

Title : Access to and use of water resources data : the views of the users communities

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Brief presentation of the topic of the session :

The issue of access to and exchange of hydrological data and products has already been extensively debated amongst the producers of the data in the framework of the different statutory bodies of WMO. **The purpose of this virtual forum is to involve the communities of the users of hydrological data in discussing the issues of access and distribution of hydrological data and products**

Presentation Paper (see *suggested discussion topics in the last part of the presentation*)

Wise integrated management of water resources requires a broad set of data and information. Information characterising the environment and water-related information relevant to human society such as health, food production, economy, etc.) are important, but the focus here is on data directly linked with water itself. Here, two categories arise : information on the resource, i.e. the "credit" component in water allocation to be compared with information on different water uses, which are the "expense" component. It has often been stated that, in many regions of the World, the looming or already existing water crisis is more a management crisis than a resource crisis and thus information on water uses should be seen as a priority. In general terms, our knowledge on water uses is affected by an unacceptably high uncertainty, largely due to the extreme fragmentation of the domain within a single country : agriculture, industry, water supply and sanitation, energy, environment, navigation are amongst others the sectors of activities concerned for making available information on water uses. It is thus understandable, that on many watersheds, even basic figures which would clearly differentiate water withdrawals from consumptive water uses are still questionable. The situation becomes worst when one considers the information available on the modification of the quality of the water after a specific use.

However, it is nevertheless obvious that in a water crisis situation, the "credit" component of the water budget is as important as the "expense" component and should be considered with equal concern. This is especially relevant in the context of climate change, which, according to the conclusions of the IPCC, will lead to a process of "intensification of the hydrological cycle". In the long term, not only will the amount of available freshwater be modified, but the distribution in time of the resource will be affected, and extreme events such as floods and dry periods are expected to be more frequent and more extreme.

Information required to assess the water resource consist of all types of variable required to close the water balance at different required scales (small watershed, country, large transboundary basin, region, global scale). The most common and specific water resource data consist of time series of rivers discharges and water levels in lakes, reservoirs an of water tables, with the appropriate characterisation of the quality of the water. Many other variables are required for the monitoring and modelling of the hydrological cycle such as precipitation, air temperature, evaporation, evapotranspiration, soil moisture, etc, some of which clearly fall in the category of meteorological data and information.

A key issue for achieving good knowledge of the processes of the hydrological cycle and thus scientifically sound water management is the condition of transfer of data from the

institutions which collect the data to the communities which make use of it. In most countries, data collection (i.e. field measurements, quality control, electronic encoding and storage) is the duty of national public institutions. But, in many cases, within a single country several other bodies may collect a substantial proportion of the information (hydropower producers, irrigation companies or inland navigation companies being amongst the most noticeable examples). These organisations, which support the cost of the collection of data from their own private field network and for their specific purpose, are inclined to consider that they are full owners of the data sets, which others argue should be considered as a common public good. It must be noted also that, during the last few years in several countries the National Hydrological Services (NHSs) are facing a growing pressure from their governments for selling their products and services to users, the process leading to the complete privatisation of the sector in a very few cases.

The diversity of circumstances in which agencies collect and distribute water resources data, which is much higher than that in which National Meteorological Services collect weather and climate data. Nevertheless, it is interesting to consider the policy and practice used for making available meteorological data and information as they have been stated in Resolution 40 (Cg-XII), adopted by the Twelfth WMO Congress in 1995. (<http://www.wmo.ch/web/pla/Res40Cg-XII.doc>).

In summary by adopting Resolution 40, the WMO Member States have adopted the following practice on the international exchange of meteorological data and products :

1. Free and unrestricted exchange of **essential data and products** necessary for the protection of life and property and the well-being of nations. Such essential products have been described in Annex 1 of the Resolution (type of variable and standard formats of exchange), and it has to be noted that the selection covers an impressive amount of data and information. "Free and unrestricted" means non discriminatory and at no more than the cost of reproduction and delivery, without charge for the data and product themselves.
2. **Additional data and products** (i.e. which are not listed as "essential"), for which it is understood that WMO Members may place conditions on their re-export for commercial purposes ("re-export" meaning redistribution outside the receiving country, directly or through a third party).
3. Resolution 40 also states that **research and educational communities** should have free and unrestricted access to all data exchanged under WMO auspices, with the understanding that their commercial activities are subjected to conditions identified in the previous paragraph (2).

Hydrological data and products were not covered by Resolution 40 and so, in 1999, the Thirteen Congress adopted Resolution 25 (Cg-XIII) (<http://www.wmo.ch/web/homs/documents/english/res25eng.html>), which is consistent with Resolution 40 (Cg XII), but applies to hydrological data and products. Resolution 25 has the same structure, in particular regarding paragraphs (1), (2) and (3) above. However, Resolution 25 has no list of variables and formats which would characterise what is considered as **essential data and products** for hydrological studies and water resources management.

As noted, the issue of access to and exchange of hydrological data and products has already been extensively debated amongst the data producers (the NHSs) in the framework of the different statutory bodies of WMO.

The purpose of this virtual forum is to involve both the producers of hydrological data and the communities of the users of hydrological data in discussing the issues of access and distribution of hydrological data and products, taking into account that according to their mandates, the NHSs are generally also important users of the data and products.

The following list provides a number of possible topics around which the discussion can be organised, but the forum is open to any contribution on the issues of accessing hydrological data and products .

➤ **On the collection of the data (i.e. operational hydrology issues)**

- As a user of hydrological data, do you consider that there are enough data and information collected (type of variable, time step, density of observation network) ?
- Is the quality of the information compatible with your objectives (thorough assessment of the resource, especially in the context of the increasing pressure of water demands and possible impacts of climate change, protection of life and property, etc.) ?

➤ **On the issues of data availability and dissemination**

- How would you qualify the conditions for accessing hydrological data and information you require ?
- What is your perception of the policies which lead to the commercialisation (sale of data) or of privatisation of public services and their consequences for your institution ? According to your experience, are they a real concern which may have a significant impact on your activities in the future ?

➤ **On the role and responsibility of the users of hydrological data for supporting data collection in the framework of operational hydrology**

In most developing countries, the National Hydrological Services are facing serious financial difficulties in carrying out their mission. The donors which nowadays show interest in supporting their activities, often see matters in a market-oriented context and call for a clear identification of the users of the data and products (referred to as the "beneficiaries" or "customers" in the project funding documents).

Thus, the **users of data and information** are probably the most **powerful driving force for having operational hydrological activities supported by the international community** in the developing World. Unfortunately, the users of hydrological data and products at national regional and international levels, form a very fragmented and "unidentified" community, which is not acting as an organised lobby.

In this respect, special mention should be made of the scientific and academic community, which has a preferential status in Resolutions 40 and 25, and should accordingly play a special role in the development of the collection of hydrological data.

- How do you consider your role as a user of hydrological data and product in favouring the donor support to the National Hydrological Services ? What sort of institutional arrangement might enhance the effectiveness of the promotion of hydrological data collection programmes (formal declaration of data users at the WWF3, set-up of one or several regional associations of data users, etc.) ?