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MANAGING DATA FOR WATER MANAGEMENT IN AUSTRIA

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STRUCTURED COLLECTION OF DIGITAL DATA FOR WATER RESOURCE MANAGEMENT

Legal background

- Water Act (Federal legal gazette No. 215/1959 – in the current version) = legal basis for water management in Austria
 - Water Information System Austria (WISA) §59
- Complemented by Ordinances

Start in 1893 (Hydrographic data)



1890 1900



1970 1980 1990 2000 2010 2020

1976: Hydrographic data

1991: Water quality database (h2o DB)

2001: Urban wastewater treatment plant DB

2003: **Water Information System Austria (WISA)**

2009: Emission Register (EMREG-SW)

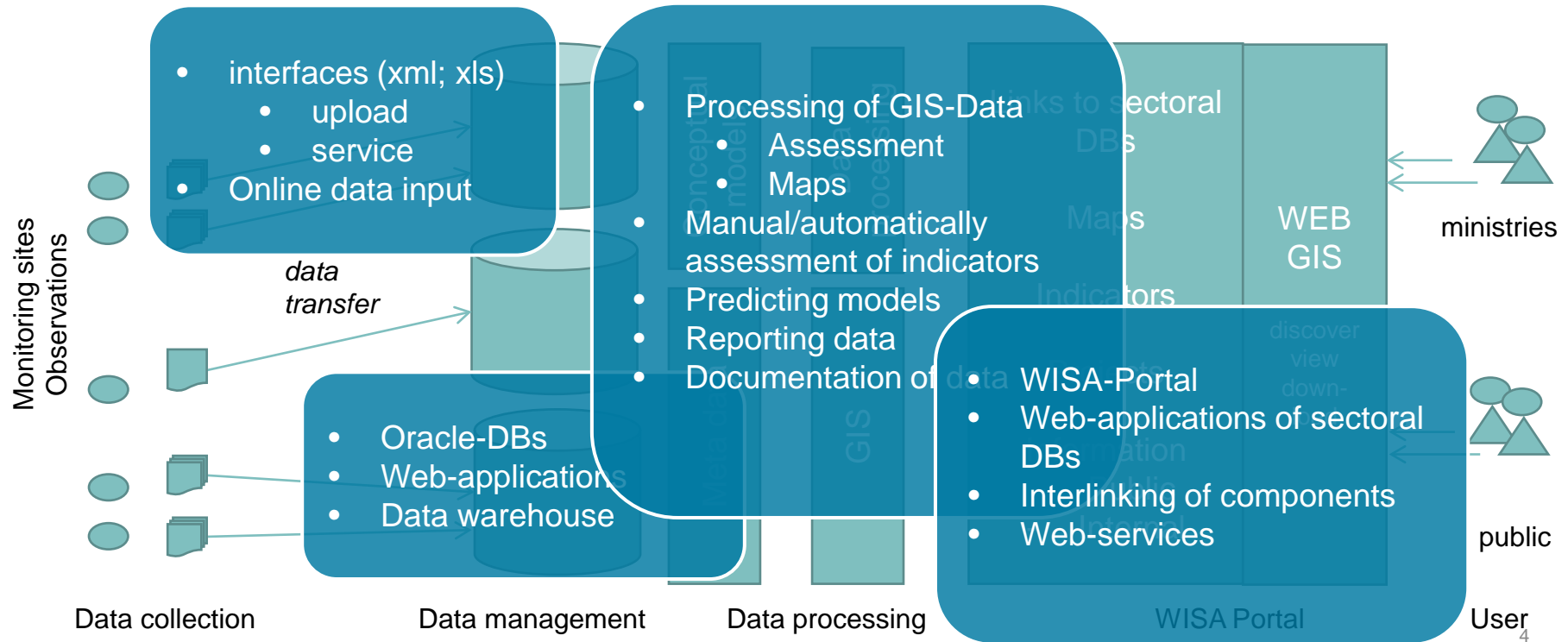
WISA – WATER INFORMATION SYSTEM AUSTRIA

Central platform for access to data and information for the Austrian water sector

