



Introduction

The Global Framework for Climate Services (GFCS) was established in 2009 at the Third World Climate Conference to enhance the availability and application of science-based information to support decision-making in climate risk management and adaptation to climate variability and change, particularly in the priority areas of agriculture and food security, disaster risk reduction, energy, health and water resources management. SBSTA 45 and 47 have given a mandate to report on progress in implementation of the GFCS.

1- GFCS contributions to high-level policy dialogues

(i) A [Policy Brief](#) was released by WMO in October 2018, on Transformative Climate Action: from Observations to Science to Services, for distribution at COP 24 of the United Nations Climate Change Conference (UNFCCC), taking place in Katowice, Poland, 3-14 December 2018. The Policy Brief elaborates on the WMO mandate with respect to the UNFCCC process, highlighting the contribution of science and climate services to the implementation of the Paris Agreement and Sustainable Development Goals (SDGs), which are interlinked. This Policy Brief is intended to assist National Meteorological and Hydrological Services (NMHSs) in understanding their role in the context of global climate change issues and emphasizes the importance of institutional mechanisms such as the National Framework for Climate Services (NFCSs, see further below) by which they can contribute more efficiently and holistically to adaptation and mitigation activities at national level. Such contributions should be based on scientific evidence, driven by high quality data analysis and conclusions.

(ii) A Framework Memorandum of Understanding (MoU) was concluded in November 2017 between the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) and WMO. The MoU includes a collaborative project, "Climate Services for Adaptation Planning and Implementation", which aims at further updating supplementary materials to the NAP Technical Guidelines; developing a collection of climate services to guide assessment and identification of adaptation strategies; and supporting at least five developing countries in using climate services for documenting observed impacts, vulnerabilities and risks in a consistent manner, using the supplementary materials developed.

(iii) An Expert Service Agreement was signed in October 2018 between WMO and the Green Climate Fund (GCF). The expert service aims to enhance the climate science basis for the climate rationale of GCF funded activities. A climate rationale provides the scientific underpinning for evidence-based climate action decision making, ensuring that

the linkages between climate and climate impacts and between action and societal benefits are fully grounded in the best available climate observations, data and science. Under the service contract, WMO will develop the concept, scientific methodology, data, tools and associated technical resources for enhancing the climate science basis for GCF funded projects and activities as well as formulate a capacity development programme at the country and local level(s) to support the application of methodology, data and tools. A strong climate-science basis for the climate rationale in NAPs and other GCF funded projects will in turn strengthen the scientific basis for climate services-related elements incorporated within those plans and projects, including those proposed on behalf of WMO Members by members of the GFCS Partners Advisory Committee (PAC).

(iv) WMO as co-custodian, with the UNFCCC, of the UN Sustainable Development Goal 13 (SDG 13) indicator 13.2.1 has developed a log-frame matrix and project level indicators to track progress towards achieving the SDG 13 and the implementation of the Paris Agreement. In this context, GFCS provides tracking of the implementation of National Framework for Climate Services and their support to National Adaptation Plans (NAPs) at country level, complementing other indicators tracked by UNFCCC. The GFCS is moving towards publishing a status of Climate Services Annual Report, which will provide details in terms of capacity of countries to produce and apply science-based information and services to support adaptation efforts.

2- STATUS OF IMPLEMENTATION OF NATIONAL FRAMEWORKS FOR CLIMATE SERVICES

(v) NFCSs are a key institutional mechanism to coordinate, facilitate and strengthen collaboration among national institutions and other key stakeholders, such as United Nations and international agencies, to improve the co-production, tailoring, delivery, and use of science-based climate services. An NFCS ensures that the entire value chain for the production and application of climate services is addressed systematically with the involvement of all relevant stakeholders in a coordinated manner. A "Step-by-Step Guideline for Establishing a National Framework for Climate Services" has been produced by the GFCS Office and is now available in all WMO official languages at: https://library.wmo.int/doc_num.php?explnum_id=4335 as a resource for Members to use for establishing an NFCS.

(vi) From four initial countries (Burkina Faso, Chad, Mali, and Senegal), NFCSs have proliferated to other regions with support from the GFCS (see Figure 1 at (http://www.wmo.int/gfcs/NFCS_status)). Countries such as China, Germany, Switzerland, and the United Kingdom have developed an NFCS independently. More information on national action plans associated with NFCSs can be found at <http://gfcs-climate.org/national-action-plans>.

(vii) In recent developments, the Economic Community of West Africa (ECOWAS) is partnering with the GFCS to support its member states in establishing NFCSs. Through funding made available by ECOWAS, the Gambia, Guinea-Bissau, Guinea, and Togo have conducted national consultations and are formulating strategic and costed action plans for the NFCS. Cabo Verde and Nigeria are pursuing the same process. Similarly, the GFCS is partnering with the Gulf Cooperation Council (GCC) to support the establishment of NFCSs in Bahrain, United Arab Emirates, Kuwait, Oman, Qatar, and Saudi Arabia. A

regional workshop is being organized by the GCC at the end of the year to kick-start the project.

(viii) At a strategic level, NFCSs have been recognised as an essential mechanism for the development of capacities as part of the Global Weather Enterprise and public-private engagement, as they provide a coordination platform at the national level that brings together stakeholders to jointly define priorities for addressing the full value chain for the production and application of weather and climate services. The Green Climate Fund (GCF) has recognized NFCS as an essential element for the implementation of projects, which are being submitted to the GCF. The GCF is requesting compliance with the GFCS implementation plan on proposals submitted to the GCF that address development and application of weather and climate services. Other key actors, such as the World Bank, are integrating NFCSs into their hydromet investment activities.

3- PROJECTS

(ix) The mid-term review of the GFCS highlighted that project implementation is not a strategic niche for the GFCS. Rather, in light of the high volume of projects under implementation involving climate services elements globally, the GFCS is moving towards a more strategic role, of tracking the global climate services portfolio and its outcomes, supporting knowledge sharing, and providing coordinated technical advisory services. However, during the early stages of GFCS implementation, projects were needed to develop a proof of concept, which has successfully demonstrated the value of the GFCS concept. This concept has now been adopted by various actors who are implementing projects, some of which are summarized below. These projects were explicitly designed based on the GFCS implementation plan and/or have been coordinated with/by the GFCS, and reflect the aligned and coordinated approach.

(x) The European Commission, under European Development Fund (EDF) 11, has approved an EUR 85 million grant for an Intra Africa, Caribbean and Pacific (ACP) Climate Services and Related Application Programme. The specific objective of the programme is to strengthen the climate services value chain through building the capacities of decision-makers at all levels to make effective use of climate information and services. The programme design is well underway with the beneficiary entities (African Union Commission – AUC; Caribbean Institute of Meteorology and Hydrology – CIMH; Pacific Regional Environment Programme - SPREP; Economic Commission of West African Countries – ECOWAS; Economic Commission of Central African States – ECCAS; Southern Africa Development Community – SADC; Indian Ocean Commission – IOC and the Intergovernmental Authority on Development – IGAD) and supporting partner organizations (ACP Secretariat; Joint Research Centre – JRC; and WMO) currently formulating their work programme. Implementation is scheduled to initiate early in 2019 pending signature of the Grant Agreements between the European Commission and the beneficiary entities and partner organizations.

(xi) The Intra ACP Climate Services and Related Applications Programme was based on the GFCS Implementation Plan. It consists of five outputs, spanning the value chain for the production and application of climate services. These include: Output 1: Establishment of User interface Platforms supported by National and Regional Frameworks for Climate Services; Output 2: Strengthening of the Climate Services Information System at regional and national levels; Output 3: Strengthening

observations and monitoring systems, as well as research, modelling and prediction;
Output 4: Capacity development to generate and apply climate information and products;
Output 5: Bridging the gap between science and policy to enhance climate-informed decision-making.

(xii) The European Commission under its Horizon 2020 Work Programme 2018-2020, and specifically under the Challenge "Climate Action, Environment, Resource Efficiency & Raw Materials", included a specific action, "LC-CLA-05-2019: Human Dynamics of Climate Change (Research and Innovation Action)", which contains an Action on Climate Services for Africa. The Action has a budget of EUR 23 Million for projects to be implemented over a three year period. Applications are open from 14 November 2018 until the deadline of 19 February 2019. The Action should exploit new, relevant climate data made available by Copernicus and other relevant sources (such as GEOSS) and create dedicated climate services for Africa for at least two of the following sectors: water, energy, land use, health and infrastructure. Actions should develop and deliver tools/applications which demonstrate clear end-user engagement, consultation and participation, and which enhance planning and implementation of climate adaptation strategies in Africa. Actions should consider activities addressed by initiatives such as the Global Framework for Climate Services (GFCS), Copernicus, and development cooperation activities, and provide added value. The GFCS Office has been promoting the information on the call and encouraging relevant stakeholders to submit proposals.

(xiii) The Climate Risk and Early Warning Systems (CREWS) initiative supports implementation of the GFCS Disaster Risk Reduction priority area. CREWS aims to significantly increase the capacity of Least Developed Countries (LDCs) and Small Island Developing States (SIDS) to generate and communicate effective, impact-based, multi-hazard, gender-informed early warnings and risk information. CREWS contributes to (i) hazard observation and monitoring; (ii) forecasting and providing analysis on extreme events; (iii) interaction between providers and users of information for early response and (iv) risk assessment and risk reduction in climate sensitive sectors through enhanced climate service delivery. In addition, CREWS also provides the analytical background to justify additional investments by the World Bank in line with the National Framework for Climate Services (NFCS). To date, large investments (USD 10 million and above) from the International Development Association (IDA), the Green Climate Fund (GCF), the Global Environment Facility (GEF) and Global Facility for Disaster Reduction and Recovery (GFDRR) are connected with GFCS priorities in Burkina Faso, Mali, Niger and the Democratic Republic of Congo (DRC). Additional investments are under consideration in the Pacific and Caribbean regions.

(xiv) The Agricultural Climate Resilience Enhancement Initiative (ACREI) is a three-year partnership program being implemented by WMO, the Food and Agriculture Organization of the United Nations (FAO), and the IGAD Climate Prediction and Applications Center (ICPAC) funded by the Adaptation Fund under its Pilot Programme for Regional Projects. The project targets Ethiopia, Kenya and Uganda and supports improved food security at the community level, improved decision making by use of tailored climate and weather information for small holder farmers and improved production of agricultural advisories and bulletins at regional and national level. The goal of the ACREI project is to develop and implement adaptation strategies and measures that will strengthen the resilience of vulnerable smallholder farmers, agro-pastoralists and pastoralists in the Horn of Africa to climate variability and change in line with the

IGAD Drought Disaster Resilience Sustainability Initiative (IDDRSI) programme, the National Adaptation Programmes of Action (NAPAs) and Development Strategies/Visions of participating countries. The project started in August 2018 and will last for three years.

(xv) In March 2018, the Adaptation Fund Board Project and Programme Review Committee (AFB/PPRC) approved the “Enhancing adaptive capacity of Andean communities through climate services” (ENANDES) project pre-concept note presented by WMO in coordination with the NMHS from Chile, Colombia and Peru. The proposed project aims to reduce vulnerability and strengthen resilience of Andean communities in those countries by developing climate-smart decision-making networks for better disaster risk, hydropower generation and agriculture management. The project will increase the technical capacity of the NMHSs of Colombia, Peru and Chile to provide weather, climate and hydrological services to local communities. It will enhance the national and local inter-institutional/sectorial stakeholder networks to co-design and co-produce sector-specific climate information in support of disaster risk management, long-term adaptation and water, food, and energy security. It will strengthened regional cooperation for mutual technical assistance among NMHSs, alignment with other complementary initiatives in the Andean region, and foster capacity building on data management, climate prediction, and tailored sectorial information that can be expanded to other countries such as Bolivia, Ecuador and Venezuela. In October 2018, the AFB/PPRC has endorsed the Project Concept Note and a full project proposal in being developed and will sent for approval in 2019.

(xvi) The International Center for Tropical Agriculture (CIAT), WMO and the University of Southern Queensland (USQ) are launching a project funded by the German Government’s International Climate Initiative (IKI) to protect farmers and agribusiness in Southeast Asia from disasters associated with climate change and variability. The ‘De-RISK Southeast Asia Project’ aims to develop climate risk management systems that incorporate advances in seasonal climate forecasts as an effective adaptation to longer-term climate change. The risk management systems will be coupled with innovative insurance products for smallholder producers and agribusiness in the coffee, sugar, rice, cassava, rubber, dairy and livestock grazing industries in four key Southeast Asian countries: Vietnam, Lao PDR, Cambodia and Myanmar. The project started in April 2018 and will last for four years. The project aims to:

- Better prepare smallholder farmers, governments and agribusiness for the future by developing and delivering appropriate and reliable seasonal climate forecasting.
- Increase small-holders resilience by utilizing effective seasonal climate forecasts and strategic knowledge on climate change to encourage the uptake of new insurance systems;
- Create long-term ownership of the project by transferring approaches and systems to the scientific community and end-users, including governments and agribusinesses;
- Better link climate risk to insurance systems by developing methods to utilize effective climate change risk/insurance risk modeling for agriculture.

(xvii) Following the successful implementation of the GFCS Adaptation Programme in Africa Phase 1 (2015-2018) in Malawi and Tanzania (see http://gfcs.wmo.int/Norway_2), the second phase of the project has been launched in Tanzania and Malawi on 17 and 26

September 2018, respectively. The project which is to be implemented during 2018 – 2019 is aimed at enabling the development of climate services in support of decision-making in the agriculture and food security, disaster risk reduction and health priority areas. The second phase, as the first, is being funded by Norway (NOK 36 000 000) and is being implemented by the Department of Climate Change and Meteorological Services (DCCMS) in Malawi and Tanzania Meteorological Agency (TMA) in Tanzania with support from the International Federation of Red Cross and Red Crescent Societies (IFRC); World Health Organization (WHO) and WMO.

(xviii) The project “Climate Services for Increased Resilience in the Sahel”, which was developed by the GFCS Office, was implemented from June 2016 to August 2018 with 1 Million US Dollars in funding provided by the United States Agency for International Development (USAID) . The project covered three countries— Burkina Faso, Niger and Senegal— and included a component to support the African Centre for Meteorological Applications for Development (ACMAD), a WMO Regional Climate Centre (RCC), to enable it to technically support the three beneficiary countries. Main achievements of the project included development of capacities of the NMHSs in data management and rescue; climate diagnostics, monitoring and forecasting; product development, including tailoring of products to specific users. Working groups were developed as user interface platforms which have allowed the production of climate and health and climate and water bulletins in Niger for the first time.

(xix) The USAID-funded 2-year project ‘Assessing Sustainability and Effectiveness of Climate Information Services in Africa’ (Sustainable CIS) was completed in September 2018. It was co-implemented by Winrock International, WMO/GFCS, International Research Institute for Climate and Society (IRI), Climate System Analysis Group (CSAG), and AGRHYMET. It sought to answer the question ‘What are sustainable and effective models for CIS?’ and developed models and options for sustainable delivery of CIS in Sub-Saharan Africa (SSA), based on examples from Côte d'Ivoire, Ethiopia, Malawi, Mali, Niger, Senegal, and Rwanda. The outcomes of the project contribute to ensuring users’ increased resilience and sustainable development, bridging the funding and investment gap for NMHSs, and consolidating and extending knowledge on the existing CIS. The project delivered: a baseline survey and metrics to assess NMHSs capacity to deliver climate information and services; a financial planning tool to support NMHSs in sustainably managing financial aspects of their climate information systems; a number of reports and policy briefs covering cost-effective technologies and approaches to climate information system implementation, capacity development, and markets and business models. As part of the way forward, efforts are underway to ensure that the project’s legacy remains embedded in NMHSs’ practices related to CIS, e.g. securing political support for the tools, incorporation of the tools into the existing global, regional, and national mechanisms, and encouraging the capacity-building essential for the successful uptake and effective use of these tools, through deployment of the WMO Climate Services Toolkit.

4- PARTNERSHIPS

(xx) Partnerships are key for supporting GFCS implementation. The Group on Earth Observations (GEO), HELVETAS and the Stockholm Environmental Institute (SEI) were the most recent members to join the Partner Advisory Committee (PAC), increasing the membership of the PAC to 22.

(xxi) The GFCS is partnering with the United Nations Institute for Training and Research (UNITAR) for the production of an e-training module titled "Integrating Climate Risk Information into the National Adaptation Plan (NAP) Process". The module is to be administered as part of the regional workshops organized by the United Nations Framework Convention on Climate Change (UNFCCC) for the Least Developed Countries Expert Group (LEG). The training is being developed as an effort to enable the linkage of climate services to the NAP process through more active participation of NMHSs.

(xxii) The GFCS is engaged in discussions with the Climate Services Partnerships (CSP) with a view to strengthen collaboration. Specific elements of collaboration include the potential of developing a joint newsletter to enlarge the audience benefiting from information on climate services and collaboration in the organization of the next international conference on climate services (ICCS-6), planned for 2019, in India. Through this collaboration a global community of practice on climate services could be one of the main outputs.
