SHUKALB
WATER SUPPLY AND SEWERAGE ASSOCIATION OF ALBANIA

TRAINING NEEDS ASSESSMENT SURVEY REPORT FOR WATER SUPPLY AND SEWERAGE COMPANIES IN ALBANIA

March, 2024

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This Training Needs Assessment Survey Report was prepared by Jonida Ahmeti, Training and Professional Development Manager in the context of assessing Water Supply and Sewerage (WSS) Companies Capacity Development Needs for 2024. For any additional information, feel free to contact us in the below contact details:

Water Supply and Sewerage Association of Albania
Rruga "Pjeter Bogdani", 39/1, K 5, 3, Njësia Bashkiake Nr. 5,
Kodi Postar 1019, Tiranë, Shqipëri
Tel: (+355/4) 2245 101
Mob: (+355) 69 70 66 222
E-mail: jonida.ahmeti@shukalb.al
Web: www.shukalb.al

1 INTRODUCTION

The Water Supply and Sewerage Association of Albania (SHUKALB), founded in 2000, envisions being a recognized leader in advancing quality performance and sustainability within the water sector. Guided by its clear mission statement - "Serve as a leading resource for knowledge, professional development, and networking" - SHUKALB is committed to enhancing and promoting capacity development, as well as delivering performance improvement products and services that contribute to the measured performance of utilities. This objective is in accordance with the Albanian Government's Strategy for the Water Supply and Sewerage Services Sector (2023-2030). The strategy, under policy goal number 5, emphasizes the development of capacities within the Water Supply and Sewerage (WSS) sector workforce and the effective administration of services. This is to be achieved through a series of priority measures/results, including the development of national planning mechanisms for capacity development across all sector actors at all levels. Other key measures involve securing funds for capacity development through budgeting, implementing the National Training and Certification Program along with provisions for continuous education, establishing effective regional organizational structures, and formulating a plan for the digital transformation of water supply and sewerage services.

In this context, SHUKALB's annual practice is to conduct an in-depth assessment and planning exercise at the onset of each year. In preparation for the year 2024, SHUKALB conducted a Training Needs Assessment (TNA) survey. The survey aimed to pinpoint specific knowledge and skills gaps, as perceived by water supply and sewerage (WSS) companies' management, and identify the necessary training needed.

The questionnaire was structured, comprising nine sections to address various aspects of training needs and capacity development:

General Information: This section gathered key details about WSS companies, including company name, contact person, current position, total permanent staff, and number of staff as per the key functional areas.

Evaluation of Past Training Programs: This section assessed the effectiveness and impact of past training and capacity development programs organized by SHUKALB.

Workforce Challenges and Knowledge Gaps: This section analysed the age distribution, challenges related to an aging workforce, specific development needs by departments/roles, and leadership development needs.

Prioritized Training Topics for 2024: This section evaluated the interest level in different training topics divided into 4 categories such as, Management, Water Supply and Water Treatment, Sewerage and Wastewater Treatment, and Interdisciplinary fields.

Prioritized Regional Capacity Development Programs: This section gauged the interest of utilities in regional CD programs aimed at developing specific capacities.

Preferred Formats, Methodologies, and Durations: This section explored the preferences for various training formats, methodologies, and durations, as well as potential areas for exchange and cooperation between WSS companies.

Community of Practice Engagement Approaches: This section assessed the willingness to engage in Communities of Practice/Working Groups and evaluating the perceived benefits and availability of staff for participation.

Utility Capacity to Pay: This section evaluated the capacity of utilities to afford fees for participation in trainings and capacity development programs.

Additional Comments: This section provided space for utilities to share any additional comments or insights related to training needs, policy changes, regulatory compliance, long term development needs and suggestions for improvements.

This questionnaire aimed at exploring the current state of capacity development needs within the water supply and sewerage sector, enabling SHUKALB to tailor its programs effectively. The subsequent sections of the report will delve into the findings and insights derived from the TNA survey, setting the stage for informed decision-making and targeted capacity development measures in 2024.

2 METHODOLOGY

The TNA Survey, a yearly initiative by SHUKALB, was prepared to assess the diverse training needs of Water Supply and Sewerage (WSS) companies in Albania. The aim was to inform the planning of comprehensive capacity development (CD) activities for the upcoming year, in this instance, 2024. The questionnaire incorporated both closed-ended and open-ended questions. Closed-ended questions provide quantitative data, offering a quicker and easier response format, facilitating quantitative analysis. Simultaneously, open-ended questions encourage participants to provide qualitative insights, allowing them the freedom to share comments beyond the structured queries outlined in the questionnaire (refer to Appendix-1).

The survey distributed to all 17 WSS companies in Albania on January 24, 2024, via email, sought input from key senior managers in the utility, such as Administrators/Deputy Administrators, Commercial Directors, Technical Directors, or Directors of Support Functions/HR. Each company was required to complete only one questionnaire which integrated the organizational training needs. The deadline for feedback collection was initially set for February 2, 2024, with an extension granted until February 21, 2024. A total of 12 regional WSS companies participated, and their completed questionnaires formed the data base for subsequent analysis.

The outcomes of the TNA survey were subject to validation in a collaborative meeting held on February 23, 2024, involving representatives from various stakeholder groups. Participants included representatives from Water Regulatory Authority (ERRU), WSS Companies, Local Government Unit (LGU) Association, Trainers, and Donors/International Financial Institutions (IFI). This inclusive approach ensured a holistic understanding of training needs within the WSS sector.

The current report compiles the findings from the survey as well as the feedback from the validation process. Based on these results, the CD Programs Calendar for the year 2024 will be compiled subsequently. This calendar will serve as a guide for designing and delivering targeted CD programs, aligned with the identified needs of the water sector stakeholders. Moreover, these results will provide SHUKALB with a solid foundation for developing new capacity development (CD) programs and integrating the key pressing challenges and issues into advocacy and dialogue initiatives.

3 DATA ANALYSIS

The total number of the utilities, which returned the questionnaires back to the Association, was 12 out of 17 Water Supply and Sewerage Companies. Given the small number of questionnaire responses, the data were analysed using Microsoft Excel. The subsequent sections of data analysis will reflect the main findings. Some section data were further analysed, in response to the feedback received from the stakeholder meeting.

3.1 GENERAL INFORMATION OF THE UTILITY

The respondents provided general information about their utilities, including the company name, contact person, current position, total permanent staff, and the number of staff in key functional areas.

3.1.1 Respondent Utilities

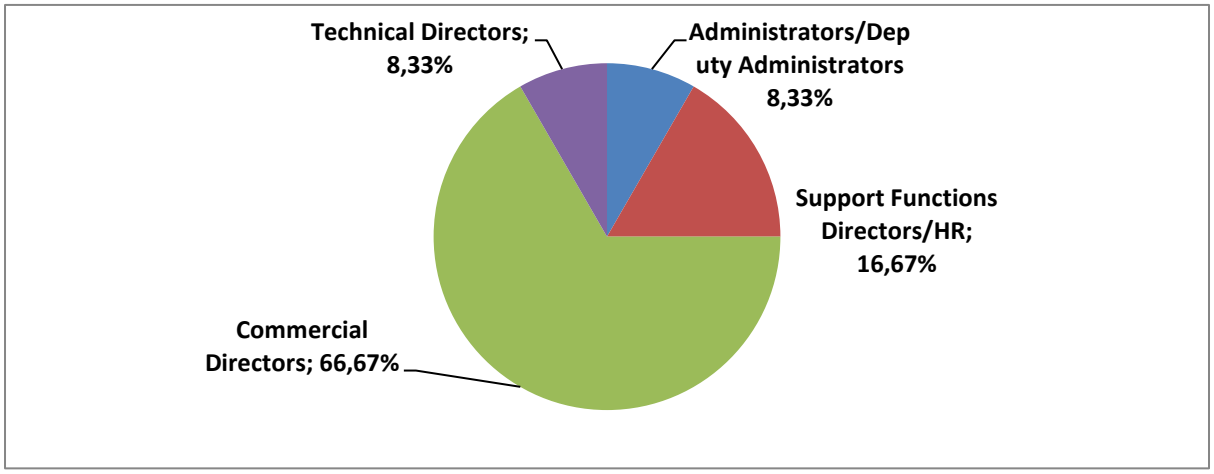
The utilities which filled out the online questionnaire were the following:

Regional WSS Company of Berat
Regional WSS Company of Dibër
Regional WSS Company of Elbasan
Regional WSS Company of Fier
Regional WSS Company of Gjirokastër
Regional WSS Company of Korça
Regional WSS Company of Kukës
Regional WSS Company of Lezhë
Regional WSS Company of Lushnjë
Regional WSS Company of Saranda
Regional WSS Company of Shkodër

3.1.2 Positions Completing the Questionnaire

The majority of respondents who completed the questionnaire held commercial manager positions (66.67%), followed by support functions directors (16.67%), and administrators/deputy administrators and technical directors represented a smaller percentage (8.33%), as shown in the graph below.

Figure 1 - Pie Chart of Positions

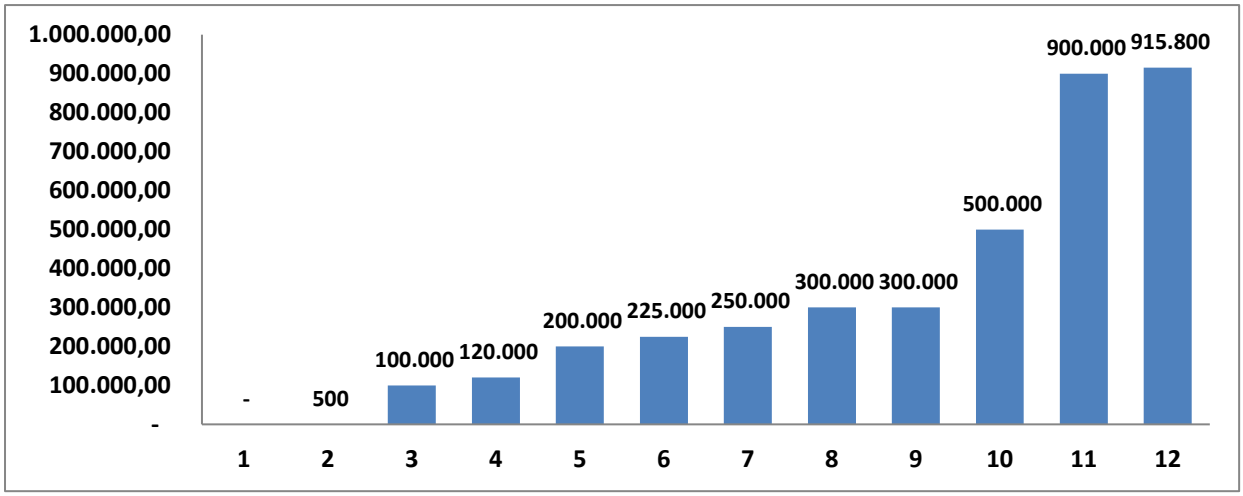


3.1.3 Allocated Budget for Training Programs

The financial values indicate the allocated budgets, or financial capacities of the respective regional WSS companies. The regional utilities vary significantly in financial terms, with some utilities having the highest reported figure and others very low to no available financial information at all. The majority of responding regional utilities have allocated financial resources for CD programs in 2024, with planned budgets ranging from 100,000 ALL to 900,000 ALL. The predominant budgetary range among respondent utilities (25%) lies between 200,000 and 300,000 ALL. Additionally, 17% allocate budgets of 100,000 ALL, and another 17% allocate budgets of 900,000 ALL. For utilities reporting budgets within the range of 100,000 ALL to 120,000 ALL, there is a possibility that the reported figures might not encompass the entire budget allocated for trainings, but rather consider the procurement threshold.

