TERMS OF REFERENCE
Climate and Health Evidence Map

1. INTRODUCTION

The Department for International Development (DFID) is committed to commissioning world-class research that directly improves people’s lives. We also want to make the research we fund easily accessible to decision makers in DFID and in the broader development community, and thus evidence maps are an important part of this research effort.

The impact of climate, climate variability and climate change on the population’s health and health systems in low and middle-income countries (LMICs) has been identified as an increasingly important issue. While separately, both climate and health are established DFID priorities with substantial portfolios, investment specifically in the intersection between these two areas is relatively small. Moreover, the evidence base on the potential risks and options for mitigating actions is unclear. DFID therefore intends to commission an evidence map looking at the relationship between climate, climate variability and climate change with health. An evidence map will systematically capture evidence on the effectiveness of climate change resilience and adaptation interventions in the health sector. This research will not provide recommendations for policy and programming or guidelines for practice. Instead it will provide links to resources that can inform policy or programme development.

The primary recipients of the work will be DFID’s Health Services Team, Africa Regional Department, Climate Energy and Water Team and Health Research Team. This commission will inform both bilateral programmes, as a number of country offices are interested in how to make health systems more climate resilient, and also the new ARD and ASCOT Climate Framework Programmes which will look at new and innovative ways to use climate/weather data. Furthermore, it will support DFID’s overarching CLARE programme which aims to ‘climate-proof’ DFID and HMG investments that are threatened by climate change, particularly in Africa.

The following terms of reference will outline the expectations, timeliness and desired outputs.

2. OBJECTIVES

The overarching aim of the research will be to provide an overview of the existing research on the relationship between climate (including climate variability and climate change) and health. DFID aims to identify gaps and improve access to evidence, in order to support an evidence-based approach to scoping, designing and delivering new climate programming. The proposed research will present studies on the relationship between climate and health, including evidence on both present and changing risks of the effectiveness of interventions across a range of outcome domains. Specifically, the research will focus on three key objectives:

- To develop a database of existing evidence that examines the relationship between, and the present and changing risks within, climate and health.
To map the available evidence on health-related risks of climate change and climate variation and effectiveness of interventions to improve resilience and adaptation in the health sectors in low- and middle-income countries.

To produce a report which charts the data, summarises the evidence, and makes recommendations based on the research trends observed and prospective areas for future research.

4. SCOPE OF WORK

As a part of the literature search, the supplier is expected to create a database which will compile the evidence base on the relationship between climate and health in low- and middle-income countries and both present and changing risks within the intersection between climate and health. The key risks which are identified, in accordance with the literature findings, will be used to guide how risks will be categorised within an Evidence Map.

The proposed evidence map should catalogue studies across the range of potential climate and health outcome domains identified in the literature. That is, what actions can be taken to respond to changing health risks and what is the evidence for their effectiveness or cost-effectiveness. The mapping should develop a protocol, database and perform searches to best include these outcomes.

The supplier will work with DFID to develop the protocol with which to process the collated evidence on climate and health. The mapping should follow a clear framework outlining how interventions are expected to be mapped against outcomes. An example of a possible guiding framework can be found here.

The workstream may also require the supplier to begin producing an online interactive version of the evidence map, after the submission of the first draft of all other outputs. The final product will be published and be publicly available in compliance with DFID’s Open Access Policy.

5. METHODOLOGY

The Evidence Map will consolidate what we know and do not know about the effectiveness of interventions by mapping out existing and ongoing evidence of effectiveness in this field; and by providing a graphical display of areas with strong, weak or non-existent evidence on the effect of interventions or initiatives. Evidence Maps are useful for policymakers and practitioners looking for evidence to inform policies and programs. For donors and researchers, these maps can inform a strategic approach for commissioning and conducting research.

Preparation of the evidence map, databases, and descriptive reports should include the following steps:

Scoping Exercise

An initial scoping exercise should take place at the outset of the project between DFID and the selected review team in order to:

a) Agree on an initial framework of categories and protocol
b) Refine the scope and methodology for the search
c) Test the search strategy as a means of assessing the feasibility of the review based on the size of the evidence base
d) Pilot the framework with circa.10 included studies. The framework will be finalised once the first circa.10 studies are coded. The protocol will be revised at that point.

The supplier is expected to attend a meeting with DFID following the scoping phase to clarify objectives, discuss the details of the proposal, inform the pilot approach to be tested during the scoping stage and address any questions regarding implementation.

