

PWS Programme assistance to NMHSs to develop operational urban focused service delivery

Concept Note (Draft 30.11.2017)

Background

Urbanization is rapidly becoming the dominant feature of population dynamics in the 21st Century exerting a large influence on sustainable urban development. More than half the global population now lives in cities and this percentage is expected to increase to approximately 70% by 2050. Considering the ongoing urbanization and related expectations of more weather and climate extremes, as projected in IPCC studies, an urgent need exists to enhance the resilience of cities and their inhabitants in withstanding environmental hazards, and to factor weather and climate to city planning, infrastructure design, transportation, power supply, water supply, food safety, disaster risk reduction, climate change adaptation and mitigation, and the health of citizens.

The following weather related effects are very important in cities:

Magnification Effect: Even slight weather events can trigger significant loss of life and property due to high population density and critical economic activities.

Domino Effect: Natural hazards can lead to accidents, life and economic losses. In especially urban areas secondary and tertiary effects of weather induced disasters may be significant and can have severe short and long term consequences.

Cities also have many positive attributes. They have economies of scales that can be tapped to enhance more efficient service delivery. They provide a vibrant backdrop to innovation, cultural interaction and economic progress which exert their influence on the future mode of service delivery. They are hubs for transport, manufacturing and the latest innovation in communication and information technology.

Thus it is clear that the urban areas need special focus. The urban decision makers and society will require integrated weather, environment and climate monitoring systems and new generation of multi-scale models and delivery of seamless integrated urban services.

WMO requirements

The WMO Congress at its 17th Session addressed urban issues in a holistic manner including all WMO technical Programmes and passed Resolution 68 (Cg-17) (2015): Establishing a WMO Cross-Cutting Urban Focus. Cg-17 considered the vital role of NMHSs in the provision of effective PWS in support of the delivery of user-targeted meteorological and hydrological services in urban areas. Furthermore, Cg-17 agreed that service delivery for urban settings should be given focused consideration and stressed the importance of the provision of impact-based forecasts and warning services in urban areas. Cg-17 agreed that WMO and its Members can make a tangible positive impact on the urban environment by providing forecasts and integrated services that are tailored and targeted to the wide-ranging needs of urban authorities and population. EC sessions 68 and 69 provided further guidance, with EC-68 adopting the WMO cross-cutting urban focus outline for the implementation framework 2016-2019 (Decision 15 (EC-68)) and EC-69 the "Guidelines for the Development of Integrated Operational Platform to Meet Urban Service Delivery Needs" (Decision 41 (EC-69)).

The WMO Operating Plan for 2020-2023 includes "Urban services and science: air quality, disasters, climate change adaptation", with the number of countries with functional urban

services as the measure. The Strategic Objective "1.4 Enhance information and services to support decision-makers" includes, as a performance indicator, the number of Members with (a) urban specific severe weather (b) urban flooding and (c) air quality services.

Thus the PWS Programme needs to address the development of NMHSs' operational urban service delivery, based on the WMO Strategy for Service Delivery and Its Implementation Plan (WMO-No. 1129) and using, amongst others, the WMO Guidelines on Multi-hazard Impact-based Forecast and Warning Services (WMO-No. 1150).

Goal

The main goal would be to provide WMO Members with advice on direction, strategic development of, and practical considerations for services to address the needs of urban communities, including value-added services, as part of the work of the National Meteorological and Hydrological Services (NMHSs).

Actions and Deliverables

The policy and technical deliverables for the PWS Programme to assist NMHSs to operationalize service delivery focused on the urban environment will be mainly delivered through the Guidelines for an integrated operational platform to support urban service delivery needs, as requested by EC-69.

Method

The Guidelines for an integrated operational platform to support urban service delivery needs are to be developed based upon best practices and case studies of Members. The information on these can be formulated from

- A survey to be sent to all the NMHSs to investigate their existing and planned urban services provision
- Starting with the information in the Mission Report to Beijing (30 Oct to 7 Nov) by Liisa Jalkanen of the services provided by countries in especially Annex 2 and 4 of the report
- The summary of best practices for impact based service delivery, associated gaps and recommended ways forward that was prepared at the meetings held in Beijing, as discussed below.

The Joint Meeting of the Commission for Basic Systems (CBS) Open Programme Area Group (OPAG) on Public Weather Services (PWS) Expert Team on Services and Products Improvement and Innovation (ET/SPII) and the PWS Expert Team on Impact of Multi-Hazard Prediction and Communication (ET/IMPACT) was held from 30 Oct to 2 Nov 2017 at the China Meteorological Administration (CMA), Beijing, China. This meeting put together a "Summary of best practices for impact based service delivery, associated gaps and recommended ways forward". The summary includes five areas from the WMO Report 1150:

Area 1. Partnerships

Area 2: Impact-Based Information and Service Development

Area 3: Functional Requirements for Impact Based Forecasting

Area 4: Impact-Based Training and Capacity Development

Area 5: Impact-Based Service Validation.

Provision of Urban Services was added as Area 6.

Although this summary is on Impact based service delivery, it is really much broader and can work as one of the basic elements for developing deliverables for the PWS Programme. It is available as Annex 3 in the above mentioned Mission report.

Points to be taken into consideration in the development of the Guidelines

User engagement and cooperation

Need to engage users and stakeholders from the very beginning in order to:

- better understand their decision-making processes and needs
- jointly develop products and services that users will find useful and usable
- disseminate products effectively
- guide stakeholders and users in the interpretation and use of the products and services.

Cooperation, communication and partnerships with local governments and other stakeholders are key for efficient and effective service delivery.

The Guidelines are cross-cutting with all WMO technical Programmes and thus they need to be included, one way or another, in the process.

Requirements, challenges and needed actions by development through a pilot project

Developing the service through a pilot project, that is subsequently operationalized, has proven useful. For such a project, the following are especially required: Involvement of the users, stakeholders and authorities from the beginning; political willingness for the urban project; good collaboration; good plan for execution, including capacity development; and appropriate management for the project. The many challenges include: Connecting the different disciplines/experts and studies towards provision of the product/service; to connect the relevant authorities; to build a system that will continue after the pilot phase. Some of the needed actions are: Map and investigate good experiences; build upon existing lessons learned; develop guidelines (for cities) for better use and integration of services for different sectors, remembering that specific services are often required as part of the whole.

Level of service provided

Urban areas vary greatly, from location to size to governance to the hazards they face, amongst others, thus there is no “one fits all” solution. There will be different ways to address the provision of urban service delivery and levels of service. Services may be provided for city safety (authorities), the public, and for big social events. At the top end of the established services, as an example, the Integrated Operational Platform of Shanghai Meteorological Service, CMA, consists of data support, forecast, service, and risk analysis areas and an emergency warning center.

Need to include

- Communication development to public and authorities
- Capacity development, including twinning
- Policy issues, including governance, legislation and data sharing policy
- Feedback, by, e.g., annual surveys, routine meetings with partners; feedback needs to be provided to science and research also, to provide requirements for, e.g., model development for enhanced products.