An approximate analysis was conducted to determine the proportion of the training budget relative to the utility salary budget. The majority of utilities allocate around 1% to 2% for training compared to the salary budget, while a small number allocate 4% to 5%. Although this corresponds with the recommended 1% threshold outlined in the WSS National Strategy for 2024, there is a concern that the allocated financial resources may fall short in adequately supporting personnel training across all organizational levels.

Figure 2 - Bar Chart for Training Budget Allocated by Utilities



3.1.4 Utility Staffing by Functional Area

Data analysis showed that the total workforce across these regional utilities amounts to 4,550 employees. However, the distribution of staff by functional areas, excluding field workers and subcontracted security staff, resulted in 3,462 reported employees. The breakdown reveals that 56% of the total staff is concentrated in the Technical Department responsible for Water Supply Operations, with the Commercial Department employing 21% of the workforce. The Technical Department related to Wastewater Collection and Treatment Operations, along with managerial staff, account for 9% of the total workforce, while administrative services constitute 6%.

The distribution across various departments within the Water Supply and Sewerage Companies indicates a significant focus on planning, operating, and maintaining water supply infrastructure to ensure reliable services. There is also a clear emphasis on financial management, customer relations, and overall business development within the regional utilities. However, the distribution of employees involved in planning, operating, and maintaining wastewater infrastructure shows an imbalance compared to the water supply.

Further inquiry is necessary in this context, as the field workers are not included in the distribution analysis. Consequently, the number of employees for water supply and wastewater systems may appear in different proportions. Additionally, an investigation into the number of employees per the number of connections (4/1000), could have provided a better understanding of overstaffing or staff efficiency indicator.

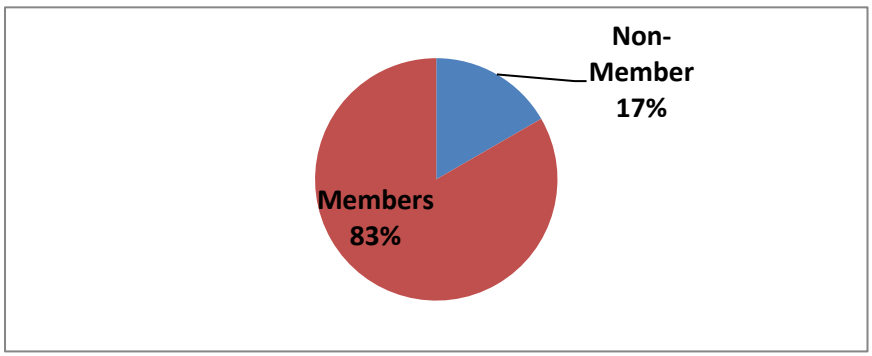
Table 1 - Utility Staffing by Functional Area shows the breakdown in numbers and percentages for all staff across 5 functional areas of a typical utility.

Managerial staff	**Commercial and Financial Department Employees**	**Technical Department- Water Supply Employees**	**Support Services Department Employees**	**Technical Department- Wastewater Collection and Treatment Employees**
303	724	1.929	198	308
9%	**21%**	**56%**	**6%**	**9%**
Total Permanent Staff reported as distributed per departments (including office and administration, excluding the field workers).		**3.462 employees**		
Total Permanent Staff reported for respondent WSS Companies		**4.550 employees**		

3.1.5 Membership in SHUKALB

Moreover, the analysis of the questionnaires regarding membership in the Association shows that 83% are members of the Water Supply and Sewerage Association of Albania, and while 17% are not members.

Figure 3 - Pie Chart of Association Membership



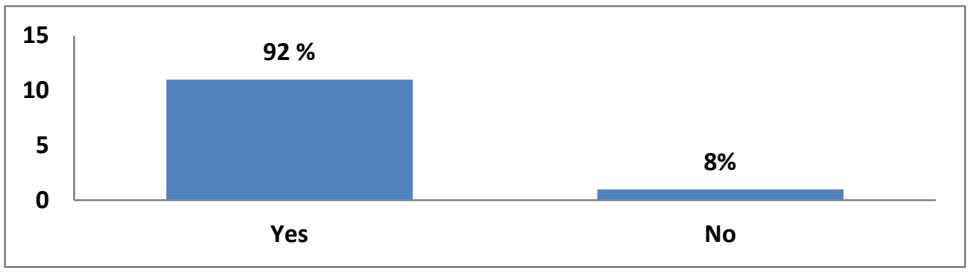
3.2 EVALUATION OF PAST TRAINING PROGRAMS

The second section aimed at evaluating the efficiency and impact of past training and capacity development programs delivered by SHUKALB. This section contained three questions.

3.2.1 Participation in Previous Training Programs

The first question asked about the Company participation on previous training or CD programs organized by SHUKALB. The majority of the respondent regional utilities have been part of SHUKALB CD programs (92%).

Figure 4 – Participation in Previous Training and CD Programs



3.2.2 Effectiveness and Impact of Trainings

The second question asked for feedback on the effectiveness and impact of the capacity development (CD) programs in the Utility. Since the question was open-ended, some of the comments received were as follows:

Positive impact on the growth of professional skills.
Very effective.
The trainings have been effective and positively impacted the performance of the trained employees.
Very valuable in the exchange of experience between utilities.
Efficient and helpful.
Very efficient.
Very good, influencing the improvement of the company's performance.
Such trainings are very valuable for the regional utilities.
Participation with full effectiveness.
The trainings have been productive for the company.
The trainings are effective, but new topics should be introduced.

While the overall feedback indicates a positive perception of the effectiveness and impact of the capacity development (CD) programs within the utility, it is observed that the feedback provided is general in nature and lacks specific documentation of the impact at the utility level.

3.2.3 Evaluation of the Impact of Training Programs

The third question inquired about how the utilities were measuring the impact of training programs on employee and company performance, and specific key performance indicators (KPIs) or success metrics they would like to see addressed in the evaluation of training outcomes. The comments received were:

The increase in performance as a result of training is significant.
Positive.
Water Losses.

Are effective in improving performance criteria.
We have no key KPI indicators.
Very good, trainings have influenced the improvement of the company's performance.
The trainings have reached their goal.
We value the trainings with a high impact on the performance of the employees.
Concrete application in utility of the lessons learned.

Once again, the feedback received is general in nature, lacking specifics on the measurement methods employed, and does not offer additional suggestions for evaluating the outcomes. On the other hand, all capacity development (CD) programs offered by SHUKALB are accurately designed with clear learning outcomes at both individual and organizational levels, aligned with key performance indicators (KPIs). There is a need for SHUKALB to establish closer collaboration with utility internal management structures and their supervisory council members to ensure the impact of trainings is documented and improvements are related to the overall KPIs or success metrics.

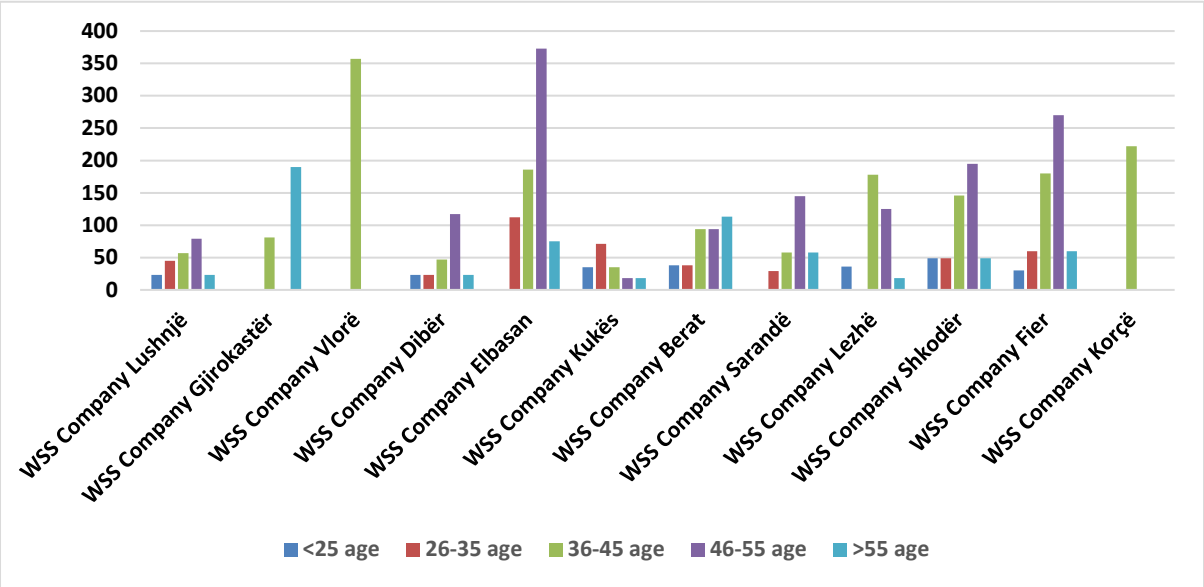
3.3 WORKFORCE CHALLENGES AND KNOWLEDGE GAPS

The third section aimed at assessing different workforce challenges such as age and specific knowledge and skills gaps in organization from top to bottom. This section contained three questions.