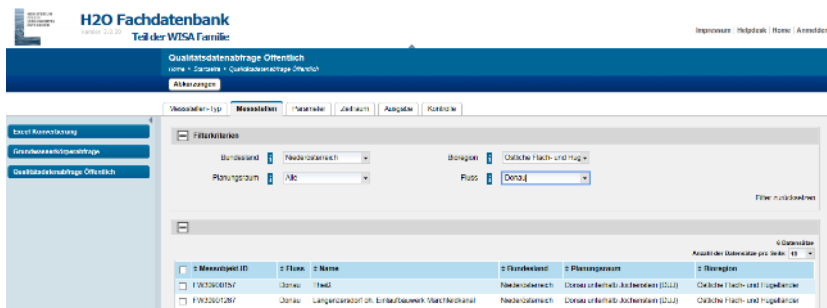
- Information on several water related topics for the general public and experts: reports, data, maps, WebGIS and WMS (e.g. water quality, emissions, hydrography, spatial data, RBMP)
 - active public participation
- Databases publicly accessible via web applications (e.g. water quality database) and with restricted access (e.g. EMREG SW)
 - Data Warehouse System combined with service-oriented architecture (access to aggregated and pre-defined data and to background data)
- Data exchange with provinces (XML interface, e.g. federal water graph, flood risk data)

<https://www.bmlrt.gv.at/english/water/Water-and-Data--WISA-.html>

CONCEPT OF WISA



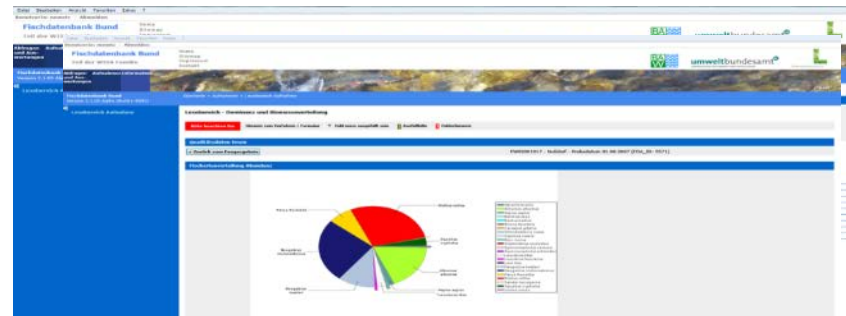
SECTORAL DATABASES - EXAMPLES



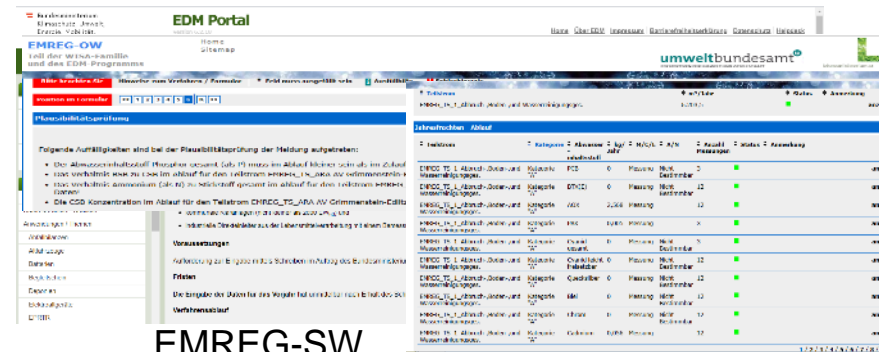
Waterquality Database



Floods Database



Federal Fish Database



EMREG-SW

<https://www.bmnt.gv.at/wasser/wisa/daten.html>

Suche:

Flüsse und Seen

Grundwasser

Geologie

Schutzgebiete

Verwaltungseinheiten

Zustand der gläsernen Zust. Oberflächenlogisches Po. veränderten flächengewä

In dieser Karte Zustand der n gewässer und Potential der i oder künstlich dargestellt.

