

Water Security, Policy, Innovation and Adoption - 19 March 2025

Question	Answer
The water sector is under pressure to reduce its leakage. Would it not be better if the focus was on helping agriculture become more efficient in its use of water?	I completely agree with you! Most of the problems the sector faces when it comes to water losses happen in the transport of water from source to crop areas. This should be the focus of policymakers.
Can you please give some details of the challenges you faced in reducing in NRW- Thank you	The main challenge was to digitalise the network, establishing DMAs, and creating the hydraulic model of the system. Once all of this was done, it was easy to start reducing NRW levels in Porto.
In the city of Porto when thinking about things like flooding and ground water recharge (things that don't listen to city boundaries) do you work outside the city? Why or why not and are there remits or mandates that prevent you from working at a larger scale?	We work at the basin level, which means that we need to create partnerships with other municipalities. This is the reason why one of the first things that we've done within the context of our sponge-city program was setting up a governance model.
Great presentation Ruben, so impressive! Regarding wastewater management, is the city fully sewerred? If not what could be the % of the non-sewerred area or population relying on non-sewerred systems for wastewater management? Any regulatory measures for pollution control for non-sewer systems to address environmental pollution and public health risks? Thanks! Najib	I hope I was able to answer your question. Anyway, if there's anything else you need to know, please just get in touch (you can easily find me in LinkedIn).
How do you identify illegal discharges that does not have the necessary release permit and how do you deal with them?	Great question. This requires periodic assessments of the watersheds and creating mechanisms that illegal/unpermitted discharges and illegal withdrawals can be reported. The law, as long as it prohibits discharges/withdrawals without a permit, would apply to someone discharging without a permit. The law can also create different kinds of penalties depending on the level of the threat to public health that the unpermitted discharges bring.
Great Presentation Alexandra! Besides penalties - any perspectives or examples of incentives for water use efficiency or pollution control derived from some of the case studies presented eg USA, EU or Kenya and Nigeria in Africa?	Thank you! Incentives are often used to help farmers reduce their nonpoint source pollution. So, for example, in the United States nonpoint source pollution is largely excluded from regulation under the Clean Water Act. Therefore, voluntary reductions are supported through funding mechanisms. Therefore, funding is given to farmers for voluntarily adopting techniques/approaches to reducing pollution. I would also suggest that laws themselves are incentives, and can be written to allow the progressive realization of certain goals.

Thank you for the great presentation, Alexandra. What kind of law could be designed to incentivize actions for water security, especially in a decentralized system, given the following challenges? 1. Local governments have discretion in funding decisions for water security. 2. Different local governments vary in financial capacity, bureaucratic skills, and hydrological challenges, making the implementation of a uniform law more difficult in some areas than others. How can a balance between incentives (carrots) and enforcement (sticks) be achieved when the national government lacks the capacity to monitor all actions? Even in the U.S., cases like Flint, Michigan, demonstrate how laws may fail to ensure safe drinking water. 3. How can corruption and mismanagement be addressed in the implementation of such a law? 4. How can a dysfunctional local political economy be navigated to prevent it from hindering improvements in water access?	All great questions. With respect to decentralized water and wastewater, one challenge is that there is often no or limited law to oversee the provision of those services at that level. Sometimes there are not laws that require permits or at least notification of the government for the drilling of household levels well. There is also no requirement to periodically test the quality of household wells to ensure that they are providing safe services. So households can be exposed to dangerous toxins. Implementation of the law is challenging. So we need both the laws as written, but then the implementation. In Flint, we had a governance breakdown unrelated and related to water. Local governments should work together! The sector often discusses how water is local, which it is, but there are tremendous opportunities to work together and cocreate solutions.
To Alexandra: Has the Implementation and enforcement of licensing been successful in the case study areas you mentioned - any reporting on statistics?	Countries should have a public database where licenses are published. For example, there is SIHI in El Salvador. There is ECHO in the US. With respect to unlicensed withdrawals and discharges, there is limited data available.
To Lara: 1. Can you share some successful case studies of Drought Resiliency Plans from different regions? Specifically, what strategies have been most effective in ensuring long-term water security? 2. Could you provide more details on the Senate Bill funding available for building water resilience? What are the key eligibility criteria, and how can organizations or municipalities access these funds?	Thank you for your questions! 1) Drought resiliency plans or water shortage contingency plans lay out measures to be implemented at different stages of drought emergency. The measures implemented by water suppliers to mitigate drought impacts and ensure long-term water security include varying levels of voluntary and mandatory water use rationing, implementation of leak detection technologies and low-flow fixtures, public awareness campaign 2) Yes! The California Senate Bill 200 established the Safe and Affordable Funding for Equity and Resilience (SAFER) Program, which provides funding and technical assistance for small and disadvantaged systems, and supports infrastructure improvements, emergency funding, and consolidation efforts.

Thank you for your great presentation, Lara. small utilities may not be reaching economic efficiency due to a lack of economies of scale. 1) What criteria do you use to determine when consolidation should be pursued by small water utilities that are struggling to operate?
2) How can small water utilities be consolidated effectively, especially when they are located in different counties, far apart, and without large utilities nearby?
3) What factors facilitate successful consolidation, and what types of consolidation models would be most effective in such cases?

Thank you for your questions!

1) Consolidation projects are usually assess through a consolidation feasibility study, that takes into consideration physical, managerial, financial, operational and institutional/political parameters. California's SAFER program also assesses and categorizes water systems based on water quality, accessibility, affordability and TMF (technical, managerial and financial) risk factors and the water systems categorized as "failing" are prioritized for consolidation technical assistance and funding.

2) As mentioned, there are several factors that come into play when considering effective and sustainable consolidation scenarios, which are usually evaluated thorough a consolidation feasibility study. Consolidation is not always a feasible option. Physical consolidation is usually deemed feasible when water systems are far apart. Managerial consolidation can be more appropriate in these situations, where a large utility takes over the management and operations of a small water system, without a physical connection of the piping networks.

3) We often refer to three (3) different types of consolidation models: physical consolidation, managerial consolidation, and regionalization, and the implementation of the different consolidation models can be adapted to specific systems' characteristics. In general, factors that help facilitate consolidation include a focus on stakeholder engagement and buy-in, availability of data and funding, strong partnerships, close proximity between the consolidating systems.