A second meeting will take place to finalise the protocol and methodology after the pilot search and assess whether there is sufficient scope to proceed to undertake a mapping of the literature.

The supplier is expected to produce a scoping report which should encapsulate the findings from the scoping exercise conducted at the outset of the project, clearly addressing all of the aforementioned aims.

**Break Clause**

The contractor will require approval from DFID before commencing work on the evidence mapping exercise. DFID may terminate the contract at the end of the inception phase if there is insufficient evidence to proceed, or work undertaken during the inception phase is unsatisfactory, or an agreement cannot be reached on the work plan for the remaining phases. If DFID decides not to proceed, the contract will be terminated at no cost to DFID and only costs agreed for work during the scoping phase will be paid.

**Structured Literature Search**

Although this mapping is not a full systematic review, and therefore cannot claim to capture all relevant research published in this area, the researchers must apply a multi-pronged and rigorous search strategy to make it as comprehensive as possible given time and resource constraints. This should entail:

- **Database searches**: A wide range of citation and journal indexes, online research and evaluation repositories, resource centres and other search engines should be interrogated. The variety of sources is designed to capture peer-reviewed materials, working papers, and grey literature (e.g. evaluations of donor-led interventions). As such, the literature search should include targeted searching on an agreed set of relevant databases including, for example, the DAC Evaluation Resource Centre, 3ie Database of Impact Evaluations, 3ie Systematic Review Database, Web of Knowledge, R4D, Gov.uk, WHO and World Bank.

- **Expert consultation**: Consultation with experts must run alongside the online literature searches. Early on in the process, suggestions for studies should be solicited from a selection of policymakers, practitioners and academics working in this area, including grey literature difficult to obtain online.

The searches should be conducted by information specialists with expertise in database interrogation. A second researcher will independently check the data for accuracy and detail. Disagreements will be resolved by consensus or by consulting a third reviewer. A flow chart of the study selection procedure at each stage of the review will be prepared, detailing when exclusion occurred and the reasons for exclusion. Any changes and additions to the search methodology following the scoping phase must be clearly signposted in the descriptive report so that the search process remains transparent and replicable.
Inclusion/Exclusion Criteria and Coding

The outputs of these searches should be sifted for relevance and assessed against agreed inclusion criteria by at least one subject specialist. This protocol should specify search strings and what databases are to be searched. The protocol should also clearly outline the criteria determining whether a source should be included in the evidence map or not. A suggested criterion is:

- **Date of publication**: The emphasis of the review must be on recent evidence; and should cover at least the last 15 years to capture all relevant advancements within the evidence base.

- **Types of publication**: Academic journals, peer-reviewed materials, working papers, grey literature, books, and book chapters that are available online at no cost to the reader. Books and book chapters should only be included where the text is available in full text format. Only materials whose primary purpose is to present research-based evidence must be included.

- **Relevance**: Studies must explore the relationship between climate and health looking at both present and changing risks, the latter being disaggregated to address the impact of both climate change and climate variability. The supplier must consider examples of programming and initiatives that support climate change resilience and adaptation in the health sector and their impact/effectiveness. All relevant studies must be documented irrespective of the nature of the relationship (e.g. positive / negative / no evidence of a relationship found).

- **Geographic focus**: Low- and middle-income countries.

- **Language**: Only studies available in English should be included.

The following sub-themes and types of studies should be excluded:

- Policy statements, guidance notes, and advocacy-oriented materials must be excluded.

- The research team will avoid the inclusion of duplicate studies, such as the same content published as both grey literature and academic article. In such an instance, the academic article will be prioritised.

- The map will only include studies transparent about their methodology and presenting research-based evidence. Evidence ranking is not part of the map. However, where the research team has a concern regarding the quality of the evidence this will be noted for the reader.

Describing the Studies

The studies found by the literature search should be recorded consistently and coded against an agreed inclusion and exclusion criteria. The coding framework should be defined as part of the protocol and in reference to the research question. At the minimum the coding framework will contain details of the following: author(s), year of publication, type of study (primary, secondary, theoretical/conceptual), study design (e.g. qualitative, quantitative, mixed method, experimental, quasi-experimental, observational), intervention type and outcomes measured. The coding of the studies should also be disaggregated by country, region and population.

6. DELIVERABLES & OUTPUTS

The following three outputs are required, all of which should be agreed and signed off by DFID:
a. An initial framework which will underpin the protocol to identify the nature and size of the evidence base, drawing on policy/strategy documents.

b. A searchable database of relevant evidence for the evidence map, in a format such as .xlsm. Data will be extracted, categorised and coded to allow for statistical analysis of the results. Hyperlinks to evidence accessible online should be included.

c. A descriptive report to be produced to support its effective use, including a description of the features of the evidence base.

