International Association of Water Service Companies in the Danube Region

IAWD

iawd.at

POSITION PAPER

The Role of National Regulative Authorities in the Western Balkans region in supporting Asset Management Practices in the Water and Sanitation Sector

February 2025

RCDN Regional Capacity Development Network for Water and

german cooperation DEUTSCHE ZUSAMMENARBEIT

Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

Table of Contents

RCDN Regional Capacity Development Network for Water and
german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

Abbreviations

ADA	Austrian Development Agency
ADKOM	Association of Utility Service Providers of the Republic of North Macedonia
ALGUs	Associations of Local Government Units
AM	Asset Management
AMP	Asset Management Plan
APUCs	Associations of Public Utilities
AQUASAN	Aquasan Network in Bosnia and Herzegovina
ARERA	Regulatory Authority for Energy, Networks and the Environment Italy
BiH	Bosnia and Herzegovina
BMZ	Federal Ministry of Economic Cooperation and Development
BWK	Belgrade Waterworks and Sewerage
CD	Capacity Development
D-LeaP	Danube Learning Partnership
DWP	Danube Water Program
EBRD	European Bank for Reconstruction and Development
EDAMS	Engineering Design and Management Systems
EIB	European Investment Bank
ERC	Energy, water services and municipal waste management services Regulatory Commission of the Republic of North Macedonia
ERRU	National Regulatory Commission of the Water Regulatory Body Albania
ERSAR	Water and Waste Services Regulation Authority Portugal
EU	European Union
EWA	European Water Association
EWRC	Energy and Water Regulatory Commission of Bulgaria
GIS	Geographic Information System
GIZ	German Agency for International Cooperation

GWP	Global Water Partnership
GWSP	Global Water Security & Sanitation Partnership
HCE	Hydro-Comp Enterprises
IAM	Integrated Asset Management
IAWD	International Association of Water Service Companies in the Danube Region
IFI	International Financial Institution
IPA	Instrument for Pre-Accession Assistance
ISO	International Organization for Standardization
IWA	International Water Association
IWA	International Water Association
KfW	Kreditanstalt für Wiederaufbau
LESAM	Leading Edge Strategic Asset Management
LESAM	Leading Edge Strategic Asset Management
LGAs	Associations of Local Governments
LGU	Local Government Unit
LSG	Local Self Government
MEKH	Hungarian Energy and Utilities Regulatory Authority
NALAS	Network of Associations of Local Authorities of South-East Europe
NRW	Non-Revenue Water
ORF MMS	Open Regional Fund for Southeast Europe - Modernisation of Municipal Services
PUC	Public Utility Company
RCDN	Regional Capacity Development Network
RDP	Rolling Development Plan
REGAGEN	Energy and Water Regulatory Agency of Montenegro
RWC	Regional Water Company
SDC	Swiss Agency for Development and Cooperation
SECO	Swiss State Secretariat for Economic Affairs

SEE	Southeast Europe
SEEAM	Asset Management Advisory Services to Water Utilities in South-Eastern Europe
SHUKALB	Water Supply and Sewerage Association of Albania
SHUKOS	Water and Wastewater Works Association of Kosovo
UMT	Utility Management Training
UN	United Nations
UN	United Nations
UTVSI	Association for Water Technology and Sanitary Engineering of Serbia
WB	World Bank
WB6	Western Balkan
WBIF	Western Balkans Investment Framework
WFD	Water Framework Directive
WOP	Water Operators' Partnerships
WSRA	Water Services Regulatory Authority Kosovo

1. Introduction

This position paper is prepared in the frame of the project "Supporting the delivery of Capacity Development (CD) products for Public Utility Companies (PUCs) and Local Government Units (LGUs) and creating synergies between the Danube Learning Partnership (D-LeaP) and the Regional Capacity Development Network (RCDN)" for the International Association of Water Service Companies in the Danube Region (IAWD).

IAWD was established in 1993 by utilities from seven countries to promote collaborative efforts to protect water supply and quality in the Danube and its tributaries. Based in Vienna, Austria, IAWD is a not-for-profit organization that, since 2013, has partnered with the World Bank to run the Danube Water Program (DWP), supporting water utilities in the region.

The RCDN project aims to enhance the capabilities of Associations of Public Utilities (APUCs) and Local Government Units (ALGUs) in the Western Balkans. Financed by the Swiss and German governments, the project focuses on four outcomes: (1) *strengthening associations, (2) providing adequate capacity development, (3) facilitating policy dialogue, and (4) offering regional services to meet the needs of water utilities*.

The Danube Learning Partnership (D-LeaP) which was launched in 2017, is a regional, integrated and sustainable capacity building initiative of national water utility associations and IAWD and provides a comprehensive curriculum to the staff of water and wastewater utilities located in the Danube region. D-LeaP offers a set of capacity building programs that are developed at regional level and delivered at national level by water utility associations and local partners (the Hubs) in national language. Among those is the D-LeaP Asset Management program, which has been implemented by four national Hubs in the region (more information under chapter 3).

An online exchange in January 2023 with the asset management hubs revealed a need for IAWD's support in advocating for regulatory changes and securing funding from donors to continue and enhance these asset management programs.

This position paper provides a summary of findings from desk research that examines the regulatory landscape of asset management in the broader Danube region and the leading EU countries. It aims to enhance the participation of LGUs and PUCs in Asset Management initiatives and to garner support from stakeholders for AM capacity development.

It further provides guidance for national regulators on AM in the Western Balkan region, where utilities face significant challenges in providing sustainable water supply and sanitation services while adhering to EU regulations.

Finally, the position paper aims at fostering closer collaboration among governmental agencies, donors, LGUs, and PUCs to address AM challenges and opportunities effectively, calling in particular the regulators to engage in supporting LGUs and PUCs with AM capacity development.

