



Identifying Opportunities for Women in the Western Balkan Wastewater Sector: Catalyzing the Women of Water Network



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Identifying Opportunities for Women in the Western Balkan Wastewater Sector: Catalyzing the Women of Water Network

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ABSTRACT

The wastewater sector in the Western Balkans is a historically male-dominated industry, particularly in technical and management roles. Challenges to women's participation include hiring bias, pay gaps, and a lack of role models, among other obstacles. In collaboration with the Water Supply and Sewerage Association of Albania (SHUKALB), we conducted 21 interviews with wastewater treatment professionals in the Western Balkans and the US to catalyze interest in a professional network to provide support and mentorship for women in the Western Balkan wastewater sector. We launched the network with an international discussion forum and by creating in-depth profiles of women leaders in the sector.





EXECUTIVE SUMMARY

The global wastewater sector

The global wastewater sector faces a dearth of talented water professionals (International Water Association, 2016). While women tend not to enter into STEM fields at the same rate as their male counterparts (World Bank, 2019c), women's opportunities are slowly beginning to increase in the wastewater sector.

In the Western Balkan countries of Albania, Bosnia and Herzegovina, North Macedonia, Kosovo, Montenegro, and Serbia, women are often perceived as the family caretakers, mothers, or wives before

recognized as important and valued members of the workforce (Lazarević, 2016). As a result, women tend to face low labor force participation, wage gaps, and the existence of socially-enforced gender roles (Haider, 2017).

Our sponsor, the Water Supply and Sewerage Association of Albania (SHUKALB), serves as a resource for knowledge, professional development, networking, and action plans for wastewater professionals and utilities in the Western Balkans (Who we are – SHUKALB, n.d.).

SHUKALB has identified the need to encourage women to pursue STEM education and careers, which can be achieved through local, national, and international professional organizations that focus on professional development, networking, and mentorship for women. SHUKALB is interested in furthering the opportunities women have within the wastewater sector and is looking to encourage women to take on more technical and leadership roles.

Approach

Our project goal was to catalyze a network of female wastewater professionals in the Western Balkans, the US, and beyond to develop opportunities for mentorship, share experiences, and support initiatives to alleviate the obstacles they face. Our approach was multi-faceted. We:

- 1. Analyzed the experiences of women in the Western Balkan wastewater sector**
- 2. Developed transmedia elements to highlight women's careers in wastewater**
- 3. Established the foundation for a network of female Western Balkan and international wastewater professionals**

We used a purposive sampling strategy to identify 21 female and male wastewater treatment workers in various roles at treatment plants and in other areas of the water sector in the Western Balkans and the United States (Robinson, 2014).

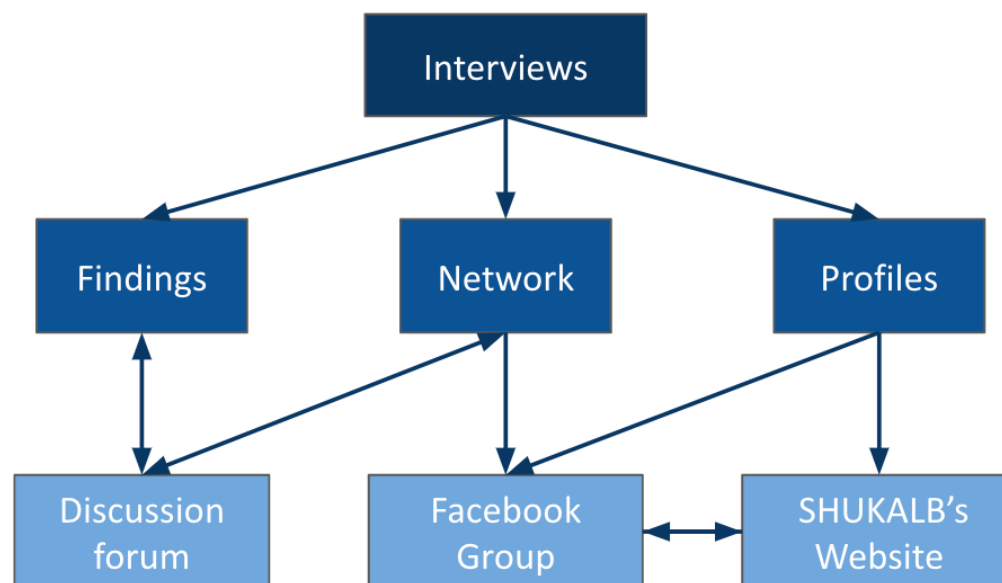


Figure E.1 - Overview of project approach

Our questions were structured to learn about the interviewee's career, education and exposure to the sector, obstacles faced in the workplace, and experiences with mentorship and networking. We collected photographs, quotes, video and audio recordings, and narratives of interviewees. Our team used these elements to create nine profiles highlighting women working in the wastewater sector and bring visibility to the challenges and opportunities they face.

We collaborated with SHUKALB and our interviewees to develop the foundation of a professional organization, the Women of Water network, that connects women of the wastewater sector in the Western Balkans, the United States, and beyond with the purpose of promoting discussion, support, and mentorship among members. To ensure the continuation of the network, our team developed a longevity guide that contains important information on the roles and activities within the network.

To launch the Women of Water network, we facilitated the “Building Bridges Over Water” forum hosted by SHUKALB on December 7, 2020. This event, attended by more than 20 wastewater professionals, served as an opportunity to meet other professionals from around the world and a platform for conversations surrounding opportunities, successes, and obstacles for women in the sector. The discussion forum was recorded and analyzed for further context and recommendations. The goal is also for similar network-related events to occur in the future, and the feedback we received was paired with our network longevity guide.

Findings

No clear career path

The water supply and treatment area of study at universities like the Polytechnic University of Tirana (PUT) tends to have no concrete career path, as opposed to the energy/air pollution pathway, which has developed industries with many well-known career opportunities. The lack of a defined career path for students who study water supply and treatment tends to discourage students from entering that field of study.

Minimal presence of career services

When asked about career services offered at many STEM universities in the Western Balkans, several interviewees stated that these services are minimal and often operate as an outside entity that is difficult to access. This hinders students’ ability to find jobs after graduation, as they are less aware of the opportunities available to them.

Limited resources lead to limited opportunities

One of the main obstacles many Western Balkan interviewees discussed was the limited number of employment opportunities in the wastewater field. This lack of opportunities stems from multiple factors, including a small number of functioning treatment plants and low funding at those treatment plants (Danube Water Program, 2015).

Qualified, yet struggling

Many interviewees from the Western Balkans have degrees and certifications relevant to the wastewater sector, but still struggled to find opportunities in the industry.

“That’s the best way to build a network, when you share experiences and you feel like “oh, I’ve been there, I’ve been in that person’s shoes.” The networks just fall in place so naturally, we have so much in common and this is just an opportunity to realize that and we have to build upon this first activity, and that will be our job, actually.”

– Elisabeta Poçi, Deputy Executive Director, SHUKALB, Albania

This differs from environmental engineering career paths in the United States, where many women find plentiful opportunities.

“Opportunities are there, but still you can’t touch them”

Once women are in technical positions in the Western Balkan wastewater sector, they often become stuck in those positions, as they have colleagues or bosses that may be holding other opportunities out of reach. Many utilities cannot afford to send employees to extra trainings or seminars, and the staff they are able to send tend to be men in higher leadership positions instead of female employees.

Lack of professional networks

Another obstacle that women in the Western Balkan wastewater sectors face is the lack of professional networks specifically for women. Without these networks, it becomes more difficult for female professionals to connect with, and receive support from, other women in similar positions.

Job insecurity

Women who are able to get jobs in their field of study in the Western Balkans are less likely than men to retain those jobs, as there are no current protections to ensure that women who take temporary leaves, such as maternity leave, have their same position when they return (Lazarević, 2016). Because the mentality in the Western Balkans still remains heavily patriarchal, women feel a responsibility to be caretakers.

Changes in local government generate leadership change at treatment plants

In some cases, changes in local government result in changes in management at wastewater treatment plants. While this affects both men and women in the sector, it is particularly difficult for women to earn and retain management positions

where they are already underrepresented.

Female classmates. Male workmates.

Most of the women we interviewed mentioned how their university classes were either majority or all women, yet they always had a majority of male coworkers in their workplaces. They believe women were avoiding field work and dirty jobs in the sector because of the nature of the work being done, as it is often considered to

“I think the mentality is ‘engineers should be men.’ This is one of the gaps in our sector.”
– Erdonita Humolli, Program and Project Assistant, SHUKOS, Kosovo

be a man’s task rather than a woman’s.

Few male changemakers in upper management

Men in high-level management positions often don’t have anyone monitoring what they do or encouraging them to be proactive against hiring bias.



Hiring managers often ask female applicants about their marital status and future family plans, which may then lessen their chances of being hired (World Bank Group, 2018). One interviewee emphasized that some men won't make an effort to change workplace conditions because they don't believe anything needs to be changed.

Understanding societal impact

Many classes present students with the chance to understand the impact

of the work they could do. While many of these women are aware of the obstacles they may face in pursuing a career in the sector, they make the decision to continue in this career path because of the motivation to have an impact.

Conferences, seminars and events

In addition to university experiences, many interviewees talked about taking advantage of conferences, seminars, and other events. Women who are able to attend these conferences and

seminars further develop their careers and passion for their work, as well as discover and network with the community of the wastewater sector in their country or region.

The importance of supportive families

The first connections that can influence people's career paths are their families. Many of the women we interviewed reflected on their first interest in engineering or the environment coming from their family background and values. These influences help counteract common ideas of traditional gender roles in the industry and show women a possible future in STEM and wastewater treatment.

Influential professors

Professors are some of the biggest influences on many wastewater professionals' careers. In nearly every interview, women working in the wastewater sector referred to one of their university professors as their biggest mentor.

Professors also act as the connection between students and different wastewater treatment plants.

Internships & research opportunities

A recurring theme in our interviews was women's access to internships, research, education, and work opportunities. International opportunities for research and postgraduate education are a common way for women in the Western Balkans to gain more knowledge about the sector to bring back to their home country.

Several interviewees credit internships with SHUKALB, water utilities, and companies abroad as being the beginning of their careers. These internships serve multiple purposes for most of these women: they bring them new connections in the field, educate them on the issues facing the sector, and grow their interest for wastewater treatment.

Some water utilities have measures in place to improve gender balance

Efforts to implement gender quotas have appeared in the utilities of our interviewees on a utility-specific scale, leading to the increased hiring of women. While some interviewees noted that they didn't believe their company was making any effort to improve gender balance, others saw trends of hiring women, specifically female managers.

Differing perspectives on quotas

Many interviewees believed that quotas provide women with a way to get their foot in the door of the wastewater sector, leading to further opportunities down the line. They discussed the fact that female representation, especially in higher-level management positions, makes them feel empowered and that their work environment is more equal from a gender perspective.



Many professionals look for improvement in legislation

Some interviewees believed that improving on issues like gender inequality (such as the pay gap) and gender balance at companies would require political change and intervention. Some women advocated in favor of legislation that prevents discrimination based on one's gender, similar to the US Civil Rights Act of 1964.

Reducing hiring bias

One interviewee noted that some job applications for water utilities explicitly give extra positive consideration to female applicants. Increasing consideration for women in certain roles is an important step in diminishing hiring bias.

International organizations assist in reducing gender issues

International organizations provide benefits to women in the Western Balkans through gender initiatives that aim to improve gender equality. One interviewee told us that projects where gender balance is talked about



openly give women a better opportunity to enter into STEM fields. Another talked about other internationally-sponsored projects and programs she participated in that provide women with training and certifications.

The importance of national organizations

While international organizations are an important actor for change, national organizations play a major role in improving gender issues as well. SHUKALB received a grant from the United States Agency for International Development (USAID) to implement approximately 50 training courses available to Albania and its neighboring countries.

Other efforts have been reflected in organizations like the Young Water Professionals, with many female interviewees reporting that they received employment opportunities through connections made within the organization after graduating.

Strategies to further improve opportunities for women in the sector

Interviewees believe certifications that demonstrate their holder's capability and knowledge relating to the industry can help establish and advance women's careers. Currently, the only internationally recognized certification that exists for the water sector is the Professional Operator (PO) program (Water and wastewater operator, n.d.).

Recommendations

Recommendations for wastewater companies and utilities

To continue improving job security for women in the Western Balkan wastewater sector, wastewater treatment plants would benefit from the implementation of certifications of technical roles. Decreasing gender inequality will also require utilities to address issues like pay gaps and gender imbalance through initiatives such as pay audits and hiring quotas. Additionally, to make the sector more welcoming for women, companies should provide adequate sanitation facilities for women.

Recommendations for SHUKALB

SHUKALB might work with affiliated companies and organizations to implement gender initiatives that aim to close gender gaps in the workplace, such as the Economic Dividends for Gender Equality (EDGE) certification program (EDGE Certification, n.d.). To increase the number of women entering the sector, SHUKALB could continue, and improve upon, efforts to encourage participation from younger women in the Western Balkans.

Recommendations relating to the Women of Water network

To ensure the success of the Women of Water network, members would need to be encouraged to contribute towards the functioning of the network and to collaborate on future discussion, events, and profiles. Those in executive positions could promote membership of the network to new groups of women and provide incentives for members. The "Building Bridges Over Water" discussion forum successfully catalyzed important conversation between female professionals, and similar events could be held in the future.

"I would say one thing: Just do it. This is an opportunity to become valuable for your community. You will make people's lives better, and at the same time you will protect the environment. It's such an exciting career. And also, by the end of the day, you'll feel proud about what you're doing. But also, you need to be prepared because you need to grow a thick skin and be twice as good to be considered equal. But, just do it, you will love it."

– Dajana Disha, Erasmus Mundus Scholar, Ghent University, Belgium

Conclusion

Our extensive interviews with female and male wastewater professionals around the world demonstrated the experiences and obstacles faced by women in the wastewater field, specifically in the Western Balkans. To expand connections and combat these issues, our team, with the assistance of SHUKALB, developed a network to connect female water and wastewater professionals. The goal of the Women of Water network is to provide communication and information to women in the wastewater sector and to share experiences and ideas to further progress the advancement of the industry and women's representation in it.

Our team is thankful and fortunate to have worked with such passionate and inspirational women and men from the Western Balkans and United States. We hope that the Women of Water network catalyzes many connections among women and that it helps to create a better work environment from women in the wastewater sector.

ACKNOWLEDGMENTS

Our project team would like to acknowledge and thank everyone that assisted in our project. This project would not have been possible without their time and support.

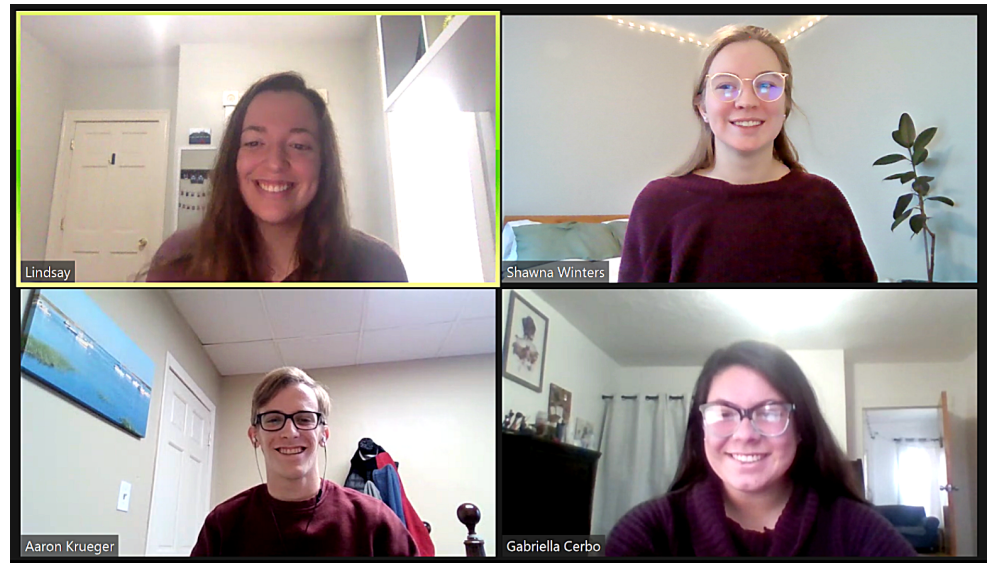
Shumë faleminderit to....

Our sponsor SHUKALB, for providing us with this amazing project. A special thanks goes to Elisabeta Poçi, Deputy Executive Director, Olta Ceca, Manager of Programs, and Alban Kushi, Manager of Member Services and Administration, for their kindness and assistance to the team. You were all so open to our ideas and willing to help us with anything and everything we asked.

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Our interviewees, for being and open honest with us about your experiences. We were taken aback by the kindness and gratitude you all showed us, and this project is truly for all of you and your colleagues.

We completed this project in the midst of the COVID-19 pandemic and were unable to travel to Albania. However, we were still able to connect with so many amazing people around the world and see the Western Balkans through their eyes. Through Zoom, we met people and traveled places we may never have in a pre-pandemic world. We cannot wait to visit you all in person one day.



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INTRODUCTION



According to the 2019

World Bank report *Women in Water Utilities*, only 17.7% of workers in water and sanitation utilities are women (**Figure 1**) (World Bank, 2019c). This disparity is multifaceted: women lack female role models and mentors, experience poor workplace culture, and are subject to negative gender stereotypes during the hiring process and while on the job (World Bank, 2019c).

The global wastewater sector is struggling with a dearth of talented water professionals (International Water Association, 2016). While women tend not to enter into STEM fields at the same rate as their male counterparts (World Bank, 2019c), women's opportunities are slowly beginning to increase in the wastewater sector. By improving gender balance (the ratio of women to men) in the workplace, water sector companies have experienced better financial performance, employee retention, and rates of innovation (World Bank, 2019c). Furthermore, as

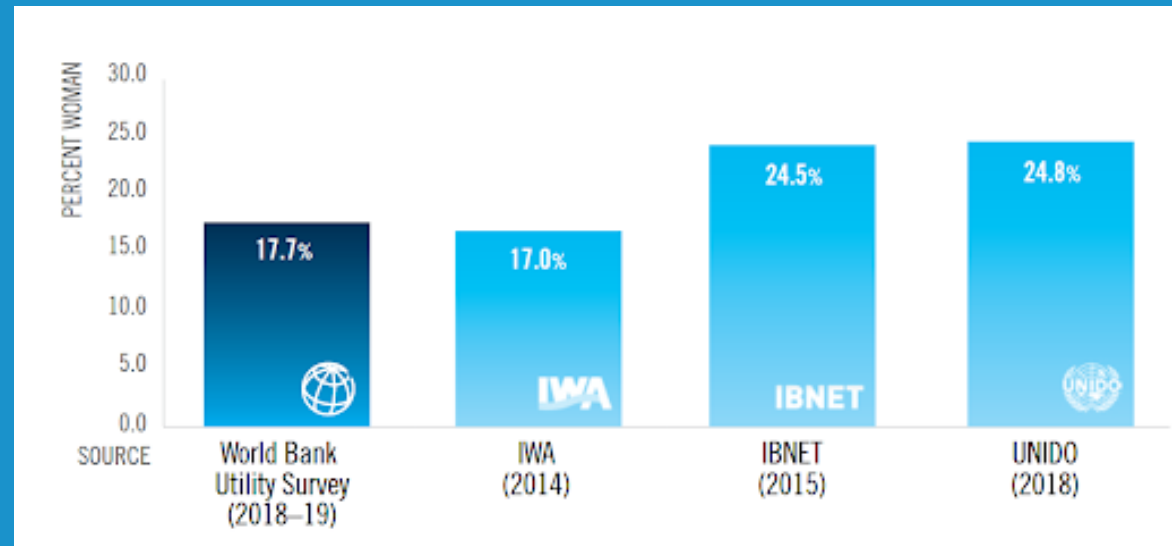


Figure 1 - Women in water and sanitation utilities, from different sources
World Bank. (2019). Women in Water Utilities: Breaking Barriers. World Bank.

young women continue to get education and training on relevant issues in the wastewater sector, they increase the talent pool and number of employees in the workforce. Increased hiring of these qualified women could improve water body quality, protect the environment, and reduce health issues relating to possible disease outbreaks (Gjebrea, 2013).