3.3.1 Workforce Age Composition

The first question inquired about the workforce age distribution within the utility, expressed as a percentage across different age groups, ranging from the youngest water professionals (YWP) to near-retirement personnel. The analysis of age distribution across different utilities highlights a substantial concentration of the 46-55 age group in Elbasan, Fier, Shkodër, Dibër, and Sarandë. This concentration indicates a mature workforce in these regions, emphasising the necessity for targeted strategies to address potential gaps in the Young Water Professional (YWP) pipeline. Similarly, Vlorë, Korçë, Lezhë, and Elbasan also demonstrate a concentration in the 36-45 age group, suggesting a mature workforce. Meanwhile, Berat and Gjirokastër report an age group predominantly above 55, indicating a workforce close to retirement.

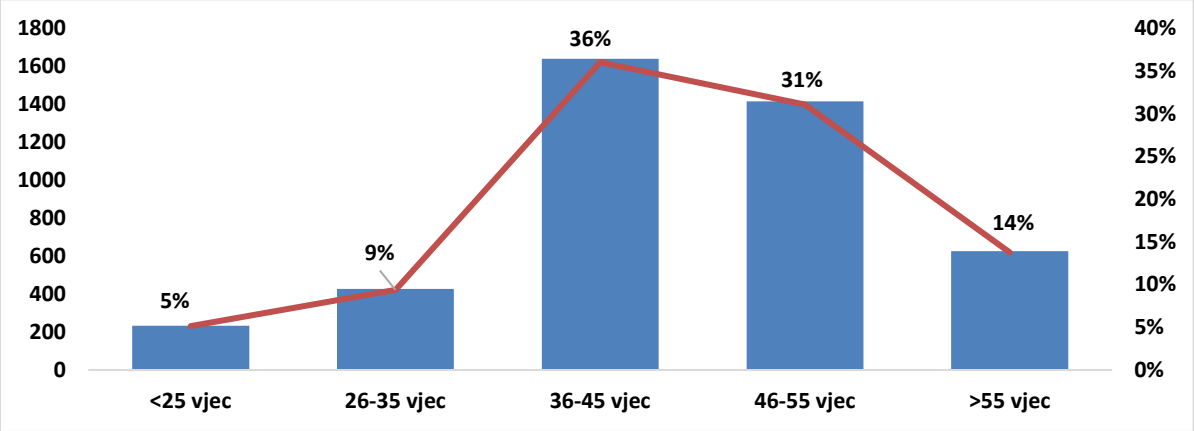
Figure 5 - Bar Chart of Distribution by Age Groups across Utilities



The responses provided by utilities presented discrepancies, with some indicating figures below or above 100% of the total workforce. Consequently, an approximate analysis was conducted. The graph illustrates that certain utilities did not report on all age groups, highlighting the necessity for further investigation into the accuracy and completeness of age-related data.

A ballpark analysis on the overall workforce's age composition highlighted the concentration of employees in the age group of 36-45 years, followed by those in the age group of 46-55 years. The smaller percentages in the age groups of <25 years and >55 years suggest a relatively smaller representation of younger and older individuals in the workforce.

Figure 6 - Bar Chart of Age Distribution

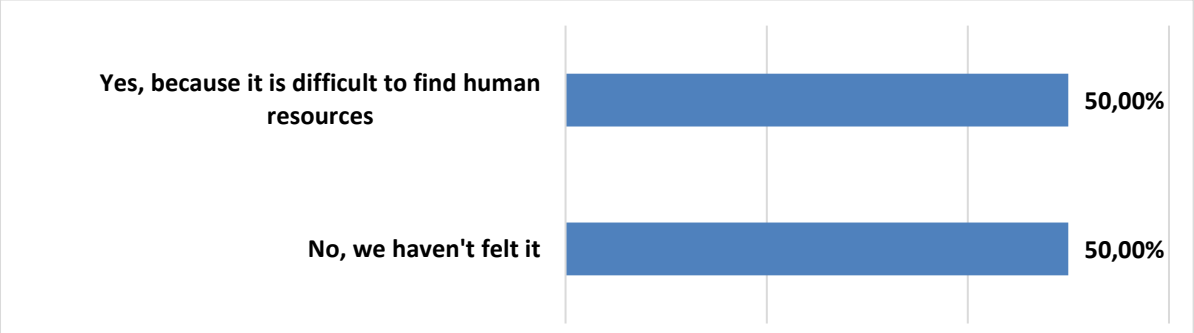


The overall observation for the reported data is that most utilities lack a balanced representation across all age groups, revealing potential gaps in workforce diversity. The analysis emphasizes the importance of strategic workforce planning to ensure a well-distributed and diverse representation of age groups, fostering a dynamic and sustainable organizational structure. However, an in-depth investigation is needed to verify the accuracy of the reported data.

3.3.2 Perceived Challenges Related to Workforce Aging

The second question aimed to assess whether utilities are currently dealing with challenges linked to an aging workforce, which may lead to potential knowledge and skills gaps due to retirements or near-retirements. The respondents were divided into two groups, with half (50%) acknowledging challenges related to the aging workforce, while the other half (50%) asserted that there are no such challenges.

Figure 7 - Bar Chart for Perceived Challenges related to an Aging Workforce



Interestingly, the response analysis appears to contradict the findings of the previous question, which highlighted a significant concentration of the 46-55 age group in various regions and a low representation of young professionals. This contradiction may suggest a lack of awareness or internal analysis within utilities regarding both the aging workforce issues and the consequential skill gaps. It indicates a potential need for utilities to conduct more thorough internal assessments and analyses to better understand and address challenges associated with their workforce demographics.

3.3.3 Specific Development Needs by Departments/Roles

The third question inquired about any perceived gaps or areas for improvement within various departments, aiming to tailor training programs to address specific needs. The feedback received mentioned the following departments:

Budget Planning,
Finance and Assets Division,
Water Distribution and Supply Network, Treatment of Wastewater,
Sales and Clients Management Division, and the
Technical Sector and the Financial Division.

However, the responses did not provide specific details about knowledge or competence gaps within these departments for SHUKALB to consider in planning development or delivery of topics, during 2024.

3.3.4 Leadership Development Needs

The fourth question aimed to gather insights into specific leadership skills or competencies considered crucial for achieving the company's strategic goals. It also sought to identify any additional leadership skills that, if addressed, would significantly contribute to the company's success. The feedback received included mentions of:

Human resource management and technical management.
General management skills.
Enhanced leadership knowledge and practical application in leadership roles.
Concrete management experience and the integration of this knowledge and experience within the water sector.
Recognition of the dedication and skills of the management staff.

The feedback indicates a wide range of leadership and managerial abilities necessary for overseeing various organizational functions, ranging from technical expertise and human resources. It also highlights the recognition for continuous learning, practical application, and alignment of leadership skills with the unique demands of the water sector. As well there is a positive recognition of the current management staff indicates a foundation of competence within the organization.

3.4 PRIORITIZED TRAINING TOPICS

The fourth section aimed to assess the training topics needed in 2024 based on fields of activity. It was organized into four overarching categories aligned with the SHUKALB Training Program: Management, Water Supply and Treatment, Sewage and Wastewater Treatment, and Interdisciplinary. Each main category included more specific training topics, and the utilities provided evaluations on a scale of 1 (low interest) to 5 (high interest). Table 2 presents the top 15 most needed training topics as ranked by the utilities and the average rating is provided. All topics and their evaluation is shown in Appendix-2.

The rankings provide valuable insights into the diverse range of management and cross-cutting training topics prioritized by utilities for capacity development. Notably, the utilities have given high priority to training in personal and professional skills, water loss management, benchmarking, procurement procedures, financial management, emergency management, asset management, energy efficiency, occupational health and safety, human resources management, and essential management skills such as group work and decision-making. These priorities reflect the utilities' focus on developing strategic capacities in key areas critical for their operational efficiency and effectiveness.

Table 2 – Top 15 Highest Prioritized Training Topics

No.	Ranking of Training Topics	Mean Value
1	Personal and Professional Skills	4,3
2	Water Loss Management	4,2
3	Performance Management through Benchmarking	4,1
4	Public Procurement Procedures for WSS Companies	4,1
5	Business Plan for Performance Improvement	4,1
6	Financial Management	4,0
7	Financial statements and their role in decision making	4,0
8	Emergency Management	4,0
9	Group Work	4,0
10	Asset Management	4,0
11	Leakage Control	4,0
12	Energy Efficiency in Water and Sewerage Companies	4,0
13	Occupational Safety for Water and Wastewater Professionals	3,9
14	Human Resources Planning/Management	3,9
15	Decision-making	3,9

A further analysis conducted within the four overarching categories reveals the top-ranked topics within each category. It is observed that technical field topics received comparatively lower interest among utilities. This indicates a distinct preference for capacity development in areas related to management and broader organizational functions.