Oberflächenw Details

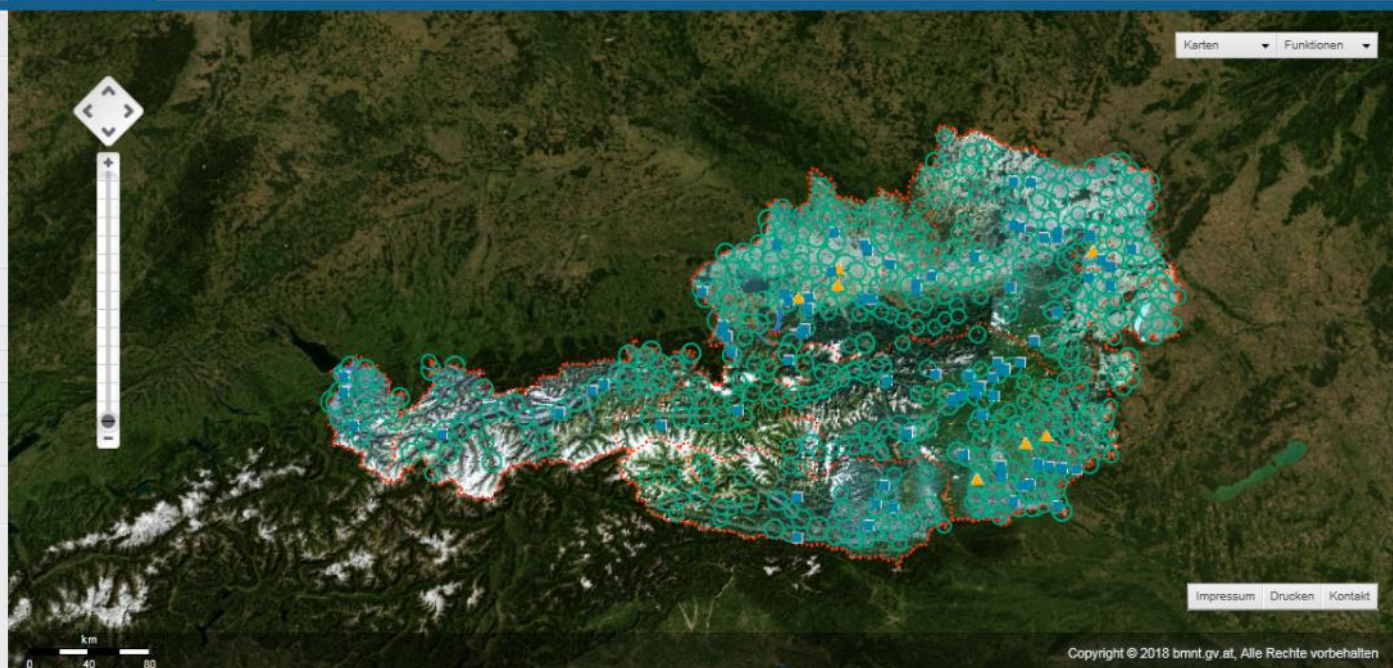
405880131
2500000
Belastungen von Oberflächen-
gewässern - Punktuelle Belastungen
In dieser Karte sind stoffliche Belastungen, die sich negativ auf die Gewässer auswirken können, dargestellt. Es werden punktuelle Belastungen (z.B. Einleitungen aus Abwasserreinigungsanlagen) angezeigt.
Belastungen laut EMREG-OW
ARA Forstschitz 3053 AM
Kommunale Kläranlagen >= 2.000 Einwohnerwert (EW)
2.000 - 10.000 EW
10.001 - 15.000 EW
15.001 - 150.000 EW
150.001 EW und mehr

Gebkartoteich

Ökologischer flächen Oberflä
Fließgewässer
PRTR-Anlagen
Anlage
Sonstige betriebliche Direkteinleiter
Direkteinleiter

Linienstärke ge
größenklassen
sehr gut /
Verwendete Grund
daten:
© OpenStreetMap-Mitwirkende, © BMNT,
© BEV 2002, ZI 5943/2002

