project is subject to a maximum of £50,000 for the entire period. Funding requests cannot exceed this amount.
- All budgets should include consideration of institutional overheads, however, overheads should not comprise more than 20% of overall costs. Per diems will not be permitted under the REACH funding agreement but modest travel costs will be covered such as accommodation, food and others as per REACH guidelines.

### 5.5. Intellectual property

Results, materials, outputs and intellectual property rights resulting from the study funded through this project grant will be owned by the Grant Recipient, subject to rights being reserved for Oxford and DfID, as the funder of the REACH programme, to use such results, materials and outputs.

### 5.6. Progress monitoring, reporting requirements and approval of deliverables

Grant Recipients will need to fulfil specified reporting requirements. Grant Recipients must report progress on the project at defined milestones within the programme. A template for the structure of activity and financial reports will be provided by REACH. Project reports must be produced in English.

A first stage payment will be issued once the contract is signed and an invoice received from the grant recipient. All other payments will be contingent upon the successful completion of deliverables and the submission of reports or financial statements to the satisfaction of the Partnership Funding Manager. Payments will only be made on receipt of invoices. Information about the timing of the payments and associated milestones will be agreed with the grant recipient and included in the final contract.

### 5.7. Review process

The proposals will be reviewed by a panel of REACH researchers. Applicants will be notified by email with the decision on their application.

## 5.8. Terms and conditions of the call

- By submitting a proposal, applicants indicate agreement with the guidelines and rules associated with the open call, in particular its terms and conditions.
- REACH's decision on a proposal is final. REACH is under no obligation to provide further information or feedback on the reasons for its selection choices or for the rejection of a proposal.
- REACH will treat submissions in confidence. Information contained within unsuccessful proposal submissions will not be shared, communicated or otherwise utilised.
- REACH is under no obligation to provide any funding for this call. All funding is contingent on satisfying the REACH Science Board that the proposal demonstrates excellent value for money and potential for impact.
- Before funding is awarded, the host institution will be asked to assist with a short due diligence process in order for the University of Oxford to ensure that the selected applicant has appropriate systems and processes to manage grant funds appropriately.

All applications must be completed in English and must be in single-spaced typescript of minimum font size 11 point (Arial or equivalent), with margins of at least 2 cm. References should also be at least 11-point font.

## 5.9. Selection criteria and evaluation

Evaluation Criteria	Judgment based upon	Scoring
Criterion 1. Institutional/ researcher's capacity	Demonstrated research experience and appropriate team composition to effectively deliver the research.  Demonstrated research credentials and publication record.	50%
Criterion 2. Quality	Quality of methodology and potential to deliver high quality designs and implementation.  Appropriate project design and objectives to deliver the aims of the call.	30%
Criterion 3. Project management and cost effectiveness	Project coordination, management strategy and previous management experience.  Appropriateness of resource justification.  Value for the money.	20%

## 5.10. Scoring

Reviewers will be asked to evaluate proposals solely against the criteria listed. Scores will not be publically available. For all criteria, the evaluation scale features a range that begins at zero and ends at twenty.

0 The application demonstrates insufficient capacity to operate effectively without close supervision

1-4 Poor: The application demonstrates limited capacity to conduct the study

5-8 Fair: The application demonstrates some of the required capacities, but there are clearly identifiable major gaps in knowledge/experience required for the role

9-12 Good: The application demonstrates the core capacities for the fieldwork, although improvements in knowledge would be necessary

13-16 Very Good: The application demonstrates the core knowledge required of the post, although certain improvements in knowledge are still possible

17-20 Excellent: The application demonstrates the full range of capacities to conduct the study and to