RCDN Regional Capacity Development Network for Water and
german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER State Secretariat for Economic Affairs SECO

2. The importance of Asset Management

The water and sanitation sector are crucial for the sustainable development of the Western Balkan region. With rapid urbanization, climate change, and an increasing demand for water resources, effective asset management strategies are essential for maintaining public health, protecting the environment, and optimizing resource use. This position paper advocates for regulators in the Western Balkans to adopt legislation that mandates water utilities to establish comprehensive asset management procedures. By prioritizing AM, the region can enhance service reliability, improve water quality, promote sustainability, and ensure the efficient use of resources.

Challenges in the Western Balkan Region:

- **Aging Infrastructure:** Much of the water and sanitation infrastructure in the region is outdated and in poor condition, leading to inefficiencies and frequent failures.

- **Limited Financial Resources:** Utilities often lack the financial resources to invest in infrastructure upgrades and maintenance.
- **Weak Regulatory Frameworks:** Many countries in the region lack comprehensive regulations requiring utilities to implement asset management practices.
- **Capacity Gaps:** Utilities may lack the technical expertise and tools needed to develop and implement effective asset management plans.

Many water utilities are struggling to provide adequate services, leading to interruptions, health risks, and environmental degradation. Additionally, climate change is projected to exacerbate water scarcity and pollution, further stressing the existing systems. Comprehensive asset management offers a strategic solution to these challenges by ensuring that utilities can effectively plan, operate, and maintain their water assets.

Asset management in the context of water utilities involves the systematic process of maintaining, upgrading, and operating physical assets, such as pipes, treatment plants, and reservoirs, to deliver sustainable services.

Effective AM is characterized by:

- **Assessment and Inventory**: Understanding the current state of physical assets through

regular assessments, ensuring that decision-makers are informed about the condition, performance, and lifecycle of their infrastructure.

- **Stakeholder Engagement**: Involving relevant stakeholders, including government authorities, consumers, and civil society, in the decision-making process to enhance transparency and build trust.
- **Financial Sustainability**: Estimating the total cost of asset ownership, including maintenance and replacement costs, to ensure that utilities can finance their operations sustainably.
- **Risk Management**: Identifying and mitigating risks associated with asset failure, including service disruptions, health hazards, and environmental impacts.
- **Long-Term Planning**: Developing strategies for the investment, replacement, and rehabilitation of assets based on their operational performance and service needs.

The Benefits of Implementing Asset Management Procedures:

- **Improved Service Delivery**: By prioritizing asset management, utilities can reduce service interruptions, enhance water quality, and respond more effectively to consumer needs. Furthermore, utilities minimize service disruptions, such as pipe bursts or treatment plant failures, which can have severe public health and economic consequences.
- **Cost Efficiency:** Effective AM leads to better budgeting and investment decisions, helping utilities to optimize the lifecycle of assets, thereby saving costs in repairs, operations, and capital expenditures.
- **Sustainability**: AM supports the sustainable use of water resources, promoting approaches that minimize waste and reduce energy consumption. This is essential in the context of climate change and increasing water scarcity.
- **Regulatory Compliance**: As Western Balkan countries progress toward EU accession, compliance with the EU Water Framework Directive and other environmental regulations is essential. With structured asset management practices in place, utilities can more easily comply with national and EU regulations pertaining to water quality and environmental standards.

- **Resilience to Climate Change**: A proactive asset management approach equips utilities to better handle the impacts of climate change, ensuring infrastructure is resilient and adaptable to new challenges.
- **Reducing Non-Revenue Water (NRW):** High levels of NRW are a significant issue in the region, with losses often exceeding 50% due to leaks and inefficiencies. Asset management helps identify and address leaks, improving water efficiency and reducing financial losses.
- **Supporting Long-Term Planning:** Asset management provides a framework for long-term planning, ensuring that utilities can

RCDN Regional Capacity Development Network for Water and
german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

meet future demand and adapt to demographic and economic changes.

Asset management is crucial in the water and sanitation sector for optimizing investment value, ensuring efficient and sustainable system operations, and adhering to regulations. It facilitates informed decision-making, improving service delivery, public health, and risk management related to infrastructure and environmental issues. By implementing robust asset management strategies, utilities can address current demands and effectively prepare for future challenges in a world with growing resource limitations.

3. Technical Capacities in Western Balkan

National water utility and local government associations, along with regional organizations like IAWD and NALAS, play a vital role in supporting infrastructure projects in the water and sanitation sector throughout the Western Balkans. A central focus of these initiatives is the enhancement of asset management capabilities within water utilities and local governments. Regulators are also essential in shaping the framework that governs these improvements, ensuring effective implementation and sustainability.

These organizations not only facilitate the training of asset management professionals in water utilities and local governments, but they also collaborate closely with regulators to establish standards and guidelines that promote efficient asset management practices. By engaging with regulators, they help define parameters for accountability, transparency, and performance metrics, which are crucial for the long-term success of water utility operations.

This collaborative approach between donor agencies, local entities, and regulatory bodies ensures that asset management practices are not merely adopted but are also in alignment with national policies and international best practices, ultimately enhancing the effectiveness of water and sanitation services across the region.

3.1 International Association of Water Service Companies in the Danube Region– IAWD

In 2014, IAWD, supported by the Danube Water Program, launched a knowledge hub for Asset Management utilizing the expertise of Belgrade Water Works (BVK). Over 18 months, this initiative aided 17 water utilities in Bosnia and Herzegovina, Serbia, North Macedonia, and Montenegro in adopting effective Asset Management practices. It resulted in the creation of the Asset Management Service Centre, which analysed management reports from participating utilities to provide comprehensive insights into asset management.