The wastewater sector in the Western Balkans employs a relatively

small number of women in technical positions (E. Poci, personal communication, September 18, 2020). Many human resource managers of water utilities in the region are not incentivized to hire women or meet gender quotas, even if they are in place. Often, women are not hired because of the possibility of extended maternity leave, whereas men are able to remain at their jobs during child rearing (Atoyán, 2017). In broader terms, the sector is seen as a "men's sector." Women are expected

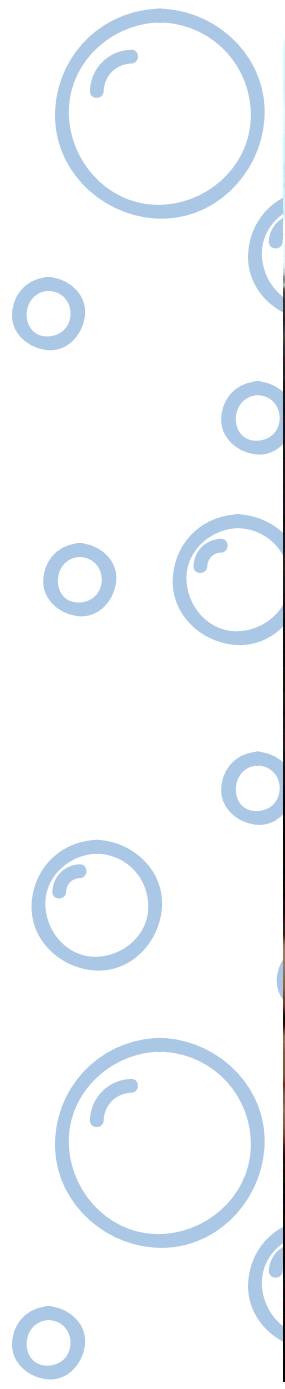
to stay home and be caretakers (Dauti & Zhllima, 2016). These gender stereotypes result in low awareness of opportunities for women in the sector, which leads to fewer women pursuing technical and leadership positions.

Our sponsor, the Water Supply and Sewerage Association of Albania (SHUKALB), is a not-for-profit organization that serves as an advocate, resource, and force for change in the water and wastewater industry (SHUKALB, n.d.). Up to this point, SHUKALB has not focused on issues of gender inequality, such as pay gaps, bias against women, and lack of women's opportunities in the sector, but growth of the sector is creating a need to address these issues (E. Poci, personal communication, September 18, 2020). The organization possesses expertise and an array of connections in the industry, academia, and political circles to potentially support and improve women's opportunities in wastewater utilities across the Western Balkans.

The goal of our project is to catalyze a network of female wastewater professionals in the Western Balkans, United States, and beyond and to develop mentorship opportunities, spaces to share experiences, initiatives to support career development, and programs to help alleviate the obstacles women face in the wastewater sector. Through in-depth interviews, we highlight the experiences and obstacles women have had working in the wastewater sector. Based on this qualitative research approach, our team convened a group of female water

professionals in the Western Balkans and the US to collaborate on developing a professional organization to connect women in the wastewater sector internationally. We facilitated a virtual discussion forum where participants discussed their experiences in the sector and issues related to developing and sustaining a network. The goal of our project is to help organize a community of female professionals in the wastewater industry and promote their stories, experience, and efforts towards advancing their careers and the careers of others.





**GLOBAL AND
REGIONAL
CONTEXT OF
WOMEN'S
OBSTACLES**

Challenges women face in water sectors around the world

Every day, women working in the wastewater sector face gender-related obstacles in the workplace. In some countries, including those in the Western Balkans, these obstacles are more severe than others and range from discrimination in the hiring and recruiting processes to workplace biases and mistreatment (World Bank, 2019c). Due to these obstacles, recruitment and retention rates of female employees are significantly lower than those of male employees.

Barriers in the global wastewater sector

The long standing belief that jobs in the sector are “men’s jobs” has contributed to a lack of women in the sector, as a majority of water utilities worldwide employ significantly more men than women (**Figure 2**) (World Bank, 2019c). This often causes women to experience hostility in male-dominated workplaces. For example, Murawski's (2020) report on women's role in the U.S. wastewater sector highlighted hostility and

discrimination from male colleagues and disrespectful commentary about the women’s roles (Murawski, 2020). In a study focused on gender balance in the wastewater sector, the International Water Association (IWA) and the United States Agency for International Development (USAID) found that men and women have “equal competencies in almost all domains; but [women] are often not perceived as such” (*The Untapped Resource*, n.d., p. 4).

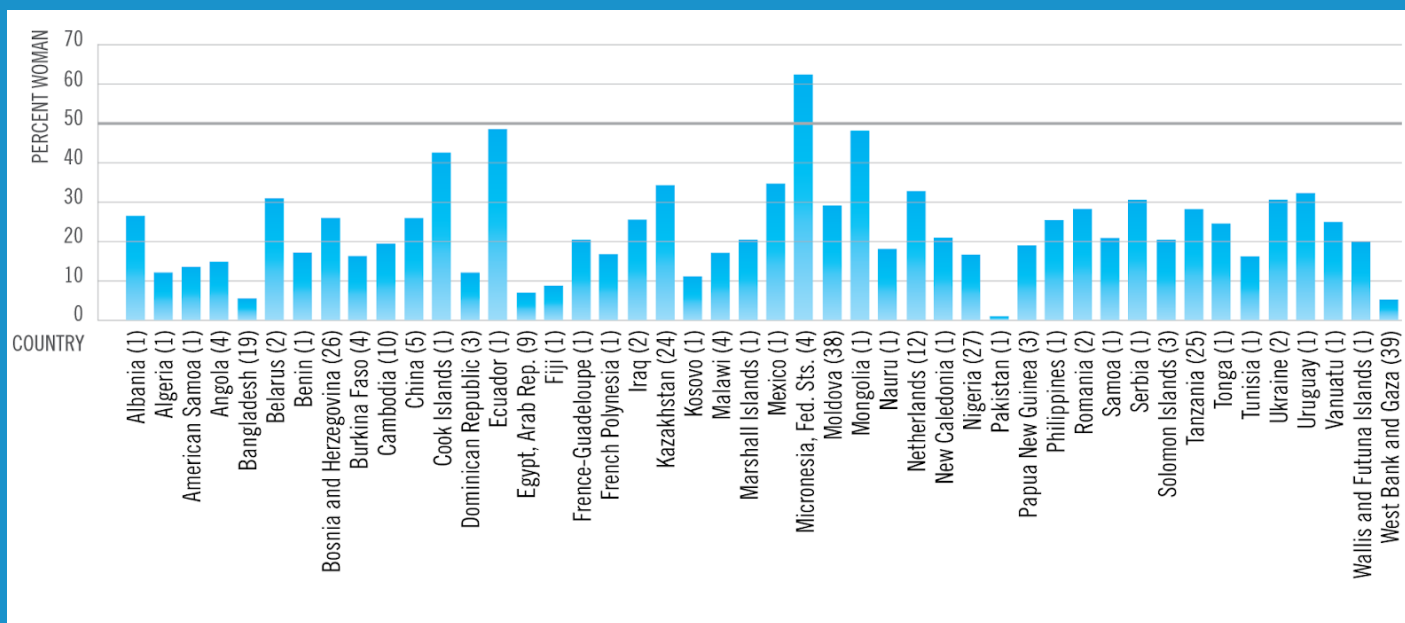


Figure 2 - Percentage of employees that are women in water and sanitation utilities, by country
World Bank. (2019c). *Women in Water Utilities: Breaking Barriers*. World Bank.

Female employees tend to feel isolated due to a lack of female coworkers, role models, and leaders. The 2019 World Bank report of 64 water and sanitation facilities from 23 countries stated that an average of 23% of engineers and managers in a utility are female, 32% had no female engineers, and 12% had no female managers (World Bank, 2019c). The report argued there are more women in areas that are stereotypically considered to be “women’s jobs,” such as administration, accounting, and human resources. **Figure 3** is one example of this skewed distribution in

a utility company in Belgrade, Serbia.

Female engineers are leaving the sector at an alarming rate of 10.3% per year, which is almost double the rate of men at 5.8% as of 2018 (World Bank, 2019c). One possible reason is that women are less likely to receive necessary accommodations while working than men (World Bank, 2019c). For example, women in Murawski’s report described being given men’s uniforms that did not fit them properly and did not always have access to adequate restrooms or changing areas that were separate

access to adequate restrooms or changing areas that were separate from male coworkers (Murawski, 2020). Another factor in women leaving the sector is sexual harassment. For example, 63% of women in private engineering jobs reported experiencing sexual harassment, as did 51% of females in the technology sector (Corbett, 2015).

Women are often unable to work extended hours in wastewater treatment facilities due to familial responsibilities. For example, out of 64 water utilities surveyed in a World Bank report, child care was only available at 4 places of employment in the water sector (World Bank, 2019c). This is one factor contributing to hiring bias against women. Researchers found that workers were being hired at a 4 to 1 ratio of males to females and are not being targeted in the recruiting process (Hegde, 2020; World Bank, 2019c). By discouraging women’s employment at water utilities, companies are limiting their options for potential trained employees in a sector that is currently facing a lack of

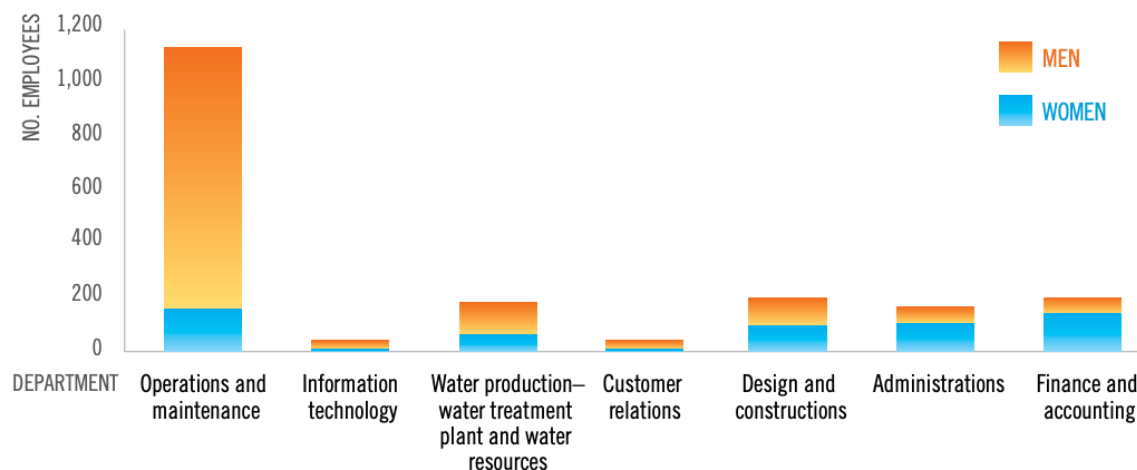


Figure 3 - Number of employees by department in a public utility in Belgrade
World Bank. 2019. “Women in Water Utilities: Breaking Barriers.” World Bank, Washington, DC.

experienced professionals. This is particularly true in countries with developing wastewater treatment programs, such as those in the Western Balkans.

Aspects of gender inequality in the Western Balkans

In the Western Balkan countries of Albania, Bosnia and Herzegovina, North Macedonia, Kosovo, Montenegro, and Serbia (Figure 4), women face low labor force participation, wage gaps, and the existence of patriarchy and socially-enforced gender roles (Haider, 2017). These issues affect both women's work and domestic lives.

Persistent discrimination and gender gaps in the Western Balkans

Women in the Western Balkans experience gender discrimination and inequality on a daily basis. These problems manifest in the form of stereotypes, violence, and a lack of political representation (Lazarević, 2016). Women are often perceived as

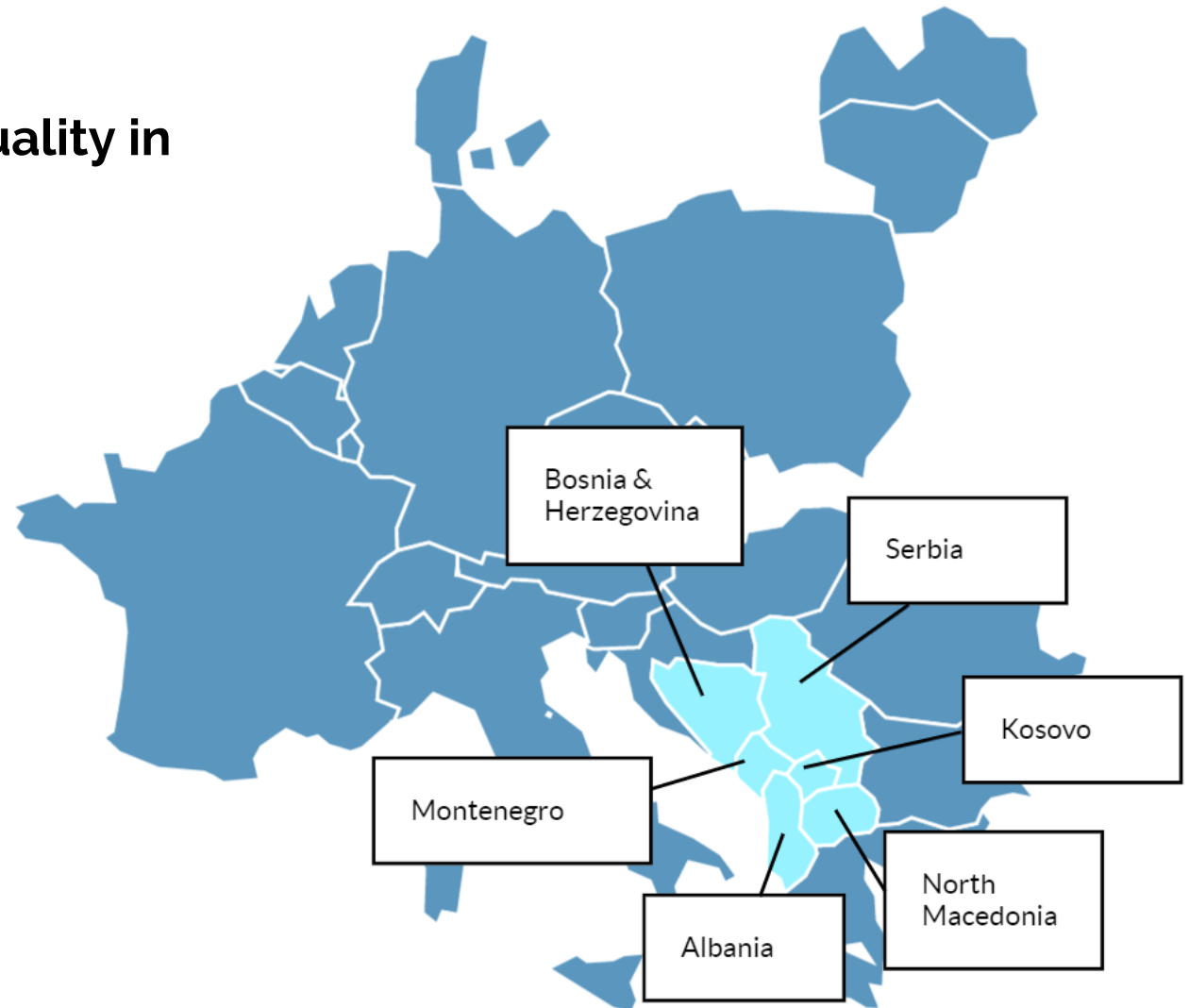


Figure 4 - The countries of the Western Balkans

Percent Female vs. Male Representation in National Parliaments

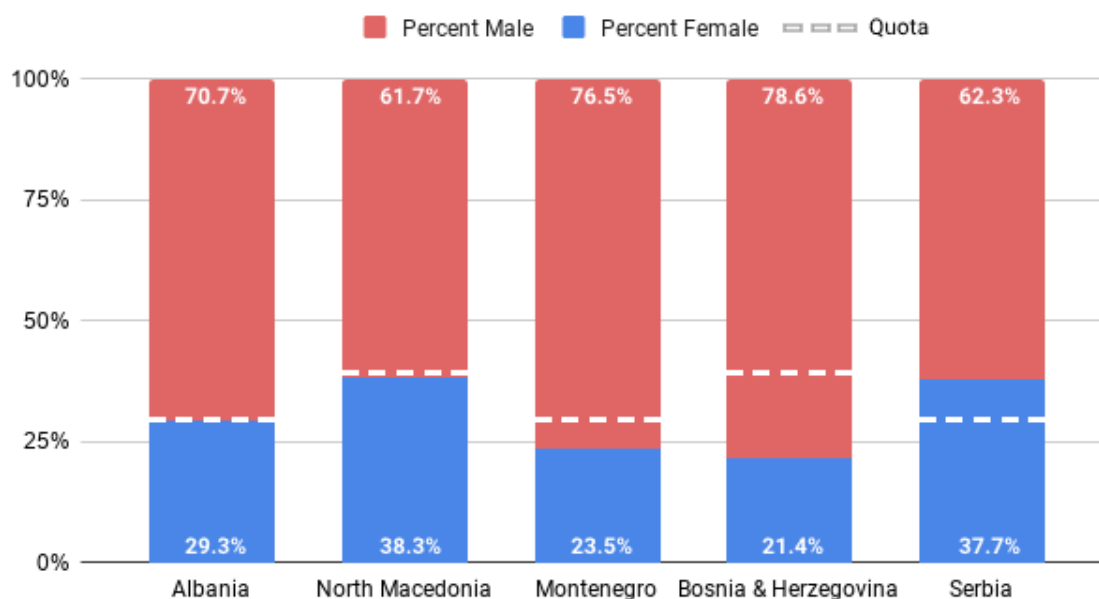


Figure 5 - Parliament seats held by women in Western Balkan countries compared to gender quotas

Women in parliaments: World classification. (2018). Inter-Parliamentary Union.

family caretakers, mothers, or wives, before being recognized as important and valued members of the workforce (Lazarević, 2016). These stereotypes are further reinforced by a traditional patriarchal system that has influenced the position of women and men in Western Balkan society (Haider, 2017).

Gender-based violence is another prevalent issue in the Western

Balkans. According to a regional survey completed by 45 Western Balkan civil society organizations (CSOs), “[physical] violence against women is recognised as the most critical gender-related issue” in the Western Balkans (Haider, 2017, p. 6). Women in some Western Balkan countries report high rates of domestic violence, with 56% of Albanian women and almost 70% of Kosovar women experiencing

domestic violence in their lifetimes (Lazarević, 2016). Additionally, after the breakup of Yugoslavia, women experienced an uptick in domestic violence as a result of post-conflict tension and intolerance of marginalised groups (Lazarević, 2016).

In addition to struggles at home, women have unequal representation in the political arena of the Western Balkans. Generally, only one-fifth to one-third of the seats in parliament are occupied by women, which does not reach the goals of each country’s quota systems (except in Serbia) (**Figure 5**) (Lilyanova, 2017).

