

Call for submission on indicators of adaptation and resilience at the national and/or local level or for specific sectors¹

We thank you in advance for filling out this template with concise, evidence-based information and for referencing all relevant sources. As you will see on the last page of the document, more detailed information on case studies, tools/methods and other knowledge resources for dissemination through the [Adaptation Knowledge Portal](#) is welcome, but optional.

Name of the organization or entity:

The Global Framework for Climate Services Office
World Meteorological Organization

Type of organization/entity:

Please choose as appropriate:

- | | |
|--|--|
| <input type="checkbox"/> Local government/ municipal authority | <input type="checkbox"/> Regional center/network/initiative |
| <input type="checkbox"/> Intergovernmental organization (IGO) | <input type="checkbox"/> Research institution |
| <input type="checkbox"/> National/public entity | <input checked="" type="checkbox"/> UN and affiliated organization |
| <input type="checkbox"/> Non-governmental organization (NGO) | <input checked="" type="checkbox"/> University/education/training organization |
| <input checked="" type="checkbox"/> Private sector | |

Scale of operation:

- | | |
|--------------------------------|--|
| <input type="checkbox"/> Local | <input checked="" type="checkbox"/> National |
|--------------------------------|--|

Specific sectors addressed:

- | | |
|---|---|
| <input type="checkbox"/> Adaptation finance | <input type="checkbox"/> Gender |
| <input checked="" type="checkbox"/> Agriculture | <input type="checkbox"/> Health |
| <input type="checkbox"/> Biodiversity | <input type="checkbox"/> Heavy industry |
| <input type="checkbox"/> Community-based adaptation | <input type="checkbox"/> Human settlements |
| <input type="checkbox"/> Disaster risk reduction | <input type="checkbox"/> Indigenous and traditional knowledge |
| <input type="checkbox"/> Ecosystem-based adaptation | <input type="checkbox"/> Infrastructure |
| <input type="checkbox"/> Ecosystems | <input type="checkbox"/> Services |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Tourism |
| <input checked="" type="checkbox"/> Food security | <input type="checkbox"/> Urban resilience |
| <input type="checkbox"/> Water resources | <input type="checkbox"/> Other (Please specify below) |

¹ FCCC/SBSTA/2016/2, paragraph 18.

City(ies)/Country(ies)/Region(s) of operation (if appropriate):

Ethiopia, Malawi, Niger, Rwanda, and Senegal

Description of relevant activities/processes or research:

Please describe the activities/processes that your entity has implemented in relation to indicators of adaptation and resilience. In case your organization carried out research, please describe it.

Africa is one of the most vulnerable continents to climate variability and change due to its high exposure to climate shocks, such as droughts and floods, and its relatively low resilience capacities (IPCC Fifth Assessment Report, 2014). Because anthropogenic climate change is anticipated to be experienced as shifts in the frequency and severity of extreme events, building resilience and coping mechanisms to current climate variability offers a promising means for adaptation and resilience at longer timescales. Providing decision-makers, including farmers and ministries of agriculture, with timely, accurate, tailored climate services can help inform decisions that enhance food security and avoid harvest loss, thereby increasing the resilience of farmers and improving social and economic outcomes.

While investments in climate services (CS) are on the rise, the guidance and delivery of CS in Sub-Saharan Africa is significantly underfunded. Furthermore, little objective evidence exists concerning the effectiveness of CS investments or the socioeconomic circumstances that constrain the use of such services. The USAID funded Assessing Sustainability and Effectiveness of CS in Africa project has sought to address these gaps. This research initiative is designed to support the CS learning agenda and brings together experts at the Global Framework for Climate Services (GFCS), World Meteorological Organization, the International Research Institute for Climate and Society (IRI) at Columbia University, Climate System Analysis Group, AGRHYMET, and Winrock International, which leads the project and consortia.

The development of effective CS requires access to reliable climate and weather information. This involves the National Meteorological and Hydrological Services (NMHSs) as key stakeholders with a national mandate to observe, forecast, and issue warnings. While the NMHSs often have qualified and dedicated staff, resources are frequently grossly deficient. As a result, many NMHSs in SSA lack the capacity to provide even a basic level of services such as emergency warnings. A key activity of this programme is to develop metrics to assess sustainable and effective provision of climate services by NMHSs and conduct a baseline assessment of current gaps. Effectively pinpointing capacity needs and gaps will better direct investments required to support the development of targeted, co-designed, and fit for use climate services.

Description of relevant tools/methods:

Please describe the tools and/or methods that have been developed and/or used.

The main objective is to support the development of CSs in Africa by creating a set of metrics that are general enough to evaluate the current capabilities of any NMHS in Africa. The metrics utilize the GFCS (Global Framework for Climate Services) and four increasingly advanced service levels (or categories) to assess the current capabilities and performance gaps of each NMHS. The metrics incorporate a triangulation of different source material and are useful for subsequent, as well as independent, evaluation of progress. Moreover, assessment done on each NMHS using the developed

metrics can be used to define capacity gaps and fundable projects as well as areas for the development of partnerships between public, private and academic institutions within the CS sector.