Figure 8 - Bar Chart of Evaluating Management Training Topics

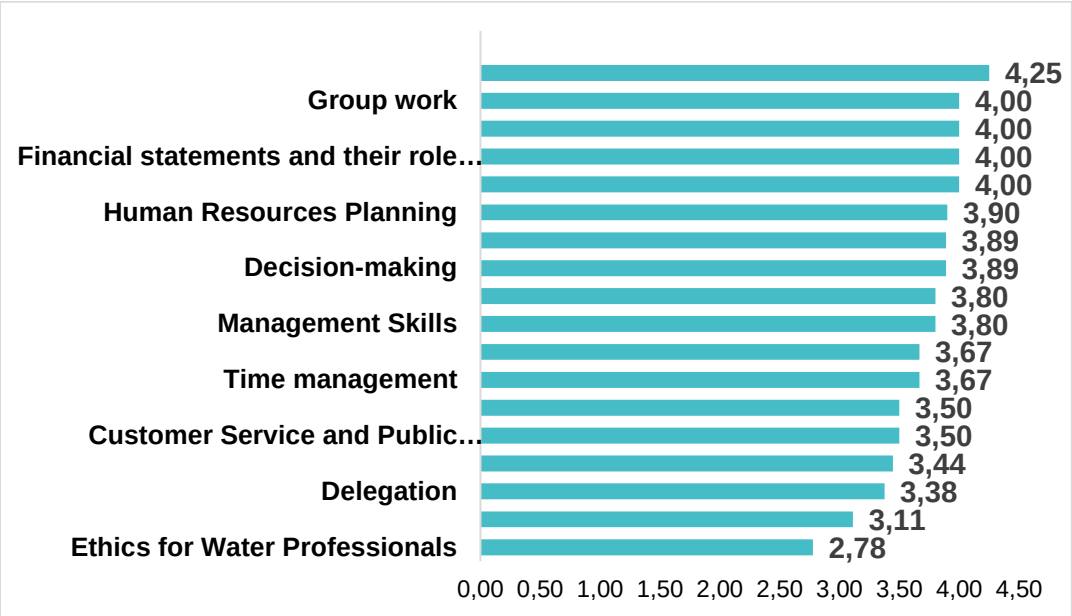
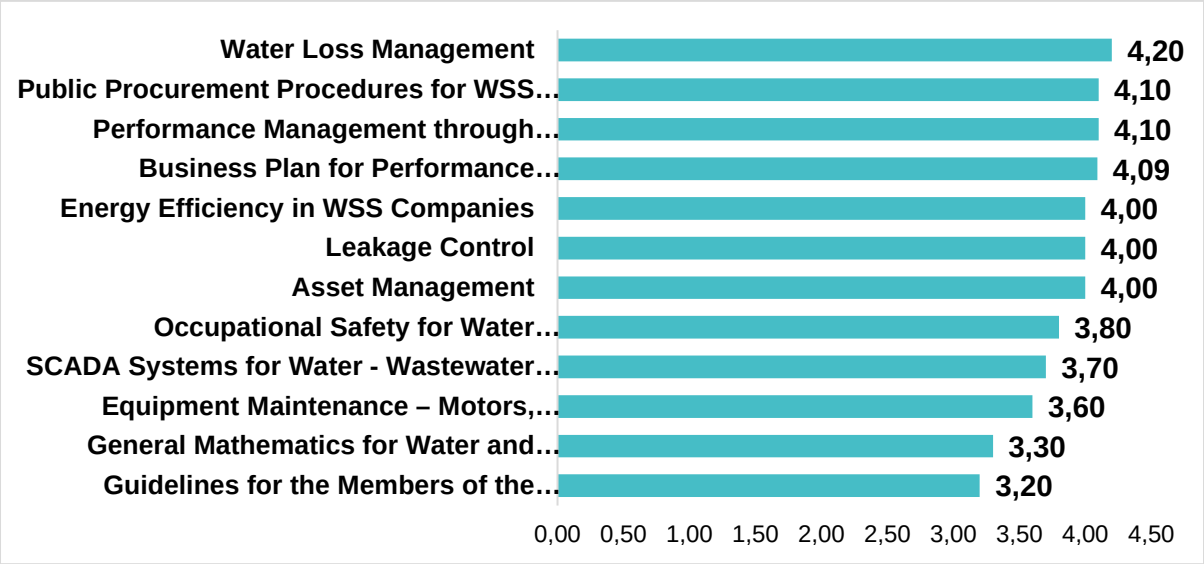
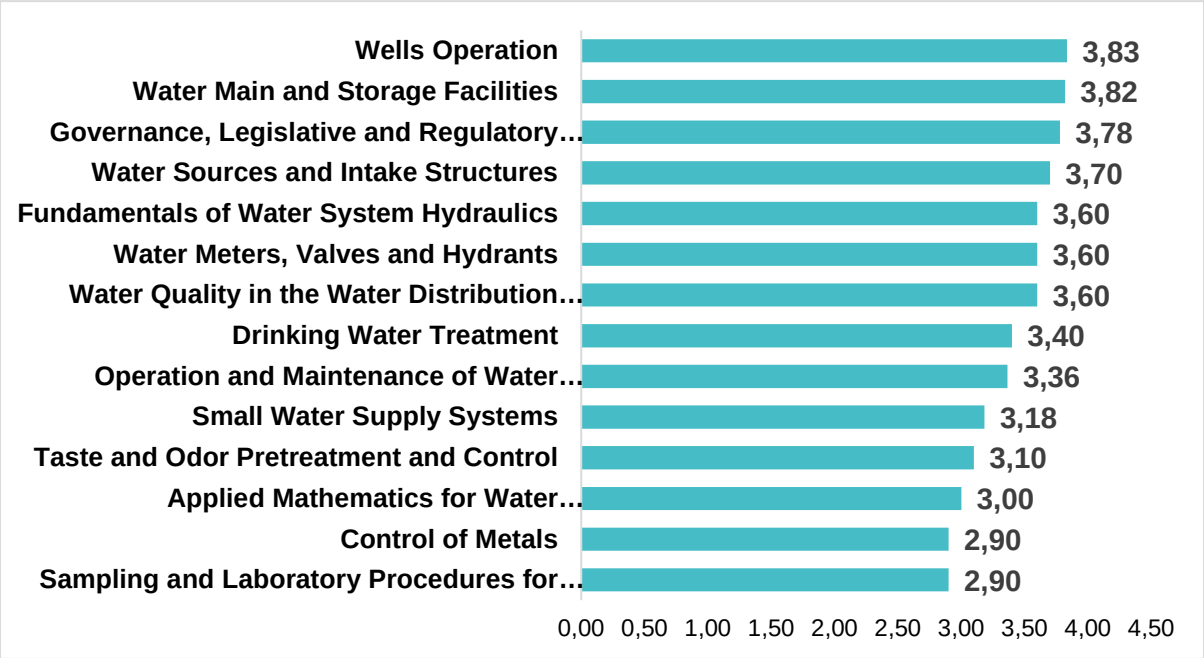


Figure 9 - Bar Chart of Evaluating Cross Cutting Training Topics



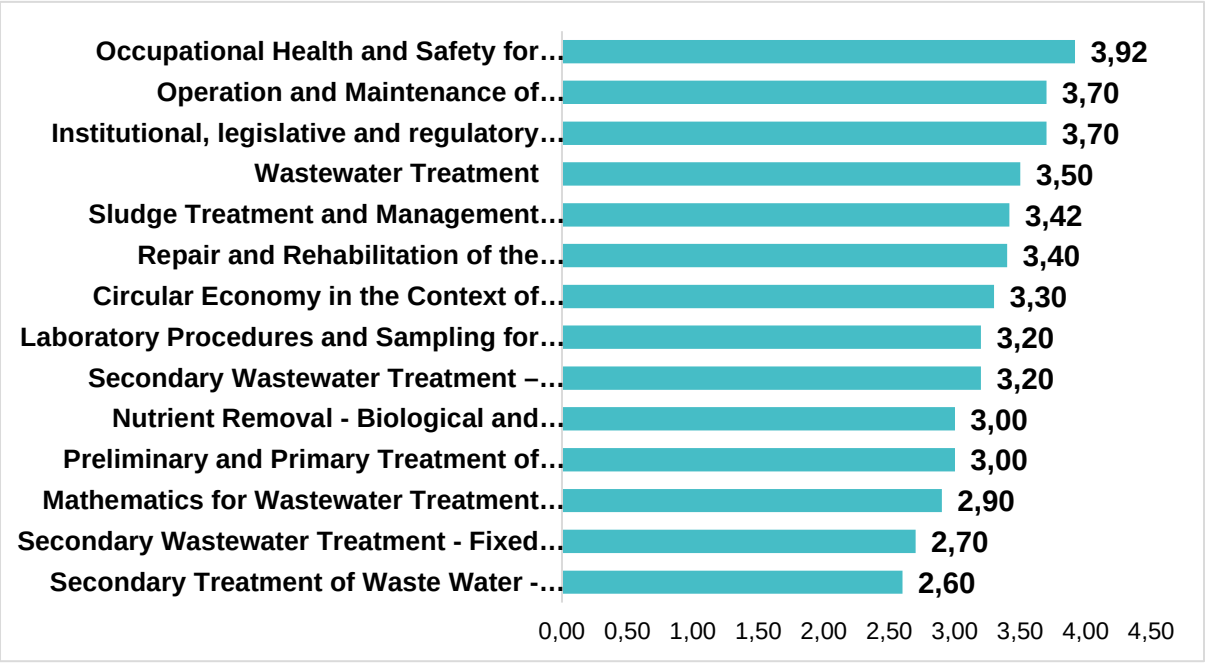
The top 5 prioritized training topics in the field of operating and maintaining water supply systems and drinking water treatment include wells operations, water mains and tanks, institutional, legislative and regulatory frameworks, water sources, and fundamentals of water systems hydraulics.

Figure 10 - Bar Chart of Evaluating Water Supply and Treatment Related Training Topics



The top 5 prioritized training topics in the field of operating and maintaining the sewerage and wastewater treatment systems are occupational safety, O &M of Wastewater Collection System, Institutional, legislative and regulatory frameworks, Wastewater Treatment and Sludge Treatment and Bio solids Management.

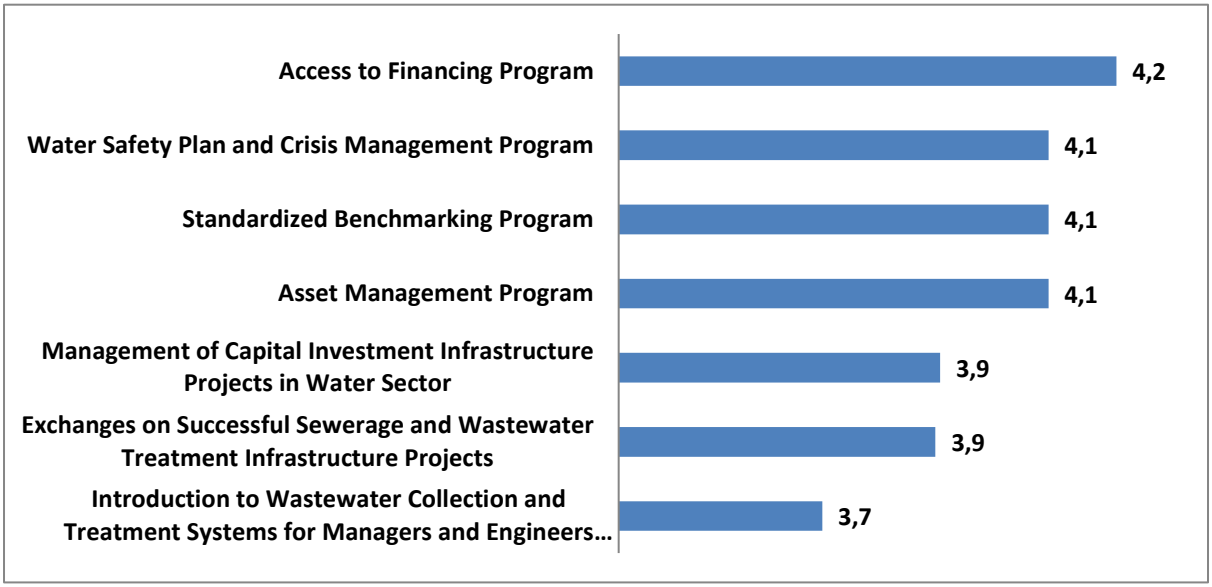
Figure 11 - Bar Chart of Evaluating Sewerage and Wastewater Treatment Related Training Topics



3.5 PRIORITIZED REGIONAL CAPACITY DEVELOPMENT PROGRAMS

The fifth section focused on assessing the Capacity Development (CD) Programs offered within the framework of Danube Learning Partnership (D-LeaP) and the "Regional Capacity Development Network for Water and Sanitation Services (RCDN+)" Project for the development of necessary capacities. Utilities provided evaluations on a scale of 1 (low interest) to 5 (high interest). The bar chart depicting the results highlighted the following topics as receiving the highest interest, in descending order: access to financing, water safety plans, benchmarking, and assets and infrastructure projects management trainings.

