

WATER AND YOUTH OPPORTUNITIES IN THE MEDITERRANEAN



Gap Analysis and Survey Results



Union for the Mediterranean
Union pour la Méditerranée
الاتحاد من أجل المتوسط

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Gap Analysis and Survey Results

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This work has been developed for the UFM Secretariat,
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Executive Summary

In response to the gap of connecting youth in the Mediterranean to jobs post-graduation, compounded by the challenges of COVID-19 on the job market worldwide, this report includes a review of water sector job trends amidst COVID-19 and opportunities for Mediterranean youth employment in the sector. A review of government stimulus packages supporting the water sector and its jobs during the pandemic, as well as a review of opportunities for the Mediterranean member countries of the European Union (EU) to benefit from aspects of the Green Deal is included. The report is concluded with results from a survey conducted with youth from the Mediterranean highlighting their perception of the future challenges and skills required for the water job market of the future.

As part of the UfM member countries, the Mediterranean region **enjoys a large youth population which must be prepared for an expanding water sector job market** in response to COVID-19 and beyond. In particular, the MENA region is made up of 200 million young people (between the ages of 18-24 years).¹ However, despite a large youthful population, unemployment rates of this age demographic are the highest they have been in nearly 25 years, reaching 30% in 2017.² Additionally, youth in the region often undergo a delayed transition to work post-graduation.³

In both the Mediterranean and the world at large, **indicators show that matching the right qualifications of select water jobs has proven to be difficult.** These indicators are evidence that much of the workforce was not well prepared. **Four bottlenecks exist** for making these matches last. These include a human resources shortage for specializations in water,

a difference in qualifications needed pending on a rural vs. urban setting, a lack of incentives for workers, and lack of coordination between industry needs and supply from educational institutions.⁴

Stimulus packages, including economic recovery responses to COVID-19, to support jobs and the water sector are beginning to pave a way for opportunities for youth and the sector. With the onset of COVID-19, the main focus of government stimulus packages has rightly been prioritized to help with immediate health crisis needs. In relation to water, this has come in the form of aiding WASH initiatives in various developing countries to ensure all communities have access to safe water and soap for hygiene and handwashing. And while economic recovery falls next in line of government stimulus priorities in the wake of the coronavirus, many countries have begun to include green measures as a central part of their COVID-19 stimulus packages. The implications of these green measures are anticipated to have real impact on the future of Mediterranean waterways and water jobs.

Results from a recent survey conducted with water youth in the Mediterranean

The aim of the survey was to identify employment and capacity related gaps for Mediterranean youth within water related sectors. It also included specific questions about youth perception on employability in the water sector within their countries of origin and places of residences. The survey also touched on youth's perception toward the compatibility of their traditional training at university and the job market needs. That is in addition to developing a better understanding of the skill


¹ ASDAA Burson-Marsteller. 2016. 8th Annual ASDAA Burson-Marsteller Arab youth survey: Inside the hearts and minds of Arab youth. Dubai, UAE: ASDAA Burson-Marsteller

² Dasgupta, Sukti & O'Higgins, Niall & B rcia de Mattos, Fernanda & Brewer, Laura & Elder, Sara & Gardiner, Drew & Larue, Jos  e-Anne & Nebuloni, Valter & Pinedo, Luis & Gonzalez, Susana & Tobin, Steven & Stefan, K hn & Milasi, Santo & Horne, Richard. (2017). Global Employment Trends for Youth 2017: Paths to a better working future.

³ Kabanni, Nader. 2020. Youth employment in the Middle East and North Africa: Revisiting and reframing the challenge. Brookings. Date Visited: April 27, 2020. <https://www.brookings.edu/research/youth-employment-in-the-middle-east-and-north-africa-revisiting-and-reframing-the-challenge/>

⁴ WWAP (World Water Assessment Program). 2016. World Water Development Report 2016: Water and Jobs. UNESCO. Paris, France.





sets necessary to better equip youth to meet the demands of the water job market of the future, as well as key challenges for employment in the region. Some of the **skills highlighted** included spatial analysis, big data analytics, machine learning, literacy in digital and online platforms, technical writing, and ability to publish, systems thinking, among others. **Other soft skills** include creativity, critical thinking, interpersonal skills, international experience, ability to work in groups, remote working skills, innovation, management skills, leadership, communication, and languages. Some of the **key challenges** facing youth according to the survey included demands for long years of experience for junior positions, specific language requirements, financial crises, lack of political stability, and lack of connections within the water sector.