While some Western Balkan countries remain above the global average of 25.1% female representation in national parliaments (IPU, 2020), unequal or poor representation of women in political positions leads to a lack of knowledge on, and acknowledgement of, obstacles that women face. (Lazarević, 2016). Many of these problems do not end at home, but continue into the workplace.

Low participation and employment of women in Western Balkan workplaces

Societal beliefs about gender roles have negatively affected women's participation in the labor force of the Western Balkans. In comparison to the average of countries of similar income levels, the gap between male and female labor force participation is significantly higher with 23.9% more men in the workforce than women (**Figure 6**) (World Bank, 2016). The lowest female labor force participation rate is in Kosovo, with just more than 20% of women in the workforce (World Bank, 2016).

In addition to overall labor force participation, there are also substantial gender gaps in unemployment in Western Balkan nations, with higher female unemployment than male unemployment. Kosovo has the highest female unemployment rate in the Western Balkans as of 2015, at 36.6% (European Commission, 2020) (**Figure 7**).

These rates of female unemployment have numerous causes, and the hiring

Labor force participation by gender (ages 15-64), 2020

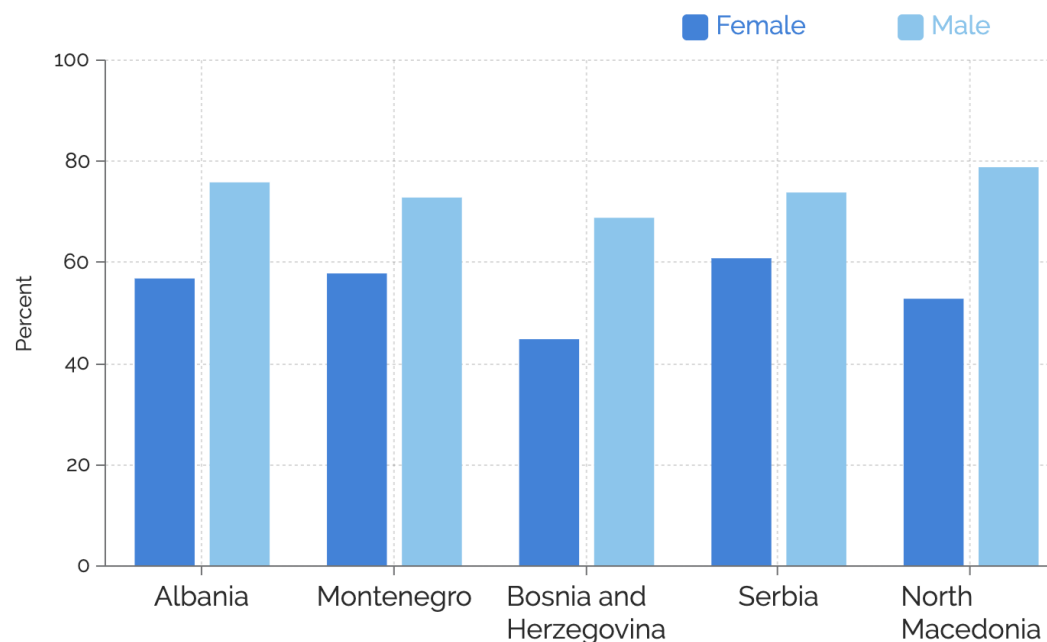


Figure 6 - Labor force participation by gender in the Western Balkans

World Bank. (2020). Labor force participation rate, male (% of male population ages 15-64) (modeled ILO estimate)—Albania, Montenegro, Bosnia and Herzegovina, Serbia, North Macedonia.

World Bank. (2020). Labor force participation rate, female (% of female population ages 15-64) (modeled ILO estimate)—Albania, Montenegro, Bosnia and Herzegovina, Serbia, North Macedonia.

process is a major contributor. Some managers in the Western Balkans believe that hiring women can be an issue for their firm because they may lack skills or experience, cost more to the company due to benefits and regulations, and have competing family obligations (World Bank Group, 2018). These beliefs vary by

country, but there are at least 5% of firms, and up to 47%, that agree with these discriminatory factors (**Figure 8**).

Invisible barriers

In the Western Balkans, it is not uncommon for interviewers to ask women questions about their marital status and future family plans

Distribution of female unemployment in the Western Balkans

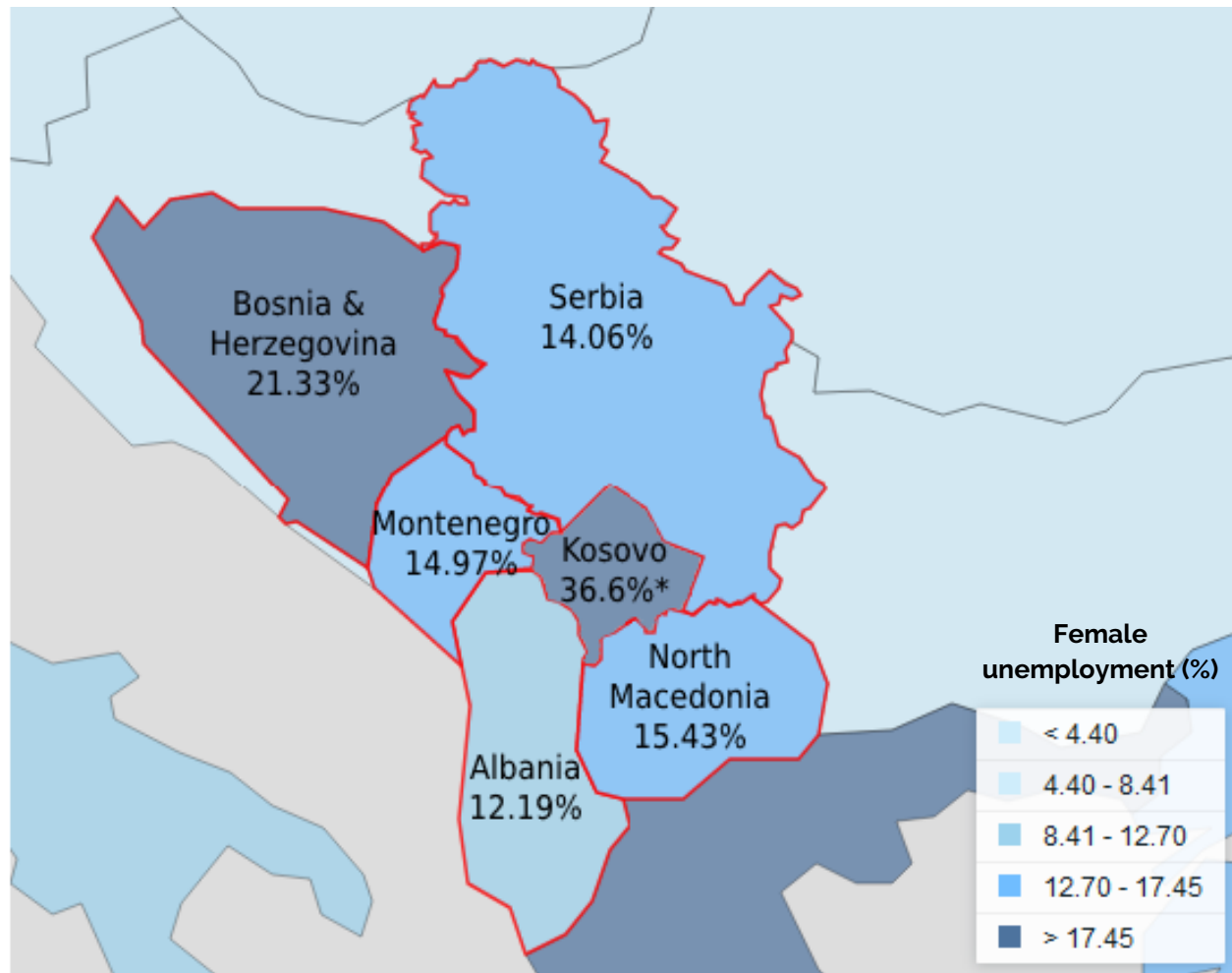


Figure 7 - Distribution of female unemployment in the Balkans

World Bank. (2020). *Unemployment, female (% of female labor force) (Modeled ILO Estimate)*—Albania, Montenegro, North Macedonia, Bosnia and Herzegovina, Serbia.

*Kosovo obtained from: European Commission. (2020). *Instrument for Pre-accession Assistance (IPA II): Kosovo*.

When hiring women, are there issues because they...

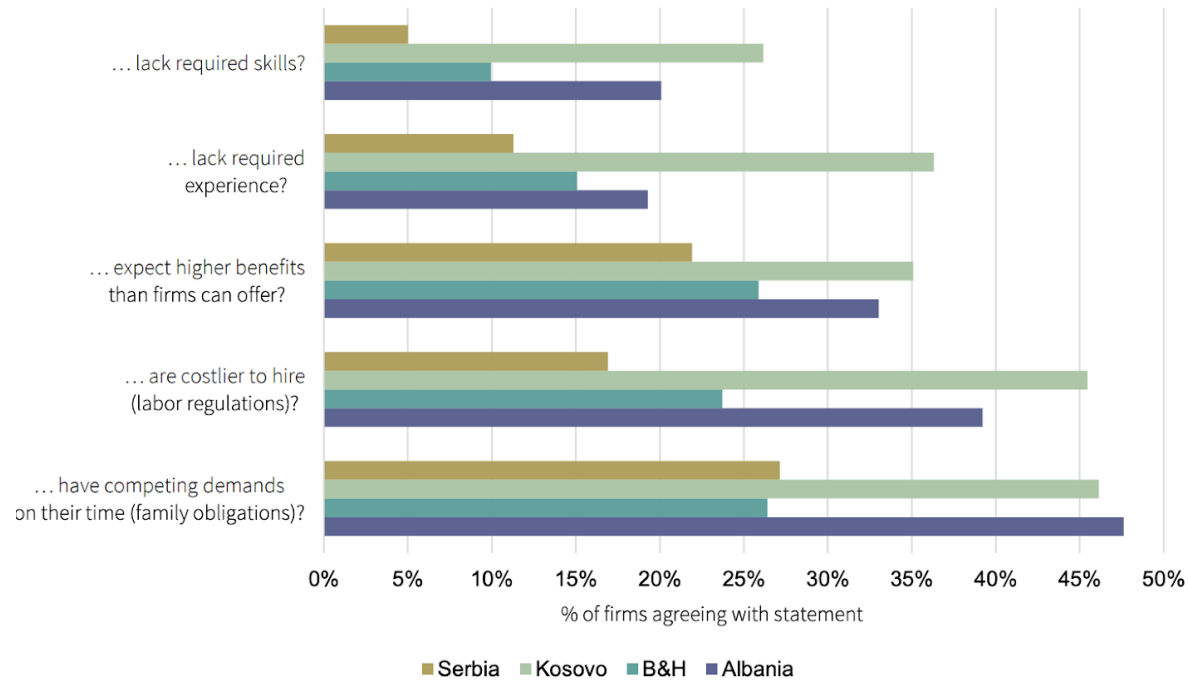


Figure 8 - Issues in Hiring Women in the Western Balkans

World Bank Group. (2018). *Promoting women's access to economic opportunities in the Western Balkans*.

(Lazarević, 2016). Though maternity leave is available in all of these countries, such as 365 days of paid leave in Albania (Buitrago, 2017), issues still arise for women looking to start families. Across the Western Balkans, the return from maternity leave results in either a demotion to a lower-level position or a complete termination of their contract (Lazarević, 2016). Even if and when women do return to work, they have difficulty finding affordable

childcare. The global issue of a lack of available and affordable childcare is also present in the Western Balkans, where the majority of childcare is done within the home by female family members (World Bank, 2018).

Once a woman moves past these invisible barriers, they face further disparities in earned wages in the Western Balkans, especially in rural areas. Women with similar

qualifications to men earn less: the wage gap is 10% in Bosnia and Herzegovina, 14% in Serbia, and 19% in North Macedonia (World Bank, 2016). These gaps are partially explained by poor representation in higher-paying leadership positions; in the Western Balkan region, fewer than 25% of companies have a woman in their top management role (World Bank, 2016). **Figure 9** breaks down these percentages by country.

Percentage of women in senior and middle management

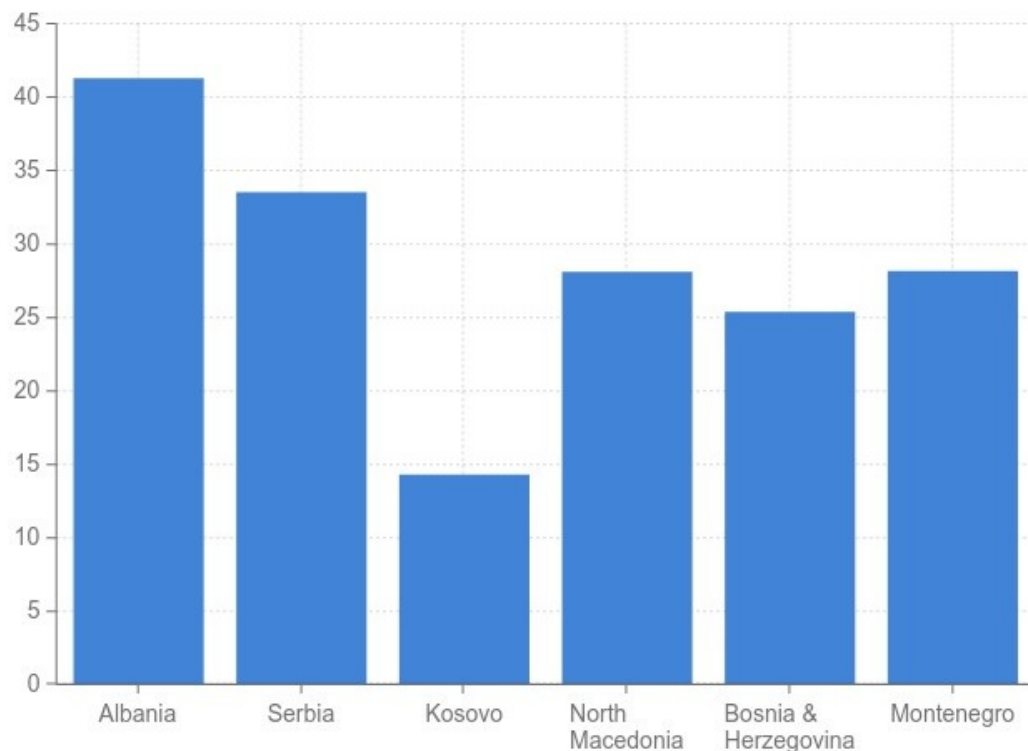


Figure 9- Issues in Hiring Women in the Western Balkans

World Bank. (2020). *Female share of employment in senior and middle management (%) (Modeled ILO Estimate)* — Albania, Kosovo, Montenegro, North Macedonia, Bosnia and Herzegovina, Serbia.

Women are severely under-represented in the Western Balkan wastewater sector and STEM fields

Women are severely underrepresented in fields relating to science, technology, engineering, and math (STEM) in the Western Balkans. In Bosnia and Herzegovina, men occupy 82% and 90%

of engineering and information technology (IT) roles respectively (Browne, 2017). Looking to technical programs in North Macedonia, women make up just 31% of undergraduates in technical and technological science programs and are only 11% of those employed in the water and wastewater

sector (Huyer, 2018). In Albania's workforce, women are present in fewer hands-on technical roles such as plant and operation (Republic of Albania Ministry of Social Welfare and Youth, 2014).

Issues of gender balance in technical fields are reflected in water utilities of the Western Balkans as well: 26% and 19% of staff in water utilities of Bosnia and Herzegovina and Serbia respectively are women, with just 3% of these utilities' female staff in engineering roles (IBNet, 2015). In water companies in Tirana, Albania and Pristina, Kosovo respectively, 15% and 12% of plant operation positions are occupied by women, and no female representation exists in upper- and top-level management positions in Pristina (World Bank, 2019b).

Encouraging women's participation in the wastewater sector

Recently, the Danube Water Program and the World Bank Global Water Security and Sanitation Partnership collaborated with three newly emerging water utilities in the Western Balkans to observe gender equality in those workplaces (World Bank, 2019b). These three utilities included the Pristina Regional Water Utility in Kosovo, the Brasov Regional Water Utility in Romania, and the Tirana Water Utility in Albania (TWWU), all of which were assessed under the Economic Dividends for Gender Equality (EDGE) global certification system. The EDGE system aims to close gender gaps in the workplace by measuring women's representation, pay equity, effectiveness of policies for career progression, and inclusiveness of workplace culture (EDGE Certification, n.d.). All three utilities scored above the EDGE international standard when looking at junior management systems, but were lacking female representation in both top management and board members (World Bank, 2019b). Each of the three

utilities are taking action that resulted in their high scores on the EDGE certification. For example, the Pristina Regional Water Company is reviewing their HR regulations in order to formalize flexible work policies (World Bank, 2019c). Additionally, they are looking at methods to alleviate the work-life conflict that disproportionately disadvantages female workers, including child and elder care (World Bank, 2019c).

The TWWU has taken the most concrete steps towards encouraging gender equality in the workplace, addressing many of the factors identified by EDGE. For example, the TWWU recently introduced a new business plan that identifies targets for male and female representation in the sector (World Bank, 2019c). Additionally, the TWWU conducts yearly gender pay gap assessments and plans to develop a mentorship





program to encourage solidarity among women in the sector and advance training and workplace skills as the older generation teaches younger hires (World Bank, 2019c).

Similarly, as multiple Western Balkan countries are official candidates for membership in the European Union (specifically Albania, Montenegro, North Macedonia, and Serbia), potential quotas implemented by the European Union (EU) will require companies to have as many as 40% of

management roles filled by women. This would further require an enforced balance between genders (European Parliament, 2013).

Support systems and role models

There are many factors that have been reported to encourage women to pursue careers in STEM. A significant number of women in the United States report that having support from family and friends to pursue STEM fields motivated them to succeed in STEM classes and later build a career in

technical roles (Leaper & Starr, 2019).

A different report on strategies that could be used to encourage women to pursue STEM fields looked at the importance of representation in the workplace, such as through female bosses or mentors (Diekman et al., 2019). Students report greater commitment to STEM careers after learning that STEM professionals are people they identify with, including female professors and teaching assistants who make an effort to emphasize the importance and impact of STEM fields (Diekman et al., 2019).

Women's networking opportunities

Many local, national, and international professional organizations focus on professional development, networking, and mentorship for women. One international organization, the Society of Women Engineers (SWE), offers scholarships, networking events, outreach programs, and conferences to its members. These networking events allow members to connect with more experienced experts while also making friends and developing a sense of

community within their field.

Another group, the International Network of Women in Engineering and Sciences (INWES), is an international professional organization for women that consists of more than 250,000 women (About INWES, n.d.). It provides opportunities for women to be introduced to science and technology industries as well as exposed to professional development and career advancement events. INWES holds conferences every year for members to attend, and while they have a European branch, no Western Balkan countries are official members. Having accessible networks of women in STEM fields will both encourage women to succeed and advance in their career by fostering social connections between women who are mostly working in male-dominated fields.