Verwendete Gru
© OpenStreetMap
© BEV 2002, ZI



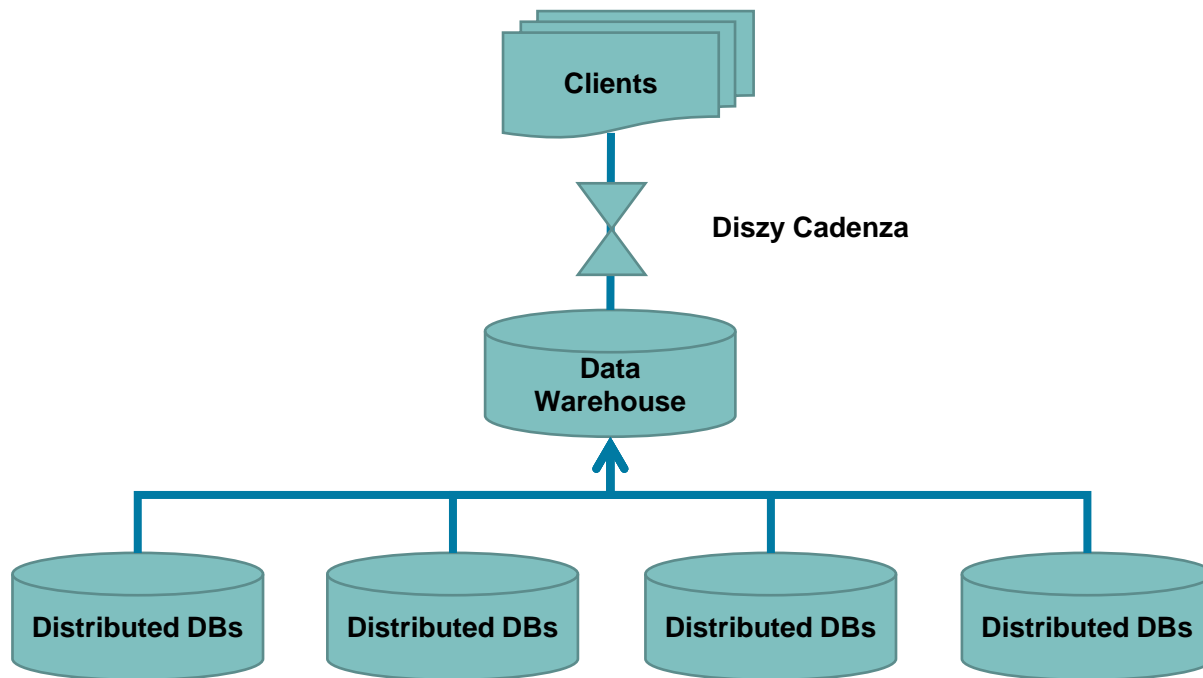
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WATER DATA MANAGEMENT – NATIONAL LEVEL