To assess the sustainable and effective provision of CS by NMHSs, the GFCS Office and the WMO are working with the IRI and Winrock International to develop a baseline survey methodology and metrics following the five pillars of the GFCS. The underlying premise being that NMHSs, and the broader CS sector within each country, cannot achieve quality CS without investments across the pillars. The five pillars of the GFCS are outlined below:

- Observations and Monitoring: to ensure that climate observations and other data necessary to meet the needs of end-users are collected, managed and disseminated and are supported by relevant metadata;
- Research, Modelling and Prediction: to foster research towards continually improving the scientific quality of climate information, providing an evidence base for the impacts of climate change and variability and for the cost-effectiveness of using climate information;
- Climate Services Information System: the mechanism through which information about climate (past, present and future) will be routinely collected, stored and processed to generate products and services that inform often complex decision-making across a wide range of climate-sensitive activities and enterprises;
- User Interface Platform: a structured means for users, climate researchers and climate information providers to interact at all levels;
- Capacity Development: to address the particular capacity development requirements identified in the other pillars and, more broadly, the basic requirements for enabling any Framework related activities to occur, including areas of governance, finance and human resources, at a minimum.

The metrics furthermore builds on the following WMO resources:

- 1) High Level Task Force Report - Climate Knowledge for Action: A Global Framework for Climate Services" as the basis for GFCS:

http://library.wmo.int/pmb_ged/wmo_1065_en.pdf
<http://www.wmo.int/gfcs/HLT>

- 2) WMO Capacity development strategy and implementation plan

<https://www.wmo.int/pages/prog/dra/CDS.html>

- 3) Open Panel of the Commission of Climatology (CCL) Experts report: CCI Guidelines on Cap Dev (ref: Table 2, p 31). See Table 2, p. 31 - 4 Categories: Basic, Essential, Full and Advanced

- 4) The GFCS Checklist

Key outcomes of the activities/processes undertaken:

Please provide information regarding the outcomes of the activities/processes described above, and do not hesitate to add qualitative assessment and/or quantitative data to substantiate the information.

Climate services involve the production, translation, transfer, and use of climate information to inform decision making in climate sensitive sectors. Climate services empower countries and communities to anticipate and manage risks and opportunities by applying the best available climate science to decision-making across time scales and sectors, including agriculture, water, health, and disaster risk management. The metrics will help identify key strengths and gaps in CS delivery by the climate and weather enterprise. Applying the metrics will help guide NMHSs and those entities whom wish to support and promote mainstreaming of climate services opportunities for partnerships with academia, civil society and the private sector and where to direct resources to improve CS to achieve long term impacts toward the sustainable development goals, Sendai Framework, and the Paris Agreement.

Description of lessons learned and good practices identified:

Please consider the following points when describing lessons learned and good practices: (a) effectiveness/impacts of the activities/processes (including measurability of the impacts), (b) efficiency in the use of resources, (c) replicability (e.g. in different locations, at different scales), (d) sustainability (i.e. meeting the current economic, social and environmental needs without compromising the ability to address future needs).

It is envisioned that the metrics, once calibrated, will serve as a means to assess gaps and priorities required to ensure quality CS development and dissemination by the NMHSs. It is applicable in ALL NMHSs worldwide and will help prioritize investment and identify opportunities for collaboration with academia, civil society and the private sector to deliver cost effective and sustainable CS.

Description of key challenges identified:

Please describe the key challenges associated with those activities/processes or the use of those tools/methods, that policy-makers, practitioners and other relevant stakeholders should know about.

The metrics are currently in the beta stage of development. It is anticipated that agreeing on final metrics to make a determination which category within the GFCS framework a NMHS sits will require additional discussion.

Planned next steps (as appropriate):

Based on this experience or research, have next steps been planned to address/study some of the identified challenges, scale up or scale out such activities/processes?

Metrics will be tested in Ethiopia, Malawi, Niger, Rwanda, and Senegal. They will be refined and made available for broader use and application.

Relevant hyperlinks:

Please provide hyperlinks to sources of information.

<https://www.climatelinks.org/blog/new-usaid-initiative-evaluate-sustainability-and-effectiveness-climate-services-africa>

<https://www.climatelinks.org/projects/learningagendaonclimateservices>

Further information:

Please do not hesitate to submit more detailed information on case study(ies), tool(s)/method(s) and/or other relevant knowledge resource(s) that are relevant to economic diversification. The latter will be shared through the [Adaptation Knowledge Portal](#):

- [Case study\(ies\)](#)
- [Tool\(s\)/method\(s\)](#)
- [Other knowledge resource\(s\)](#) (online portals, policy briefs, training material, multimedia material, technical reports and scientific publications)