SHUKALB

Our project sponsor, the Water Supply and Sewerage Association of Albania (SHUKALB), was established in 2000 as a professional, non-profit organization

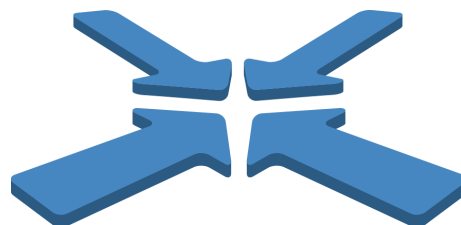
water supply and sewerage professionals. It works to ensure that the management of the wastewater sector in Albania is efficient, sustainable, and effective in enforcing the current laws and regulations in Albania (Who we are – SHUKALB, n.d.). SHUKALB's overall mission involves advocating for the interests of professionals in Albania's water sector, serving as a resource for knowledge, professional development, networking, and collaboration with partners in the Western Balkans (Who we are – SHUKALB, n.d.).

SHUKALB also runs a summer internship program for university students to provide them with practical experience relating to their degree. This program has reached more than 380 students, many of whom have continued on to be employed by water companies. This

program serves as both a networking opportunity and learning experience for these students, as they are able to speak and connect with other professionals in the sector. SHUKALB tends to have more women than men in their internship program, as the amount of women in the environmental engineering program in universities remains higher than men; however, this ratio is not reflected in the overall wastewater sector (E. Poci, personal communication, September 18, 2020).

Young Water Professionals

The Young Water Professionals (YWP) is an initiative of the International Water Association (IWA) that works to build a network of water professionals that are finishing or have recently completed their academic studies. SHUKALB recognized the necessity of having young people in the wastewater



SHUKALB
WATER SUPPLY AND SEWERAGE ASSOCIATION OF ALBANIA

sector and worked with the YWP of Austria to establish a branch of the YWP in Albania (Young Water Professionals, n.d.). Many current water utility employees are aging out of the workforce and retiring, which creates an opportunity for young professionals to enter the sector. As the wastewater sector itself is developing, having recently educated individuals as employees will help advance and introduce new knowledge to the sector.

The YWP provides networking workshops, internship programs, conferences, and career fairs for professionals under 35 years of age. The YWP and SHUKALB currently work together to achieve objectives including encouraging young professionals to become involved with SHUKALB, facilitating opportunities to learn through professional seminars and career development programs, and encouraging community involvement through volunteering and mentoring (Young Water Professionals,



n.d.). As associations, both the YWP and SHUKALB have always consisted of a majority of women, but women holding positions of power within the organization have been slim; SHUKALB hasn't had a woman as the executive director in the past 5 years. SHUKALB works closely with professionals in the

wastewater sector and is interested in advocating for changes their members would like to see within the industry. SHUKALB is interested in furthering the opportunities women have within the wastewater sector and is looking to encourage women to take on more technical and leadership roles.

TË GJITHË

NCA DHE EKSPONATI
SHKËT BALLKANIKE
R 2019 PRISHTINË, KOSOVË

KOS | SHUKALB



CATALYZING AND COLLABORATING: OUR APPROACH



The main goal of our

work is to catalyze interest and empowerment for women in the Western Balkan wastewater sector through the creation of a women's professional network. We collaborated with wastewater employees from the region and members of SHUKALB through interviews and discussion to help create a forum for deliberation between Western Balkan and American women in the industry. Our approach was multi-faceted. We:

- 1. Analyzed the experiences of women in the Western Balkan wastewater sector***
- 2. Developed transmedia profiles highlighting women's careers in wastewater***
- 3. Established the foundation for a network of female Western Balkan and international wastewater professionals***

The combination of these elements already working in the field, and aims to promote opportunities for women in the wastewater field, identify potential areas for support and highlight women improvement and progress in the Western Balkans.

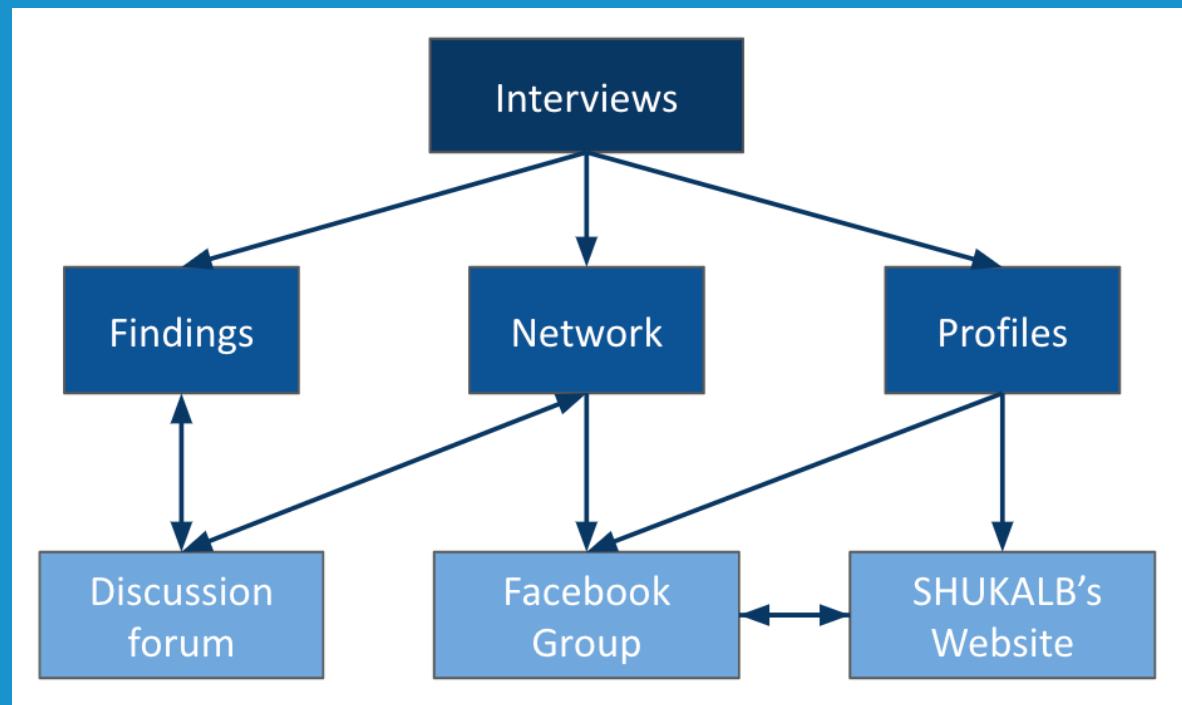


Figure 10 - Overview of project approach

Analyze the experiences of women in the Western Balkan wastewater sector

Our team conducted 21 semi-structured interviews between September 2020 and December 2020 to learn more about women's experiences in the wastewater sector of the Western Balkans. We used a purposive sampling strategy to identify male and female wastewater

treatment workers, meaning interview subjects were selected by employment categories such as those who perform in technical roles and those in upper management positions (Robinson 2014). While we mainly interviewed women, we included three men to illuminate male

perspectives concerning gender inequality in wastewater utilities. Our team also included male and female students and alumni from the Polytechnic University of Tirana (PUT) in our sampling to learn more about the pipeline between education and professional work and to gain

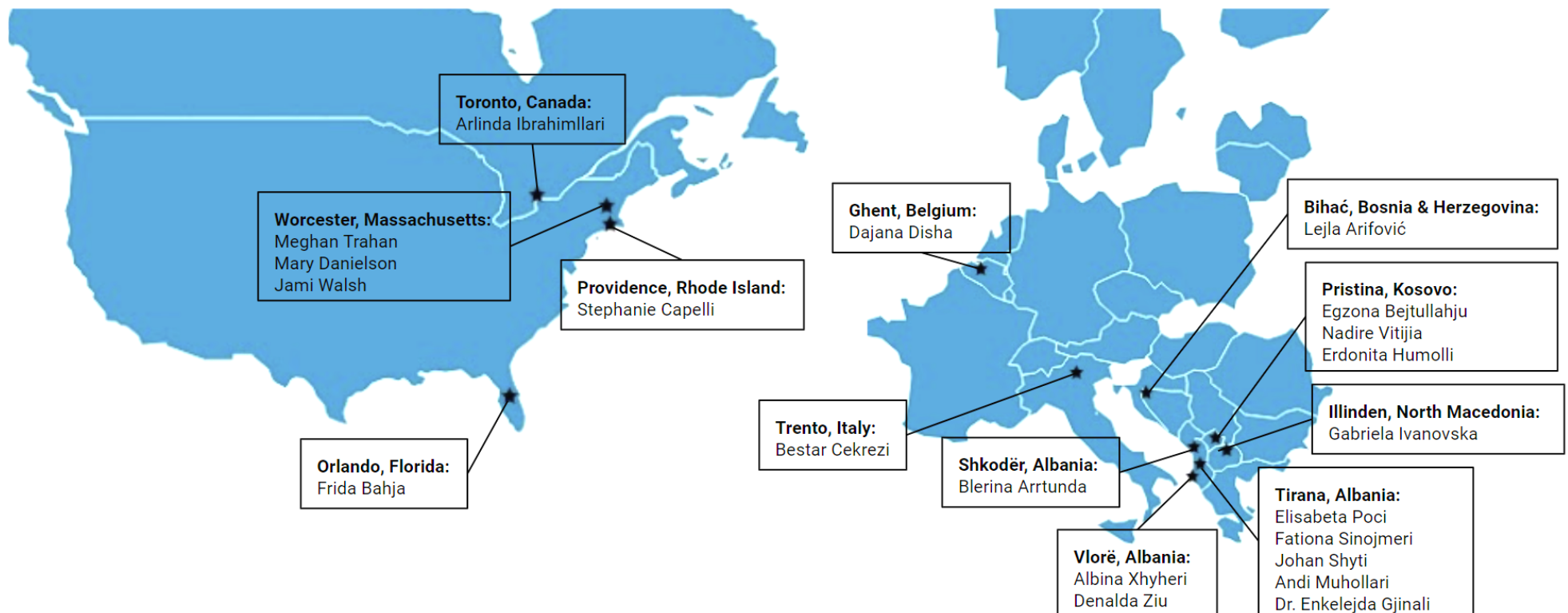


Figure 11 - A map of where interviewees are located

perspective on how students perceive issues and opportunities in the wastewater sector. We used our sponsor's connections to obtain contact information for professionals in the Western Balkans. Contacts from PUT were obtained from Professor Enkelejda Gjinali. A complete list of interviewees and their positions can be found in **Appendix A**.

We aimed to conduct interviews that would give our team insight on specific workers in the industry as well as knowledge on the successes or struggles these women have faced. We wanted to learn about the interviewee's career, including their education and exposure to the sector both before and during their employment in the industry. We also pursued discussion on mentorship, obstacles, and networking experiences.

To prepare interviewees and accommodate non-native English speakers, we sent questions in advance and asked subjects to bring pictures relating to their work and life.

With these photos, we planned to elicit discussion on the interviewee's career in the sector and to learn more about what they find valuable in their employment and career as a whole. Photo-elicitation is relevant to this project as it encourages more emotional and effective conversation by giving the interviewee the power to choose and shape what they would like to discuss (Rose, 2016). These photos were ultimately used in profiles and in this report to highlight and visualize different aspects of the interviewees' experiences in the wastewater sector. We discussed topics regarding:

- The interviewee's decision to pursue a career in the wastewater sector;
- Their education;
- How they may have interacted with (women's) professional organizations;
- Their interest in an international organization of women working in the wastewater sector, and their preferences on what they'd like to see in this network;
- How they may have been affected by gender roles in water treatment utilities;

- The challenges their respective country's wastewater treatment currently faces and how that affects women in the industry;
- Their perspective on the future of their respective country's wastewater sector;
- What opportunities they believe are available in the wastewater sector for women now and in the future;
- How their career has or has not advanced throughout their time in the industry.

A complete list of questions and prompts for interviews can be found in **Appendix C**. Each question was open-ended and structured to minimize bias, allowing subjects to formulate their responses while not being pushed towards a certain answer. Our team analyzed interviews through a coding approach, meaning we transcribed, wholly or in part, the interviews and identified themes that emerge from the transcripts and our notes from the interviews (Schmidt, 2004).

Develop transmedia profiles highlighting women's careers in wastewater

From our interviews, we collected photographs, quotes, and video and audio recordings of women working in the wastewater sector. Our team used these elements alongside interviewees' responses to create profiles to highlight women working in the wastewater sector, provide them with a voice to share their own stories, and bring visibility to women's opportunities in the sector. For each interviewee being profiled, we identified overarching themes and developed a narrative that highlighted these themes, primarily using the woman's own words, pictures, and interview snippets to represent their story. Interviewees were also able to revise their profiles to ensure they were entirely satisfied with the way they are portrayed.

SHUKALB's website is the main archive for these profiles. With the help of SHUKALB's team, we added a page to the "Programs" tab on their website (Figure 12). This page acts as a

The screenshot shows the SHUKALB website's 'Women of Water Project' page. The header includes the SHUKALB logo and navigation tabs: Home, About Us, Membership, Training & Capacity Development, Events, Programs (selected), Projects, Resources, and Contact Us. The main content area is titled 'Women of Water Project' and contains an overview of the project, a network link to a Facebook group, and a news section with a link to 'Opportunity for Water and Sewerage Utilities to Join - SHUKALB Receives Grant to Support Water Utilities in Albania in Developing Water Safety and Crisis'. A Burimi Newsletter sign-up form is also visible on the right side.

Figure 12 - The current "Women of Water" tab on SHUKALB's website (December, 2020)

landing point where profiles are found. Each woman's name and picture is featured, and their full profiles can be accessed from here. Completed profiles can be found at <http://shukalb.al/en/programe/women-of-water-project/> and also in **The Wonder Women of Wastewater**.

SHUKALB also publishes a monthly e-newsletter, the Burimi Newsletter, that highlights their projects, programs, and progress made on various initiatives in the wastewater sector. We published an article in SHUKALB's e-newsletter (**Appendix D**), which was written at the beginning of the project to tell readers of our goals and the work we hoped to do to accomplish them.



Establish the foundation for a women's professional network

We collaborated with SHUKALB and our interviewees to develop the groundwork for a professional organization, the Women of Water network, that connects women of the wastewater sector in the Western Balkans, the United States, and beyond. The purpose of this network is also to provide opportunities for mentorship, networking, and discussion on alleviation of women's obstacles in the wastewater sector.

Women of Water Network

Most professional organizations require a platform for their members to connect. To facilitate this, we created a Facebook group so members of the network may have such a platform. With consideration to other platforms, such as LinkedIn, Facebook's options for mentorship and group discussion are the most accessible to members as many interviewees already have an account. By inviting female interviewees from different countries and backgrounds to join this group, we hope

to create a diverse network of women in the industry. The Facebook group will be directly linked to SHUKALB's Facebook page to formalize the relationship between the two and increase traffic to both. The Facebook group is located at <https://www.facebook.com/groups/womenofwatershukalb>.

We will use the Facebook group to post shorter profiles and discussions about women's experiences in the wastewater sector. These profile posts consist of quotes from our interviews, pictures of the woman being profiled, and a link to their full profile on SHUKALB's website. The group will also serve as a platform for discussion, where various discussion topics can be posted by moderators that members can respond to and discuss with each other. We developed a system of roles held by members of the network that will ultimately post these discussion prompts, and will also provide these

members with a list of possible discussion topics. The goal for these posts is for women to share their experiences, provide advice, and discuss the future of women's opportunities.

Launching the network: Building Bridges Over Water

The next step in launching the network was to facilitate a discussion forum about women's obstacles and opportunities in the wastewater sector. It served as a launch of the network, an opportunity to meet wastewater professionals from around

the world, and a platform for conversations surrounding opportunities, successes, and obstacles in the sector. We also discussed the goals of the network and the plan for its operation in the future.

The discussion forum was held remotely via the video-conference platform Zoom, where team members and speakers led 26 attendees through various topics determined through interviews to be the most pertinent to women in the sector. Attendees consisted of women and

men from the wastewater sector of the Western Balkans, United States, and elsewhere, and were invited by SHUKALB. Both English and Albanian speakers attended the event, as a translator was present. Attendees participated in round-robin style discussion, meaning they entered breakout rooms to discuss specific prompts with a small group, then had a representative share their ideas with the larger group after an allotted amount of time. Topics for discussion prompts included, but were not limited to, the following:

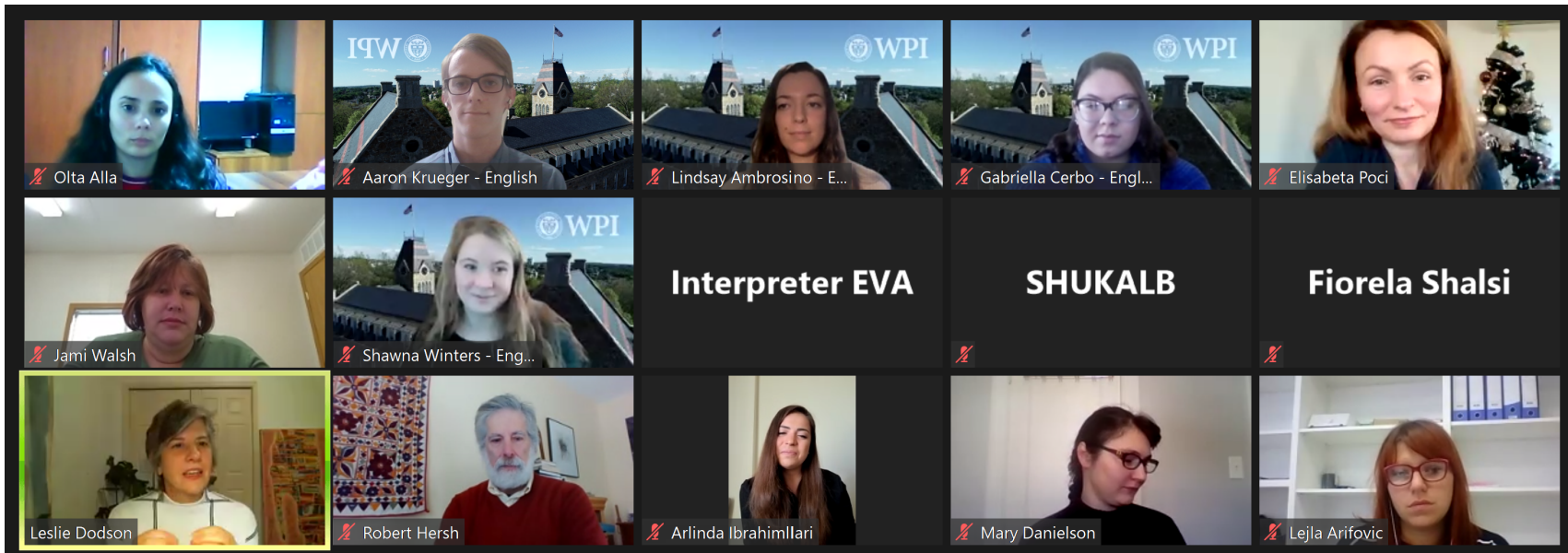


Figure 13 - Our team with some of the attendees of the "Building Bridges Over Water" Discussion Forum (December 7, 2020)

- What attendees hope to gain from the network in terms of connections, mentorship, knowledge, etc.;
- To what extent professional organizations have influenced their career path, and how they believe a professional organization could provide value in future endeavors;
- What impact mentors have had on their careers;
- What experience they may have with existing gender disparities such as wage gaps, career advancement, sexism, etc. in the workplace;
- How cultural norms and institutional practices related to gender affect women's roles in the wastewater sector;
- What efforts have been made towards increasing women's opportunities and gender equality;
- What efforts towards increasing women's opportunities they want to see in the future.

The full list of discussion topics from the forum can be found in **Appendix F**. The discussion forum was recorded

and analyzed for further themes and information on the context of what attendees would like to see from the network. The goal is also for similar network-related events to occur in the future, and the feedback we receive paired with our network longevity guide will help this effort move forward.

