DANUBE WATER FORUM

DATA COUNTS:
SOUND DATA FOR SMART POLICIES

All that was said, shown and asked: The summary report on another exciting session, covering the value of sound data for smart policy decisions in every field, from tariffs to pandemic monitoring and from resilience building to the fixing of pipeline leaks.

“It is indeed sad that we cannot meet in person”, said World Bank’s Senior Analyst Stjepan Gabric who had teamed up with IAWD’s Emilija Milunovic to host the first session of day 2 of the Danube Water Forum. “But the upside is that a virtual Forum gives us a chance to widen the circle and reach out to people who would otherwise not be able to join us.”

As a matter of fact, over 80 participants from three continents enjoyed a lively session, titled Data Counts, dealing with sound data as a necessary basis for smart policies, and presenting perspectives from countries with different development levels in their water sectors.

A fresh look at data collection and transparency

First to take the podium was Gabor Kisvardai, Head of Secretariat, from the Hungarian Energy and Public Utility Regulatory Authority. Exiled in his home office like so many of us these days, Mr. Kisvardai had to wrestle with a shaky data connection, but, lucky for the audience, he won and gave a smashing presentation on the Hungarian experience with data management for policy development purposes.

He remarked initially that Hungary is quite unique in the Danube region in that the Energy and Public Utility Regulatory Authority has unrestricted authorization to collect whatever data it deems necessary or helpful. In the same breath, Mr. Kisvardai recognized the responsibility that comes with liberty: “After eight years of collecting data, we diagnosed some serious problems in the ways, and also the volume, we collected. This resulted in a complete revision.”

Gabor Kisvardai’s team went back to the drawing board and reviewed what they called “the maze” of the water sector data collection process in Hungary, asking the famous three questions: why, how, and what?

The answers to “why?” are the most obvious, and include the need to meet national and international obligations. The “how?”, on the other hand, offered lots of room for improvement: “I have to admit that in the past we did not communicate very well, as far as data gathering and tariff setting were concerned. We found the need to change the pace and reset our perspective: a little less regulating authority, and a lot more service-mindedness.”

Intent on reducing regulatory burdens and streamlining the data collection process, the regulators invited 40 utilities to a workshop and started handing out business cards: “Quite surprisingly for the businesses, we shared our phone numbers and e-mail addresses freely, and that was actually a first. Today, when utilities have input or questions, they can simply pick up the phone and talk to us.”

It was the start of a very productive exchange: “We drew up a draft of the future data collection structure and gave the utilities 30 days to come up with feedback and suggestions.” At the end of a four-stage revision process, Gabor Kisvardai’s team had succeeded in eliminating a whopping 40 per cent of the data collection burden on the utilities by simply removing parallel data collection and data that were gathered, but actually never really used. With agile structures, transparent processes and improved communication installed and a national water service strategy currently under construction, the Hungarian regulators now look forward to the official introduction of a modern data management platform – a smart investment, because, as Gabor Kisvardai quotes at the end of his presentation:

> “Without data, you are just another person with an opinion.”

Three years worth of data analysis for a turnaround

Next on the stage was Ms. Milica Petrovic, Communal Services Coordinator at the Energy and Water Regulatory Agency of Montenegro. Much like her colleagues in Hungary, she promotes data-driven change. With water being Montenegro’s largest and most important natural resource, sustainable resource management is indispensable, and the Regulatory Agency for Energy and Regulated Communal Activities has to lead the process towards this goal. Originally charged with energy management, the Agency has only lately extended its competences to public water supply and communal wastewaters.

It’s job profile includes defining fair prices for services, ensuring the sustainability of operators and their conduct according to principles of objectivity, transparency and non-discrimination, and, last, not least, keeping the delicate balance of interests between users and operators. To this end, the Agency issues, changes and revokes licenses, supervises the performance of operators, implements benchmarking, issues by-laws, approves tariffs proposed by operators and reports annually to the Parliament of Montenegro.

A mixed bag of 25 municipal operators falls under the jurisdiction of the Agency. Their sizes vary from medium to tiny, infrastructures are shaky, with some 65% commercial and technical losses of water measured in 2018, and the data they provide to the regulators is of mixed quality.

To get a grip on the situation, the Agency invested the first three years of its operations in the water sector almost exclusively into data analysis and benchmarking: “Benchmarking determined our methodic approach to tariff setting”, says Ms. Petrovic. “We are about to introduce first tariff regulations in 2021, based on 200 data sets we collect every month.” In this

context, Ms. Petrovic mentions the reliability check the team applies to all collected data. “When data are identified as not reliable, they go into our indexing at half their original value.”

Diligent data handling is all the more important, because the first tariff setting round needs a rock-solid database. Three years of analyzing data have revealed glaring structural gaps: For the same services, legal entities pay up to 338% more than private households, a tariff structure which damages business development in the water sector. Commercial and technical water losses above 50%, a lack of investments and an overproportional share of labor costs add to the problems, and the tariff round of 2021 is only a first tentative step towards a data-driven sorting out the sector:

“Good regulation is not possible without good data”,

concludes Milica Petrovic at the end of her presentation.

Hard data and the Rolls Royce approach

A full two decades before Milica Petrovic’s team started sorting through the available water data, operators on the other side of the continent had decided to enter a voluntary benchmarking process that earned them a proud 21% performance improvement, which in turn motivated their government to create a legal basis for performance benchmarking in 2007.

This was in the Netherlands, where Dr. Peter van Thienen works as a Senior researcher & Chief Information Officer at the water research institute KWR, an internationally connected facility with a 11 water utilities as its financing background, 180 employees, and a wide range of research interests covering the whole water cycle. “Bridging science to practice” is KWR’s motto, and Dr. van Thienen’s presentation included the appropriate amount of food for thought.

As mentioned, Dutch water utilities performance benchmarking has now a legal basis in the country’s Drinking Water Law and measures water quality, service quality, environmental and economic parameters. Dr. van Thienen notes that utilities are sensitive to their ranking in the benchmark to the point of drifting into over-competitive mindsets.

From data-driven improvement that started out as a sector initiative and then became a policy, Dr. van Thienen switches to the field of non-revenue water, a problem of single-digit percentage dimensions in the Netherlands, thanks to a friendly topography and a business philosophy which the scientist calls the “Rolls Royce Approach”. Further reductions are possible, he states, but not without solid data and their smart application: Flow and pressure data measured at strategic locations in a network, together with the appropriate algorithms support the detection and localization of leaks.

Taking the data approach one step farther, KWR applies numerical optimization to determine the most efficient locations for the measuring instruments to get the best performance for the smallest investment.

Other data-driven decision support tools supplied by KWR are the City Blueprint Performance Framework, a system of 24 indicators to determine and visualize the sustainability of urban water management which is now applied in 62 cities everywhere on the planet, the Urban Water Atlas for Europe and modelling tools to get a grip on uncertainty when planning resilient systems.

> “Whatever you do, know your system”,

says Dr. van Thienen at the end of his presentation.

Fighting Corona with data? It can be done.

His KWR has long engaged in pandemic prediction and control based on data from urban sewer systems, a field also covered by the final speaker of the day’s first session: Professor Heribert Insam’s team at the Institute of Microbiology at Universität Innsbruck reports on a research project on COVID-19 Wastewater Epidemiology.

“Mind that this is not a monitoring project”, he reminds the audience. “This is research on methods, data availability, data quality and logistics in highly dynamic systems that are influenced by life- and workstyles, climate factors and other parameters.”

Monitoring 27 wastewater treatment facilities all over Austria, Prof. Insam’s study aims at a proof of concept for wastewater monitoring as an early warning system. His preliminary findings indicate that this can indeed be feasible, provided reliable standardisation of sampling and inter-laboratory comparability, improvement of the database by including more WWTPs and more frequent sampling, improved prediction models.

> “Wastewater Epidemiology is a question of infrastructure and money”,

Prof. Insam says and provides a cautiously optimistic outlook: The system he is developing might indeed provide reliable decision-making support during the current crisis, and in post-corona wastewater epidemiology.