The scoping paper and protocol should be no longer than 5 pages and the final reports will be no longer than 30 pages, excluding annexes.

Database of Studies

The database should provide a comprehensive overview of the available evidence on the relationship between climate and health in low- and middle-income countries as well as for both present and changing risks within the intersection between climate and health. This should be in the form of a searchable database of entries of identified studies, with links to the full text reports, which summarises the intervention, context, study design, main findings and overall quality assessment. A suggested outline/structure for the database should be included as part of the proposal.

Any approach taken by the lead supplier must provide a fully-coded and user-friendly database of empirical evidence Studies should be coded in a manner which is accessible to a wide range of stakeholder which clearly identifies, for each study, the risk they are associated with, the nature of the relationship, author(s), year of publication, type of study (primary, secondary, theoretical/conceptual) and study design (e.g. qualitative, quantitative, mixed method, experimental, quasi-experimental, observational).

When considering the evidence base on risks within the intersection between climate and health a full list of categories for risk types will emerge from analysis of the evidence but should include the actual and potential effects and impacts: on health systems (e.g. services delivery, supply chains, access, infrastructure, technologies, and waste disposal), on disease patterns and on disease vectors; on emergency preparedness resilience and response; on demographic change; on the wider determinants of health such as water supplies, food supply chains, use of pesticides; and of heat effects on health.

Evidence Map

The evidence map should offer a visual presentation of the available evidence on the relationship between climate and health risks and interventions. A proposal for the structure of the evidence map should be developed as part of the proposal and be reflected in the coding framework (i.e. if the map is structured according to intervention types and outcomes, these must be captured in the coding framework). The categorisation of risks and the interventions necessary for mitigation should be informed by the findings within the structured literature search and potentially draw on existing frameworks such as the one found here. The evidence map must offer insights into the nature of the evidence base displaying where the evidence base is abundant, patchy or missing when linking interventions to outcomes. Where feasible this should be further broken down by methodology and region.
The Evidence Map may have two primary dimensions: interventions (rows) and outcomes (columns). Additional dimensions could include country, region and study design. The Evidence Map should also consolidate the evidence base available on present and changing risks within the intersection between climate and health via the inclusion of an additional row. This row which will demonstrate the nature and abundance of evidence for each risk, i.e. this row will highlight research that examines risks only.

The supplier will work with DFID to agree how to present the data, though they must keep in consideration that the final product should be accessible and relevant to a wide range of stakeholders, including DFID staff, non-research policy teams, policy makers in LMICs, implementing organisations and research organisations. Examples of existing DFID evidence maps include Security and Justice, and Modern Slavery. These can be referred to as a guide for the kind of product that is required; however, we welcome suggestions for alternative approaches to visualising the data in the maps.

**Break Clause**

The contractor will require approval from DFID after the submission of the first drafts of all outputs, before continuing work on the evidence mapping exercise. DFID may terminate the contract if work undertaken during the initial phases are deemed unsatisfactory, or an agreement cannot be reached on the work plan for the remaining phases. If DFID decides not to proceed, the contract will be terminated at no cost to DFID and only costs agreed for work during the completed phases will be paid.

**Online interactive evidence map**

The decision to produce an online interactive evidence map will be made after the submission of the first drafts of all outputs. If DFID decides not to proceed the supplier will continue with the production of only the offline outputs and only the work for completing the offline phases of the work will be paid.

In the online version, the additional dimensions will be possible to use as a filter. The online version will include references to included studies and brief summaries of each study based on the abstract (for primary studies) or plain language summary (for systematic reviews) provided for it. Primary studies included in systematic reviews will be highlighted.

**Descriptive Report**

A descriptive report should be prepared to accompany each database of studies. The final report will document the conceptual framework and methodological approach.

The report should provide a summary of the characteristics of the evidence base, including:

- Commenting on the nature of the evidence base.
- An assessment of the scope of the evidence base – disaggregated by methodology, focus, region, country interventions, and outcomes/outputs.
- A description of where evidence is abundant, patchy, or missing – referring to the evidence chart and commenting on the characteristics of evidence available for different category types.
- A clear and accessible summary of the key evidence gaps as a means of highlighting potential areas for future research.

It must be a clear and accessible summary of the key evidence gaps as a means of highlighting potential areas for future research and provide recommendations for DFID regarding
challenges to be addressed and future opportunities. The report will contain academic research and practical recommendations, which will be clearly drawn from the mapping work.

**Quality Assurance**

An independent peer reviewer with methodological and subject expertise should be identified for the evidence map as part of the inception phase. The peer reviewer must undertake a full review of the (i) search protocol and (ii) the draft evidence map, database and descriptive report.

As part of their reviews they must consider the appropriateness of the proposed search strategy; the completeness of the results of the literature search; the appropriateness of the descriptive report and quality assessment. The peer review comments must be shared with DFID.

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<th>7. TIMEFRAME &amp; PAYMENTS</th>
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The assignment should commence as soon as possible and must be completed within 16 weeks of the start date as agreed by DFID and the lead supplier. The budget for the evidence map is up to £50,000 (inc. VAT) this includes an additional £5k to budget for the creation of an online interactive evidence map, should this aspect of the work not be completed the overall budget for the evidence map will be £45,000 (inc. VAT). The timeline for each milestone is detailed below.

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Description</th>
<th>Break</th>
<th>Milestone Payments (Workstream %)</th>
<th>Due Date (by end of):</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Inception meeting at DFID</td>
<td></td>
<td></td>
<td>1 weeks</td>
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<tr>
<td>2.</td>
<td>Scoping report and full protocol</td>
<td>Yes</td>
<td>15%</td>
<td>4 weeks</td>
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<tr>
<td>3.</td>
<td>First draft of all reports</td>
<td>Yes</td>
<td>35%</td>
<td>9 weeks</td>
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<tr>
<td>4.</td>
<td>Steering meeting at DFID</td>
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<td></td>
<td>11 weeks</td>
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<td>5.</td>
<td>Revised Submission of all reports</td>
<td></td>
<td></td>
<td>13 weeks</td>
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<tr>
<td>6.</td>
<td>Submission of online, interactive evidence map</td>
<td></td>
<td>10%</td>
<td>14 weeks</td>
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<tr>
<td>7.</td>
<td>Final copy-edited version of all reports</td>
<td></td>
<td>30%</td>
<td>15 weeks</td>
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<tr>
<td>8.</td>
<td>Dissemination meeting</td>
<td></td>
<td>10%</td>
<td>16 weeks</td>
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</table>

Although these milestones represent the major deliverables, suppliers should expect DFID to monitor and quality assure the progress of the evidence map throughout the review process. This may require the submission of revised outputs in order to achieve milestones.

The disbursement of milestones payments will be contingent upon the approval of the documents by DFID. Suppliers are expected to outline the proposed number of days allocated to team members and suggested fee rates, as well as itemised expenses.

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<th>7. COMPETENCES</th>
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This assignment will require a consultant or small team of consultants who will work in close collaboration with DFID’s Senior Responsible Owner (SRO).
The desired competencies of the consultant/consultancy team include:

- Excellent technical understanding of health and climate, including broader multi-sectoral issues
- Demonstrable expertise in undertaking rigorous literature reviews (whether with REAs, systematic reviews research) and evidence mapping;
- Excellent knowledge of latest research and evidence on health and climate change including key stakeholders;
- Skills in database interrogation, evidence synthesis, quantitative and qualitative research methods, and writing for policy audiences;

### 8. SUBMISSIONS

Proposals should include a brief description of the proposed methodology to address the questions including indicative definitions of key search terms and a list of intervention categories. Suggestions will be refined in the scoping stage. The proposal should be no longer than 20 pages excluding CVs.

As such, the proposal should describe how the team plans to undertake each of the following stages of the evidence mapping (to be tested and refined during the scoping phase):

- Approach to identifying relevant literature and production of evidence database with appropriate search/filter functionality.
- Determining which categories will be used when mapping the evidence base;
- Approach to writing the descriptive report; Quality assurance (QA), in terms of the protocol, in terms of the quality review of the search conducted, analysis and clarity of reporting (including the named individual(s) accountable for QA of written outputs).
- Overall project management of the study; and
- Clear cost estimates (i.e. cost to achieve each milestone)

Proposals should include a draft protocol for undertaking the scope of work (max 20 pages) and the CVs for project staff, clarifying their roles and responsibilities in undertaking the different stages of the process. They should also set out the timetable for completion against the following milestones:

a. Submission of the scoping report;
b. Submission of search protocol for sign off;
c. Submission of draft evidence map, database and descriptive report;
d. Submission of final evidence map, database and descriptive report and sign off by DFID;
e. Presentation to DFID staff.