Key accomplishments included developing a GIS-based asset register, disseminating methodologies, generating management reports, assessing utility performance, and supporting system audits.

The ongoing D-LeaP AM Program, initiated in 2017 and part of the broader Danube Learning Partnership, focuses on capacity building for water and wastewater utilities in the region. It trains utility staff, helps create tailored action plans, and was previously run together with GIZ from 2017 to 2022, with Hydro-Comp Enterprises as the technical partner.

Four D-LeaP AM Hubs have been established to provide expertise and assistance to participating utilities throughout the program: UTVSI – Association for Water Technology and Sanitary Engineering of Serbia (serving North Macedonia, Montenegro, and Serbia); AQUASAN – Aquasan Network in Bosnia and Herzegovina (for Bosnia and Herzegovina); SHUKALB – Water Supply and Sewerage Association of Albania (for Albania); and SHUKOS – Water and Wastewater Works Association of Kosovo (for Kosovo).

This program has delivered direct technical assistance, state-of-the-art software solutions, and extensive capacity building in Integrated Asset Management to water utilities across Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, and Serbia.

ASSOCIATION FOR WATER TECHNOLOGY AND SANITARY ENGINEERING

3.1.1 UTVSI D-LeaP AM Hub (2014 – ongoing)

Founded in 2014, the UTVSI D-LeaP AM Hub aims to improve asset management (AM) methodologies in Serbia and neighbouring countries, leveraging the expertise of the Belgrade Waterworks and Sewerage. The Hub's team comprises experienced hydro-technical and mechanical engineers with over 20 years of experience.

Key projects include:

- Establishing a regional AM Hub in Belgrade (2014-2015) with Austrian government support, implemented by IAWD.
- Providing business planning advisory services for water supply companies in Bosnia and Herzegovina, Montenegro, Serbia, and Albania (2015-2016), supported by GIZ and NALAS.
- Offering asset management advisory services to Southeast European water supply companies (2017-2022), backed by GIZ, HCE, IAWD, and the World Bank.
- Conducting Utility Management Training (UMT) online in 2021 and in person in 2023, supported by IAWD, the World Bank, and GWSP.
- Teaching AM practices in the Utility Governance Program (UGP) in 2025, funded by SECO and BMZ.
- Implementing a recent D-LeaP AM project in 2024 to optimize the water network for PUC Loznica by creating an asset management registry.

Over 11 years, the Hub has supported 51 public utility companies across four countries, benefiting over 2.7 million users and managing a 15,333 km network, with 12,266 km digitized. The Hub also conducted 35 training sessions, training 155 participants under the guidance of 7 trainers (6 male and 1 female).

ASSOCIATION „AQUASAN Network in B&H“

3.1.2 AQUASAN D-LeaP AM Hub (2017 – ongoing)

The Aquasan D-LeaP AM Hub, established in 2017, helps water utilities in Bosnia and Herzegovina integrate Asset Management methodologies. Over eight years, it has supported 19 public utility companies, serving around 500,000 users across 4,800 kilometres, with 80% of operations digitized.

The Hub has conducted 26 training sessions with 175 participants led by 11 trainers. In May 2024, it held a training in Sarajevo under the DWP Program on Integrated Asset Management, with 25 participants from 8 PUCs and 7 local government units, focusing on enhancing collaboration and improving management of communal water infrastructure.

SHUKALB
WATER SUPPLY AND SEWERAGE ASSOCIATION OF ALBANIA

3.1.3 SHUKALB D-LeaP AM Hub (2019 – ongoing)

SHUKALB has over 20 years of experience in asset management within Albania's water

sector, emphasizing strategic foundations and sustainable strategies. Since 2008, it has advanced practices through 11 training sessions and an asset management project that engaged 271 professionals nationwide. The inaugural training occurred in Tirana in 2008, with additional sessions conducted through 2020 to foster knowledge sharing.

From 2019 to 2022, SHUKALB, with support from GIZ-ORF, IAWD, and HCE, implemented the SEEAM project, involving 21 water utilities and benefiting over 2.7 million users. This project included 12 specialized training sessions for 91 staff members and utilized EDAMS software for practical digital asset management experience. The network now spans 5,165 km, with 85% digitized.

In 2024, SHUKALB collaborated with the National Water Regulatory Authority and IAWD to launch an Asset Management Program under the D-LeaP framework, featuring three interactive workshops for six water utilities and 12 utility staff.

SHUKOS
WATER AND WASTEWATER WORKS ASSOCIATION OF KOSOVA

3.1.4 SHUKOS D-LeaP AM Hub (2019 – ongoing)

In 2019, the SHUKOS D-LeaP AM Hub was established in Kosovo under the SEEAM project to enhance asset management for water supply companies using the EDAMS IAM system. Despite the project's end in 2022, seven Regional Water Companies extended contracts with Hydro-Comp Enterprises to continue using EDAMS. Challenges in adopting EDAMS for maintenance led SHUKOS, with D-LeaP support, to provide additional training and workshops. The hub has aided seven Regional Public Utility Companies, impacting over 1.7 million users and digitizing 60% of the 5,270 km network.

Throughout its operation, SHUKOS held 10 training sessions with 35 participants, led by 5 trained instructors.

NALAS

3.1.5 Network of Associations of Local Authorities of South-East Europe – NALAS

The NALAS Task Force on Solid Waste & Water Management has developed a robust training program for local governments in the Western Balkans, focusing on asset management (AM) methodology to improve water management efficiency and sustainability. This initiative equips local authorities with necessary skills to assess and maintain infrastructure, enhancing decision-making and service delivery, ultimately benefiting environmental and public health.