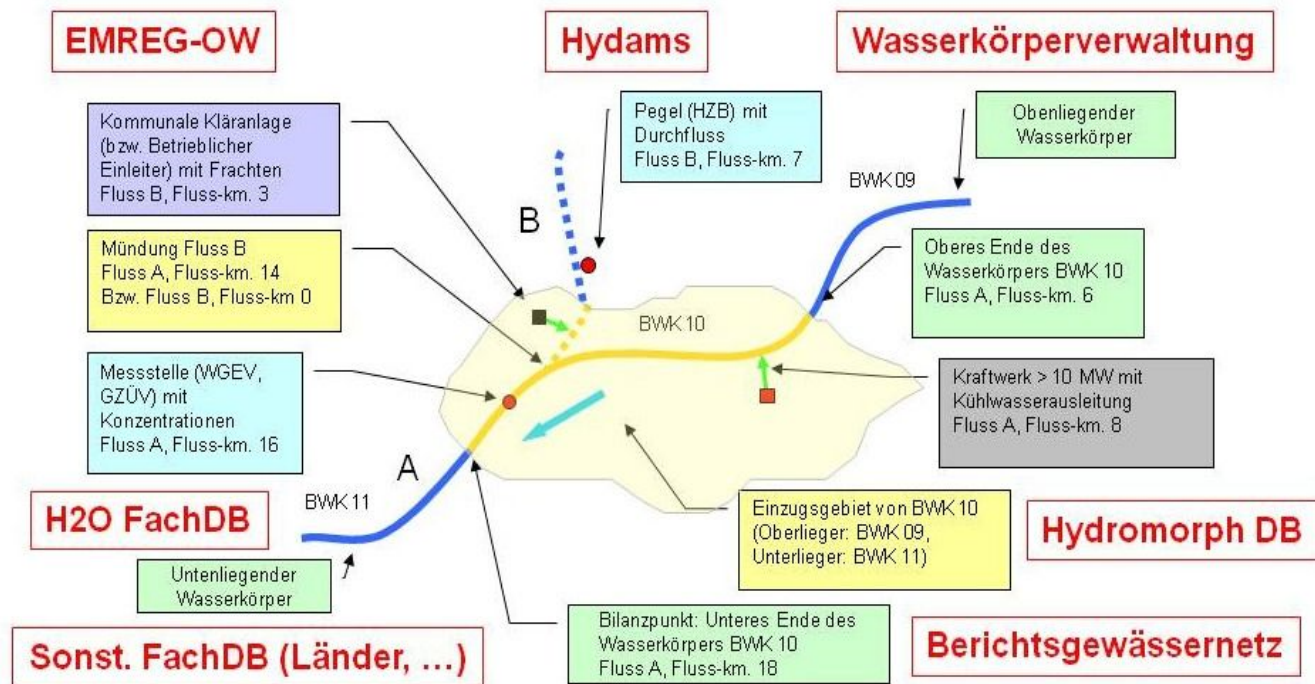
Applications for data management and data assessment

- Water quality database (Web application & services)
- Biological Databases
 - Fish Database (Web application & services)
 - Benthos Database (Web application & services)
 - Makrophytes Database (Web application & services)
- Austrian Water Graph (GIS)
- Spatial Data Infrastructure (SDI) Water
- Floods Database (Web application & services)
- Hydrographic Yearbook
- EMREG-SW
- Datawarehouse Water

INTEGRATED DATA ASSESSMENT



CONCEPTUAL MODEL

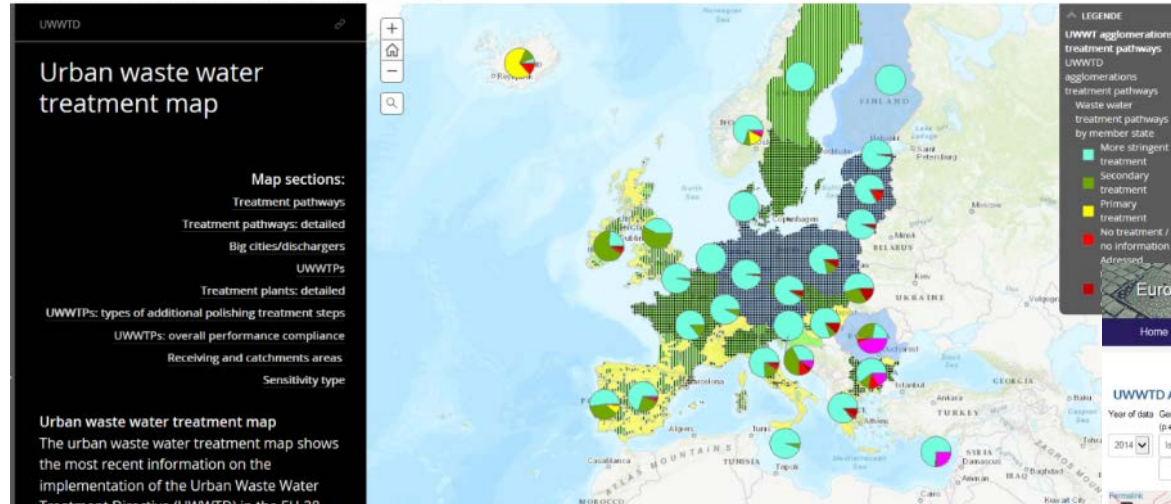


EMREG-SW – DATA USAGE (I)