Figure 12 - Bar Chart of Evaluating Regional CD Programs



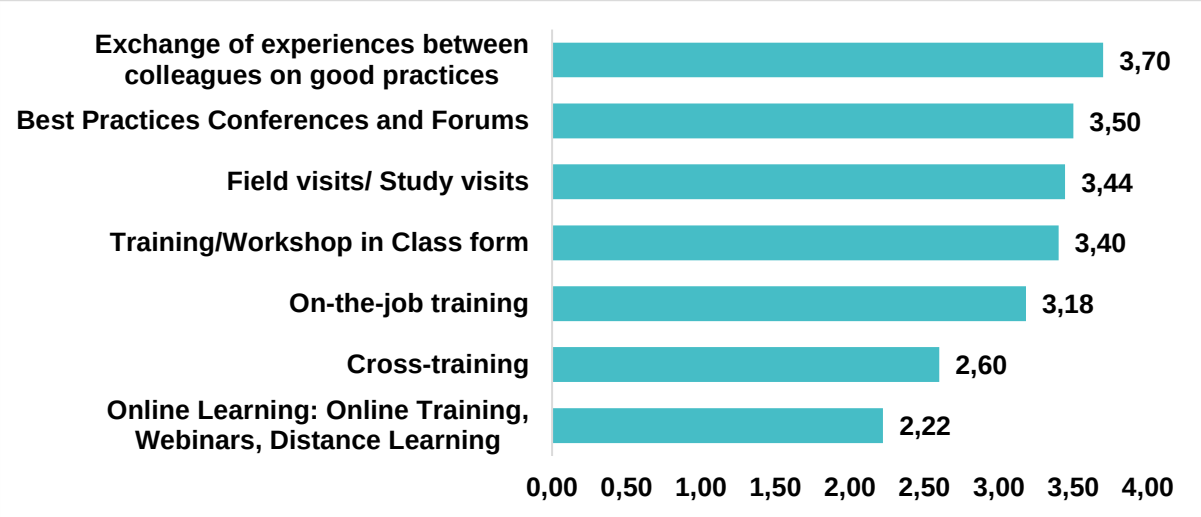
3.6 PREFERRED FORMATS, METHODOLOGIES, AND DURATIONS

The sixth section was designed to assess the preferred formats, methodologies, and durations for capacity development (CD) measures. This section comprised four questions:

3.6.1 Preferred CD Formats

The first question aimed to assess different capacity development (CD) formats and identify the most valuable and effective ones that best meet the needs of utility staff, rated on a scale from 1 (not valuable) to 4 (very valuable). The results emphasized the importance of practical and interactive formats, including peer exchanges, conferences, study visits and face to face activities compared to e-learning and online activities.

Figure 13 - Bar Chart for Preferred CD Formats



3.6.2 Knowledge Sharing and Exchange among WSS Companies

The second question delved into SHUKALB's commitment to promoting the exchange of experiences between companies. It aimed to gather insights into potential areas for cooperation with other utilities to facilitate the sharing and exchange of experiences, fostering mutual learning and development. Some specific areas mentioned by respondents include:

Drafting of procedures and technical safety regulations.
Management of risk points.
Work procedures of different sectors.
Reorganization in the Regional Utilities.

3.6.3 Preferred Training Duration across Hierarchical Levels

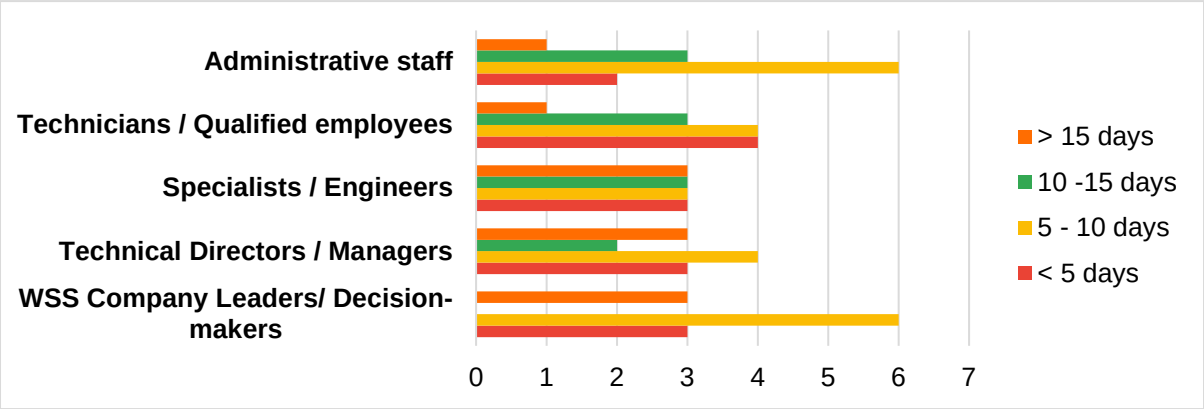
The third question aimed to discern the time each hierarchical level could allocate to a training activity. The findings indicate a preference for a duration of 3-4 days across decision-makers, managers, engineers, and qualified employees. Notably, decision-makers exhibit a preference for a 1-day duration, while technical directors, technicians, engineers, and administrative staff favour the 3-4 days duration.

Figure 14 - Bar Graph on Preferred Training Duration across Hierarchical Levels

3.6.4 Preferred Annual Duration for Capacity Development across Hierarchical Levels

The fourth question inquired into the number of days per year each hierarchical level could allocate to capacity development. The findings reveal a preference for a duration of 5-10 days across all levels. Notably, decision-makers, technical directors, technicians, engineers, and administrative staff exhibit a preference for durations less than 5 days.

Figure 15 - Bar Chart on Annual Duration for Capacity Development across Hierarchical Levels



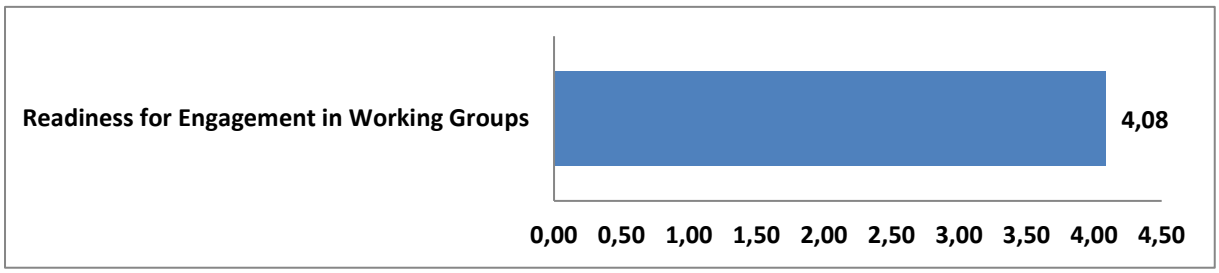
3.7 COMMUNITY OF PRACTICE ENGAGEMENT APPROACHES

The seventh section of the survey focused on evaluating innovative approaches to capacity development, particularly the readiness on engaging in Communities of Practice (CoP) or Working Groups. SHUKALB is exploring the establishment of such groups, specifically in the areas of workforce management and wastewater management. This section comprised three key questions.

3.7.1 Willingness to Participate

The first question gauged the readiness of employees in actively joining a Community of Practice/ Working Group related to their function in the WSS sector in a scale 1 (not at all ready) to 5 (very ready). The responses indicate that there is readiness for employees joining communities of practice.

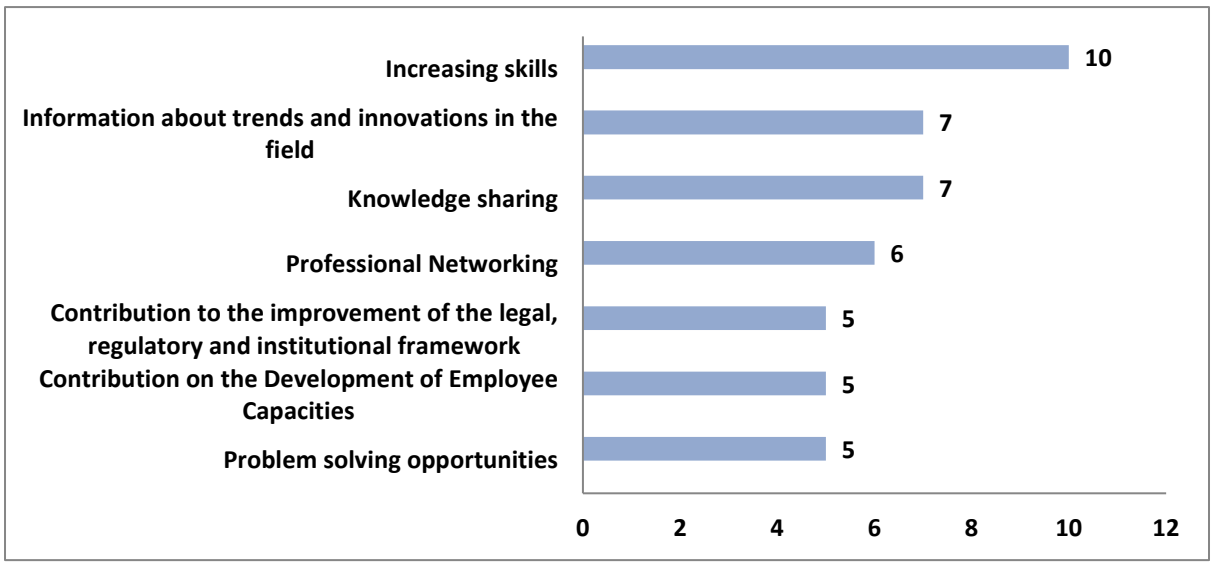
Figure 16 - Bar Graph Readiness for Engagements in Working Groups



3.7.2 Perceived Benefits

The second question aimed to gather insights from utilities regarding the anticipated benefits of actively involving staff in a Community of Practice. The perceived benefits highlighted include enhancing skills, staying informed about trends and innovations, fostering knowledge sharing, and professional networking.