As a result of the gap analysis research and survey results, the following policy recommendations are provided to the UfM for careful consideration of bolstering the employment opportunities of youth in the Mediterranean seeking water and climate related work.

- It is recommended the UfM secure youth employment training opportunities and funding provided through investments programs like the European Youth Guarantee.
- It is recommended that the UfM utilizes financial and personnel resources proposed from the European Social Fund to help reskill, in preparation for jobs in the green economy, its UfM member country youth that belong too to the European Union.
- Support peer-to-peer youth mentorship programs to support in sharing experiences and skills.
- Develop small grants to support innovation and entrepreneurship among youth in the water sector.

- Encourage academic-private sector partnerships to ensure internship and training opportunities for young and early career professionals in the water sector.

- It is recommended that the UfM seek opportunities from the Green Deal for tracking skills competence of youth pursuing a career track in the water sector.

- Support water youth organizations in the region through organizing facilitated webinar series and seminars targeted at building awareness on topics related to the water sector.

- Develop training opportunities specifically in spatial analysis (such as Arc GIS), data analysis, and literacy in digital and online platforms.

Background

Since the beginning of May, Covid-19 has claimed the lives of hundreds of thousands in the UfM countries⁵, with the biggest devastation hitting Italy.⁶ Millions of businesses have halted service in reverence to hinder the spread of COVID-19, resulting in nearly 190 million unemployed worldwide,⁷ one of the highest unemployment rates of our times. With this, the global pandemic will continue to leave a lasting impact on economies in the UfM region and worldwide. This will require countries to adapt by means of an increased digitized economy,⁸ paving a road that is fundamental for worker employment and public health. While the immediate response of the coronavirus was to adapt by working remotely and through teleconferencing, new normal for working and for the economy will continue to be established. In response to these challenges, an opportunity arises for new job markets to be developed, especially in the Mediterranean region.

⁵ WHO. Coronavirus (COVID-19). April 27, 2020. Date visited: April 27, 2020. <https://covid19.who.int/>

⁶ WHO. Coronavirus (COVID-19): Global, Italy. April 27, 2020. Date visited: April 27, 2020. <https://covid19.who.int/region/euro/country/it>

⁷ UN-News. COVID-19: impact could cause equivalent of 195 million job losses, says ILO chief. Date visited: April 27, 2020. <https://news.un.org/en/story/2020/04/1061322>

⁸ Harvard Business Review. Coronavirus Is Widening the Corporate Digital Divide. March 26, 2020. Date visited April 27, 2020. <https://hbr.org/2020/03/coronavirus-is-widening-the-corporate-digital-divide>

The water sector is one of those markets. In combat of the coronavirus, the only thing prescribed to our defense and in slowing the spread is keeping hands clean using soap and water, as well as social distancing. With this, the water/WASH sector has a heightened advantage of creating jobs during this pandemic season and beyond. In fact, millions of dollars are being stimulated from international development agencies⁹ to procure an increase of WASH facilities, including clean water services, and hand washing stations. Additionally, water services are more greatly acknowledged by other sectors to need proper investment, especially during this time of crisis.¹⁰ This increase of investment will result in new water jobs to maintain such facilities. And for the wide demographic of young professionals in this region, this could be an advantageous time to train, and equip a new workforce of water professionals.¹¹ This would allow harvesting of new innovations for addressing the anticipated complex challenges facing the water sector, as economies and job markets continue to evolve.

Despite these additional challenges that compound the current COVID-19 workforce challenges, youth has the potential to play an instrumental role in leading efforts to address the complex water challenges of the future. This includes responding to shocks similar to COVID 19, in addition to implementing the highly interconnected 2030 Sustainable Development Goals. A few barriers exist which might challenge this possibility. These barriers could include: 1) inconsistency between educational training and job market needs, 2) lack of internet infrastructure preparedness to allow switching to a digitized economy, and 3) lack of environments which allow for this segment of the population to be an active contributor to the economies of the future.

In response to these challenges and potential opportunities in the Mediterranean, this report includes a review of water sector job trends and opportunities for new jobs amidst the coronavirus; a review of government stimulus packages supporting the water sector and its jobs during the pandemic, as well as a review of opportunities for the Mediterranean member countries of the European Union (EU) to benefit from aspects of the Green Deal. This is followed by a survey conducted with youth from the Mediterranean which highlights their perception of the future challenges and skills required for the water job market of the future.