From 2013 to 2016, NALAS executed a GIZ-funded project that led to the creation of an e-Learning course, "Introduction to Asset Management in the Water Sector," offered annually since 2018 and updated in 2022, with plans for a 2025 session and an advanced version to follow. The course, targeting local government decision-makers and utility company personnel, includes six modules on key asset management topics. It is delivered online with interactive elements and is available in English, Serbian, Albanian, and Macedonian.

3.2 International outreach of AM projects/initiatives

The activities related to Asset Management projects and initiatives in the Western Balkans were showcased at various events centred on water and sanitation. The accomplishments of water utility associations and communal utilities in the Western Balkans in implementing asset management methodology in the last ten years elevate the region's standing on the international stage.

The achieved results were presented at the following international events:

- IWA Strategic Asset Management Specialist Group Leading Edge Strategic Asset Management (LESAM) conferences – 2014 in Lisbon, 2017 in Trondheim, 2019 in Vancouver, 2022 in Bordeaux, 2025 Cyprus
- IWA International Strategic Asset Management Forum – Belgrade 2021
- IWA International Conference on Rethinking Treatment with Asset Management back-to-back with 5th International Conference on Water Economics, Statistics and Finance – Porto 2021
- Danube Water Conference – Bucharest 2013, Vienna 2014, 2015, 2016, 2017, 2018, 2019, 2021, 2023, 2025
- Danube Water Forum – virtual 2020, Tirana 2022
- Benchmarking and Asset Management NEXUS Conference – Tirana 2022
- National conferences and forums
    - Water Forum – organized annually by UTVSI in Belgrade
    - Balkans Joint Conference – organized annually by SHUKALB and SHUKOS in Tirana/Prishtina
    - Aquasan Network Conference – organized annually by Aquasan in Sarajevo
    - Jahorina Conference – organized annually by UTVSI and Association of Water Companies of Republika Srpska)
    - ADKOM Conference – organized annually by ADKOM in Skopje/Ohrid
    - Montenegro Water Conference – organized annually by Association of Water and Sewerage Companies of Montenegro in Budva and Podgorica
- European Water Association (EWA) webinar on Water Utility Asset Management in Europe – online 2020
- UN-Habitat's Global Water Operators' Partnerships Alliance Global WOPs Congress, Asset Management Session – online 2021
- GIZ Community of Practice webinar – Integrated Asset Management in the water and wastewater sector – online 2022

4. Regulatory frameworks in Western Balkan

Public water supply and urban wastewater management are vital for health, safety, economic activity, and environmental protection. They should ensure universal access, service continuity, quality, efficiency, and fair pricing. Regulation aims to protect user interests by improving service quality and ensuring equitable access and sustainable practices. In the Western Balkans, regulatory frameworks for water and sanitation are shaped by national laws, regional agreements, EU directives, and local practices, each with unique regulations and institutional structures.

In Bosnia and Herzegovina and Serbia, there is currently no regulatory authority governing the water sector. In BiH, the water sector operates under a self-regulated public model, as there is no national regulatory agency or established national benchmarking system in place. Conversely, the Regulatory Agency for Energy in Serbia could serve as a potential framework for future regulatory developments in the water sector.

Below, is a comprehensive overview of regulatory frameworks for water resources and sanitation in the Western Balkans:

1. Legal and Institutional Frameworks:

- **National Legislation:** Each country in the Western Balkans has its own legal framework governing water resources, sanitation, and asset management. These laws dictate how water utilities operate, maintain infrastructure, and ensure service provision.
- **Institutional Structures**: Asset management responsibilities are typically divided among various governmental and local agencies, including ministries of environmental protection, public health, and regional governments. This fragmented structure can lead to overlaps and gaps in accountability and efficiency.
- **Decentralization vs. regionalization**: Both involve transferring power to local governments for better management of water and sanitation services. In Albania and Kosovo, regionalization allows neighbouring areas to collaborate on these services, while decentralization empowers local communities in decision-making. Both approaches aim to improve governance by making decisions closer to those affected, though they can highlight disparities in the capabilities of urban and rural local governments. Regionalization may enhance efficiency and resource sharing, while decentralization can empower communities but often necessitates support for effective management.

2. EU Integration and Compliance:

- **EU Accession Process**: The Western Balkan countries are pursuing EU membership, which necessitates compliance with EU regulations, particularly the Water Framework Directive and other related directives. These directives influence asset management practices, emphasizing sustainability, water quality, and service efficiency.
- **Harmonization Efforts**: Efforts are being made to align national regulations with EU standards, which includes institutional strengthening, capacity building, and financial investment in infrastructure to ensure that water and sanitation services meet EU norms.

RCDN Regional Capacity Development Network for Water and
german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

3. Asset Management Practices:

- **Standards and Guidelines**: Countries develop specific standards and guidelines for managing water and sanitation assets, often informed by international best practices. These documents guide the maintenance, operation, and monitoring of water supply and wastewater treatment facilities.
- **Performance Indicators**: Regulatory frameworks may incorporate performance indicators for utilities assessing their operational efficiency, service quality, and environmental performance. These indicators can drive improvements in asset management practices.

4. Financial Regulations:

- **Tariff Regulations**: Regulatory bodies often set guidelines on tariffs for water and sanitation services, balancing affordability for consumers with the financial sustainability of utilities. The establishment of cost-recovery mechanisms is critical for effective asset management.
- **Public Financing and Investment**: Regulations outline how funds are allocated for infrastructure development and maintenance. This includes public investment, international grants, and loans from development banks, requiring robust financial planning and management practices.