Women of Water Network Longevity Guide

To ensure continuation of the network, we developed a longevity guide containing information on the roles and activities within the network. This guide includes the responsibilities of individuals in leadership roles (admins, moderators, and event managers). Ideally, each leadership role has more than one woman in charge of it to reduce the workload on any single woman in the network and make the experience more collaborative. This guide also contains suggestions for what admins and moderators could post in the Facebook group to encourage discussion within the group. These discussion topics could include, but are not limited to, subjects

surrounding networking, opportunities in the sector, and support for women working in the sector.

Possible future event ideas and guidelines are also included in this guide for the group's event managers. These events are suggested to take advantage of the networking potential of the group and also create a sense of belonging for the women in the group. These potential events could include:

- Additional discussion forums similar to the one our team is facilitating;
- Monthly "drop in" video calls where members can meet and talk informally;
- Member pairing to let members connect and get to know each other on a more personal basis

In addition to suggestions for what should be included in the network, the guide also contains expectations for both Facebook and future events. The full longevity guide can be found in **Appendix H**.

THE WONDER WOMEN OF WASTEWATER





"Working at a wastewater treatment plant, It's seen like something that 'You can't do that, you can't touch that, you are a woman.'"

Arlinda Ibrahimllari: A Trailblazer of Firsts

Arlinda Ibrahimllari served as a Senior Project Manager at UKKO JSC (2020) in Korçë, Albania. Prior to her work at UKKO, Arlinda worked as a Project Manager at SHUKALB, where she had originally participated in the internship program.



Environmental Engineering was a relatively new branch of study at the Polytechnic University of Tirana when Arlinda began studying for her degree.

In her third year of study, she was one of the only women convinced of choosing the wastewater treatment path in the Environmental Engineering Department. With passionate assistance from her mentor and professor, Doctor Enkelejda Gjinali, Arlinda's talent led her to work as an intern at SHUKALB in her last year at university. After graduating, she was employed as a Manager for Training Courses that was also organized by SHUKALB.

Arlinda described her passion for water issues as being "infected" by an example of excellence in Philip Giantris, the former Executive Director of SHUKALB. The professional life of Arlinda was impacted by moving from Tirana to work at UKKO JSC in Korçë, nowadays having one of the best Wastewater Treatment Facilities in the country. She became the youngest director they had.

Four years after entering the sector, Arlinda became the Chair of the Albanian Young Water Professionals (YWP) group, leading the program for several years and being supported by the Executive Director of SHUKALB, Mr. Philip Giantris. He was a great supporter of Arlinda.

Recognized in the region and internationally, Arlinda was elected the Chair of the International Water Association Emerging Water Leaders Program and served for 2 terms. In this time, she delivered Professional Development Programs and provided international networking opportunities for YWPs globally.

Arlinda was the first international participant to take and pass the Professional Operator Exam Class I for Wastewater Treatment Plants, further proving her success and capability as a trailblazer.





Dr. Professor Enkelejda Gjinali [Online image]. Retrieved December 10, 2020, from <https://rcdnsee.net/pool-of-trainers-and-moderators/>

Enkelejda Gjinali: A Mentor to All

Professor Dr. Enkelejda Gjinali currently teaches in the Department of Environmental Engineering within the Faculty of Civil Engineering at the Polytechnic University of Tirana (2020).



Dr. Professor Enkelejda Gjinali has proven herself as a key mentor to hundreds of students at the Polytechnic University of Tirana.

Professor Enkelejda Gjinali always knew she wanted to be an engineer. Both of her parents were successful electrical engineers, and she recalls that “they were working as engineers and they were impacting the lives of others, I wanted to impact the lives of others.”

Professor Gjinali got her chance to start changing people’s lives in many ways, working diligently for her second Master’s degree in France while researching at one of the largest water treatment facilities in the world. After returning to Albania, she began to apply her knowledge to developing the wastewater treatment engineering field while simultaneously beginning her career in education as a teaching assistant at the Polytechnic University of Tirana (PUT).

Professor Gjinali expressed that career resources in education are fairly lacking, and networking and opportunities often come from personal connections. Regardless, Professor Gjinali makes sure to keep in touch with her students to make sure they are up to date on news and opportunities for work in the sector.

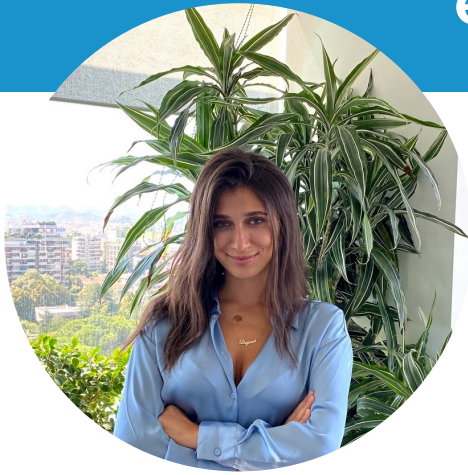
Looking to today, Professor Gjinali has helped mold the career paths of many students in PUT’s wastewater treatment program. Working to change mentalities on water, she teaches her students about water as a service.



Professor Enkelejda Gjinali teaching at Epoka University [Online image]. Retrieved December 10, 2020, from http://www.epoka.edu.al/departments/departmentimages/foto/2/1528887512_dnews.jpg

“I’m always inviting people into the water sector, and wastewater, to me, is the best place to go.”

"We don't have the experience, but we have the energy, the eagerness to learn more every day."



Dajana Disha: Wastewater Woman of the Future

Dajana Disha is an Erasmus Mundus Scholar who has completed her Bachelor's degree in environmental engineering and Master of Science degree in water treatment from the Polytechnic University of Tirana. She is now currently pursuing a Master of Science degree in sustainable and innovative natural resource management abroad in Belgium (2020).

Both a humanitarian and environmentalist, Dajana Disha uses her values to drive her career and education in the wastewater sector.

In 2017 while obtaining her bachelor's degree in environmental engineering, Dajana conducted a field survey where she observed the impacts of a flood and the effects it had on the inhabitants of a nearby town. From this, Dajana drew motivation to further pursue a career in the wastewater industry, as she knew it was her responsibility to help keep people and the natural environment she loved safe.



Dajana insists that she and other women are able to stand out and be remembered despite their minority status in the wastewater sector. Dajana sees being able to stand out as a positive; however, she still feels the need to work twice as hard as a man to prove herself. During trainings in the water sector, Dajana has seen an increase in women, which she believes will bring open and inclusive problem solving strategies to new and developing issues and projects.

“I think it’s my curiosity and my passion to learn and just be able to give back more.”



Frida Bahja:

Pursuing her Passions

Frida Bahja is currently a PhD candidate at the University of Central Florida (2020). Prior to studying in the United States, Frida completed both her Bachelor's and Master's degrees in environmental engineering at the Polytechnic University of Tirana.

Frida grew up in a family that emphasized women being able to do anything and everything that men can do. Her sister got a degree in electrical engineering, which encouraged Frida to also look into an engineering field.

As a high school student, she was involved in many civil and environmental science related projects and credits her interest in these issues as the reason she decided to pursue environmental engineering in university. She later earned both a Bachelor's and Master's degree at the Polytechnic University of Tirana.

Inspired by her professors in college and teachers in her family, Frida developed a passion for academia. After some years of work experience as an engineer and project manager in Albania, she moved to the United States to pursue her dream of becoming a scholar.

She holds a second Master's degree from the United States and is currently a doctorate candidate at the University of Central Florida. Frida's engineering background, combined with her social sciences education, helps her to look at complex environmental issues in tourism through a unique interdisciplinary lens.





Jami Walsh: A Mentee Passing it Forward

Jami Walsh is currently a construction coordinator at the Massachusetts Water Resource Authority (2020). Prior to this, she worked as a consultant at AECOM Technical Services designing wastewater, drinking water, and storm water conveyance and treatment systems (2016).

Jami Walsh experienced the support of many influential mentors throughout her career and now tries to help younger engineers wherever she can.

Jami originally expected to attend WPI as a Civil Engineering major who would then go to law school and become an environmental lawyer. However, when a trusted advisor encouraged her to stay at WPI to get a Master's degree in Environmental Engineering, she began taking classes on hazardous and municipal waste remediation.

After her first job, Jami decided to move to a larger firm. Jami's new boss was constantly looking for opportunities for her to learn and grow. She credits him with helping develop her confidence and encouraging her to take on larger responsibilities.

"I always tell people, you know, don't be afraid to admit what you don't know. And I think, regardless of if you're a guy or a girl, when you go in it's okay to ask questions, it's okay not to know something."

In Jami's current job, she works with two female bosses who are constantly looking for opportunities to raise their female employees up.

While she acknowledges the fact that women are still struggling to be heard and seen as equals, Jami does believe that current work environments are much better now for women when compared to when she started in the field, as younger women begin to occupy leadership positions. At her current job, Jami tries to help many of the younger engineers; she wants women to know that it's okay to admit what they don't know and that asking questions isn't a bad thing.

"I work with a lot of our younger engineers when they come in, both male and female; the mentoring thing is very close to my heart, so I like to help the young engineers a lot."

"It feels daunting at the start but there's a way to get there and a way to achieve your goals while being a female and [having] to face those difficulties upfront."



Mary Danielson: Working Towards Change

Mary Danielson currently works at Tighe & Bond in the USA, where she consults on a wide variety of water and wastewater engineering projects (2020).

Despite only starting her work in 2017, Mary Danielson has already made big steps to improve gender diversity at her workplace.

In the United States, working in the wastewater sector can present some challenges to women. For example, women are subject to issues like not having proper facilities (i.e. restrooms) during work, a gender pay gap, and sexual harassment.

Despite these issues, Mary Danielson, who entered the sector in 2017, has felt empowered by her work. To Mary, working with female role models and achieving her goals through project work is a great way to show people that she has what it takes to strive in the sector.

Mary is also taking steps to improve the situation for women at her company, where she is part of the Women in STEM subcommittee of her company's Diversity and Inclusion Committee.

Mary is working on a number of initiatives that will help support equal pay for women, improved hiring ratios between men and women, and increased female retention in the long term.

Mary has seen success through some of these measures, such as having approximately a 50/50 hiring ratio between male and female college graduates. She is optimistic about the future, as the subcommittee plans to introduce more women in technical projects and make sure that women returning from maternity leave are supported appropriately.

"It does feel like you have to work a little harder to show your merit and there is more expectation to bring something to the table rather than people just going into a situation assuming you have qualifications and there's a reason you have your job. It sometimes feels like you have to prove your worth a little bit more."

"Once I was there and I saw how much I could change and where it needs to start, I thought 'I need to go back to my home country and contribute there.'"



Fationa Sinojmeri: Bringing a Spotlight to Change

Fationa Sinojmeri currently works full-time with the German Society for International Cooperation (GIZ) as the Technical Advisor of Climate Change Adaptation in Flood Risk Management in the Western Balkans and lectures at the Polytechnic University of Tirana (2020).

From a young age, Fationa Sinojmeri developed an ear for environmental issues as she listened to her father, an environmental engineer, discuss his work and the challenges facing the ecosystem. This seed of passion eventually grew into Sinojmeri earning her Master's degrees in environmental engineering, water treatment, and later on flood risk management.

However, Sinojmeri's love for nature and water didn't always translate well, as sometimes she faced a lack of motivation from older people saying "she's just a young girl, who wants to listen to her?" This mentality of being powerless grew on Sinojmeri like an earring, whispering doubt into the same ear that helped her learn her love for the environment and water.

Despite the obstacles she faced since being a student, Sinojmeri joined the German Development Agency (GIZ) of the German Corporation for International Cooperation (GmbH) as a technical advisor on the project titled "Climate Change Adaptation on transboundary flood risk management, Western Balkans" (CCA WB).

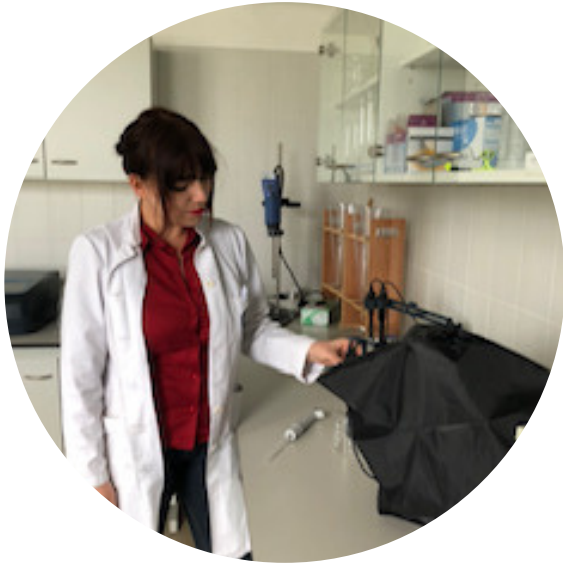
At the same time she holds the position of the project's "gender focal point", meaning she ensures gender mainstreaming in project activities.

Sinojmeri has worked at the project and national levels with GIZ Albania, as part of the gender group to make sure gender issues are considered in GIZ's partner institutions. She described herself as a "policewoman" promoting gender equality and elimination of gender specific disadvantages.

Throughout the years working with GIZ, Sinojmeri has been involved not only as a technical advisor but also as a gender officer throughout many activities of the projects. She also took part in awareness campaigns on flood risk management of the Shkodra Region dealing with different groups of society (such as men, women, and children).

As a professor at the Faculty of Civil Engineering, Sinojmeri brings up gender inequalities at universities such as the lack of women in leadership roles for the academic world. She hopes that with the right amount of awareness and education, gender inequality will be balanced out in the future, preventing future generations from wearing the earring of incapability that she'd borne for much of her life.

"Basically all around Bosnia there are not a lot of women in the engineering sector. But in my firm I'm the only woman engineer."



Lejla Arifović: An Unanticipated Pioneer

Lejla Arifović currently works as the Laboratory and Process Manager of JP Vodovod d.o.o. Bihać, a wastewater treatment plant in Bihać, Bosnia and Herzegovina (2020). She earned both a Bachelor's and Master's degree in chemical engineering from the University of Sarajevo.

In Lejla Arifović's first year studying Chemical Engineering at the University of Sarajevo, she was one of 100 students pursuing the degree. By her fourth year, she was one of 10. Lejla chose this path for this very reason: knowing that opportunities do not come easy or often in her country, she chose to get her degree in a field that often lacks trained professionals due to its rigor.

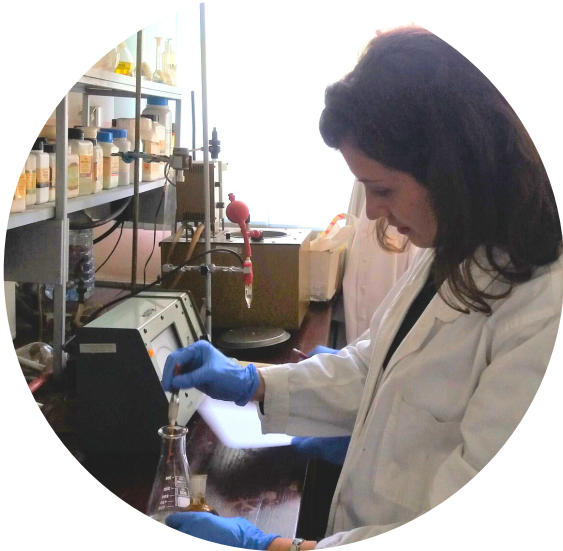
This ambitious move paid off for Lejla. As a brand new wastewater treatment plant was opening in her hometown of Bihać, she was the only Chemical Engineer that applied for the position. The wastewater sector was not a path she would have taken, but it was the opportunity presented to her. There was no choice to be made. She accepted the position.

Lejla has found her passion in the wastewater sector. She has seen a difference in the three years the wastewater treatment plant has been operating, and she loves the puzzles that face her on a daily basis. She always knows how her day will begin, but never how it will end.

Lejla's biggest obstacle in her career has not been related to her position as the only female engineer; instead, it relates more to her position as the only chemical engineer. She has to fight everyday to explain why her laboratory needs more funding. With few chemical engineers in the country, Lejla finds it difficult to explain to management why her chemicals, instruments, and analysis costs as much as it does.



"I've grown so much in the last year, and I've been able to experience and do stuff that maybe I have only imagined doing."



Egzona Bejtullahu: Looking Towards the Sector's Future

Egzona currently works as a Water Treatment Plant and Wastewater Treatment Plant Manager at Ecolog International (2020). She has a Bachelor's degree in chemical engineering and a Master's degree in analytical and environmental chemistry from the University of Pristina.

There are gender gaps between women and men in workplaces around the world; women often face obstacles such as unequal pay, hiring biases, and lower rates of promotion and advancement in their careers. The future that so many are working towards is a vision of equality across all of these factors and more, and Egzona Bejtullahu has exemplified this vision in her first two years working in Kosovo's wastewater sector.

Egzona began her Bachelor's degree in Chemical Engineering from the University of Pristina in 2012, and in 2013 she joined Kosovo's Young Water Professionals (YWP). The connections Egzona has made with members of the YWP are one of the biggest influences she credits with inspiring her love for the wastewater sector. The organization has also been a huge resource for educational and networking events.

After completing her degrees and returning from an exchange program in

Scotland, Egzona began an internship at SHUKOS, the Water and Wastewater Works Association of Kosova. It was here that she learned about an opportunity at the firm she works at today. Egzona began as a lab technician, analyzing wastewater samples everyday. After only a year and a half, however, she was promoted and now manages two departments.

Egzona has worked hard to get where she is, and this hard work has paid off. She loves the sector and she loves her job. She also considers herself fortunate to work at a company where she hasn't had to face some of the gender-related obstacles that challenge so many women in the sector. After less than three years in wastewater treatment, Egzona's experiences have been what every woman's should be: one of hard work, success, and equality.



**OBSTACLES,
INFLUENCES, AND
ADVANCEMENT:
FINDINGS FROM OUR
INTERVIEWS**



Our team analyzed the

factors that influence women's careers in the wastewater sector over the course of three months and through 21 interviews with women and men from the Western Balkans and the United States. These findings highlight the most prevalent and critical themes we discovered from the interviews. We describe the past, present, and future of the obstacles, successes, and efforts towards improvement for women's opportunities in the wastewater sector.

Obstacles women face in the wastewater sector

Women highlighted the numerous obstacles they have faced in the wastewater sector of the Western Balkans and the US. By analyzing interview transcripts, we identified some of the barriers that make it

harder for women to begin, maintain, and advance their careers.

No clear career path

Environmental Engineering programs at universities such as the Polytechnic University of Tirana (PUT) tend to focus broadly on environmental issues for the first couple of years before students decide on a focus of study. Several interviewees who studied at PUT, for example, highlighted that during their third year of study, they are asked to decide between a concentration in energy/air pollution or water supply and treatment. Arlinda Ibrahimllari, a freelancer and Technical Director of the Sanitation Department at the Water Supply and Sewerage Enterprise of Korçë, Albania, emphasized that the water supply and treatment focus of study tends to have no concrete career path, as opposed to the energy/air pollution pathway, which has

developed industries with many well-known career opportunities. The lack of a defined career path for water supply and treatment tends to discourage students from entering that field of study. Arlinda Ibrahimllari reflected on her memory of her education at PUT, when there was no specific promotion of water treatment; only environmental science as a whole received significant promotion.

Minimal presence of career services

Women in the water sector in the US talked about how they attended career fairs and spoke to companies that were invited to their schools while in university. They cited this as helping them create connections and gain interest in sectors and careers related to their majors. Conversely, when asked about career services offered at PUT, several alumni interviewees and Dr.