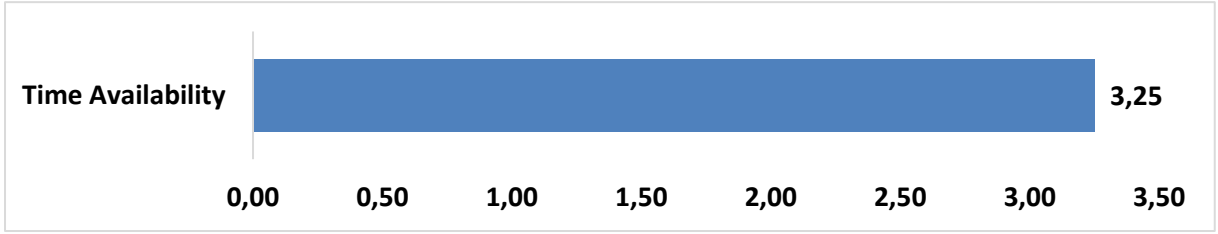
Figure 17 - Bar Graph Perceived Benefits of actively engaging staff in working groups



3.7.3 Availability for Participation

The third question gauged the staff's availability to participate in activities related to the Community of Practice, using a scale from 1 (Very limited) to 5 (Very available). The responses suggest that there is limited time available for staff to engage in such activities.

Figure 18 - Bar Graph for Time Availability



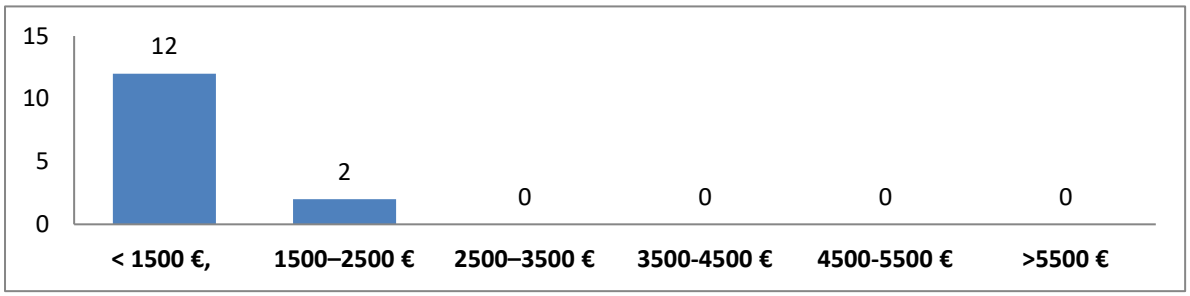
3.8 UTILITY CAPACITY TO PAY

The eighth section focused on assessing the utilities' capacity to afford fees for participation in capacity development programs. In response to the question regarding the amount utilities can pay for the participation of a person in a 1-day training, all the responses indicated the value of 100 euros.

Figure 19 - Bar Graph Financial Capacity of Utilities for Participation Fees for 1-Day Training

In response to the question about the amount utilities can pay for the participation of a team (2-3 people) in a program lasting several months, including training and technical assistance, the majority indicated a value less than 1500 euros. Only two utilities indicated a range of 1500-2500 euros.

Figure 20 - Bar Graph Financial Capacity of Utilities for Team Participation in Long-Term CD Programs



3.9 ADDITIONAL COMMENTS

The ninth section of the survey provided utilities with an opportunity to share additional insights, comments, and suggestions related to their training needs. The questions addressed in this section aimed to gather information on any special training needs arising from changes in policy, laws, and regulations essential for the company's capability and compliance. Additionally, it sought input on the types of training that would help utilities prepare for expected sector changes and developments in the coming years. The section also inquired about the knowledge and skills that would facilitate the adaptation to new technologies, regulations, and industry trends. Some of the notable responses included:

Drafting of the Budget Plan,
Drafting of business plans,
Financial management and control
Risk management,
Procurement and implementation of contracts,
Project management,
Regionalization and challenges,
Communication ethics and teamwork,
5-year plans and long-term investments,
The field of technology and its use,

Legislation and procurement,
Tariffs,
The problems of the sector at both macro and micro levels.

4 CONCLUSIONS AND RECOMENDATIONS

The Training Needs Assessment (TNA) report provides a comprehensive overview of the current state of capacity development within the Water Supply and Sewerage Companies in Albania. The analysis encompasses key areas such as budget allocation, workforce distribution, past training program evaluations, workforce aging challenges faced, and specific training topics needed for 2024. The insights gathered from the responses shed light on the strengths, weaknesses, and areas for improvement within the utilities. SHUKALB acknowledges the equally vital roles of AKUK, ERRU, and supervisory councils in the process of needs assessment, development of new curricula, design, delivery, and evaluation of capacity development programs for utilities, as well as in ensuring an enabling environment for integrated and sustainable capacity development of the workforce. The following are some conclusions and recommendations that SHUKALB has drawn from the survey findings and the feedback received from the stakeholder meeting. It is understood that more could be learned from further discussions with utilities, using the Survey results as a basis.

4.1 CONCLUSIONS

While there is a significant commitment to capacity development across utilities, the variance in allocated budgets is noticeable. Despite planned allocations, financial resources fall short of adequately supporting personnel training at all organizational levels. There is a crucial need for the central agency AKUK and supervisory councils to closely monitor and ensure proper funding for capacity development in alignment with the sector strategy, providing essential guidance to utilities.

The focus on water supply infrastructure is evident from the concentrated workforce in the technical department for water supply operations. However, a more in-depth investigation is crucial to comprehend the complexities of managing these systems, justifying the existing allocation of the workforce based on the staff efficiency indicator of 4 employees per 1000 connections. Further inquiry is necessary to illuminate the disparity between total permanent staff and the distribution of employees across functional areas. It is worth noting that field workers are excluded from the current analysis, and there may be additional considerations, such as subcontracted security staff, contributing to the observed differences.

The majority of respondents who participated in previous training programs organized by SHUKALB acknowledged a positive impact on professional skills and overall company performance. However, the feedback lacks specificity regarding improvements and tangible results observed in the workplace following the trainings. All CD programs provided by SHUKALB are accurately designed, containing precise learning outcomes at both individual and organizational levels, aligned with key performance indicators (KPIs). To enhance the effectiveness of these programs, it is important for SHUKALB to foster closer collaboration with utility internal management structures and their supervisory bodies to ensure accurate documentation of improvements and assessment of the programs' impact, linking them to both employees and utility performance.

The examination of the workforce aging distribution uncovered a predominant presence in the age groups of 35-45 and 46-55 years old, signalling a potential gap in the younger water professional pipeline and a forthcoming retirement phase for personnel. However, the divided response concerning perceived challenges associated with an aging workforce underscores the necessity for targeted strategies. There is a pressing need to enhance awareness of utilities about the significance of this factor and the potential need to conduct more thorough internal assessments and analyses to better understand and address challenges associated with their workforce demographics. Additionally, the central government should consider prioritizing measures aimed at mitigating the potential challenges posed by an aging workforce. Further investigation on the accuracy of data is needed.

The specific inquiry into knowledge or competence gaps within departments/roles did not yield explicit skills requiring improvement. However, the evaluation of leadership skills gaps emphasized key areas such as human resource and technical management, general management skills, and the integration of leadership knowledge within the water sector.

High priority was given to training in personal and professional skills, water loss management, benchmarking, procurement procedures, financial management, emergency management, asset management, energy efficiency, occupational health and safety, human resources management, and essential management skills such as group work and decision-making, illustrating a cross-disciplinary focus among senior managers in utilities. Similarly, the prioritized regional CD Programs included access to financing, water safety plans, benchmarking, assets and infrastructure projects management trainings. These results underscore the utilities' recognition of weaknesses in performance within these areas and the need for improvement through training. The need for utilities to prepare asset management plans as part of the business plan and water safety plans was acknowledged by ERRU during the stakeholder meeting.

However, technical field topics targeting employees operating and maintaining water and wastewater systems received comparatively lower interest among utilities, suggesting a potential oversight by the utilities, or indicates a distinct preference for capacity development in areas related to management and broader organizational functions. SHUKALB supports the implementation of the Training and Test Based Certification Program specifically targeting the training of workforce in the technical department at all levels.

Significant insights for the Association were gathered, emphasizing the importance of practical and interactive formats, including peer exchanges, conferences and study visits. Utilities indicated a perceived affordability of 100 euros for an individual to attend 1-day training, and this extends to their indication of less than 1500 euros for a capacity development (CD) program. The preference for 3-4 day duration emerged as common duration for one activity, while, participants indicated an allocation of 10-15 days per year for capacity development, which was consistent across hierarchical levels.

The exploration of potential areas for cooperation among utilities to facilitate the sharing and exchange of experiences, fostering mutual learning and development, highlighted priorities such as the drafting of work procedures in various sectors and technical safety regulations. Additionally, respondents emphasized the importance of collaboration in the management of risk points and the reorganization of regional utilities. As peer exchanges were highly valued by utilities, SHUKALB will design specific activities or integrate them into the conference program to address these needs during 2024.

The inquiry into establishing communities of practice/working groups, particularly in the areas of workforce management and wastewater collection and treatment, revealed a willingness among participants to engage in such groups. They recognized the benefits of enhancing skills, staying informed about trends and innovations, fostering knowledge sharing, and professional networking. However, time constraints were identified as a limiting factor.

Respondent utilities emphasized additional training needs, specifically highlighting the formulation of long-term plans, including business and investment plans. There was a strong emphasis on financial management and control, with a specific focus on risk management, procurement, and contract implementation. The challenges related to regionalization were identified as a critical area requiring attention, as well as, staying updated on technological advancements, regulatory shifts, and industry trends. Another important insight was the growing interest of utilities in institutional, legislative, and regulatory frameworks. SHUKALB will need to collaborate closely with AKUK and ERRU to develop new curricula that assist utilities in ensuring compliance.