5. Public Participation and Transparency:

- **Stakeholder Involvement**: There has been a growing recognition of the importance of public engagement in the decision-making processes related to water and sanitation. Regulatory frameworks increasingly advocate for stakeholder involvement, including community participation in service planning and asset management decisions.
- **Transparency and Accountability**: Mechanisms are being developed to ensure transparency in operations, financial management, and service delivery, including requirements for public reporting on utility performance and financial status.

6. Challenges and Opportunities:

- **Capacity Building**: The effective implementation of asset management frameworks is often hindered by a lack of technical capacity, funding, and infrastructure investment. Regulatory reforms are needed to enhance the capabilities of local governments and utilities.
- **Funding**: Many utilities face financial constraints, affecting their ability to maintain and upgrade infrastructure adequately.
- **Regional Cooperation**: There is a need for enhanced regional cooperation to address shared water challenges, improve transboundary water management, and develop joint asset management strategies.
- **Implementation Gaps**: While regulatory frameworks exist, challenges remain in ensuring effective implementation and enforcement.
- **Climate Change Adaptation**: Regulatory responses to climate change impacts on water resources and sanitation systems are becoming increasingly important. This includes investing in resilient infrastructure and adaptive management practices.

The regulatory frameworks governing asset management in the water and sanitation sector in the Western Balkans are evolving amidst a backdrop of legal reforms, EU integration challenges, and the need for sustainable service delivery. Ongoing efforts to strengthen institutions, enhance public participation, and align with EU standards are critical in ensuring that these frameworks effectively support the

management and sustainability of water and sanitation assets. The engagement of all stakeholders, including government agencies, local communities, and international partners, will be essential in addressing the pressing challenges in this vital sector. Here's an overview of the existing frameworks across some key countries in the region:

Country	Legal Framework	Organisation of services and their responsibilities, and ownership of assets	Regulatory Body
Albania	The water sector is primarily governed by the Law on Water Supply and Sewerage. No specific legal framework or regulation governing AM.	Regional Water Utilities operate as Joint Stock Companies, with 51% of their shares held by the Ministry of Infrastructure and Energy. The remaining 49% is owned by local municipalities, with the share distribution proportional to the number of customers served by each municipality.	The Water Regulatory Authority of Albania (ERRU) is responsible for regulating water services, including tariff setting and service quality. Regulator formally sets tariffs, reporting, by law, directly to the Parliament of the Republic of Albania.
Bosnia and Herzegovina	Law on Principles of Local Self-Government, Law on Water, Law on Communal Affairs, Law on Accounting and Auditing, Other supporting laws and regulations. Ongoing development of Law on Water Services in Federation BiH and Republic of Srpska.	Water services are in direct jurisdiction of LGUs, including AM of communal water infrastructure. Each entity has its own regulatory body that oversees water supply and sanitation services, with a focus on local management of assets. Utilities set tariffs in consultation with local authorities.	BiH doesn't have regulatory body (Regulator). The water sector in BiH is regulated through a public self-regulated model, since neither a national regulation agency nor an official national benchmarking system has been implemented.
Kosovo	The Law for Regulation of Water Services in Kosovo is the principal document governing water resources, including asset management within the sector.	The AM Plan is regarded as the most vital plan that utilities need to implement. This plan forms the basis for developing additional strategies and guiding infrastructure investment decisions.	The Kosovo Water and Wastewater Regulatory Authority (WSRA) oversees the planning, management, and regulation of water and wastewater services.

North Macedonia	The Law on Waters establishes the regulatory framework, with an emphasis on public health and environmental protection.	Local public enterprises manage water supply and sanitation, guided by national regulations.	The State Water Economy Inspectorate monitors compliance with water-related laws, while the Energy and Water Services Regulatory Commission (ERC) manages tariffs and license issuance.
Montenegro	The Law on Communal Services provides a regulatory framework for water and wastewater management.	The government has a decentralized approach, with municipalities responsible for the operation and maintenance of water services.	The Agency for Water and Wastewater Services (REGAGEN) regulates the sector, ensuring compliance with national and EU standards.
Serbia	The Law on Public Property identifies three categories of public property: Public property of the Republic of Serbia (RS), Public property of LSGs, Public property of autonomous provinces.	Local governments manage water utilities, following regulations set by the national government. The entity that holds ownership of fixed assets is also the holder of the property rights. In the case of local public enterprises, ownership is with the LSGs.	Serbia doesn't have regulatory body (Regulator). The Regulatory Agency for Energy serves as a model for potential future regulatory structures in the water sector.

Table 1 – Overview of the existing frameworks across Western Balkan countries

Municipalities play a vital role in planning and developing water and sewage services, focusing on service expansion and quality improvement. They create strategic and spatial plans to set management priorities for the sector and have designated departments (or appointed person from larger department) and inspectors for effective oversight. While municipalities determine water and sewage tariffs based on proposals from Public Utility Companies (PUCs), these rates often do not cover full operational costs.

In Kosovo and Albania, regional PUCs are government-managed, differing from typical municipal governance. PUCs are responsible for providing reliable water and sewage services, ensuring water quality, maintaining infrastructure, and minimizing water losses while following established service standards.

5. Call to Action: Recommendations for Regulators

Empower, Elevate, Ensure!

EMPOWER!

ELEVATE!

ENSURE!

Empower, Elevate, Ensure! – powerful appeal to enhance water and sanitation services in the Western Balkans, a region that has long faced significant challenges in these vital sectors. Let's delve into the key elements of this phrase for a deeper understanding:

- **Empower:** focuses on providing stakeholders – including local governments, municipalities, communities, utilities and individuals – with the skills, resources, and authority needed to manage their water and sanitation systems effectively.
- **Elevate:** This suggests raising the standards and practices in water and sanitation management to improve service delivery. It could involve adopting best practices, utilizing innovative technologies, and implementing sustainable practices to ensure that water and sanitation services meet the needs of all communities.
- **Ensure:** This focuses on guaranteeing that water and sanitation systems are reliable, sustainable, and equitable. It emphasizes the need for robust regulatory frameworks, monitoring mechanisms, and accountability measures to ensure that these essential services are consistently available and safe for all citizens.

