Some Frequently Asked Questions:

The Global Framework for Climate Services

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What do an air conditioning engineer, a farmer and a city planner have in common? Each uses climate information to do his or her job properly.

The engineer incorporates detailed temperature and humidity data in his or her designs; the farmer regularly reviews past records and future outlooks for rain or drought; and the planner explores the risks of floods and pollution in different districts.

Making climate data and information available to these professionals – and to countless millions of others facing diverse questions and decisions – is the task of climate services.

But in many places and situations, especially in developing countries, the necessary data, information and expertise is often not available. The consequences are higher impacts and costs to their communities and businesses.

What will the framework do?

Put simply, the Global Framework for Climate Services is a globally coordinated collective of the organizations that are already engaged in producing and using climate information and services. The aim in bringing these together through the Framework is to enable producers, researchers and user organizations to join forces to lift the quality and volume of climate services worldwide, and particularly for developing countries.

Central players in climate services are the National Meteorological and Hydrological Services, which already collect and exchange climate data, undertake research, and generate climate information products. Through the Framework they will help develop protocols and standards for data exchange between themselves and other organizations as well as improve information products and service delivery. The Framework will systematically build capacity in these national organizations where needed.

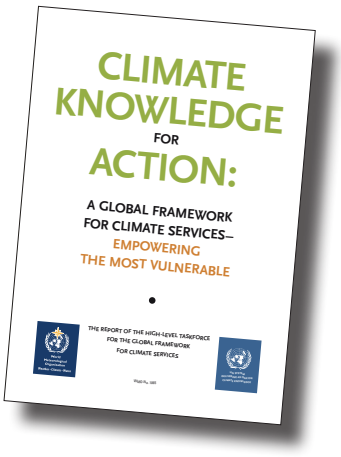
The Framework will also foster stronger relationships between researchers, climate information providers and users, to help ensure that the right information is available to all sectors of society for day-to-day and longer-term planning.

The World Climate Conference-3, held in 2009, directed WMO to convene a High-Level Taskforce for the Global Framework for Climate Services. The Taskforce met several times in 2010 and consulted widely. Its report, *Climate Knowledge for Action: A Global Framework for Climate Services – Empowering the most vulnerable* was launched in May 2011. It outlines the current state of climate services, gaps in climate service provisions, and its recommendations for a Global Framework for Climate Services. It was reviewed at the intergovernmental WMO Congress in May. This article is adapted from an extensive brochure that accompanies the report. For updates and more information, see http://www.wmo.int/hlt-gfcs/index_en.html

Why propose a new initiative on climate services?

Global cooperation to share expertise and data can significantly reduce the impact and cost of climatic events like drought, storms and floods.

Many people are not aware of the benefits of climate information,



or lack the necessary expertise or access to it. Climate information is used to avoid and manage risk, and to take advantage of climate-related opportunities.

Climate services are weakest where they are needed most, in climate-vulnerable developing countries.

The foundations for a global system exist: there are weather and climate observing systems and data exchange, climate research programmes and risk management techniques that are used in different economic and social sectors.

What is lacking is a global framework to link these elements, address shortcomings and fill in the gaps. One needs a supply chain for climate services that can be used at every level in society. This requires a global mobilization of effort and partnership across political, sectoral and scientific boundaries.

What are climate services? Who uses them?

A climate service includes an information process and products to help people manage climate risks and opportunities.

Farmers, water managers, planners, energy specialists, marine operators, construction managers, disaster managers and insurance experts are examples of people who are very affected by climate and use climate services to make business decisions.

Quality climate services are based on good data. The data are drawn from national and international databases, and cover things such as temperature, rainfall, wind, soil moisture and ocean conditions.

This data is then used to prepare a climate information product and deliver it to users in a way that meets their needs. A product may include data, statistical summaries, predictions and advice. It may be as simple as the average rainfall for a locality, or as elaborate as a countrywide analysis of past and future climatic risks. Products may be generated automatically for widespread use or customized to address a user's problem.

