Institutional Arrangements and the Water Data Centre

Case study of the Republic of Moldova

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Background

Moldova is a small, landlocked country situated between the western border of Ukraine and the eastern border of Romania and lies in the Black Sea Basin. The entire territory is constitutes 33,800 sq km. The country's major water resources are two international rivers – the Nistru and Prut: River Prut forms a border with Romania through-out its length and River Nistru forms a border with Ukraine in two sections, one in the north and one section in the south.

Moldova has signed International Conventions and agreements related to water resources including: Convention on protection of trans-boundaries rivers and lakes (Helsinki, 1992), the Black Sea convention on the environment (1994), Sofia convention on the Danube River (1994), and RAMSAR (1971).

In total, Moldova has sighted 17 international environmental conventions and has ratified 15, and is consequently responsible for reporting at national and regional levels in relation to these conventions. Since 1993, the Parliament and the Government of Moldova has adopted 25 legislative acts and around 50 normative documents, which set the foundation for environmental management, controlling the protection and rational use of natural resources, especially water resources.

The Framework of national policy in water resources is aimed at preventing the degradation of water resources at all levels, taking into consideration social and economic changes, national plans and current trends in different regions and river basins. Fundamental to Moldova's national water policies is the use and conservation of water resources, the improvement of water quality, and water supply that meets the needs of the population and the national economy and restoration of aquatic ecosystems. Another objective of Moldova's national water policies is to ensure stable management of water.

Therefore, the role of water resources statistics is obvious, as one of the main means of studying ecological problems linked to the state of natural water resources so that governmental policies can be developed. Good water resource statistics should improve decision making in relation to government reform and the development of government bodies responsible for environmental protection.

Institutions in charge of water in Moldova

In Moldova, there are four State bodies in charge of water resources management, the collection and processing of data on water and the reporting of this information to different international institutions and committees:

- Ministry of Ecology and Natural Resources is the state governing body for environmental protection of water. Four institutional departments and agencies of the ministry participate in water resource surveillance. These are:
  - State Ecological Inspectorate, which consists of 12 territorial organizations and 4 zonal laboratories
  - Hydro-meteorological service "Hydrometeo"
  - State Geological Agency "MoldaGeoM"
  - National Institute of Ecology
- "Apele Moldovei", the State Water Agency under the Ministry of Agriculture, is the authority that licenses water use and controls the use of water for irrigation, water abstraction, and the supply and discharge of water by economic agents. They are the main source for statistical reporting on water use.
- The National Centre for Science and Preventive Medicine of the Ministry of Health, including territorial Centres of Preventive Medicine, control overall water quality for example drinking water, surface and recreation waters.
- The Department of Statistics and Sociology is responsible for water statistics methodology and statistical reporting.

In fact, each organization is involved in one way or another in the reporting process to the UN-SD, UNDP, UNECE, OECD, WHO, UNICEF, FAO, GRID UNEP, WMO and International Conventions.

The Water Accounts

In July 1998 a pilot study on water resources accounts started within the TACIS environment statistics project, steered by Eurostat, with Ifen (the French Environment Institute) being the principal operator.

The study demonstrated that useful water data already existed and is already being collected by the Statistical office, Hydro-meteorological Service and Water agency on a regular basis. The study also demonstrated that this existing data can be used to assess the availability and use of water resources.

The pilot study report included supply and use accounts and water asset accounts for Moldova. The report concluded that there is interest in water accounts, because of their analytical potential. The pilot accounts provide an information system which facilitates the formulation and evaluation of policies and strategies of sustainable development, especially in water and sanitation issues. The pilot report concluded that the accounting

framework was useful in overcoming some gaps in the statistical system during the transition period (and beyond).

It became clear that one of the limiting factors to the development of statistics and physical accounts of water was the absence of an informatics database on water. Therefore, the reform of water statistics and the implementation of water accounts continued within a new broader project, the aim of which was to create a national Water Data Centre (WDC) making it possible to manage all the data related to water issues as well as implementing water accounts in Moldova.

The creation of the Water Data Centre

An important result of the project and the pilot study activities is the understanding of the users needs and of the ways and means to address them by developing the inter-institutional information network – the "Water Data Centre", which now acts under the authority of the Ministry of Ecology and Natural Resources. The main partners and data holders are the Central services of the Ministry, the State Ecological Inspectorate, the Service of Hydro-meteorology, the Geological institute "AGeoM", the public agency "Apele Moldovei" and the National Centre of Scientific - Practical Preventive Medicine of the Ministry of Health.

The **Water Data Centre** is used for current activities of the participating organisations involved in water management in Moldova: elaboration, implementation and follow up of the National Strategies, Governmental National Action Programmes on water issue, especially into the context of the national sustainable development. As well, the WDC is used for reporting on water data to the international organizations, compatible with the European standards.

Institutional and other difficulties

The following problems have been faced during the WDC project:

- Multi institutional involvement in water surveillance each collecting different patches of information on water resources status but not coordinating their activities, therefore duplication of inventories and statistical studies on lakes, dams, waste water treatment plants, as well as institutional fighting for administrating water resources.
- The need to improve the database in terms of quality of monitoring data and statistics and to implement the methodological changes needed to better define data, to improve data collection, processing and dissemination.
- Absence of an up to date database on ground water resources, with current information being based on an inventory which was carried out 20 years ago.
- Multiple approaches compulsory surveys and indicators, which have been incomplete since the end of the Soviet system, instead of combining surveys, samplings, modelling and water accounts.

- Lack of recognition by involved institutions that the data they collect is of insufficient quality,
- A lack of recognition of quality controls in operating monitoring systems and operation of statistical surveys and studies.
- Variety of methodological approaches to water data definitions, nomenclatures, codifications arising from activities under umbrellas of WMO, WHO or FAO. These activities do not appear to be coordinated with environmental policy needs, especially at national and local levels.
- Technical problems with old monitoring equipment, exacerbated by monetary constraints on the maintenance of monitoring equipment and field measurements. These things influenced negatively on the frequency and quality of samplings.
- The number and location of monitoring stations were not sufficient to be representative for quality of water assessments.
- Varying levels of information technology between different organisations. There are states institutions still using software created twenty years ago, and some monitoring and statistical information is kept on paper.
- Varying informatics standards and versions between organisations.
- Specialists needed improved computer and professional skills to meet current water statistics demands.

Need for capacity building and training

From a poll by WDC in April 2004, one third of specialists in the water resources sector need special training in environment statistics, in particular methodologies directly linked to water statistics: data collection, sampling & modelling, indicators and indexes.

One third of civil servants mentioned that their working places are not arranged with computers. A majority of interviewed staff indicated that well known software packages such as MapInfo and Access as unknown or unused program products. One quarter of those who knew about the existing database on water said that they had no access to this database and no possibility to use it for reporting. About 10% indicated they did not know how to operate databases in general.

This explains why today there are some difficulties in computerizing water data in these institutions.

However, it is necessary to state that the main difficulty is to put people from various organizations work together as a team (from a psychological point of view).