This appeal acts as an urgent call to policymakers, regulators, and stakeholders in the Western Balkans to take proactive steps towards enhancing the management of water and sanitation assets, thereby improving public health, environmental sustainability, and economic development in the region.

The experience from advanced EU countries in regulating water and sanitation services provides valuable guidance. Two best practice examples are those of the Water and Waste Services Regulation Authority (ERSAR) in Portugal and the Hungarian Energy and Public Utility Regulatory Authority (MEKH).

ERSAR
ENTIDADE REGULADORA
DOS SERVIÇOS DE ÁGUAS E RESÍDUOS
THE WATER AND WASTE SERVICES REGULATION AUTHORITY

The Water and Waste Services Regulation Authority (ERSAR) in Portugal includes several

key performance indicators (KPIs) for asset management:

- **Infrastructure Knowledge Index**: Measures the understanding of existing water supply infrastructures, scored on a scale 0-200 points based on specific questions.
- **Infrastructure Asset Management Index**: Assesses the overall management framework for infrastructure assets, including documentation, strategic, tactical, and operational planning, also scored from 0 to 200 points.
- **Safety, Security, and Resilience Index**: Evaluates essential safety, security, and resilience components, covering governance, risk management, communication, and emergency plans, with scores ranging from 0 to 200 points.
- **Index of knowledge of physical assets and collection optimisation**: Assesses the modernization and understanding of facilities and infrastructures related to urban waste management in the designated area.
- **Asset Management Certification**: Certification related to the water supply activity according to ISO 55000 or similar standards.

The Hungarian Energy and Public Utility Regulatory Authority (MEKH) focuses on three main areas: rolling development plans, a geographical information system, and non-revenue water (NRW) management.

MEKH
Hungarian Energy and Public Utility Regulatory Authority

- **Rolling Development Plans** (RDPs): MEKH plays a key role in the approval of RDPs in the drinking water and wastewater sectors. These plans aim to ensure the preservation and development of water utility assets for maintaining water supply security and efficient service delivery. The approval process allows long-term planning (over 10 years) for necessary asset replacements, ensuring compliance with legal and economic standards. RDP data offers national oversight of the water utility sector, supporting various policies and grant systems.
- **Geographical Information System**: MEKH maintains a geographical registry that maps the locations of technical installations and their capacities. This includes administrative boundaries, major water sources, and details about the municipalities served. The maps are updated biannually to reflect any changes in water service providers, facilitating clear identification of the infrastructure supporting water supply and wastewater treatment.
- **Non-Revenue Water (NRW) Management**: MEKH uses performance indicators related to NRW to monitor water loss through billing discrepancies. The authority aims to reduce water loss compared to previous years. If the NRW indicator worsens, the costs associated with water loss may not be recognized as justified in tariff settings, encouraging improvements in efficiency.

To address the challenges and unlock the benefits of asset management, regulators in the Western Balkan region should adopt regulations that require water utilities to establish and implement proper asset management procedures. To harness the benefits of asset management, regulators in the Western Balkan region must take decisive action:

- ***Enact Legislation Frameworks:*** Develop and adopt regulations that require water utilities to implement structured asset

management frameworks, ensuring systematic and standardized practice across the sector.

- **Mandate Asset Management Plans:** Require utilities to develop and maintain comprehensive asset management plans that include inventory, condition assessment, risk management, and long-term investment strategies.
- **Support Financial Sustainability:** Implementing financial mechanisms – such as tariffs, subsidies, or public-private partnerships – that support the long-term maintenance and expansion of these services.
- **Set Clear Standards and Guidelines:** Develop and disseminate standards and guidelines for AM, aligned with international best practices and EU regulations.
- **Digitalization and application of information technologies:** Integrate capital assets with AM, water network management, financial management and planning.
- **Promote Data-Driven Decision-Making:** Encourage utilities to adopt modern data management systems. Require utilities to collect and maintain accurate data on asset condition, performance, and costs to support informed decision-making.
- **Provide Guidance and Support for Capacity Building**: Equip utilities with resources, tools, and training to develop effective AM systems that align with best practices. Offering training for personnel involved in water and sanitation management to ensure they possess the necessary skills for efficient system operation and maintenance. Leverage existing capacity building initiatives, such as the D-LeaP program by IAWD, funded by the Danube Water Program.
- **Ensure Economic Resources:** Advocating for funding, grants, and investments aimed at improving infrastructure and technology in water supply and sanitation services.
- **Incentivize Investment:** Create incentives for utilities to invest in AM, such as linking regulatory approvals or tariff adjustments to the implementation of AM plans. The incentives will be aimed for utilities that demonstrate exceptional asset management, including access to financing, grants, or other rewards.
- **Monitor and Enforce Compliance:** Developing systems to assess the performance of water and sanitation assets, ensuring accountability, transparency, and enabling data-driven decision-making. Create a regulatory framework to assess compliance with asset management requirements, establish performance indicators to measure success and enforce penalties for non-compliance.
- **Foster Stakeholder Collaboration:** Encourage collaboration between utilities, regulators, and other stakeholders to share knowledge and resources for effective asset management. Actively involving local communities in decision-making processes, giving them a platform to express their needs and concerns, which helps create a sense of ownership over water resources.

Despite the absence of a formal regulatory body in Serbia and BiH for managing water utilities, the central government retains authority to mandate certain practices, such as AM, within these utilities. It implies that the government possesses the power to impose regulations and ensure compliance, even in the absence of a dedicated oversight agency.