Traditional climate information products include:

- Historical data sets for particular places;
- Statistical summaries, such as long-term averages or maps;
- Risk analyses of extreme conditions; and
- Risk assessments of hazards such as drought or fire.

Climate data may be combined with industry or economic data to produce assessments or predictions of production levels, demand or prices. New scientific products include predictions of *El Niño* conditions, seasonal outlooks for rainfall or temperature as well as long-term projections of conditions under climate change.

How do weather and climate services differ?

Time frames make the difference. Weather services describe short-term conditions – what is happening now and how the weather will evolve over the next few days, sometimes up to ten days ahead. By contrast, climate services address patterns of conditions over longer time frames. These may cover the next few months, years, or decades ahead.

Most people are familiar with the daily weather forecast, which gives outlooks for temperature, precipitation and wind conditions over coming days, as well as warnings of severe weather conditions. Weather services are based on detailed observations of current weather conditions and on how these are likely to develop in the hours and days ahead.

Climate services focus on the longer-term climate at different times of the year, such as the temperature and rainfall for different localities and months or the average occurrence of extreme events like heatwaves or floods. These products are very important for planning. Our knowledge of the climate system and climate change has grown recently, and so the traditional statistical products are being complemented by predictions and projections of climatic conditions for seasons and years ahead.

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Displaced children fetch water after floods in Sudan in 2008.

Who produces climate services now?

The sources depend on national circumstances and government policies. National Meteorological and Hydrological Services are the most common provider of climate services. Other organizations are involved in this work are oceanographic and agricultural institutes, climate research centres, satellite operators, universities and businesses. The private sector is increasingly active in producing commercial value-added information to serve particular clients.

National meteorological and hydrological organizations have a key position in climate services because of their core role in protecting public safety and responsibilities for weather observations. The weather data they collect is authoritative and vital for climate data archives. Many are very active in climate research and assist national policymaking on climate change.

This is why the High-Level Taskforce recommended that the organization of the Global Framework for Climate Services be coordinated internationally by WMO.

How is the Global Framework for Climate Services related to climate change?

This framework can contribute to climate change policy, especially for developing countries. It will generate essential information to support new policies on climate change and development such as expanded renewable energies, better water management, reafforestation and energy efficiency. The framework is designed to improve climate data collection, availability and information. It can also strengthen country adaptation capabilities.

Industries need to know what is happening in the climate system and to be prepared to deal with future climate events. Good management of the climatic risks today is the foundation for managing the changed climatic risks of tomorrow.

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What is innovative about the framework?

There are two core ideas underpinning the Global Framework for Climate Services. Firstly, climate risks should be systematically managed by all countries, industries and communities. Secondly, new levels of cooperation and collaboration are needed to achieve this capability globally.

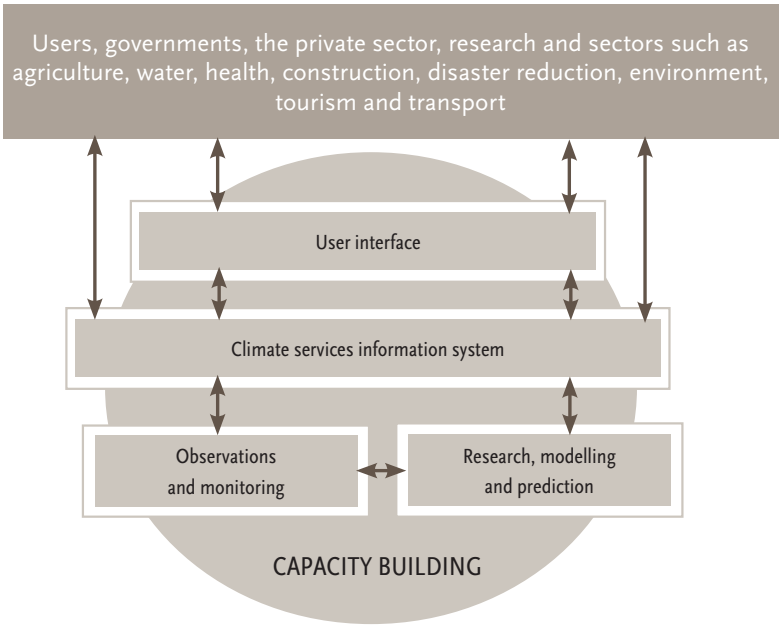
The innovative aspect of the framework is its end-to-end package to develop global collaboration and operations. These are:

- The **User interface platform**, a forum to promote and develop user interests;
- The **Climate services information system**, a network to exchange data and data products;
- **Observations and monitoring**, to assemble climate-related data from diverse national and international systems;
- **Research, modelling and prediction**, to develop and communicate new knowledge; and
- **Capacity building**, to support development.

The User interface platform and the Climate services information system are two important new developments. The framework's proposed multiparty leadership and coordination arrangements will also require considerable innovation.

In practical terms, how will the Framework operate?

The framework is best seen as a new, globally coordinated collective, comprised largely of existing organizations that produce and use climate services. The collaboration will enable producers, researchers and user organizations to lift the quality and volume of climate services worldwide, particularly for developing countries.



The Global Framework for Climate Services is designed for capacity building occurring within and between all its components.

Overall tasks

Climate services identified within the framework will be produced by existing operational organizations, mostly national ones. A key task will be to establish agreements and protocols among the world's governments and technical organizations describing what information will be exchanged, between which governments, organizations and individuals, and by what means.

Areas of collaboration

Collaborative action is suggested in five areas of importance: observations and monitoring; research, modelling and prediction; systems for information exchange; user interests; and capacity building. International expert committees will lead the work in each area.

Funding

In many countries the framework can serve as a component of a national climate adaptation programme. Much of the cost of implementing the Framework will be absorbed as part of ongoing improvement of existing programmes, which exceed several billions of US dollars annually, on a global scale. Developed countries are likely to require only small adjustments of existing programmes with little extra cost. Additional costs will cover priority projects for developing countries. Additional costs will focusing on upgrading data collection and interface; regional support; the Global Climate Observing System; and a small international secretariat to coordinate the framework.

Timing

The framework will be implemented progressively over the next 10 to 20 years. The forces are aligned for rapid action and progress will already be evident after two years. The Global Climate Observing System has a strong foundation and can target developing countries where quick upgrading is possible. Many technical organizations are ready and waiting to contribute to the design of the Climate Services Information System and related data questions. Building upon these existing foundations will pay off in the long run. The shape of action will become clearer as agreements are forged between nearly 200 governments, hundreds of different organizations join in the effort, and many technical capacities are developed.

Who will benefit most?

Communities and industries that are vulnerable to climate variations, particularly poor communities in developing countries affected by droughts, floods, tropical storms and other extreme conditions, will benefit most. Land and ocean-based industries such as agriculture, health, water resources, tourism and transportation also will be primary beneficiaries.

Public agencies will benefit, such as those in health, housing, construction, land use planning, environmental management, and disaster management. For example, climate information is essential to regulate land use, protect the environment and design building codes to avoid building collapse. It is heavily used in agricultural and water supply planning and in managing the social and economic impact of drought. Some malaria prevention programmes now use climate information.

Businesses and city managers will benefit when making complex decisions questions about locating industries and housing, investing in infrastructure, and managing seasonal fluctuations in supply and demand of energy, water and sometimes food. Communities will benefit from better access to climate information when making decisions about local risks and opportunities.

Data gatherers will see their data being used and will learn what data is most needed, climate service operators will develop better knowledge and more innovative products, researchers will see their results put into practice, and users will be better able to voice their needs and experience.

How will we measure success?

In the short term, success will be measured by the level and breadth of support from potential participants in developing countries, sectoral organizations, user representatives and funding agencies.

Over time, success will be determined by how much improvement occurs in the access and effective use of climate information by vulnerable communities. Measures of success are likely to be the quality and availability of climate observation programmes, climate data exchange systems, expertise to support national and regional users, and the level of systematic use of climate information in different sectors.