Enkelejda Gjinali, a Professor of Environmental Engineering at PUT, stated that these services are minimal and often operate as an outside entity that is difficult to access. This hinders students' ability to find jobs after graduation, as they are less aware of the opportunities available to them.

While a lack of career services affects all degree programs at the university, many other degree programs have more developed sectors with more obvious impacts on the community. Career services are a way to not only advertise an industry, but advertise the jobs within an industry as well. In comparison to other industries, the wastewater treatment sector is not fully understood by or visible to those affected by it in the Western Balkans; many interviewees discussed facing difficulty with communicating the

importance of their jobs and the sector's services as a whole.

Given this lack of general understanding of the jobs in wastewater treatment, the lack of career services at some universities means that professors are one of the only sources of information on opportunities for graduates.

Limited resources lead to limited opportunities

One of the main obstacles many Western Balkan interviewees discussed was the limited number of employment opportunities in the wastewater field. This lack of opportunities stems from multiple factors, including a small number of functioning treatment plants and low funding at those treatment plants (Danube Water Program, 2015). These

issues aggregate to create a sector that does not have enough resources to be effective, which then limits opportunities for women. Lejla Arifović, a Bosnian Laboratory and Process Manager, spoke on how her career was entirely circumstantial. She was offered a job at the new wastewater treatment plant in her hometown and did not have the option to look for other opportunities.

"When they opened a wastewater treatment plant here in my hometown, and when they offered me a job, I didn't have a chance to say 'No, I'm not interested.' It was a job. It was my only opportunity for a job."

– Lejla Arifović, Laboratory and Process Manager, Bosnia & Herzegovina

"So it's really hard to explain to anybody that doesn't have a similar career path why my laboratory costs so much if it doesn't produce anything. Except for clean water and a healthier river, we don't produce anything. People don't see it like that. People see that we're just spending money and not doing anything at all."

– Lejla Arifović, Laboratory and Process Manager, Bosnia & Herzegovina

Qualified, yet struggling

Another instance of a lack of opportunities was brought to light by Frida Bahja, a PhD candidate at the Rosen College of Hospitality in Orlando, Florida, who decided to continue her education instead of entering the Albanian workforce. She recalled that she was qualified to be hired by both the government or the local university as a faculty member, but neither of these opportunities were available for her to take advantage of. This is similar to the experiences of other qualified women and men we interviewed who had relevant degrees and certifications, but still struggled to find opportunities in the wastewater sector.

This differs from career paths relating to environmental engineering in the United States, where opportunities are plentiful and not difficult for female engineers to take advantage of. Our American interviewees mentioned how they pursued careers at different companies and did not have any issue with finding new jobs or switching between these jobs.

“I would say [the biggest obstacle] is the lack of opportunities. For me, I literally fulfilled every single criteria for being either faculty, hired in the government, and yet there were no opportunities.”

– Frida Bahja, PhD candidate, the Rosen College of Hospitality, USA

“There are some very good professionals in the field, and some youth are coming out now, like me, for example, or some other guys and girls that are really interested [in the sector]. But, the opportunities and possibilities to get involved are very, very difficult.”

– Johan Shyti, Water and Environmental Consultant, Abkons, Albania



“Opportunities are there, but still you can’t touch them”

Once women are in technical positions in the Western Balkan wastewater sector, they often become stuck in those positions, as they have colleagues or bosses that may be holding other opportunities out of reach. Many utilities cannot afford to send employees to extra trainings or seminars, and the staff they are able to send tend to be men in higher leadership positions instead of female employees. Arlinda Ibrahimllari recounted her experience with this:

“[Management] doesn’t give you the opportunity to attend more trainings and outreach programs. So you are definitely in the corner, and waiting for your bosses to decide who is attending. Opportunities are there, but still you can’t touch them.”

– Arlinda Ibrahimllari, freelancer and Technical Director of the Sanitation Department, the Water Supply and Sewerage Enterprise of Korçë, Canada and Albania

Lack of professional networks

Another obstacle that women in the Western Balkan wastewater sectors face is the lack of professional networks. While some of these networks do exist – for example, the YWP – they are not specifically targeted towards women and do not explicitly focus their work on improving women’s experiences in the sector. This lack of networks substantiates our background research that shows many international women’s organizations exist, but often don’t expand their reach to the smaller countries in the Western Balkans. Without these networks, it becomes more difficult for female professionals to connect with, and receive support from, other women in similar positions. When we asked interviewees whether they were affiliated with any women’s professional organizations, all 13 of the women we interviewed from the Western Balkans responded “no.” Women without the opportunity to network through institutional structures (such as those at PUT) have less of a chance of finding a mentor, or



building connections with other women in the sector, or accessing training and workshop events integral to career advancement.

Job insecurity

Women who are able to get jobs in their field of study are less likely than men to retain those jobs, as there are no current protections to ensure that women who take temporary leaves, such as maternity leave, have their same position when they return (Lazarević, 2016). This is an issue in workplaces in the United States as well. Mary Danielson, an American staff engineer at Tighe & Bond, and speaker at the “Building Bridges Over Water” forum, spoke on how a gender and diversity committee at her company is working to address this problem.

Both Arlinda Ibrahimllari and Nadire Vitijia, the Training Manager at Water and Wastewater Works Association of Kosova (SHUKOS), mentioned that work in utility companies is not family friendly, citing that shifts are much longer than at other jobs and the hours are irregular or change frequently. This correlates with our background research, which found that women struggle to find options for childcare in the Western Balkans (World Bank Group, 2018). Because the mentality in the Western Balkans still remains heavily patriarchal, women feel a responsibility to be caretakers.



“One thing we’re working on is ways to help support women when they do take maternity leave and come back, and how to make sure that they still have work to do and that they’re still moving forward in their career instead of backtracking or feeling like they’re falling behind their male counterparts.”

– Mary Danielson, Staff Engineer, Tighe & Bond, USA

“As women we tend to feel we need to figure it all out on our own and if we don’t people are going to look down on us. And I think that’s a big mental block that we, as women, need to overcome.”

– Jami Walsh, Construction Coordinator, Massachusetts Water Resource Authority, USA

Changes in local government generate leadership change at treatment plants

In some cases, changes in local government result in changes in management at wastewater treatment plants. For example, in Albania, when local elections occur and power shifts from one party to another, administration at local utilities tends to also switch. This leads to a trickle down effect where new administrators shift

staff around the utility, often promoting and demoting employees without explanation. While this affects both men and women in the sector, it is particularly difficult for women to earn and retain management positions where they are already underrepresented. Arlinda Ibrahimllari mentioned that because she was working in Korçë, which has a fairly stable political situation, the staff in her workplace were not constantly changing and she was able to maintain her position for several years. However, she could also recount the experiences of other colleagues in other municipalities where their job title and responsibilities fluctuated with mayoral elections.

Female classmates. Male workmates

Most of the women we interviewed mentioned how their university classes were either majority or all women, yet

“When it comes to the on-site visits, for women it’s a bit more difficult if this is in the water utility. This has nothing to do with our culture. It has to do with the work by itself.”

– Dr. Enkelejda Gjinali, Professor of Environmental Engineering, Polytechnic University of Tirana, Albania

they always had a majority of male coworkers in their workplaces. A few of our interviewees spoke about how they believed it wasn’t patriarchal values preventing women from entering the wastewater sector. Instead, they believe women were avoiding field work and dirty jobs in the sector because of the nature of the work being done; often, considered to be a man’s task rather than a woman’s.

Interviewees described this mentality as being common in the Western Balkans, where women are often taught from a young age that they’re less suited to do things such as lift

heavy items. When asked for further clarification, many interviewees did not question this standard and even recounted instances of adults affirming this belief throughout their childhoods.

“In my country, women are taught from a very young age, based on tradition and religion, that their primary role in life is being a wife and a mother, and that all other roles are subordinate to that one. That is the most important one. So, for women, education and job opportunities here in Bosnia are not career paths, they are just a source of income for their families.”

– Lejla Arifović, Laboratory and Process Manager, Bosnia & Herzegovina

“Even though the utilities are owned by the central government, we still experience the effects of politics. The board of the public water utilities are political, and this then affects our sector in Kosovo.”

– Erdonita Humolli, Program and Project Assistant, SHUKOS, Kosovo

"I think the mentality is 'engineers should be men.' This is one of the gaps in our sector."

– Erdonita Humolli, Program and Project Assistant, SHUKOS, Kosovo

"If I could go back I would continue again in the water sector, and I would advise all the young generation, including females, to work in the water sector because it's a very interesting area and there's a lot of opportunities "

– Bestar Cekrezi, PhD candidate, Università di Trento, Italy

Few male changemakers in upper management

Men in high-level management positions often don't have anyone monitoring what they do or encouraging them to be proactive against hiring bias. Hiring managers often ask female applicants about their marital status and future family plans, which may then lessen their chances of being hired (World Bank Group, 2018). Many interviewees noted that without having people in charge who care to change the current state of the sector, changes won't occur. In this regard, Arlinda Ibrahimllari had high hopes of changing the mindsets of people and encouraging them to make changes in the workplace that will benefit women. However, she also mentioned that speaking to upper management – the

main people who needed to have their mindsets changed, in her opinion – was extremely difficult. Similarly, one female interviewee mentioned that some men don't think about closing the gender gap because nobody is making them think about the gender gap; there are no laws or protections

in place to force those in higher positions to implement workplace standards that emphasize gender equality. She emphasized that some men won't make an effort to change workplace conditions because they don't believe anything needs to be changed.



"A lot of the older men in the industry almost patronized you, and didn't really value your opinion. I often would have to get my older male boss to say what I just said in order to get them to listen."

– Jami Walsh, Construction Coordinator, Massachusetts Water Resource Authority, USA

Education, connections, and opportunities

While many of the women we interviewed reflected on the obstacles they have faced in their careers, particularly surrounding gender issues, these obstacles were not the defining characteristics of their professional lives. These women all spoke equally, if not more often, about the experiences and resources that have helped them successfully develop and advance their careers: education, connections, and opportunities.

Understanding societal impact

Many classes at PUT present students with the chance to understand the impact of the work they could do. Dajana Disha, an Erasmus Mundus Scholar currently pursuing a Master of Science in sustainable and innovative natural resource management at Ghent University in Belgium, recalls her first visit to a site impacted by the flooding of a nearby river as part of one of her classes in university. She credits this trip with showing her the importance of her work in the sector, a

"I would say one thing: Just do it. This is an opportunity to become valuable for your community. You will make people's lives better, and at the same time you will protect the environment. It's such an exciting career. And also, by the end of the day, you'll feel proud about what you're doing. But also, you need to be prepared because you need to grow a thick skin and be twice as good to be considered equal. But, just do it, you will love it."

– Dajana Disha, Erasmus Mundus Scholar, Ghent University, Belgium

point which now drives her career. Many other interviewees recalled similar experiences in gaining perspective on the societal impact they can have through the wastewater sector and how it motivates them

every day. While many of these women are aware of the obstacles they may face in pursuing a career in the sector, they make the decision to continue in this career path because of this motivation.

"I learned from university. I was in my third year and we started discussing what we are going to do next and what classes we are going to take. So I liked it, you know? It was like love at first sight. And when I got to know the sector, I was really interested."

– Blerina Arrtunda, Manager of Wastewater Systems, Water Utility of Shkodër, Albania

Conferences, seminars and events

In addition to university experiences, many interviewees talked about taking advantage of conferences, seminars, and other events held by organizations like SHUKALB to learn more about opportunities in the sector and supplement the knowledge gained from their classes.

“The policies in the university are not the best for recruiting or companies. But during the conferences or workshops, we used to have a lot more open lectures with the people Ms. Gjinali invited from SHUKALB or other organizations to present open positions for students.”

– Andi Muhollari, Red Cross, Albania

Denalda Ziu, Head of Wastewater Treatment at the Vlorë Water Supply and Sewerage Company in Albania, reflects that:

This testimony from Denalda Ziu validates the efforts of both SHUKALB and YWP to bring similar conferences and training to wastewater professionals (Young Water Professionals, n.d.). In gaining these connections and advancing their learning, women who are able to attend these conferences and seminars to further develop their careers and passion for their work, as well as discover and network with the community of the wastewater sector in their country or region.

The importance of supportive families

The first connections that can influence people’s career paths are their families. Many of the women we interviewed reflected on their first interest in the environment or engineering coming from their parents, family background, and family values. This directly complements our background research on how the

iof families and friends to pursue STEM fields motivates women to continue to do so (Leaper & Starr 2019). For example, while there have been countless factors that have led to Professor Enkelejda Gjinali’s success in her career, she credits the initial interest in career path to her parents.

“[My parents] were working as engineers and they were impacting the lives of others, I wanted to impact the lives of others.”

– Dr. Enkelejda Gjinali, Professor of Environmental Engineering, Polytechnic University of Tirana, Albania



“I have learned a lot through the various workshops, conferences, and trainings that I have participated in, both in Albania and abroad. Such trainings would be around different topics such as: Managerial and Operational Functions of the Implant, Undertaking Thorough Laboratory Analysis, Good Keeping of the Electrical and Mechanical side of the Implant and many other fields that helped me become more proficient in my job.”

– Denalda Ziu, Head of Wastewater Treatment, Vlorë Water Supply and Sewerage Company, Albania

Additionally, Dajana Disha credits her interest in environmental engineering to her family, who have always been enthusiastic about solving environmental issues. Dajana Disha entered the field because she had always loved and respected nature and she later enjoyed learning about environmental factors and issues. She went on to find a passion in water and wastewater treatment. Many interviewees cited similar cases of familial influence on their careers beginning at a young age. For them, these influences helped counteract common ideas of traditional gender roles in the industry and showed them a possible future in STEM and wastewater treatment.

Influential professors

Professors are some of the biggest influences on many wastewater professionals' careers. In nearly every interview, women working in the

wastewater sector referred to one of their university professors as their biggest mentor. For Albanian women who attended the Polytechnic University of Tirana, Professor Enkelejda Gjinali was often mentioned as both the catalyst of interest for the sector and their access to opportunities. While Egzona Bejtullahu was attending the University of Pristina in Kosovo, she recalls that:

Professors also act as the connection between students and different wastewater treatment plants. Some professors directly send new opportunities to their current and past students and have been crucial to their students finding jobs. Wastewater treatment plant managers often contact professors directly, asking which of their students have excelled and would be a good fit for their utilities.

"I learned when some Dutch professors came and held two-week trainings here in Kosovo, and that's where I learned the most and I fell in love with wastewater."

– Egzona Bejtullahu, Water Treatment Plant and Wastewater Treatment Plant Manager, Ecolog International, Kosovo



"My family. They accept my choices to enter this sector even though it's hard. They've respected my choices and they were a really big help."

– Blerina Arrtunda, Manager of Wastewater Systems, Water Utility of Shkodër, Albania

“[Professor Gjinali] has been very helpful to find new possibilities, even for internships in different cities, not only in Tirana where we graduated. She advised us ‘Go where the job is, go [to] other cities.’ Also, she tried to connect with other water managers in the different regions in Albania to [let us] get to know the directors and get ready for internships or job opportunities.”

– Bestar Cekrezi, PhD candidate, Università di Trento, Italy

Internships & research opportunities

A recurring theme in our interviews was women’s access to internships, research, education, and work opportunities, typically during and directly after studying at university. Women reported that the first internship, research opportunity, or job following university often served as a launch point for the rest of their careers. This is true in the case of Professor Enkelejda Gjinali, who completed research in France early in her career.

International opportunities for research and postgraduate education are a common way for women in the Western Balkans to gain more knowledge about the sector to bring back to their home country. In Professor Enkelejda Gjinali’s case, this experience helped her jumpstart the hydrotechnical engineering department at PUT.

Several interviewees were accepted into SHUKALB’s internship program and credit it with being the beginning of their careers. Other interviewees have completed internships abroad in

other countries or even directly with utilities in their own countries. Frida Bahja, for example, completed an internship with SHUKALB and an internship in Turkey during two different summers while still in school at PUT. These internships serve multiple purposes for most of these women; they bring them new connections in the field, educate them on the issues facing the sector, and grow their interest for wastewater treatment. SHUKALB specifically is closely connected with the wastewater treatment department at PUT.

“One of the teachers at my faculty says ‘Kejda, you should go, you are supposed to go to France.’ and I said ‘How? I have a little baby’ he says ‘We are determined to open an environmental engineering department at the faculty of civil engineering. So you are going to join us there because you are young, you are the future, and we really think the combination between senior professors and young ones is going to be the success of this new department. We need to translate environmental issues in Albania.”

– Dr. Enkelejda Gjinali, Professor of Environmental Engineering, Polytechnic University of Tirana, Albania

Strategies for advancement of women's roles in the sector

Women are navigating obstacles in the wastewater sector of the Western Balkans, and some water utilities have recognized the challenges that staff faces. Many interviewees were hopeful that conditions of gender balance and gender inequality, such as a poor ratio of male to female workers and unequal treatment of women compared to men, would improve in the near future. We asked our interviewees what strategies they currently see in place to address issues of gender balance (i.e. the ratio between men and women employed by a company) and gender inequality as well as their opinions on the effectiveness of such strategies.

Some water utilities have measures in place to improve gender balance

As described in Rights and empowerment of women in the Western Balkans, some Western Balkan countries have instituted gender quotas in their parliaments in order to improve upon poor female

representation in the political sphere (Lilyanova, 2017). Similar efforts to implement gender quotas have appeared in the utilities of our interviewees on a utility-specific scale, leading to the increased hiring of women. For example, when asked if his company employed quotas, Johan Shyti, an Albanian water and environmental consultant at Abkons,

stated “they do have [quotas]... they are promoting females in the sector.” While some interviewees noted that they didn’t believe their company was making any effort to improve gender balance, Egzona Bejtullahu, a treatment plant manager from Kosovo, told us “at the company I work at, the trend is more females than males” and that her company has a trend of hiring



female directors. This case contrasts with our background research, which showed that management positions in water utilities generally aren't occupied by women (World Bank, 2019b).

Differing perspectives on quotas

Many interviewees believed that quotas provide women with a way to get their foot in the door of the wastewater sector, leading to further opportunities down the line. For example, Fationa Sinojmeri, an Albanian flood risk expert and environmental engineer at GIZ, believes quotas are a major first step for changing people's mindset on gender roles.

"Of course there are disbalances, and they will always [exist] if we don't change our mindsets; that's how it should start."

– Fationa Sinojmeri, Flood Risk Expert and Environmental Engineer, GIZ, Albania

Conversations from the discussion forum and our interviews mirrored this sentiment, with women and men believing quotas could change perspectives and create a more respectful work environment. Also, many interviewees discussed the fact that female representation, especially in higher-level management positions, makes them feel empowered and that their work environment is more equal from a gender perspective. This addresses our background research that described women feeling isolated, and therefore unwelcome, in a male-dominated workplace. Some interviewees also recognized potential negative aspects of quotas that exist along with benefits. Jami Walsh, Construction Coordinator at the Massachusetts Water Resource Authority says quotas could lead to employing women who are not a good fit for a job, solely to improve the company's ratio between men and women.

"What [having quotas is] supposed to do is get you used to the idea of having women in that industry. It's not perfect, it's not great, but I think that's often the first step, especially that governments use."

– Jami Walsh, Construction Coordinator, Massachusetts Water Resource Authority, USA

Many professionals look for improvement in legislation

Western Balkan candidate countries could be required to adhere to potential gender quotas put in place by the European Union (European Parliament, 2013). This type of international regulation is desired on a more local scale, where Gabriela Ivanovska, a North Macedonian chemical engineer at JP Vodovod Kumanovo, remarked that improving on issues like gender inequality (such as the pay gap) and gender balances at companies would require political change and intervention.

“That is a political job in our country, not a man and woman’s. If you have someone who can help you it’s not a problem, but our country is not like [the USA].”

– Gabriela Ivanovska, Chemical Engineer, JP Vodovod Kumanovo, North Macedonia

Similar sentiments were echoed in the “Building Bridges Over Water” forum, where some women advocated in favor of legislation that prevents discrimination based on one’s gender similar, to the US Civil Rights Act of 1964. Fiorela Shalsi, an Albanian and Senior Gender Advisor of the Global Water Partnership, talked about legislation and social change being the first and second steps to reducing gender inequality.

“Water companies are like bastions of these old fashioned attitudes.”

– Aida Jusufhodzic, Aquasan Network, Bosnia and Herzegovina

“I think that challenging legal frameworks or discriminatory legal framework can be one option that can bring more examples. Identification of both men and women [as models] or examples to be shared is the second one that exchange of experience can be discussed around.”

– Fiorela Shalsi, Senior Gender Advisor of the Global Water Partnership, Albania



Reducing hiring bias

Dajana Disha, an Albanian student and Erasmus Mundus scholar, noted that some job applications for water utilities explicitly give extra positive consideration to female applicants. This means that for a woman and a man with similar qualifications who apply for a position at a company with this policy, the woman will have a higher chance of receiving the job on the basis of her gender. Bestar Cekrezi, a male PhD candidate at Università di Trento, noted it is easier for women to be employed in the sector than men as a result of having more opportunities.

Increasing consideration for women in certain roles is an important step in

"I see in some positions that girls have more opportunities, and that is very cool. In the water sector, in engineering firms, even in some government positions, for example in my country they are trying to get more women in the engineering field in particular."

– Bestar Cekrezi, PhD candidate, Università di Trento, Italy

diminishing hiring bias recognized by reports like Promoting women's access to economic opportunities in the Western Balkans (World Bank Group, 2018).

International organizations assist in reducing gender issues

International organizations provide benefits to women in the Western Balkans through gender initiatives that aim to improve gender equality, such as those sponsored by GIZ. GIZ is a German organization that internationally supports sustainable infrastructure projects to improve economic activity and living conditions (GIZ, n.d.). Albanian flood risk expert and environmental engineer Fationa Sinojmeri works directly with GIZ as a technical advisor and "gender focal point," meaning she ensures gender is a mainstream topic in project activities. She described her position as one where she polices GIZ's partner institutions to enforce gender balance in their programs.

Fationa Sinojmeri told us that projects where gender balance is talked about

"Gender focal points need to have an eye and mind there on the gender balance. Starting from the way [a program] is designed, I need to be there as a policewoman, being there to say 'Hey, we need to take gender into account. This is not gender balanced.'"

– Fationa Sinojmeri, Flood Risk Expert and Environmental Engineer, GIZ, Albania

openly give women a better opportunity to enter into STEM fields, an obstacle discussed in reports like Gender norms in the Western Balkans (Browne, 2018) and Gender and Climate Change in Macedonia (Huyer, 2018). Albina Xhyheri, an Albanian hydrotechnical engineer at Sha UK Vlorë, talked about other internationally-sponsored projects and programs she participated in, such as the "Support to the Water Supply and Sewerage Sector in Albania" (WASSP) Program (funded by the European Union and the Austrian Development Cooperation Office), which provides women with training and certifications. Denalda Ziu, head of wastewater

treatment at the Vlorë Water Supply and Sewerage Company in Albania, told our team “GIZ is an important organization that has helped shape [me] into a great professional in the field.”

The importance of national organizations

While international organizations are an important actor for change, national organizations play a major role in improving gender issues as well. SHUKALB received a grant from the United States Agency for International Development (USAID) to implement approximately 50 training courses available to Albania and its neighboring countries (Kosovo, North Macedonia, and Montenegro) (USAID, 2018b), some of which have been taken advantage of by multiple interviewees.

Nadire Vitijja and Erdonita Humolli, who are the Training Manager and

“I was a member of the Young Water Professionals organization (PRU) in Albania. I got to meet a lot of like-minded individuals with whom I still keep in touch to this day. It was a wonderful experience for me, who was still a student at the time and was interested in becoming a part of this industry.”

– Denalda Ziu, Head of Wastewater Treatment, Vlorë Water Supply and Sewerage Company, Albania

“For me, the Young Water Professionals group was the opportunity to find a job.”

– Erdonita Humolli, Program and Project Assistant, SHUKOS, Kosovo

Program and Project Assistant of SHUKOS respectively, expressed that their organization was making a concerted effort to increase appeal of the sector among younger female students, with Nadire stating that women only make up about 12% of the sector in Kosovo. Efforts similar to this have been reflected in organizations like the Young Water

Professionals, with many female interviewees reporting that they received employment opportunities through connections made within the organization after graduating. These strategies seek to level out gender imbalance described in reports like Women in Water Utilities (World Bank, 2019c). Denalda Ziu, head of wastewater treatment at the Vlorë Water Supply and Sewerage Company in Albania, describes YWP as being an integral part of her job search.

“I have participated in trainings organized from SHUKALB [and other organizations] for ‘asset management’, ‘water losses’, ‘energy efficiency’, ‘non-revenue water’, ‘water resources - you have a role to play.’”

– Albina Xhyheri, Hydrotechnical Engineer, Sha UK Vlorë, Albania

Strategies to further improve opportunities for women in the sector

Interviewees believe certifications that demonstrate their holder's capability and knowledge relating to the industry can help establish and advance women's careers. The purpose of certifications is multi-faceted: it provides its holder a way to show employers their skill, demonstrate their ability to return to the workforce after raising a child, and prevent those who are uncertified from receiving job offers. Issues like hiring bias and nepotism recognized in the 2018 World Bank report Promoting women's access to economic opportunities in the Western Balkans prevent women seeking employment in the wastewater sector, and introducing a certification might help combat those problems.

Currently, the only internationally recognized certification that exists for the water sector is the Professional Operator (PO) program (Water and wastewater operator, n.d.), which is available in the United States. Arlinda Ibrahimllari talked about receiving her PO certification, emphasizing the certification's ability to demonstrate that its recipient is capable of handling a position in the wastewater sector. SHUKALB received funding from the USAID to develop a certification program based on testing and specific requirements for water supply and sewerage utilities, allowing these utilities to be staffed with certified operational managers (USAID, 2018a). Dr. Enkelejda Gjinali, a professor at the Polytechnic University of Tirana (PUT), talked about all instruments being in

"Most of the women in the country, after their pregnancy, going back to the utilities, don't have the same position. So having that certification in their hands will definitely make them feel in the right place and go back to work on the same position which would make them stable. So I think it definitely will help."

– Arlinda Ibrahimllari, freelancer and Technical Director of the Sanitation Department, Water Supply and Sewerage Enterprise of Korçë, Canada and Albania

place for this certification to be implemented, but believed that new people and digital communication were required in order for the certification initiative to succeed.


"Political influence has been very hard, and it's continued to be present. That is a main [obstacle], because it's been keeping us here in a circle and not letting us develop more."

– Nadire Vitija, Training Manager, SHUKOS, Kosovo



RECOMMENDATIONS





“We have a role to play, and we can choose what role to play in this network.”

- Elisabeta Poçi, Deputy Executive Director, SHUKALB, Albania

Through research and

interviews with wastewater professionals, our team better understood the obstacles that women in the Western Balkan wastewater sector face and how they overcame them, the importance of mentorship and connections, and strategies for improvement in the industry. As a result, our team has curated a set of recommendations addressed to wastewater companies and utilities, SHUKALB, and those affiliated with the network.

Recommendations for wastewater companies and utilities

Encourage certifications in wastewater treatment plants

To combat the hiring bias women face when applying for jobs, a universal certification should be used for certain positions within the plant. The introduction of a certification requirement will create a more structured and objective hiring process, in turn countering issues that women face like hiring bias and nepotism. The Women of Water network can act as a way for members to get support and advice on these certifications.

Arlinda Ibrahimllari talked about the certification program that SHUKALB is in the process of implementing:

"I'm very happy that we'll be also implementing [a certification program] in Albania and we'll give that strength to people, and especially to women, when they pass that exam, to reinforce their position within their utility."

– Arlinda Ibrahimllari, freelancer and Technical Director of the Sanitation Department, Water Supply and Sewerage Enterprise of Korçë, Canada and Albania



Address and mitigate issues of gender inequality within the sector

Gender inequality is a major issue facing women in the Western Balkan wastewater sector and causes issues like pay gaps, a lack of respect for women, and gender imbalance in the workplace. To alleviate issues like pay gaps, utilities could perform salary audits to determine if a pay gap between men and women exists within that utility. The Women of Water network is integral to alleviating these obstacles, as it gives members a way to talk about gender issues facing the sector, get support, and promote change within the sector.

As for hiring bias, utilities could give extra consideration for women in the hiring process, or otherwise attempt to nullify bias by placing an equal number of men and women on hiring committees. Our background research and interviews show that women are underrepresented in the workplace and are often not present in management positions. Enforcing quotas to promote equal hiring and promotion of men and women and providing more opportunities for women to advance into high-level positions will allow for more equal representation of women in the industry.

Provide adequate sanitation facilities

Utilities should be required to provide adequate sanitation facilities for female employees. In particular, facilities are necessary for women returning from maternity leave. The lack of appropriate facilities for women shows minimal consideration for their presence in the sector, in turn causing women to feel unwelcome and further perpetuating the idea that the wastewater sector is a man's sector. The Women of Water network gives women a platform to discuss these issues, validate their concerns, and empower them to speak up.

“First, strengthening of the legal frameworks when everything that kind of relates to gender inequality has to be mandated by legal arrangements, but also a great component of it is the social context. And that’s where each of us can do our role to change the mentalities and break the stereotypes that you mentioned”

– Fiorela Shalsi, Senior Gender Advisor, Global Water Partnership, Albania



Recommendations for SHUKALB

Encourage participation from younger generations

Based on advice from women who work in the wastewater sector, it is important to continue and expand programs that promote the sector among students and increase levels of hiring and recruitment. While many women have been successful with the assistance of personal connections, creating more programs and initiatives, such as internships, conferences, and training events, could ensure that women entering the sector have improved access to opportunities. Multiple interviewees discussed programs put in place by organizations like the Young Water Professionals and SHUKALB because of the invaluable experiences and connections these programs helped them obtain. SHUKALB could increase these benefits by encouraging utilities to recruit more women by hosting women-centric events, such as women's tours of the utility's facilities and laboratories. SHUKALB could also reach out to universities to develop

events that allow students to learn more about a career in the wastewater sector, such as through technology presentations or campus visits with affiliated utilities. The Women of Water network is not exclusive to women currently working in the sector, and can both help promote careers in wastewater treatment to female students and introduce them to role models and mentors in the sector.

Develop gender initiatives with affiliated companies and utilities

SHUKALB might work with affiliated companies and utilities to catalyze consideration for and alleviation of issues of gender inequality in the wastewater sector. Similar gender-focused initiatives have been created by organizations such as GIZ that aim to change mentalities among women in male-dominated fields. Our background research also identified initiatives like the Economic Dividends for Gender Equality (EDGE) certification program, which aims to close gender gaps in the workplace through various

means (EDGE Certification, n.d.). Connections between different utilities and companies through the Women of Water network can help these initiatives spread faster throughout the sector. SHUKALB could create programs that require affiliates to address issues like pay gaps, unequal hiring rates between men and women, and more. This could also include requiring affiliated utilities to conduct frequent audits to show that they are holding true to their contributions towards gender equality among employees.



Recommendations relating to the network

Continuation and utilization of the Women of Water network

To expand connections among women in the industry and combat issues of gender inequality, our team, in collaboration with SHUKALB, has developed the Women of Water network to connect female water and wastewater professionals. The goal of this network is to provide a platform for networking and discussion to its members and to share experiences and ideas to further progress the advancement of the industry and women's equal representation in it. Advertising and expanding the network provides a method for more experienced professionals to meet and mentor younger women, hopefully allowing for the continuation and increased success amongst women in the wastewater sector.

“That’s the best way to build a network, when you share experiences and you feel like “oh, I’ve been there, I’ve been in that person’s shoes.” The networks just fall in place so naturally, we have so much in common and this is just an opportunity to realize that and we have to build upon this first activity, and that will be our job, actually.”

– Elisabeta Poçi, Deputy Executive Director, SHUKALB, Albania

Promote membership of the network and provide incentives to members

To maintain and increase membership of the Women in Water network, our team created a network longevity guide that should be followed by those in executive roles. This guide suggests volunteer administrators, event managers, and moderators who would be willing to contribute time to this network. Expansion of the Women of Water network will depend on the willingness of members and affiliated organizations

to share this network with their female colleagues in the wastewater sector. For this network to be effective, members will need to continue contributing to discussion and events within the group. It is important that further events are held for members of the network to interest and provide value for both new and tenured members. Additional promotion of the profiles on SHUKALB’s website, as well as a continued system to highlight members of the network on the Facebook Page, should be emphasized. Identifying some of these “best cases” acts as a model to encourage other members of the network. Progress and continuation of the network will require engagement and passion from its members; otherwise, the network could fail to meet its goals.

“Finding that person who you can bounce ideas off of, who you can tell them ‘I’m having a bad day,’ that ‘This doesn’t seem right,’ that ‘I feel uncomfortable here,’ that goes a long way to making you confident as a person in a male-dominated field and it gives you the confidence to really reach and succeed.”

– Jami Walsh, Construction Coordinator, Massachusetts Water Resource Authority, USA

Continue to host discussion forum webinars for the Women of Water network

The longevity guide is designed to help women of the sector continue on the network that we have launched, and a

major component to the success of the network is large events to keep the members engaged and to allow for greater network opportunities. The “Building Bridges Over Water” forum was informative and it was exciting to

see the network come to life, however, many important issues like sexual harassment and gender inequality needed further deliberation that unfortunately did not fit in the time constraints of the event.

“These types of forums that you were just mentioning, they can influence their lives too, to see how they can be more visible. Sometimes engineers, they are a bit more shy. So I’m confident that this initiative on forums will serve the Albanian sector’s needs and to the new generation to transfer knowledge from your experience to our community.”

– Dr. Enkelejda Gjinali, Professor of Environmental Engineering, Polytechnic University of Tirana, Albania





CONCLUSIONS

Our interviews and

discussions with wastewater professionals around the world helped to articulate the experiences and obstacles faced by women, both entering and working within the wastewater field. In the Western Balkans, there are additional factors that women face that make it even more challenging to work in the wastewater field. The Western Balkans are historically considered to be the caretakers of the household and are often perceived as being incapable of doing the same job that men can, such as working in technical roles or receiving an education in science, technology, engineering, and math (STEM). This belief coupled with the scarcity of opportunities and other issues leads to a disparity between genders employed in the wastewater sector, where there are very few women working alongside the men in technical and managerial positions.

There is a need for an expansion of the wastewater sector to fulfill the treatment needs of the Western Balkans, as well as room for change in the patriarchal setting of the wastewater sector that has perpetuated the gender disparities since the creation of the industry.

Mentors have inspired, guided, and connected women to opportunities in the field; however, there is a limited number of women already working within the sector, making connections sparse and contributing to feelings similar to imposter syndrome and isolation amongst male coworkers.





To expand connections and combat these issues, our team, with the assistance of SHUKALB, has developed a network to connect female water and wastewater professionals. The goal of this network is to provide communication and information to women in the wastewater sector and to share experiences and ideas to further progress the advancement of the industry and women's representation in it. The Women of Water network was successfully launched with the "Building Bridges Over Water" discussion forum that our team hosted alongside SHUKALB on December 7, 2020 where more than 20 women from the wastewater sector shared their experiences and talked about issues facing women in the industry.

Our team is thankful and fortunate to have worked with such passionate and inspirational women and men from the Western Balkans and United States. We hope that the Women of Water network catalyzes many connections among women and that it helps to create a better work environment from women in the wastewater sector.

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APPENDIX A: List of Interviewees

Name	Current Location	Position	Date
Elisabeta Poci	Tirana, Albania	Project Manager at SHUKALB	September 18, 2020
Meghan Trahan	Worcester, Massachusetts	Engineer at Woodard & Curran	October 9, 2020
Mary Danielson	Worcester, Massachusetts	Staff Engineer at Tighe & Bond	October 16, 2020 & November 23, 2020
Stephanie Capelli	Providence, Rhode Island	Project Manager at Rhode Island Department of Environmental Management	October 30, 2020
Jami Walsh	Worcester, Massachusetts	Construction Coordinator at Massachusetts Water Resource Authority	October 30, 2020
Arlinda Ibrahimllari	Toronto, Canada	Technical Director of the Sanitation Department at Water Supply and Sewerage Enterprise of Korçë	November 5, 2020
Enkelejda Gjinali	Tirana, Albania	Faculty of the Civil Engineering Department at the Polytechnic University of Tirana	November 10, 2020
Johan Shyti	Tirana, Albania	Water and Environmental Consultant at Abkons	November 12, 2020
Dajana Disha	Ghent, Belgium	Erasmus Mundus Scholar	November 13, 2020
Frida Bahja	Orlando, Florida	PhD candidate at the Rosen College of Hospitality	November 13, 2020
Andi Muhollari	Tirana, Albania	Red Cross Albania	November 13, 2020
Bestar Cekrezi	Trento, Italy	PhD candidate at Università di Trento	November 16, 2020
Fationa Sinojmeri	Tirana, Albania	Flood Risk Expert/Environmental Engineer at GIZ	November 19, 2020
Lejla Arifović	Bihać, Bosnia and Herzegovina	Laboratory and Process Manager at JP Vodovod d.o.o Bihać	November 20, 2020
Egzona Bejtullahu	Pristina, Kosovo	Water and Wastewater Treatment Plant Manager at Ecolog International	November 24, 2020
Gabriela Ivanovska	Illinden, North Macedonia	Chemical Engineer at JP Vodovod Kumanovo	November 27, 2020
Nadire Vitijia	Pristina, Kosovo	Training Manager at SHUKOS	November 27, 2020
Erdonita Humolli	Pristina, Kosovo	Program and Project Assistant at SHUKOS	November 27, 2020
Albina Xhyheri	Vlorë, Albania	Hydrotechnical engineer at Sha UK Vlorë	Written responses received December 1, 2020
Blerina Arttunda	Shkodër, Albania	Manager of Wastewater Systems at Water Utility of Shkodër	December 3, 2020
Denalda Ziu	Vlorë, Albania	Head of the Wastewater Treatment at Vlorë Water Supply and Sewerage Company	Written responses received December 4, 2020

APPENDIX B: Informed Consent Script

Interview Subject(s): _____

Date: _____

Time: _____

Team Attendees: _____

Hello _____,

We are a team of third year students from Worcester Polytechnic Institute, which is located in the northeast of the USA. We are working with the Water Supply and Sewerage Association of Albania (SHUKALB), and we'd like to talk to you to learn more about your experiences working in the wastewater sector. Through our conversation we're hoping to learn more about what opportunities the wastewater sector may hold for Western Balkan women and how these opportunities could benefit the Western Balkans as a whole.

Interviews (non-profiling): If you agree, we would like to include your responses in the report, as well as your position in your company. If this does not suit you, please let us know and we will keep your information and responses confidential. Do we have your consent to publish your responses?

Interviews (profiling): Our goal is to publish both a report and a section of a website with in-depth profiles about professionals in the wastewater sector. Your responses will be published in the report and on this website, as well as your name and position in your company. If this does not suit you, please let us know; we will maintain confidentiality and will not use any identifying information in our final report. We will also provide you the opportunity to review your profile prior to it being published.

Also, with your consent, the video and audio of the interview will be recorded for later use. Do we have your permission to record this interview? When we're done with the report, portions of it may be posted online and shared with you.

APPENDIX C: Question List

Women and Water Team Question List

Team members: Lindsay Ambrosino, Gabriella Cerbo, Aaron Krueger, and Shawna Winters

Advisors: Professor Leslie Dodson, Professor Robert Hersh

Sponsor: SHUKALB

Profiles:

Purpose: We would like to develop “profiles” of some of our interviewees. This means that we will record sections of our interview for publication on SHUKALB’s website and/or a Facebook group with the purpose of demonstrating stories about women in the sector to garner interest among your constituents and those entering into the sector. We will send you a copy of your profile before it is posted anywhere to ensure that its content is representative of your responses and how you would like to be portrayed.

- Do we have your permission to use the information you provide us with to develop and publish a profile?
 - If not, we would still like to conduct the interview. Can we use your responses to identify themes and discuss topics in our report, without connecting the information to you in any way?

Pictures:

Purpose: Generally, we’re focusing on pictures that highlight the work you do in the wastewater sector. Our intention is to create a collage of these pictures that will be on a Facebook group and webpage on SHUKALB’s website, and also to provide life to the profiles we create. We will also discuss these photos during our interviews.

- Do you have any pictures you could provide for us to publish, with your permission? Pictures can be:
 - A picture of you working at your job
 - A picture of your favorite part of the workplace
 - A picture of any certificates you have
 - A picture showing the field work being done at your workplace

-
- A picture of you doing a favorite hobby
 - A picture of you

General Interview Topics:

- Interest in the wastewater sector
 - Education
 - How you learned about it and became interested in it
 - Career path
- Professional organizations
 - Networking, mentorship
- Gender inequality
 - Experiences
 - Improvements on issues/growth in the sector
- In the future
 - Areas of improvement
 - Advice for women in the sector

Primary Questions:

Purpose: These questions will let us get to know you better and will be recorded and possibly published with your consent. If you prefer not to have any or all of the questions recorded, we will not record your responses, but would still like to hear your input. We want to ask you more about yourself and start some conversation about your career.

- Do we have your permission to record this interview?
- How did you become interested in the wastewater sector?
 - Did your college experience have anything to do with deciding your career path?
- How did you find a job after graduating from university?
 - i.e. internship experience(s), company recruiting


-
- What roles have you held in the water/wastewater sector?
 - Have you advanced your career in the wastewater sector? If so, how?
 - Are you affiliated with any professional organizations? If so, how have they influenced your career path?
 - Would you be interested in joining a network for women in water utilities in Albania?

Further Questions:

Purpose: These questions are more open-ended and are more directed towards our project. With your permission, we would like to record these questions so we can look back on them and use some direct quotes for our profiles. If you are not participating in profiling, we won't record your responses, but would still like to hear your input.

- Can you tell us more about the pictures you've brought with you?
- What have been the largest influences on your career?
- Despite women making up about 2/3rds of the student body in civil engineering programs, they only hold about a quarter of the positions in water and sanitation utilities. Do you have an idea as to why this disparity might exist?
- How do you think being a woman has affected your experiences in the wastewater sector, if at all?
- How have you seen companies attempt to overcome obstacles in gender balance? Have they been successful? Why or why not?
- What has been the biggest obstacle you've faced overall working in the wastewater industry?
- What is your favorite part of working in the wastewater sector?
- What do you see changing in the future for the sector as a whole and for women's employment in wastewater?
- Do you have any advice for women trying to enter/already in the wastewater sector?

APPENDIX D: Burimi Newsletter Article (English & Albanian)




WATER SUPPLY AND SEWERAGE ASSOCIATION OF ALBANIA

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Identifying Opportunities for Women in Albania's Wastewater Sector

SHUKALB Albania Tuesday November 3rd Newsletter




Wastewater Treatment Plant of Durres WSS Company
Photo Credit: SHUKALB

Since 2013, SHUKALB has been collaborating with Worcester Polytechnic Institute (WPI), USA, on a number of projects related to the water sector and science, technology, engineering, and mathematics education that involve a team of WPI students working in Albania for a period of 8 weeks. This year, the WPI team is focusing on women in the wastewater industry.

The wastewater sector in Albania has historically been viewed as a male-dominated industry, particularly in technical and management roles. There are many potential reasons for this discrepancy, including lack of female interest in the field, gender gaps in hiring, and low representation of female role models in leadership roles. The students hope to identify opportunities for women in Albania's wastewater sector and to reduce gender bias for women working in the industry.


The students are at the beginning stages of developing a network of women professionals working in the wastewater sector from the USA, Albania, and other countries in the Balkans. The network will increase opportunities for mentoring and collaboration. The students also plan to produce a webinar highlighting the experiences of women in the industry and strategies to increase employment opportunities, retention, and advancement.

The WPI team consists of four third-year students: Gabriella Cerbo, Aaron Krueger, Shawna Winters, and Lindsay Ambrosino. Due to the pandemic situation, the students were not able to travel internationally and therefore they are managing the project remotely from Massachusetts. They are excited to be working with SHUKALB and would very much like to talk with BURIMI newsletter readers. You can contact them via email at: gr-womenandwater_A20@wpi.edu



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- Identifying Opportunities for Women in Albania's Wastewater Sector

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Upcoming Events

Drinking Water Quality in the Distribution System (Chlorination and Disinfection)



SHODATA LUËSJELJES KANALIZIME E SHQIPËRISË

f in

Kreu Rreth Nesh Anëtarësimi Trajnimet dhe Zhvillimi i Kapaciteteve Evente Programe Projektet Burimet Na Kontaktimi

Identifikimi i mundësive për gratë që punojnë në sektorin e ujërave të ndotura në Shqipëri

SHUKALB Albania e martë 3 nëntor Newsletter



Impianti i Trajimit të Ujërave të Ndotura të shoqërisë UK Durres
Foto nga SHUKALB

Që nga viti 2013, studentët nga Instituti Politeknik Worcester (WPI) nga SH.B.A. kanë bashkëpunuar me SHUKALB në disa projekte në sektorin e ujit dhe shkencë, teknologji, inxhinieri dhe matematikë, ku përfshihet një ekip studentësh të WPI që punojnë në Shqipëri për një periudhë 8 javore.

Sektori i ujërave të ndotura në Shqipëri është parë historikisht si një industri e mbizotëruar nga burrat, veçanërisht në rolet teknike dhe të menaxhimit. Ekzistojnë shumë arsye të mundshme për këtë mospërputhje, duke përfshirë mungesën e interesit të femrave në këtë fushë, boshllëqet gjinore në punësim dhe përfaqësimin e ulët të roleve të grave në rolet drejtuese. Studentët dëshirojnë të identifikojnë mundësitë për gratë në sektorin e ujërave të ndotura në Shqipëri dhe të zvogëlojnë paragjykimin gjinor për gratë që punojnë në këtë industri.

Studentët janë në fazat fillestare të zhvillimit të një rrjeti të grave profesioniste që punojnë në sektorin e ujërave të ndotura në SH.B.A., Shqipëri dhe vendet të tjera në Ballkan. Rrjeti do të risë mundësitë për këshillim dhe bashkëpunim. Studentët gjithashtu planifikojnë të prodhojnë një webinar që thekson përvojat e grave në industri dhe strategjitë për të rritur mundësitë e punësimit, mbajtjen dhe përpunimin.

Ekipi përbëhet nga katër studentë të vitit të tretë: Gabriella Cerbo, Aaron Krueger, Shawna Winters dhe Lindsay Ambrosino. Për shkak të pandemisë, studentët nuk mund të udhëtojnë ndërkombëtarisht kështu që po e zhvillojnë projektin në distancë nga Massachusetts. Ata janë të entuziastë që po punojnë me SHUKALB dhe do të dëshironin shumë të flisnin me lexuesit e gazetës BURIMI. Ju mund t'i kontaktoni ata përmes emailit në: gr-womenandwater_A20@wpi.edu



Kërko

Burimi Newsletter



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- Request for Expressions of Interest – Local Experts
- Request for Expressions of Interest – Advocacy Expert
- Request for Expressions of Interest – Moderators for the Delivery of Peer Exchanges on "Successful Infrastructure Waste Water Collection and Treatment Projects"
- Identifikimi i mundësive për gratë që punojnë në sektorin e ujërave të ndotura në Shqipëri

Logimi i Anetareve

Ju nuk jeni loguar.

Perdorues

Fjalekalimi

kyoni Regjistrohu

Ngjarjet e ardhshme

Çlësia e Ujit në Sistemin e Shpërndarjes

APPENDIX E: Discussion Forum Flyer (English & Albanian)

Building Bridges Over Water

Identifying opportunities for women in the Western Balkan water sector

**Join us for a virtual discussion!
Presented in English & Albanian**

Connect with other water sector professionals, discuss experiences, obstacles, and successes, and launch a new network of women in the water sector in the Western Balkans, United States, and beyond! A background in water utilities is not required to join.

**SAVE THE DATE:
DECEMBER 7, 2020
3:00PM CET | 9:00AM EST**

Ndërtimi i urave mbi ujë

Identifikimi i mundësive për gratë në sektorin e ujit në Ballkanin Perëndimor

**Bashkohuni me ne në një diskutim virtual!
Prezantim në Anglisht dhe Shqip**

Lidhuni me profesionistë të tjerë të sektorit të ujit, diskutoni përvojat, sfidat, dhe sukseset, dhe krijoni një rrjet të ri të grave profesionale në sektorin e ujit në Ballkanin Perëndimor, Shtetet e Bashkuara të Amerikës dhe më gjerë! Përveç punonjësve të shoqërive ujësjellës kanalizime, janë të ftuar të marrin pjesë dhe profesionistë të tjerë në sektor.

**RUANI DATËN:
7 DHJETOR 2020
ORA 15:00**



Discussion Forum: gr-WomenAndWater_A20@wpi.edu
Program Information: program@shukalb.al
Tel/fax SHUKALB: +355 42 245 101, Mob: +355 69 6012782



Forumi i Diskutimit: gr-WomenAndWater_A20@wpi.edu
Informacioni i programit: program@shukalb.al
Tel/fax SHUKALB: +355 42 245 101, Mob: +355 69 6012782

APPENDIX F: Discussion Forum Agenda



Webinar: Building Bridges Over Water Forum “Identifying opportunities for women in the Western Balkan water sector” Project

Date: Monday, 7 December, 2020

Timing: 15:00 - 16:30 (GMT+2)

Agenda

15:00-15:06	Welcome speech and general introduction Elisabeta Poçi , Deputy Executive Director, SHUKALB, Albania
15:06-15:08	Introduction Leslie Dodson , Assistant Teaching Professor, Worcester Polytechnic Institute, USA
15:08-15:12	Project Introductions and Format of Discussion Forum The Women and Water Team , Worcester Polytechnic Institute, USA
15:12-15:18	Why is it important to get involved in networks and learn knowledge from around the world. Arlinda Ibrahimllari , Freelancer - Project Manager, UKKO JSC, Albania
15:18-15:29	Prompt 1 - Breakout Room Discussions What opportunities have you taken advantage of through networks and other professional organizations? What do you hope to gain from this network of women and what will make it successful?
15:29-15:44	Group Feedback Discussion for Prompt 1
15:44-15:48	Gender inequality in the workplace Leila Arifović , Head of the laboratory for wastewater, Bosnia and Herzegovina
15:48-15:52	Gender and diversity committee-related; how have these commissions helped alleviate issues Mary Danielson , WPI Alumna and Staff Engineer, Tighe & Bond, USA
15:52-16:00	Prompt 2 - Breakout Room Discussions What changes have you seen regarding gender inequalities that have been successful and unsuccessful? What changes would you like to see (i.e. from companies, legislation)?
16:00-16:10	Group Feedback Discussion for Prompt 2
16:10-16:15	How mentorship affects careers? Jami Walsh , WPI Alumna and Construction Coordinator, Massachusetts Water Resource Authority, USA
16:15-16:25	Group Discussion on Prompt 3 Have you had a mentor or other positive influence? How did they affect your career? How do you see mentorship opportunities being developed through this network?
16:25-16:27	Conclusions The Women and Water Team , Worcester Polytechnic Institute, USA
16:27-16:30	SHUKALB Conclusions

APPENDIX G: Women of Water Network Overview

NETWORK OVERVIEW

About

The Women of Water group is made up of women working in the water and wastewater sectors of the Western Balkans, United States, and beyond. The group will serve as a forum for discussion, networking, and mentorship, in the hope that it will help begin an effort towards increasing women's opportunities and advancement in the sector.

Topics of discussion in the Facebook Group or for future events may include:

- Personal experiences
- Gender inequality in the sector
- Current and future improvements
- Opportunities within the sector
- Networking tips
- Mentorship

Possible Discussions

Objectives

Connect women in the wastewater sector worldwide and provide them a place to:

- Develop mentorship
- Connect with women worldwide
- Learn about opportunities in the sector
- Discussion on women's obstacles in the sector and possible solutions

Women from global water sectors, including:

- Professionals in the industry
- Students & professors
- And more!

Group roles consist of the following:

- Member: contributes to discussion and events
- Admin: handles membership, posts in group
- Moderator: posts/moderates discussion topics
- Event Manager: organizes/schedules events

Who Can Join?

WOMEN OF WATER NETWORK LONGEVITY GUIDE

WRITTEN BY:

LINDSAY AMBROSINO
GABRIELLA CERBO
AARON KRUEGER
SHAWNA WINTERS

PROJECT ADVISORS:

PROFESSOR LESLIE DODSON
PROFESSOR ROBERT HERSH

Women of Water Network

Purpose & Introduction

The purpose of the Women of Water Network is to connect women in the wastewater sector worldwide and provide them a place to develop:

- Mentorship
- Opportunities
- Discussion on women's obstacles in the sector and possible solutions

What do attendees want to get out of the network?

- A space to talk about issues that women face in the sector
- The opportunity to meet other women and create connections
- A chance to learn about women's experiences in other countries and workplaces
- A way to learn about "best cases" of women in the industry, which act as a way to encourage other women
 - Our team created profiles of women with this purpose in mind. These profiles have pictures, audio and video recordings, and follow a narrative of the woman's career relating to the sector
- Opportunities for mentorship
- Opportunities to discuss change or implementation of legislation that prevents gender discrimination

Roles & Network Structure

The network will ideally be communal, with multiple women taking on the responsibility of a few volunteer executive roles (listed below).

- Admins
 - Accept new members into the group
 - Handle postings on the Facebook group and other social media platforms
 - This position will also be shared with SHUKALB, whose Facebook page is linked to the group
- Moderators
 - Generate and post discussion topics
 - Moderate discussions both in the Facebook Group and possible future forum events
- Event Managers
 - Organize and schedule future events for the network similar to the Building Bridges Over Water forum
 - Organize/expand the "Building Bridges Over Water" forum

- Members

- Post, comment, and interact
- Invite friends, classmates, and colleagues to join
- Attend events
- Contribute ideas to the network

Women of Water - SHUKALB Facebook Group

Purpose: The Women of Water - SHUKALB Facebook group serves to provide members of the network with a way to connect and discuss topics relating to the network or women in wastewater. It also acts as the main platform for mentorship and announcements from SHUKALB or group administrators.

- Possible discussion topics:
 - Networking tips
 - Mentorship
 - Gender inequality manifesting in the sector
 - Obstacles relating to gender inequality and how to address them
 - Improvements on gender diversity that companies are making
 - What have people seen work to improve gender diversity?
 - Job search advice
 - International experience and working/learning abroad
 - What makes people passionate about the sector?
 - New technology, processes, etc.
 - Technological and gender diversity changes for the future
 - Improvements to the sector
 - Maintaining work-life balance
- Potential posts:
 - Weekly discussion thread
 - New opportunities in the wastewater sector
 - Personal experiences/stories
 - Wastewater news/advancements

- Additional:

- Look more into the mentorship program/option available on FB's platform
- Connect with other groups or pages that may have similar goals

Events

Purpose: Provide members with opportunities for networking, discussion, and more

- Possible future events:

- Remote:

- Discussion forum (similar to the "Building Bridges Over Water" forum held on December 7th, 2020)
- Smaller-scale discussion rooms on Zoom, Skype, etc.
- Monthly "open" check-in, where members can meet informally
- Pairing of members to be "pen pals"
 - Could switch to new pen pals every month, two months, etc.
- Virtual plant tours
- Webinar on issues of gender inequality, where speakers can share experiences

- In-person (when it becomes possible):

- Round table of women on committees for gender inclusion
- In-person plant tours, such as for younger members
- In-person discussion opportunities similar to the discussion forum

Network Expectations

- Professionalism and kindness is expected
- No hate speech, harassment, or bullying
- No promotions, solicitation, or irrelevant advertisements
- Political discussion is allowed; however, no personal political viewpoints are to be projected

"Building Bridges Over Water" Discussion Forum

Overview:

This event served as a launch of the network, an opportunity to meet wastewater professionals from around the world, and a platform for conversations surrounding opportunities, successes, and obstacles in the sector.

Who was invited?

Women and men from international wastewater sectors. This included both contacts of SHUKALB and our interviewees.

Format:

After introductions by SHUKALB and the Women and Water Team, the forum cycled from speaker to breakout rooms to full group discussions three times.

- Speakers
 - Four speakers from Albania, Bosnia & Herzegovina, and the United States were asked prior to the forum to speak about how discussion prompts relate to their personal experiences and were given 3-7 minutes each
 - Speakers were translated
- Breakout Rooms
 - Attendees were encouraged to go into breakout rooms to have individualized conversations with each other over the discussion prompts
 - Breakout rooms were separated by languages, had 4-7 attendees each, and were 10 minutes each
- Full Group Discussions
 - Attendees were encouraged to share with the group what they spoke about in their breakout room
 - Full group discussions were translated

Discussion Prompts:

- What opportunities have you taken advantage of through networks and other professional organizations?
- What do you hope to gain from this network of women and what will make it successful?
- What changes have you seen regarding gender inequality that have been successful and unsuccessful?
- What changes would you like to see (i.e. from companies, legislation)?
- Have you had a mentor or other positive influence? How did they affect your career?
- How do you see mentorship opportunities being developed through this network?

Setting up a forum event

Planning for an event with a large number of attendees began 4-6 weeks in advance.

- Allot ample time to contact speakers and attendees
- Create materials for the event (such as a flyer)
 - Send a flyer (we created one on Canva.com) AT LEAST 2 weeks in advance
- Determine the event agenda
- Promotion: utilize SHUKALB's contacts
- Registration: SHUKALB can send a registration form for the event, giving attendees a direct method to sign up and capture email addresses
- Send an agenda of the event with prompts to attendees a few days prior to the forum
 - Determine prompts with SHUKALB, speakers for the event, and other experts or interested parties

Challenges and Successes

- Many attendees greatly enjoyed the event
- Some attendees didn't talk or had technical issues that prevented them from talking
 - Use the chat feature to invite people to talk
 - Have a moderator (occasionally) read the messages in the chat
- Inviting women from international wastewater sectors allowed participants to hear a wide range of views and experiences
- Attendees wanted more time to discuss certain topics
- Speakers were a great way to introduce topics
- Translation made most of the event accessible
 - Breakout rooms were not translated
- Breakout rooms were more effective for discussion than the large group discussion format

Suggestions for future

- Host events dedicated to one specific topic or theme
- Distribute prompts and topics 2 days – 1 week prior to the event so attendees can prepare
- Promote profiles on SHUKALB's page and Facebook Group
- Create more profiles of model women in the wastewater sector