Effective asset management is essential for ensuring the sustainability, efficiency, and resilience of water and sanitation services in the WB region. By adopting regulations that require utilities to establish proper asset management procedures, regulators can address critical challenges, optimize financial resources, and improve service delivery for citizens.

We strongly encourage regulators in the WB nations to prioritize the creation and execution of asset management frameworks. This will ensure that the region's water and sanitation sector is adequately prepared to handle both current and future demands, drawing on the extensive knowledge and expertise that IAWD has accumulated over the past decade.

6. Stakeholder Map

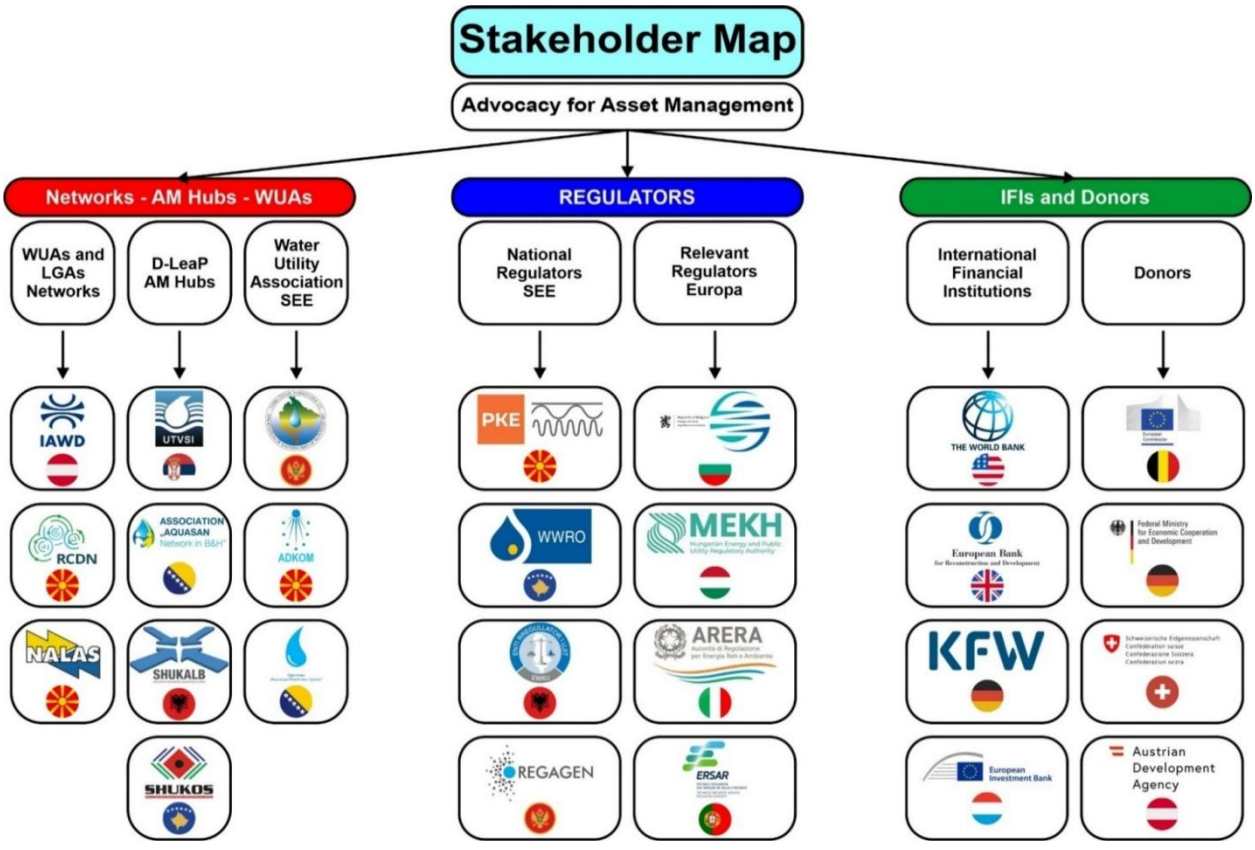

Figure 1 – Stakeholder Map

References

1. Azevedo de, C. (2019). *Asset Management Insights*. South Norwalk, CT, USA; Industrial Press INC.
2. International Association of Water Service Companies in the Danube River Catchment Area – IAWD website, available on https://www.iawd.at/ (viewed on 07th of February 2025)
3. IAWD website on D-LeaP AM program, available on https://www.iawd.at/eng/danube-toolbox/d-leap/programs/asset-management/ (viewed on 07th of February 2025)
4. IAWD website on DWP AM Program, available on https://www.iawd.at/dwp/program-activities/capacity-development/development-of-d-leap/asset-management/ (viewed on 07th of February 2025)
5. IAWD website on Utility Management Training Program – UMT, available on https://www.iawd.at/eng/danube-toolbox/d-leap/programs/utility-management-training/ (viewed on 07th of February 2025)
6. Danube Water Program – DWP website, available on https://www.iawd.at/eng/about/dwp/ (viewed on 07th of February 2025)
7. Danube Learning Partnership – D-LeaP website, available on https://www.iawd.at/d-leap (viewed on 07th of February 2025)
8. Swiss State Secretariat for Economic Affairs – SECO website, available on https://www.seco.admin.ch/seco/de/home.html (viewed on 11th of February 2025)
9. Federal Ministry of Economic Cooperation and development – BMZ website, available on https://www.bmz.de/de (viewed on 12th of February 2025)
10. Regional Capacity Development Network – RCDN website, available on https://rcdnsee.net/integrated-asset-management/ (viewed on 04th of February 2025)
11. German Agency for International Cooperation – GIZ website, available on https://www.giz.de/de/html/index.html (viewed on 05th of February 2025)
12. Hydro-Comp Enterprises Ltd. website on Asset Management Advisory Services to Water Utilities in South-Eastern Europe – SEEAM program, available on https://hydro-comp.com/seeam/ (viewed on 12th of February 2025)
13. Hydro-Comp Enterprises Ltd. website on Engineering Design and Management Systems software, available on https://hydro-comp.com/edams/ (viewed on 12th of February 2025)
14. Association for Water Technology and Sanitary Engineering of Serbia – UTVSI website, available on https://utvsi.com/en/work-programme-utvsi/ (viewed on 12th of February 2025)
15. Aquasan Network in Bosnia and Herzegovina website, available on https://aquasanbih.ba/sadrzaj/upravljanje-imovinom/16 (viewed on 12th of February 2025)
16. Water Supply and Sewerage Association of Albania – SHUKALB website, http://www.shukalb.al/ (viewed on 12th of February 2025)
17. Water and Wastewater Works Association of Kosovo – SHUKOS website, available on https://shukos.org/?lang=en (viewed on 12th of February 2025)
18. Belgrade Waterworks and Sewerage – BWK, available on https://www.bvk.rs/en/home/ (viewed on 12th of February 2025)
19. World Bank – WB website, available on https://www.worldbank.org/en/programs/global-water-security-sanitation-partnership (viewed on 12th of February 2025)
20. Vodovod i kanalizacija Loznica website, available on https://www.vikloznica.rs/ (viewed on 12th of February 2025)
21. Network of Associations of Local Authorities of South-East Europe – NALAS website, available on

