CHAPTER 28

World Meteorological Organization

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As a UN specialized agency, the World Meteorological Orgnization (WMO)[1] is the UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources. As weather, climate and the water cycle know no national boundaries, international cooperation at a global scale is essential for the development of meteorology and operational hydrology, as well as to reap the benefits from their application. WMO provides the framework for such international cooperation.

Through its technical and scientific programmes, WMO helps to document climate change and natural hazards, two of the drivers, multipliers and accelerators of migration, which can both be a setback to and an advancement of development.[2] The priority of WMO is to protect the lives, property and livelihoods of people through climate services information and disaster risk reduction activities. Climate data and products, such as climate monitoring bulletins, climate indices for sector-specific applications and seasonal climate outlooks, provide tools for use in decision-support systems related to both migration and development.

1. Migration and development activities since the 2006 High-level Dialogue

Since 2006 WMO has regularly produced authoritative publications and statements contributing to an improved understanding of climate change and its impacts, as reflected, for instance, in the UN Secretary General's remarks to the Security Council on the Impact of Climate Change on International Peace and Security (New York, 20 July 2011):

> "... The facts are clear: climate change is real; it is accelerating in a dangerous manner; and it not only exacerbates threats to international peace and security, it is a threat to international peace and security.
>
> ... Extreme weather events continue to grow more frequent and intense in rich and poor countries alike, not only devastating lives, but also infrastructure, institutions, and budgets – an unholy brew which can create dangerous security vacuums.

[1] Established in 1950, WMO became the specialized agency of the United Nations in 1951 for meteorology (weather and climate), operational hydrology and related geophysical sciences. WMO had its origins in the International Meteorological Organization (IMO), which was founded in 1873. WMO has a membership of 191 Member States and Territories (as of January 2013).

[2] See the outputs of such programmes in the successive Assessment Reports and Special Reports of the Intergovernmental Panel on Climate Change (IPCC), which received the Nobel Peace Prize in 2007: www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#.UUiG7xykpyU and www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#2.

> … Around the world, hundreds of millions of people [are] in danger of going short of food and water, undermining the most essential foundations of local, national, and global stability.
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> ... Competition between communities and countries for scarce resources – especially water – [is] increasing…exacerbating old security dilemmas and creating new ones.
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> Environmental refugees [are] reshaping the human geography of the planet, a trend that [will] only increase as deserts advance, forests [are] felled, and sea-levels [rise]."[3]

The WMO-led initiative of setting up and implementing the Global Framework for Climate Services (GFCS) has continued to inform decisions and understanding relative to migration and development activities worldwide. The extraordinary session of the World Meteorological Congress held in Geneva from 29 to 31 October 2012 approved a resolution establishing the Intergovernmental Board on Climate Services to implement the Global Framework for Climate Services. Migration will be one of the key user sectors of climate services, especially in a changing climate, as both climate change and the responses to the impacts of climate change will impact on population movements and population distribution.[4]

The disaster risk reduction activities of WMO have been integrated and coordinated with other international, regional and national organizations, including the UN Development Programme (UNDP), the UN Environment Programme (UNEP) and the UN Office for Disaster Risk Reduction (UNISDR). WMO currently coordinates the efforts of the National Meteorological and Hydrological Services (NMHSs) to mitigate human and property losses through improved forecast services and early warnings, as well as risk assessments, and to raise public awareness. Natural hazards can have a major impact on population distribution and on national development. Early warning systems are one effective way of minimizing the impacts of natural hazards.

Disaster risk reduction (DRR) remains a priority for WMO members and NMHSs. The implementation of the Hyogo Framework for Action by national governments is leading to changes in national DRR policies, as well as legal and institutional frameworks, with implications for the role, responsibilities and new working arrangements for NMHSs.[5] These changes provide opportunities such as increased recognition of NMHSs by their

[3] See the full transcript on www.unep.org/newscentre/default.aspx?DocumentID=2646&ArticleID=8817.

[4] Extraordinary session of the World Meteorological Congress held in Geneva from 29–31 October 2012 www.unisdr.org/we/inform/events/29002.

[5] The Hyogo Framework for Action is the first plan to explain, describe and detail the work that is required from all different sectors and actors to reduce disaster losses. It is a 10-year plan to make the world safer from natural hazards, endorsed by the UN General Assembly in the "Resolution A/RES/60/195" following the 2005 World Disaster Reduction Conference.

governments and stakeholders, which can result in strengthened partnerships and increased resources.

WMO works with partners such as UNEP, UNDP and UNISDR in the documentation of national policies and regulatory frameworks and the roles of NMHSs, and in the development of relevant partnership agreements and alliances (regional and global) through avenues such as the Global Platform on Disaster Risk Reduction. Disasters, especially floods and droughts, have a major impact on migration and development, and migration can, in turn, place more and more people at risk, as those who migrate often move to socioeconomic areas where there are greater risks of disasters – for example, floodplains. As populations grow, the movement to coastlines and urban areas also increases the number of people at risk of weather- and water-related disasters. Policymakers need to keep the impacts of climate variability and change on the locations and density of populations in mind when making decisions regarding future development.[6]

The WMO Climate Services Information System routinely generates climate information, including data, diagnostics, assessments, monitoring, predictions, projections, and others, that users need for a broad range of climate-sensitive decisions at different levels. WMO issues consensus-based El Niño and La Niña updates with climate information that can contribute to the planning of migration and development efforts.[7]

Through its Hydrology and Water Resources Programme, WMO has continued to promote water-resources assessment, and provides the forecasts needed to plan water storage, agricultural activities and urban development. It currently supports an integrated, multidisciplinary approach to water resources management. The availability of water resources is a significant factor in national development. For example, the Associated Programme on Flood Management provides guidance and advice with respect to integrated flood management, an approach in which consideration is given to the positive, as well as negative, aspects of floodwaters and to the valuable resource represented by the flood plains that these waters occupy on occasion.[8]

All of the aforementioned activities provide scientifically sound, user-orientated data, information and services on which to base planning, design and operational decisions in support of urban and rural development and, in particular, to respond to changes in migration patterns driven by a range of factors. GFCS, focusing on aspects of health, agriculture, water and disaster risk reduction (all factors influencing migration), has established an implementation plan which will provide a range of outcomes over the short, medium and long term.[9]

[6] The work can be downloaded from www.wmo.int/pages/prog/drr/documents/2012.07.05-WMODRRWork-Plan2012-2015.pdf.

[7] For more information about the activities of WMO, visit www.wmo.int/pages/themes/climate/index_en.php.

[8] The official website of the Associated Programme on Flood Management is www.apfm.info.

[9] The GFCS implementation plan is available for download from www.wmo.int/gfcs/site/documents/GCFSIPv2.pdf.

2. Support provided to the Global Forum on Migration and Development

Despite the increasing interconnections between weather, climate and human mobility, there has so far been no direct relationship between the work of WMO and the GFMD.

3. Identified good practices

WMO, through the technical standards and guidance material it develops, has promoted best practices in the use of weather, climate and water data and services. It is essential that weather, climate and water information is factored into migration and development-related decision-making at all levels. This often requires capacity development and some strategic investments in infrastructure, especially observing systems, to provide high-quality data which enable the monitoring and prediction of environmental changes and support the development and delivery of services and products.

One identifiable good practice is the Global Framework for Climate Services, which aims at:

(a) Reducing the vulnerability of society to climate-related hazards through better provision of climate services;

(b) Advancing the key global development goals through better provision of climate services;

(c) Mainstreaming the use of climate information in decision-making; promoting better uptake, understanding and awareness of the need for climate information and climate services; and demonstrating the value of the services in socioeconomic, safety and sustainability terms;

(d) Strengthening the engagement of providers and users of climate services. Building relationships between providers and users of climate services at both the technical and decision-making levels;

(e) Maximizing the utility of existing climate service infrastructure; improving coordination; and strengthening and building this infrastructure, where needed.

Capacity development is one of the key focus areas of WMO, and the availability of technical supporting documentation, guidance and advice is essential to building the capabilities of NMHSs. For example, the Associated Programme on Flood Management has established a help desk which provides access to both “Get help” and “Help yourself” capacity development components.[10]

[10] The APFM Helpdesk is at www.apfm.info/helpdesk.htm.

4. Challenges identified in carrying out WMO work

To invest in capacity development to better use available weather, climate and water data, and products and services in infrastructure development and management, especially observing systems, is not an obvious decision when other serious challenges, such as health, food security, access to water, among others, are faced, and funds are needed by vulnerable populations, especially migrants. In this respect, more solid demonstrations of the socioeconomic returns on such investments are needed.

The collection of basic weather, climate and water data and information is a major challenge for NMHSs. There has been a significant decline in the meteorological and hydrological networks operated in most countries, but particularly in those operated by the developing countries. These basic data and information are the foundations for the provision of meteorological, climatological and hydrological services that support safety of life and sustainable development.

NMHSs also face increasing demand and liabilities related to the provision of products and services to larger and more diverse groups of DRR stakeholders (for example, government authorities, public and private sectors, NGOs, general public and media, and others) who have direct responsibilities for DRR decision-making.

5. Gaps evident within the migration and development sphere

WMO has observed a serious lack of availability, knowledge and use of information about weather, climate and water in migration and development policymaking.

6. Recommendations for the 2013 High-level Dialogue

The HLD in 2013 should strengthen multidisciplinary and cross-cutting approaches to tackle migration and development-related issues, integrating all dimensions of sustainable development in a coherent manner.

The HLD should stress the need for the delivery of data, information and products collected in a robust manner, using the most appropriate technology and best scientific understanding as inputs to decision-making in regard to weather, climate and water factors that impact on migration and development, in particular, the impacts of climate variability and change in these areas.

Disasters have significant impacts on migration and development. The HLD should encourage a pro-active, risk management approach to disaster management that supports the development and implementation of end-to-end systems which recognize and address issues associated with migration and development.