However, the topics of digital transformation and organizational structures/organograms are notably absent in the feedback, and they hold high priority in the Water Supply and Sewerage (WSS) Strategy. Trainings in these areas are crucial to address emerging challenges and opportunities. Moreover, as AKUK and ERRU will establish a national database comprising all utilities data, training on creating databases must be developed, and ERRU is committed to contributing. The same commitment is shared by SHUKALB.

Further insights from stakeholders underscore the pressing environmental concerns, as regional WSS companies are responsible for wastewater treatment plants. The substantial carbon footprint in these operations emphasizes the need for utilities to acknowledge and address environmental challenges proactively. This involves recruitment of environmental engineers and the preparation of Environmental Management Plans, which cover critical aspects, such as, source protection, repair works, and the discharge of effluent water. Additionally, it is crucial to prioritize ongoing training for these professionals on various environmental issues to enhance their expertise and contribute to sustainable practices within utilities.

In response, SHUKALB is dedicated to expanding its capacity development (CD) product portfolio by developing new curricula and programs that effectively address these highlighted topics, ensuring utilities are well-prepared for anticipated industry changes and emerging trends.

4.2 RECOMMENDATIONS

The Training Needs Assessment (TNA) report provides a foundational understanding, but continuous dialogue with utilities is essential for ongoing learning and improvement. The survey results need to be used as a basis for further discussions. The following recommendations aim to enhance the effectiveness of capacity development initiatives, address identified challenges, and foster increased dialogue with all stakeholders for integrated and sustainable capacity development of the workforce in the Water Supply and Sewerage (WSS) Companies in Albania:

Share the training and capacity development programs calendar for the year 2024, incorporating prioritized trainings, capacity development (CD) programs, peer exchanges, and conferences with all stakeholders. This approach aims to foster alignment of efforts and promote informed participation.

Establish an Inter-Institutional Working Group on Capacity Development, bringing together key stakeholders in the water sector. This group should include representatives from the Ministry, Water Regulatory Authority (ERRU) National Agency for WSS (AKUK), WSS Companies, Municipalities, and Local Government Associations. The aim is to facilitate policy dialogue and research on workforce challenges and management topics, such as recruitment, training, workface aging, and staff distribution across functional areas. Additionally, develop policy recommendations to raise awareness and harmonize actions for an improved legal and regulatory framework.

Collaborate closely with AKUK, ERRU, and supervisory councils of utilities, and internal management structures of utilities to:

- Monitor and ensure proper training budget allocation, advocating for increased financial resources to support personnel training at all levels.
- Support the implementation of the Training and Test Based Certification Program specifically targeting the training of workforce in the technical department at all levels.
- Assess and enhance the impact of capacity development programs, aligning with key performance indicators (KPIs), and ensuring accurate documentation of improvements and impact in utilities.
- Enhance awareness among utilities about the challenges associated with an aging workforce. Develop targeted strategies to bridge potential gaps in the younger water professional pipeline. Encourage the central government to prioritize measures mitigating challenges posed by an aging workforce.
- Conduct further inquiry into specific knowledge or competence gaps within departments/roles to identify areas for improvement.
- Encourage utilities to give equal attention to technical topics related to operating and maintaining water and wastewater systems.
- Develop new curricula to address additional training needs identified, particularly in areas, such as, institutional, legislative, and regulatory frameworks aspects, long-term planning, financial management, risk management, technological advancements, digitalization, organizational structures, environmental issues, database creation and leadership skills.

Finally, establish and facilitate participation in Communities of Practice, recognizing and addressing time constraints to encourage meaningful engagement of utility staff.

APPENDICE1: ONLINE QUESTIONNAIRE

ASSESSMENT OF TRAINING NEEDS FOR THE DEVELOPMENT OF CAPACITIES FOR WATER SUPPLY AND SEWERAGE COMPANIES IN 2024

Dear all,

The Water and Sewerage Association of Albania (SHUKALB) in full accordance with its mission to increase the performance of water and sewerage companies through capacity development, is conducting a Survey for the Assessment of the Needs of Water and Sewerage Companies for the year 2024. This questionnaire aims at identifying the training needs of the water Supply and Sewerage (WSS) Company.

The questionnaire collects information in the following areas:

- General information of the Company.
- Evaluation of past programs.
- Assessment of the age of the workforce and the knowledge and skills of the staff.
- Evaluation of training topics needed for the year 2024 according to fields of activity.
- Evaluation of regional programs for the development of the necessary capacities.
- Evaluation of preferred training formats, methodologies and durations.
- Evaluation of new engagement approaches for capacity development, such as the Community of Practice.
- Assessment of affordable fees for participation in capacity development programs.
- Additional comments and suggestions.

Only one questionnaire is required to be completed from your company by the Administrator/Deputy Administrator, Commercial Director, Technical Director or Director of Support Functions/HR. Your answers should reflect your real training needs and planning, as SHUKALB will design the training calendar for 2024 based on your input.

Awaiting your feedback until February 2, 2024. The deadline has been extended to February 21, 2024.

Thank you for your cooperation!

1. GENERAL INFORMATION ON THE COMPANY

1.1 WSS Company Name:

_____

1.2 Name and Surname of Contact Person:

_____

1.3 Position Title:

- Administrator / Deputy Administrator
- Commercial Director
- Technical Director
- Director of Support Functions/HR

1.4 What is the budget that your WSS Company allocates for capacity development programs per year (Amount in Lek)?

1.5 How many permanent employees does your utility have in total? _____

How many employees make up the management staff of the company? _____
How many employees does the commercial and financial department have? _____
How many employees does the technical department have in terms of water supply service? _____
How many employees does the technical department have in terms of sewerage service and wastewater treatment? _____
How many employees does the support services department have? _____

1.6 Membership Status in the Association:

Members
Non-Members

2. EVALUATION OF PAST PROGRAMS AND TRAINING

2.1 Has your WSS Company participated in any training or capacity development (CD) program organized by SHUKALB in the past?

YES
NO

2.2 If so, please share your feedback on the effectiveness and impact of the CD programs in your Utility.

_____

2.3 Evaluation of the Impact of Training Programs:

a) How do you measure the impact of training programs on the performance of employees and utility?

b) Are there specific key performance indicators (KPIs) or success metrics that you would like to see addressed in evaluating training outcomes?

_____

3. AGE PROFILE OF THE WORKFORCE AND ASSESSMENT OF CURRENT KNOWLEDGE AND PROFESSIONAL SKILLS

	10 -20 %	20 - 30 %	30 - 40 %	50-60 %	60-70 %	70-80 %	90-100 %
< 25 years old							
25 - 35 years old							
36 - 45 years old							
46 - 55 years old							
> 55 years old							

3.2 Is your utility currently experiencing challenges related to an aging workforce, including potential knowledge and skills gaps due to retirements or near-retirements?

_____

3.3 Specific Needs by Departments/Roles:

Are there specific skills gaps or areas for improvement that you perceive within various departments? *Your insights will help us tailor training programs to address these specific needs.*

_____

3.4 Leadership Development Needs:

a) What specific leadership skills or competencies do you believe are crucial for achieving the company's strategic goals?

b) Are there additional leadership skills needs that, if addressed, would contribute significantly to the company's success?

_____

3. TRAINING TOPICS

The training program offered from SHUKALB contains 4 main categories of training topics: Management, Water Supply and Drinking Water Treatment, Sewage and Wastewater Treatment and Interdisciplinary. The main categories contain special topics to consider.

4.1 Topics in the Field of Management

The following management training topics are targeting supervisory council members of the WSS company, the senior managers of the utility, as administrators, technical, commercial, financial, and support services managers including legal and human resources functions, as well as the specialists working in these key functions of the WSS company.

Please select the training topics of the highest interest for your company to participate in during 2024, using the rating scale (1 low interest and 5 very high interest).

	Very low interest	**Low interest**	**Neutral**	**High interest**	**Very high interest**
Management Skills					
Personal and Professional Skills					
Ethics for Water Professionals					
Planning and Organization					
Decision-making					
Problem Solving					
Financial Management					
Financial statements and their role in decision making					
Emergency Management					
Customer Service and Public Relations					
Human Resources Planning					
Human Relations					
Communication					
Time management					
Effective Meetings and Presentations					
Conflict Resolutions					
Delegation					
Group work					

If you identify other topics needed in the field of management that are not mentioned above, please specify here the topics:

_____

4.2 Training Topics Related to the Operation of Water Supply and Drinking Water Treatment Systems

The following training topics are focused on the technical aspects of managing water production, distribution and treatment processes in a water supply and sewerage company and are targeting managers, engineers and technicians who manage, operate, and maintain water supply and drinking water treatment systems.

Please select the training topics of the highest interest for your company to attend during 2024, using the rating scale (1 low interest and 5 high interest).

	Very low interest	Low interest	Neutral	High interest	Very high interest
Governmental, Legislative and Regulatory Framework					
Water Resources, Catchments and Water Quality Management					
Drinking Water Treatment					
Taste and Odor Pretreatment and Control					
Operation and Maintenance of the Drinking Water Treatment Plant					
Water Quality in the Distribution System					
Sampling and Laboratory Procedures for Drinking and Contaminated Water					
Water Meters, Valves and Hydrants					
Operation of wells					
Main Pipes and Water Tanks					
Fundamentals of Hydraulics for the Water Supply System					
Applied Mathematics for Water Treatment Operators					
Small Water Supply Systems					
Control of Metals					

If you identify other topics needed related to the management, operation, and maintenance of water supply systems, which are not mentioned above, please specify here the topics:

_____

4.3 Training Topics Related to the Operation of Sewerage and Wastewater Treatment Systems

The following training topics are focused on the technical aspects of managing wastewater collection treatment and disposal in a water supply and sewage company and are targeting managers, engineers and technicians who manage, operate, and maintain sewerage and wastewater treatment systems.

Please select the training topics of the highest interest for your company to attend during 2024, using the rating scale (1 low interest and 5 high interest).