https://www.nalas.eu/nalas-taskforces/ (viewed on 14th of February 2025)

22. NALAS website on AM e-learning course, available on http://nalas-academy.com/course/view.php?id=17 (viewed on 14th of February 2025)

23. World Bank – WB website, available on https://www.worldbank.org/ext/en/home (viewed on 18th of February 2025)

24. European Investment Bank – EIB website, available on https://www.eib.org/en/ (viewed on 17th of February 2025)

25. Kreditanstalt für Wiederaufbau – KfW website, available on https://www.kfw-entwicklungsbank.de/International-financing/KfW-Entwicklungsbank/ (viewed on 17th of February 2025)

26. European Bank for Reconstruction and Development – EBRD website, available on https://www.ebrd.com/where-we-are.html (viewed on 18th of February 2025)

27. Western Balkans Investment Framework – WBIF website, available on https://www.wbif.eu/ (viewed on 18th of February 2025)

28. European Union Enlargement and Eastern Neighbourhood website, available on https://enlargement.ec.europa.eu/enlargement-policy/overview-instrument-pre-accession-assistance_en (viewed on 18th of February 2025)

29. Swiss Agency for Development and Cooperation – SDC website, available on https://www.fdfa.admin.ch/sdc (viewed on 18th of February 2025)

30. Assetman post on LinkedIn, available on https://www.linkedin.com/posts/assetsman_opex-capex-assetmanagement-activity-7271842802659950593-zQxb?utm_source=share&utm_medium=member_desktop&rcm=ACoAAACwjxgB5gktZI3oa_kcY_ENdKCekjjV-6w (viewed on 20th of February 2025)

31. SHUKALB position paper on Asset Management, available on https://shukalb.al/wp-content/uploads/2021/04/Position-Paper_AssetManagement.pdf (viewed on 05th of February 2025)

32. Aquasan position paper on Asset Management, available on https://aquasanbih.ba/en/files/media/pdf/62b563efc171c7.01942127_Position%20paper_Asset%20management.pdf (viewed on 05th of February 2025)

33. The art of the possible: smart management of assets in the water sector on EBRD website, available on https://www.ebrd.com/documents/municipal-infrastructure/art-of-the-possible.pdf (viewed on 06th of February 2025)

34. Water – Detailed Asset Management plan on Central Elgin website, available on https://www.centralelgin.org/Asset-Management/Water-Detailed-Asset-Management-Report-2021-(1).pdf (viewed on 14th of February 2025)

35. Asset Management: A Handbook for Small Water Systems on United States Environmental Protection Agency website, available on https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100R8O8.TXT (viewed on 14th of February 2025)

36. Water Asset management plan on Invercargil website, available on https://www.icc.govt.nz/wp-content/uploads/2021/07/Water-Asset-Management-Plan-2020-Draft-Version-2.pdf (viewed on 14th of February 2025)

37. Energy and Water Regulatory Agency of Montenegro – REGAGEN website, available on https://regagen.co.me/planovi-i-izvjestaji/ (viewed on 27th of January 2025)

38. Energy and Water Regulatory Agency of Montenegro – REGAGEN website, available on https://regagen.co.me/komunalne-djelatnosti/benchmarking-komunalne-djelatnosti/izvjestaji/ (viewed on 27th of January 2025)

39. Guide for assessment of the quality of water and waste services provided to users (31.01.2023) – ERSAR TECHNICAL GUIDES

40. Email exchange with Ms. Hajrije Morina, Director of Water Services Regulatory Authority (WSRA) of Kosovo (January 2025)

41. Email exchange with Energy and Water Regulatory Agency of Montenegro – REGAGEN (January 2025)

42. Email exchange with Mr. Dávid Horváth, International Public Utilities Coordinator, Department of International Relations, Hungarian Energy and Public Utility Regulatory Authority – MEKH (January 2025)

43. Email exchange with Mr. Diogo Faria de Oliveira, President of Water and Waste Services Regulation Authority Portugal – ERSAR Advisory Council (January 2025)

RCDN Regional Capacity Development Network for Water and
german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO