

## Agenda Item 4.2

# Development of methodology and indicators on integration of climate and health

4.2 (a) Updates on the SOSCHI project

4.2 (b) Updates on Sub-group work on climate and health indicators

Climate and Health Team, ONS  
23 September 2025



# Objectives

The EG-ECCS is invited to:

- **Note** the progress of the ‘Standards for Official Statistics on Climate-Health Interactions’ (SOSCHI) project
- **Note** the activities of the Sub-group on Climate and Health established following the 11<sup>th</sup> meeting of the EG-ECCS
- **Support** the proposed inclusion of selected indicators and their computation methods which have developed by the SOSCHI project, considered and supported by the Sub-group on Climate and Health for the future revision of the Global Set, subject to consultation with the Member States in due course.

# 1. Project overview

# 1.1 Aims of SOSCHI

- Integrate climate-health monitoring into the official **international statistical system**
- Support routine use of state of the art methods for **attribution of health outcomes to climate factors\***
- Support operationalisation of high-level indicators by translating into **more specific and feasible sub-topics**
- Provide detailed methodological guidance, R code and online **tools for national implementation**

# 1.2 Project partners

- African Institute for Mathematical Sciences (AIMS) Rwanda
- Cochrane Planetary Health Theme Group (University of Alberta)
- Office for National Statistics, UK (Climate and Health Team)
- Regional Institute for Population Studies (RIPS) at the University of Ghana
- UK Health Security Agency
- UN Global Platform\*

Funded by Wellcome (grant no. 224682/Z/21/Z)



**AIMS** African Institute for  
Mathematical Sciences  
RESEARCH & INNOVATION



**Cochrane Climate-Health  
Working Group**



UK Health  
Security  
Agency



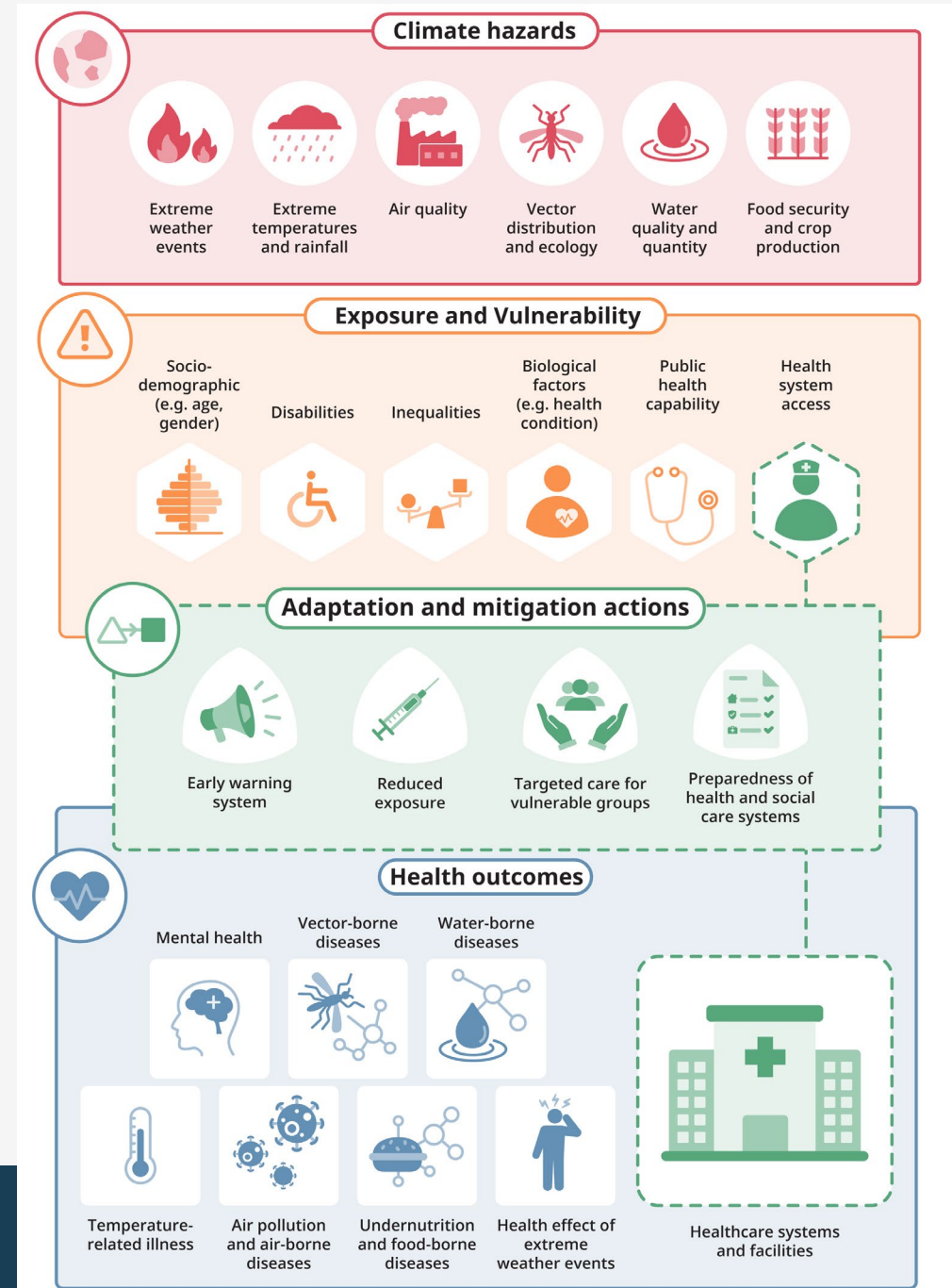
# 1.3 Timeline



# 2. Framework scope

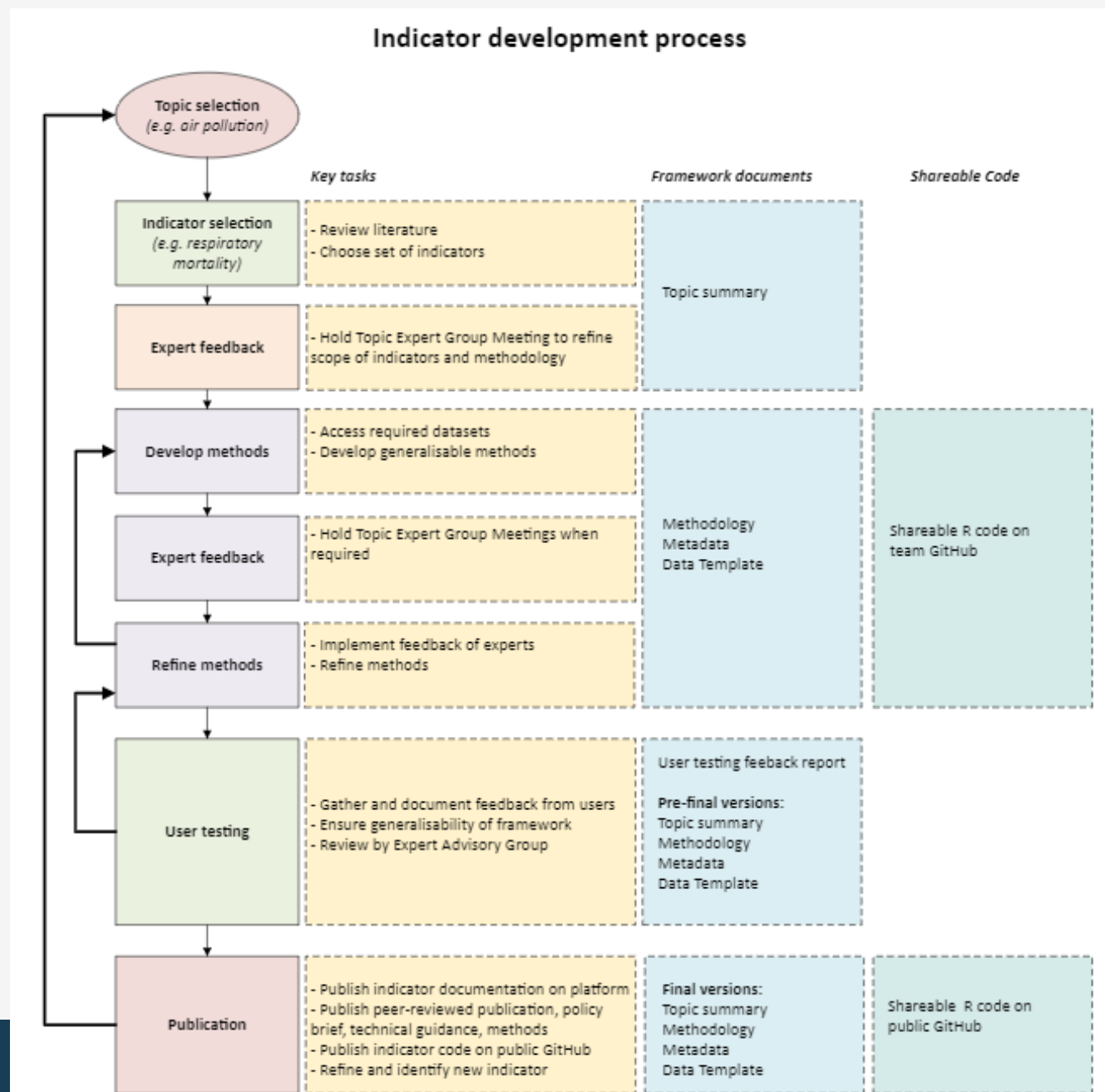
# 2.1 SOSCHI conceptual framework

- Based on well-established science e.g. WHO and UNFCCC reports
- Provides an overview of the causal pathways linking climate and health
- Specifies the scope of the health outcomes covered by the proposed indicators and statistical methods
- Lower-level topic-specific format being designed



## 2.2 Rigorous indicator development process

- Numerous global experts engaged throughout the process
- Review scope of indicators and methodology
- Discuss in Country Steering Committees (relevance) and Technical Expert Groups (methodology)
- Advise on state of the art, review drafts, give feedback as methods develop
- Collaborate on analysis publications



## 2.3 Framework scope and progress

- Topic led by:
- ONS
  - AIMS
  - RIPS
  - AIMS and RIPS

TOPIC	STATISTICAL FRAMEWORK	ONLINE PLATFORM
Heat and cold	●	●
Mental health	●	●
Extreme weather events - Wildfires	●	●
Vector-borne diseases	●	○
Water-borne diseases	●	○
Air pollution	●	▲
Healthcare systems and facilities	○	
Extreme weather events - Flooding	▲	
Non-communicable diseases	▲	
Airborne diseases	▲	
Undernutrition	▲	
Chemical contaminants	▲	

**Legend**

- Beta in progress
- Alpha in progress
- ▲ Alpha complete/limited scope

## 2.4 Top priority indicators



Mortality rate from all causes per 100,000 population attributable to non-optimal outdoor heat and cold



Suicide rate per 100,000 population attributable to extreme heat



Mortality rate from all causes per 100,000 population attributable to wildfire-related PM2.5



Mortality rate from all causes per 100,000 population attributable to outdoor PM2.5 exposure



Malaria incidence per 100,000 population attributable to extreme hot and cold temperatures  
Malaria incidence per 100,000 population attributable to extremely wet and dry conditions



Diarrhea incidence per 100,000 population attributable to non-optimal temperatures  
Diarrhea incidence per 100,000 population attributable to extreme precipitation

# 3. Project outputs

# 3.1 Main outputs

**Published 31 methodological documents, mostly on [Zenodo](#):**

- Discovery phase and Alpha phase reports
- 27 framework topic documents (alpha versions)
- [Climate change and global health outcome indicators: scoping review](#)
- Extreme weather events due to climate change and mental health outcomes indicators: scoping review protocol

**SOSCHI platform functionality at <https://climate-health.officialstatistics.org>:**

- Website in Private Beta development
- [Indicator calculator tools](#) (5 indicators - 3 now available)
- R code package (6 indicators) on [GitHub](#)

**Upcoming publications:**

- Final SOSCHI framework report
- 18 topic documents (final versions)
- Health systems qualitative methods (alpha version)
- Analysis publications (approx. 10)
- 3 national SOSCHI implementation plans

# 3.2 Climate and health R package

## GitHub interface:

The screenshot shows the GitHub repository page for 'climatehealth' by user 'onssoschi'. The repository is private and has 1,210 commits. A pull request by 'cbrowning04' is merged. The file list includes:

File	Description	Last Commit
.github/workflows	Update_r_cmd_check.yml	last month
.gitlab	Add a merge request template	last year
R	feat: adjust parameter names	4 days ago
git_filter	add git-filter-repo file	2 years ago
inst	feat: move test data to follow best practice	last month
man	fix: merge with dev	4 days ago
tests	feat: package best practices updates	last month
.Rbuildignore	feat: update package files	last week
.gitignore	feat: package best practices updates	last month
CODEOWNERS	Create CODEOWNERS	9 months ago
CONTRIBUTING.md	Update CONTRIBUTING.md	10 months ago
DESCRIPTION	Update DESCRIPTION	4 days ago
LICENSE	feat: package best practices updates	last month
LICENSE.md	feat: package best practices updates	last month
NAMESPACE	fix: merge with dev	4 days ago
README.md	feat: Update release version in README.md	4 days ago

## Indicator calculator scripts:

The screenshot shows the R package file list for 'climatehealth / R'. The files listed are:

- air\_pollution.R
- attrdl.R
- cleaning\_utils.R
- defence\_utils.R
- descriptive\_stats.R
- diarrhea.R
- diseases\_shared.R
- file\_utils.R
- graph\_utils.R
- malaria.R
- mental\_health.R
- temperature.R
- wildfire.R

## 3.3 No-code calculator interface

- Public-facing platform hosting project documentation, publications and analytical tools (currently in Private Beta)
- Designed for non-technical users, enabling broader access to the R package
- Built with Python, JavaScript, CSS & hosted on UNGP AWS cloud
- No-code calculator interface allows users to:
  - Upload climate and health data
  - Explore descriptive statistics and calculate indicators
  - Receive downloadable outputs (CSV, PNG files)
- Future versions planned to include data sharing and API functionality

# Mental Health Indicator: Suicides attributed to extreme temperature

## Platform Demo

The screenshot shows a web browser window displaying the 'Climate and Health Platform' website. The browser's address bar shows '127.0.0.1:5001'. The website header includes the 'Office for National Statistics' logo on the left, the title 'Climate and Health Platform' with the subtitle 'Standards for Official Statistics on Climate-Health Interactions' in the center, and a 'BETA Under Development' badge on the right. A dark blue navigation bar contains links for 'Home', 'Statistical framework', 'Indicator tools', and 'About', along with a 'Leave feedback' link on the far right. The main content area features a dark blue background with a large image of a forest fire on the right. The text on the left reads: 'Welcome to the Standards for Official Statistics on Climate-Health Interactions (SOSCHI) Climate and Health Platform. This platform facilitates national statistical organisations, researchers, academics and the public to produce and report climate-health interactions in line with a standardised statistical framework. This online resource was created in collaboration with the UN Global Platform.' Below this, there are three white buttons with dark text: 'Statistical framework' (with a description: 'Explore the statistical framework for more information on indicators and their methodologies'), 'Indicator tools' (with a description: 'Use the indicator tools to produce climate-health statistics with your own data'), and 'Leave feedback' (with a description: 'We welcome your feedback on the statistical framework, indicator tools and platform'). The footer contains logos for the Office for National Statistics, AIMS, WHO, and WFP, along with an OCL license notice and a 'Contact Us' link.

# 4. EG-ECCCS Sub-group on Climate and Health

## 4.1 Organisation of the Sub-Group

- A **recommendation to the 56th session of the UN Statistical Commission** was to establish a Sub-group on Climate and Health with experts from countries and international organisations to test and refine the proposed indicators
- The Sub-group is made up of **19 members from 11 countries** (including one academic institute) and 2 UN system organisations, with around 10 additional national experts attending as needed
- The Sub-group has met on **four occasions** (20<sup>th</sup> March, 14<sup>th</sup> May, 8<sup>th</sup> July and 25<sup>th</sup> August 2025) with a further series of meetings planned after the September 2025 EG-ECCS

## 4.2 Activities of the Sub-group

- Discussed **barriers to measurement** especially in low-income countries – e.g. data availability, data sharing, technical capacity
- Reviewed **four proposed indicators** (shown in following slides) based on the SOSCHI methodologies, discussed their data requirements, and saw example statistics (some provisional/confidential data)
- Considered national and international **policy relevance**, availability and quality of **data sources**, and the robustness of the **methodologies** developed.
- **Two further indicators** (on air pollution and vector-borne diseases) to be presented in October 2025 meeting

## Indicator 44:

### Incidence of cases of climate-related diseases

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Discussed and recommended by the Sub-group:

- **Incidence of diarrheal diseases attributable to (i) extreme heat and (ii) extreme rainfall:** this operationalises a subset of indicator 44 using a validated methodology.

To be discussed in October Sub-group meeting:

- **Malaria incidence attributable to extreme temperature.**

## Indicator 45:

### Incidence of heat- and cold-related illnesses or excess mortality

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Discussed and recommended by the Sub-group:

- **Mortality attributable to heat and cold:** this operationalised indicator 45, which is currently Tier 3, using a validated methodology.
- **Mortality attributable to mental health conditions (suicide) associated with excess heat:** this adds a new sub-indicator to indicator 45.

## Indicator 46:

### Climate-induced air pollution

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Discussed and recommended by the Sub-group:

- **Mortality attributable to extreme weather (wildfire smoke):** this adds a new sub-indicator to indicator 46.

To be discussed in October Sub-group meeting:

- **Mortality attributable to outdoor PM2.5 exposure.**

## 4.3 General conclusions

- Based on wide engagement with scientific experts by the SOSCHI project, the methodologies are likely to be robust
- The Sub-group on Climate and Health considered there to be clear policy relevance internationally and to most countries to inform climate adaptation strategies
- Adoption of these indicators improves the Global Set indicators 44-46 by providing new definitions and statistics based on validated and operationalizable methodologies
- The Sub-group highlighted the need for enhanced technical capacity and resources in low-income countries to enable implementation

# Thank you



For further information please contact:

- About the SOSCHI project – [climate.health@ons.gov.uk](mailto:climate.health@ons.gov.uk)
- About the sub-group on Climate and Health – the EG-ECCS Secretariat