	Very low interest	Low interest	Neutral	High interest	Very high interest
Governmental, Legislative and Regulatory Framework					
Circular Economy in the Context of Wastewater					
Occupational Health and Safety for Wastewater Professionals					
Operation and Maintenance of Sewerage System					
Repair and Rehabilitation of the Sewerage System					
Wastewater Treatment					
Preliminary and Primary Treatment of Polluted Water					
Secondary Treatment of Polluted Water - Ponds, Lagoons and Constructed Wetlands					
Secondary Wastewater Treatment - Fixed Culture Processes					
Secondary Wastewater Treatment – Activated Sludge Processes					
Sludge Treatment and Management Methods					
Laboratory Procedures and Sampling for Wastewater					
Nutrient Removal - Biological and Chemical Methods					
Mathematics for Wastewater Treatment Professionals					

If you identify other topics needed related to the management, operation and maintenance of sewerage and wastewater treatment systems, which are not mentioned above, please specify here the topics:

_____

4.4 Topics in Interdisciplinary Training

The following training topics combine managerial, technical, commercial, financial, legal and technological aspects of managing key function areas of a water and sewerage company and are targeting supervisory council members of WSS company, senior managers as administrators, technical, commercial, financial, legal, HR, as well as other specialists who are responsible for managing water supply and wastewater systems.

Please select the training topics of the highest interest for your company to attend during 2024, using the rating scale (1 low interest and 5 high interest).

	Very low interest	Low interest	Neutral	High interest	Very high interest
Guidelines for the Supervisory Council Members of the Water Supply and Sewerage Company					
Business Plan for Performance Improvement					
Introduction to Asset Management					
Performance Management through Benchmarking					
Water Loss Management					
Leakage Control					
Energy Efficiency in Water and Sewerage Companies					
Occupational Health and Safety for Water Professionals					
Equipment Maintenance – Motors, Pumps, and Valves for Potable and Wastewater					
General Mathematics for Water Supply and Sanitation Professionals					
SCADA Systems for Water - Sewer Professionals					
Public Procurement Procedures for the Staff of Water Supply and Sewerage Companies					

If you identify other topics needed related to interdisciplinary fields, which are not mentioned above, please specify here the topics:

_____

5. REGIONAL CAPACITY DEVELOPMENT PROGRAMS

5.1 Capacity Development Programs within the Danube Learning Partnership (D-LEAP)

Regional D-LeaP programs offer a combination of theory and practice, and participants analyse specific performance indicators of their WSS company, and produce an action plan with specific objectives, which utility can use to make the necessary interventions. The target groups are the responsible positions who manage the respective areas.

Please select the CD programs of highest interest to your company to attend during 2024, using the rating scale (1 low interest and 5 high interest).

	Very low interest	Low interest	Neutral	High interest	Very high interest
Asset Management Program					
Standardized Benchmarking Program					
Water Security and Crisis Management Plan Program					
Access to Financing Program					
Asset Management Program					
Standardized Benchmarking Program					
Water Security and Crisis Management Plan Program					
Access to Financing Program					

5.2 RCDN + Regional Capacity Development Products

Capacity development products have been developed within the "Regional Capacity Development Network for Water and Sanitation Services (RCDN)" Project. These products are targeting decision-makers and managers for WSS companies, such as supervisory council members, administrators, technical directors, commercial, and infrastructure project managers, as well as decision makers and managers in the Municipality, as directors of finance, investment and project departments and employees responsible for local services.

Please select the CD products of highest interest to your company to attend during 2024, using the rating scale (1 low interest and 5 high interest).

	Very low interest	Low interest	Neutral	High interest	Very high interest
Management of Capital Investment Projects in Water Supply and Sewerage Infrastructure					
Exchanges on Successful Sewerage and Wastewater Treatment Infrastructure Projects					
Program "Introduction to Sewerage and Wastewater Treatment Systems for Managers and Engineers" (Institutional, Regulatory, Technological and Management Aspects of Infrastructure Projects)					

6. TRAINING OPTIMIZATION: PREFERRED TRAINING FORMATS, METHODOLOGIES AND DURATION

6.1 Which of the formats below is most valuable and best serves the needs of your Utilities' staff?

	Not valuable	Somewhat valuable	Valuable	Very Valuable
Classroom Training/Workshop: The training is led by the Trainer and organized at a Hotel and allows for interaction, practical exercises, lectures/demonstrations on a particular topic.				
On-the-job training: Training takes place on Utilities premises and combines classroom training and practical field demonstrations.				
Online learning: Online trainings, Webinars, Distance learning through e-learning platforms.				
Blended training: Combines on-line learning methods with those of physical presence training.				
Exchange of experiences between colleagues on good practices: Physical meetings and field visits are combined.				
Study visits				
Best Practices Conferences and Forums				

6.2 Exchange of Experiences and Collaborations:

SHUKALB prioritizes the exchange of experiences between WSS companies. In which areas do you see the potential for cooperation with other utilities to share experiences for the benefit of mutual learning and development?

Are there specific topics or challenges where cooperation between WSS companies can lead to mutual benefits?

_____

6.2 How many days can each of the members of the groups below dedicate to a training activity?

	1 day	2 - 3 days	3 - 4 days
WSS Company Leaders/ Decision-makers			
Technical Directors / Managers			
Specialists / Engineers			
Technicians / Qualified employees			
Administrative staff			

6.3 How many days per year can each of the members of the groups below dedicate to capacity development?

	< 5 days	5 - 10 days	10 - 15 days	> 15 days
WSS Company Leaders/ Decision-makers				
Technical Directors / Managers				
Specialists / Engineers				
Technicians / Qualified employees				
Administrative staff				

7. EVALUATION OF NEW APPROACHES: CREATING COMMUNITIES OF PRACTICE IN THE AREAS OF WORKFORCE AND WASTEWATER MANAGEMENT.

SHUKALB is considering the establishment of Communities of Practice/Working Groups in the areas of workforce and wastewater management and is assessing the willingness of members to engage in these groups.

7.1 Readiness for Engagement in Work Groups / Communities:

How willing are your employees to actively participate in a community of practice/Workgroup related to their function?

1=Not at all willing; 2; 3; 4; 5=Very willing

7.2 Perception of Engagement Benefits:

What potential benefits do you see in actively engaging staff in a community of practice? (Select all that apply)

- Knowledge sharing
- Professional Networking
- Possibilities for solving problems
- Increasing skills
- Information about trends and innovations in the field
- Contribution on the Development of Employee Capacities
- Contribution to the improvement of the legal, regulatory and institutional framework

7.3 Time Availability:

How would you describe the availability of your staff to participate in community of practice activities?

1= Very limited; 2; 3; 4; 5 =Highly available

8. AFFORDABILITY OF FEES FOR TRAINING AND CAPACITY DEVELOPMENT PROGRAMS

8.1 Which of the values listed below can your WSS company pay for the participation of a person in a 1-day training?

- 100 euros.
- 100-200 euro.
- 200-300 euros.

8.2 Which of the values listed below can your WSS company pay for the participation of a team (2-3 people) from the utility in a program lasting several months and include training and technical assistance?

- < €1500
- 1500–2500 €
- 2500–3500 €

- 3500–4500 €
- 4500–5500 €
- >5500 €

9. ADDITIONAL COMMENTS AND SUGGESTIONS

Changes to Policies, Laws and Regulations:

Are there special training needs arising from changes in policy, laws and regulations that are essential to your company's capability and compliance?

_____

Long Term Planning:

What trainings would help you prepare for the expected sector changes and developments in the coming years? What knowledge and skills would help you to embrace new technologies, regulations and industry trends?

_____

We would appreciate any additional comments, suggestions or specific requests regarding training and capacity development for your WSS company.

_____

Thank you for Completing the Training Needs Assessment Survey!

Your feedback is very important in the Association's efforts to support the development of the capacities of water supply and sewerage companies!

APPENDICES 2: THE LONG LIST OF PRIORITIZED TRAINING COURSES

Personal and Professional Skills	4.25
Water Loss Management	4.20
Performance Management through Benchmarking	4.10
Public Procurement Procedures for Water Supply and Sewerage Companies	4.10
Business Plan for Performance Improvement	4.09
Financial Management	4.00
Financial statements and their role in decision making	4.00
Emergency Management	4.00
Group work	4.00
Asset Management	4.00
Leakage Control	4.00
Energy Efficiency in Water Supply and Sewerage Companies	4.00
Occupational Safety for Wastewater Professionals	3.92
Human Resources Planning	3.90
Decision-making	3.89
Problem Solving	3.89
Operation of wells	3.83
Main Pipes and Water Tanks	3.82
Management Skills	3.80
Planning and Organization	3.80
Occupational Health and Safety for Water Professionals	3.80
Governmental, Legislative and Regulatory Framework	3.78
Water Resources, Catchments and Water Quality Management	3.70
Governmental, Legislative and Regulatory Framework	3.70
Operation and Maintenance of Sewerage System	3.70
SCADA Systems for Water -Wastewater Professionals	3.70
Time management	3.67
Conflict Resolutions	3.67
Water Quality in the Distribution System	3.60
Water Meters, Valves and Hydrants	3.60
Fundamentals of Hydraulics for the Water Supply System	3.60
Equipment Maintenance – Motors, Pumps, and Valves for Water and Wastewater	3.60
Customer Service and Public Relations	3.50
Human Relations	3.50
Wastewater Treatment	3.50
Communication	3.44
Sludge Treatment and Management Methods	3.42
Drinking Water Treatment	3.40
Repair and Rehabilitation of the Sewerage System	3.40
Delegation	3.38
Operation and Maintenance of the Drinking Water Treatment Plant	3.36
Circular Economy in the Context of Wastewater	3.30
General Mathematics for Water and Wastewater Professionals	3.30
Secondary Wastewater Treatment – Activated Sludge Processes	3.20
Laboratory Procedures and Sampling for Wastewater	3.20

Guidelines for the Members of the Supervisory Councils of the WSS Company	3.20
Small Water Supply Systems	3.18
Effective Meetings and Presentations	3.11
Taste and Odor Pretreatment and Control	3.10
Applied Mathematics for Water Treatment Operators	3.00
Preliminary and Primary Treatment of Wastewater	3.00
Nutrient Removal - Biological and Chemical Methods	3.00
Sampling and Laboratory Procedures for Water and Wastewater	2.90
Control of Metals	2.90
Mathematics for Wastewater Treatment Professionals	2.90
Ethics for Water Professionals	2.78
Secondary Wastewater Treatment - Fixed Culture Processes	2.70
Secondary Treatment of Polluted Water - Ponds, Lagoons and Constructed Wetlands	2.60