

World Meteorological Organization

Ghassem Asrar, Director of the World Climate Research Programme at WMO rejoins *International Innovation* to discuss the strategic approach to analysing sharing knowledge of the impacts of climate variability in a more holistic manner

What is your role within WMO and the Global Framework for Climate Services (GFCS)? Moreover, could you explain how GFCS contributes to the overall mission of WMO?

The World Climate Research Programme (WCRP) coordinated the development of the Research, Modelling and Prediction component of GFCS. This is one of the five major components that will enable the development of science-based information for decision makers. Its advantages include building on the observations element, as well as communicating with the climate information system element through the GFCS user interface to ensure an integrated and holistic approach to climate information and knowledge delivery that all stakeholders and decision makers can benefit from.

GFCS was initiated at the World Climate Conference-3 (WCC-3) in 2009 to foster enhanced climate predictions. What progress has GFCS made in the interim years and has its role changed?

Significant progress has been made since the initiation of GFCS, including: the development of an implementation plan; subsidiary documents, such as five annexes that describe in detail the plans and priorities for the five GFCS components; and a series of documents that list examples of projects and activities that are either in place or need to be developed in support of the four near-term GFCS priorities in food security, water resources, health and disaster risk management. The GFCS implementation plan was formally approved at an extraordinary session of the World Meteorological Congress in Geneva, Switzerland in the autumn of 2012, held in recognition of the significance of GFCS and the urgency for implementation of its plans and priorities to the benefit of global society. The Congress also approved a governance mechanism in the form of an International Board to oversee the implementation of GFCS on its behalf. Mobilising required resources for implementing GFCS is well underway with significant commitment of financial support by several countries already in place. The International Board plans to hold its first meeting in July 2013 to finalise its governance structure and take stock of major actions that are either initiated or will be initiated by the partners of the Framework.

What are the main priorities of GFCS for the coming years? Do you foresee any specific challenges ahead?

The four near-term priorities of GFCS are: 1) agriculture and food security; 2) water resources; 3) health; and 4) disaster risk management. There has been significant progress made in the development of specific plans and priorities for each of these four areas, primarily through partnership with

other UN sister agencies such as the Food and Agriculture Organization (FAO) and World Food Programme (WFP), World Health Organization (WHO), UNESCO, and the International Federation of Red Cross and Red Crescent, along with other partners. The engagement of such organisations in GFCS plans and priorities will facilitate the development of 'actionable' climate information, as well as its effective and timely delivery – both between themselves and to a far wider network of decision makers and stakeholders. There is also considerable discussion towards the development of some of GFCS mid- to long-term priorities focused on topics such as energy and transport, megacities and air quality, etc.

WMO can help developing countries to better understand weather patterns which can support communities. How are you aiding communication and capacity building in these regions?

Indeed, WMO has a very rich and successful history of coordinating among the global network of national weather services to ensure effective and unrestricted access to weather information for all its members. A series of WMO scientific and technical commissions will help to ensure that the most up-to-date capabilities and technologies are shared among regions, to include the 190 member nations. WMO devotes significant efforts and resources to the development of capacity among all countries, especially in the less developed and developing regions and nations. Together with other organisations, WMO also sponsors several international observations, research and assessment programmes such as the Global Climate Observing System (GCOS), the Intergovernmental Panel on Climate Change (IPCC), and the aforementioned WCRP, etc. These programmes, networks and their associated capabilities, which have been developed and improved during the past several decades, will be WMO's unique contributions to the GFCS. WMO is also offering to host the secretariat office for GFCS on behalf of participating partners. As impressive as WMO contributions are, GFCS depends on essential contributions of its participants and partners to be fully successful.

Pilot studies to address climate-related issues in West Africa aim to develop a Framework of regional and national climate services. How is this being realised and how will these services be implemented?

There are a vast number of projects and activities focused on addressing climate and environmental challenges and opportunities in Africa and elsewhere, based on national and international funding from public, private and non-governmental organisations (NGOs). The overarching goal of these efforts is to provide the best available science-based information to tackle such issues and opportunities by developing

approaches to climate adaptation, risk management strategies, and effective mitigation measures. GFCS is intended to: provide the necessary mechanisms for coordination and integration of the ongoing efforts, and to establish new ones as they are required, in such a way to make the whole greater than the sum of these activities: facilitate networking between and among the expert communities; identify major required capabilities; and assist in addressing issues through regional and international cooperation and partnerships. The GFCS implementation plan has identified the regions and sectors that can benefit from its efforts in the short term, as a matter of priority.

What studies are currently taking place in other areas of the world and how will they help developing nations to better deal with climate change?

The impacts of climate change and variability on people, economic sectors and the natural resources base are now a major concern for nations worldwide. Beyond national concerns and efforts to address these impacts, regional cooperation and coordination are also emerging rapidly. For example, for the first time WCRP is facilitating a major focus on coordinating the development of regional climate information, evaluation and analysis and assessment of climate conditions in ways that are useful to regional decision makers. This effort is based on the partnership with existing networks such as the Asia Pacific Network (APN), Inter-American Institute (IAI) and System for Analysis Research and Training (START), as well as with co-sponsorship by the development banks, NGOs and national funding agencies for international development. An additional focus of these regional partnerships is to develop the requisite scientific and technical capacity in these regions for evaluation and analysis of best available climate knowledge, and to facilitate its translation into actionable information for policy makers. The task of capacity development is a major component of GFCS and it is envisioned to encompass all other components (ie. observations, research, modelling and prediction, information system, and user interface) of the Framework. There is significant interest by a large number of nations in investing and benefiting from the capacity development aspects of GFCS, thus capacity development is a cross-cutting activity within and among all components of GFCS.

By 2020, 75-250 million people in Africa may be exposed to increased water stress due to climate change. How is WMO working to address these issues?

Climate change and variability will impact all sectors and regions worldwide; however, the manifestation of such impacts will vary for

different regions and sectors. Consider the state of the climate in 2012, which was among the warmest years in the recent history, featuring major extreme events such as heat waves, droughts, floods and storms throughout the world. Current projections of future climate conditions highlight extreme events as a major area of risk. Against this context, a major area of research for WCRP is to understand the root causes of these events in order to enable future predictions. Any advanced warning that can be provided to the public, managers and decision makers will be very valuable for taking precautionary measures in time, as well as hastening post-event recovery. The WCRP has also identified four other major areas of research: 1) provision of science-based regional climate information; 2) sea level change and its regional implications; 3) water availability; and 4) sensitivity of climate to clouds and atmospheric circulation that will yield similarly actionable climate information in direct support of the service that GFCS is planning to provide to decision makers.

WMO works together with other global organisations such as FAO. How are such partnerships harnessed to protect the wellbeing of people in developing countries?

The GFCS approach to these partnerships is unique because it requires the sister organisations to take ownership and lead the discussion on identifying the plans and priorities for the implementation of its strategy. The partners will also ensure effective dissemination of the resulting knowledge, both to their network and to their affiliate partners. The partnerships between FAO, WFP and WMO are in a good position to address the need for climate information for agriculture and food security.

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