- Reporting to EU: WFD, EQS, UWWTD, Water Information System Europe, European Environment Agency (EEA)
- OECD / Eurostat
- International water protection commissions
 - ICPDR (Internationale Commission for the Protection of the Danube River)
 - IKSR (Internationale Commission for the Protection of the Rhine River)
- NIR - Austria's National Inventory Report
Submission under the United Nations Framework Convention on Climate Change and the Kyoto Protocol
- Cross-checks for PRTR-data (Pollution Release and Transfer Register)

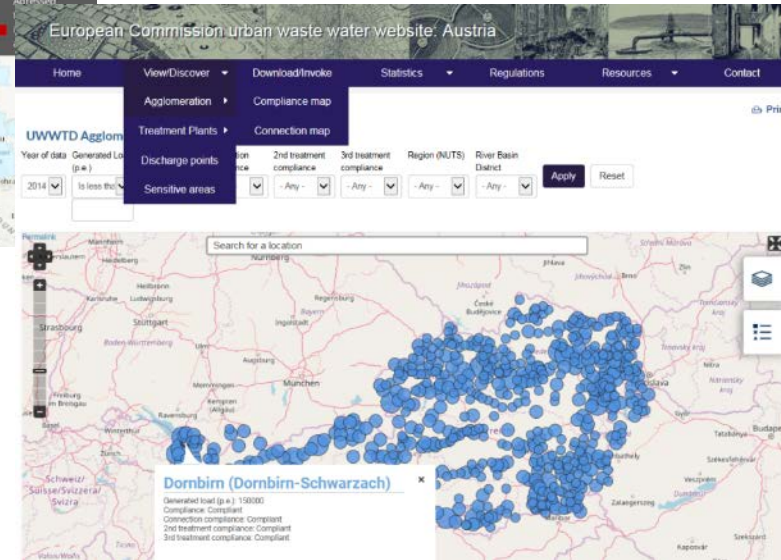
EMREG-SW – DATA USAGE (II)

: map reflects the most recent available information at the EU-level on implementation of the Urban Waste Water Treatment Directive (UWWTD) in EU 28 plus Iceland, Norway and Switzerland based on data reported by the Member States (for reference years 2013 or 2014) in 2015.



Source: <http://uwwtd.oieau.fr/>

Source: <https://www.eea.europa.eu/themes/water/water-pollution/uwwtd/interactive-maps/urban-waste-water-treatment-maps>



EMREG-SW – DATA USAGE (III)

- Review of the impact of human activity on the status of surface waters (WFD, Art.5.1)
- Status inventory (Federal Water Act §55d) - Basis for national water management plan
- Information of the public (aggregated loads on catchment area of monitoring sites) via WISA
- Research projects, e.g.:
 - Modelling emissions (nutrients, priority substances) on basin level
 - SCHATURM (Emissions from urban areas)
 - RELAKO (Nitrous oxide emissions from urban wastewater treatment)

PURPOSE OF WATER DATA MANAGEMENT IN AT

- Water **assessment**: characterisation and status assessment of rivers, lakes, groundwater
- Water **foresighting**: analysis of pressures and prediction of impacts
- Water related **measures**: planning, implementation and monitoring
- Assessment of **effectiveness of measures**
- **Information** for decision makers, planning, the general public,
- **Access** to data and data **exchange** (general public, experts, INSPIRE, OGD)
- **Reporting** (European Commission, International River Commissions)

Tools for river basin management planning and integrated water resources management

PRINCIPLES OF WATER DATA MANAGEMENT IN AT

- To **collect data only once** and keep it where it can be **maintained most effectively**
- To **share the data** with many users and applications (data access and distribution)
- To use the water data for **different purposes** (collect once and use many times)
- To establish **common interfaces** – combine data from different sources – and harmonise data (use standards, enable data exchange and use)
- To apply strict **quality assurance** and **well describe** the data used (metadata)
- To make sure that data and information **collected at one level can be shared with all levels**
 - detail level for thorough investigations; general level for strategic purpose

CONTACT & INFORMATION

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Danube Water Forum
27.-29. October 2020