**Data and information requirements relative to the reconstruction of water infrastructure in Moldova, Romania and Ukraine**

The complexity of water services in terms of the necessary knowledge, tools and processes for their multi-perspective management also leads to a need for information, which is a prerequisite for the effective and efficient decision-making process that steers the entire system towards the set goal, which follows the **UN SDG 6 - Clean Water and Sanitation**. In this domain EU, by its regulatory and reporting framework is a raw model for many non-EU countries

The data requirement set for **the water infrastructure** are always embedded in the overall information and spatial information framework of any country, which is in EU defined by the EU INSPIRE (spatial information) directive, that defined basic set of spatial information management services and their standardization in the EU.

**Clean water and sanitation services information** requirements are defined by core set of EU directives, that are also subject to reporting, that enables follow up and corrective measures: EU Water Framework Directive, EU Floods Directive, EU UWWTD, EU Drinking Water Directive, EU Nitrate Directive, EU Bathing Waters Directive, EU Industrial Emissions Directive, EU Seveso Directive, EU Environmental liability directive, EU Priority Substances Directive, to list only the core set of directives.

General dataset is defined on the basis of experience of implementation of these directives in several EU countries and **countries in the accession process**. This process is verified data framework, which enables complex transformation of accession countries in the field of clean water and sanitation. The data and information in also related to the implementation of the EU Public Sector Information Directive (2018).

**The information requirements are usually separated in:**

A) **General** (spatial) data requirements, and

B) Water and sanitation **specific data** requirements.

**A)** **General data requirements** are related to non-water data infrastructure, usually maintained by generic data services in any country:

* **Spatial units for the statistical purposes** (I.e. NUTS, defined for Romania, not for Moldova, Ukraine), related also to information on agglomerations, which are key spatial unit for the water services – defined by INSPIRE 2.8.I.2 Data Specification on Administrative Units – Technical Guidelines.
* **Information on buildings** (as service connection points) – defined by INSPIRE D2.8.II.2. Data specification on Buildings – Technical Guidelines – usually defined as buildings with a street address.
* **Information on population** (to highest possible resolution) – data on demography following if possible, INSPIRE D2.8.III.10 – Data Specification on Population Distribution – Technical Guidelines. Population distribution defines basic demand function for water supply and sanitation. Being fully aware that the current (and future) population distribution is extremely challenging due to large number of displaced people.

**B) Specific data requirements** for the provision of water services are related to data infrastructure regarding water services, usually maintained by specific data services in any country (Water Agency, Ministry of Environment and similar):

* **Spatial data on existing water supply and sanitation infrastructure** (pipe network, treatment facilities, water sources, and similar), following D2.8.III.6 Data Specification on Utility and Government Services – Technical Guidelines, with related information on the water supply system basic information following the IWA guidelines on water balance and other technical information on the network services and Environmental Mangement Facilities.
* **Environmental monitoring data** – following D2.8.II/III.7 Data specification on Environmental Monitoring Facilities – Technical Guidelines (spatial data services defining IKT framework of the services, the contents is defined in other reference standard documents (EU IED Directive, EU Nitrate Directive, EU Seveso directive, etc.)
* **Information on drinking water protection zones**: following INSPIRE D2.8.II.4 Data Specification on Geology – Technical Guidelines – information on recharge areas of drinking water sources and drinking water protection zones (if exisiting)
* **Water management data** – following the datasets collected by the European Environment Agency – CIRCABC (<https://ec.europa.eu/environment/water/water-framework/iep/index_en.htm>)
* **Information on the industrial water requirements and industrial sources of wastewater** (any). The information should include all non-domestic water demand folllwingthe NACE classification, including agriculture (i.e. livestock).

Being aware that Ukraine is not even an accession country the listed information necessary to assess current status and provide a framework for the assessment of future requirements could only be considered to be a general framework. Any data enabling insight into situation relative to the provision of water services would be welcomed. Similar situation can be found in Moldova.

Useful information, to start with, might be available on SOS Danubis – a state of sector, <https://sos2018.danubis.org/>, https://sos2018.danubis.org/eng/report/country-pages/ukraine/. Country notes for Moldova, Romania and Ukraine are attached.

INSPIRE technical guidelines, which could be considered as optimal datasets and services are attached.

Kind regards,

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