Water Sector Workforce Trends Pre-COVID-19: Global and Regional

While economic development is highly dependent on the availability of water, global workforce trends in the water sector mimic the demands of the aspects of the industry. As highlighted in the 2016 report by the World Water Assessment Program on Water and Jobs, jobs in the water sector fall into three main categories (1) water resources management, including IWRM and ecosystem restoration and remediation; (2) building and managing water infrastructure; (3) and the provision of water related services, including water supply, sewage, waste management and remediation.¹² Based on these categories, global trends in the water sector show that the global workforce increased from 2.3 billion people in 1991 to an estimated 3.2 billion in 2014, during the same time period the global population grew from 5.4 billion to 7.2 billion over the same time period. The industry and services sectors account for this increase, with water supply and wastewater facilities employing nearly 80% of the workers in the industry,¹³ while employment in the agriculture sector slightly decreased during this period.¹⁴

⁹ Center for Global Development. How are International Development Agencies Responding to the COVID-19 Crisis? April 8, 2020. Date visited: April 27, 2020. cgdev.org/blog/how-are-international-development-agencies-responding-covid-19-crisis

¹⁰ Kane, Joseph. COVID-19 is a chance to invest in our essential infrastructure workforce. Brookings. April 7, 2020. Date visited: April 27, 2020. <https://www.brookings.edu/blog/the-avenue/2020/04/07/covid-19-is-a-chance-to-invest-in-our-essential-infrastructure-workforce/>

¹¹ Kane, Joseph. COVID-19 is a chance to invest in our essential infrastructure workforce. Brookings. April 7, 2020. Date visited: April 27, 2020. <https://www.brookings.edu/blog/the-avenue/2020/04/07/covid-19-is-a-chance-to-invest-in-our-essential-infrastructure-workforce/>

¹² UN DESA 2008. International Standard Industrial Classification of All Economic Activities Revision 4. Statistical Papers Series M. No. 4. New York, United Nations.

¹³ UNESCO-UNEVOC (United Nations Educational, Scientific and Cultural Organization - International Centre for Technical and Vocational Education and Training). 2012 Skills Challenges in the Water and Wastewater Industry: Contemporary Issues and Practical Approaches in TVET. Bonn, Germany, UNESCO-UNEVOC.

¹⁴ ILO (International Labor Organization). 2015a. World Employment and Social Outlook: Trends 2015. Geneva, Switzerland, ILO. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_337069.pdf



To compare water sector job availability pre-COVID-19 in the Mediterranean region, job trends between 1992 and 2014 are highlighted in the 'World Water Development Report 2016: Water and Jobs' for the regions of the European Union and MENA regions. For the European Union, trends mimic the global trends described above, and for the MENA countries, trends for job availability in all areas including agriculture, industry, and services show continual increase. For developed economies and the European Union jobs increased in the services area from 167.7 million (1992) to 248.6 million (2014), and decreased in the agriculture industry from 28.7 million (1992) to 16.6 million. For the MENA countries, job availability in the agriculture category increased from 20.8 million (1992) to 27.9 million (2014); increased in the industry category from 26.5 million (1992) to 61.3 million (2014); and increased in the services category from 18.8 million (1992) to 44.0 million (2014).¹⁵ It is assumed that water jobs in these areas increased as a result. And with an increase in job opportunities in the water sector, there too is a need to train an employable workforce.

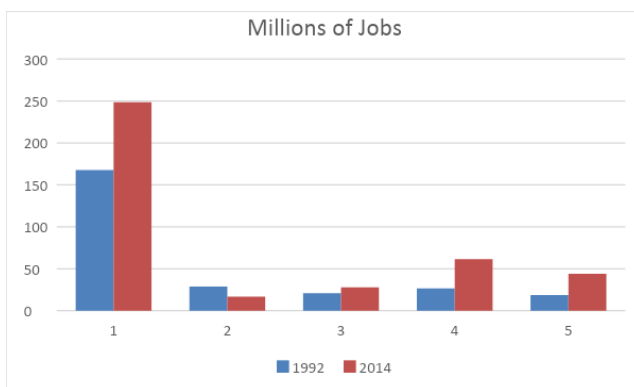


Figure 1. Job Comparison in Developed Countries and the MENA Region Between 1992 and 2014.

The Difficulties of Youth Unemployment in the Mediterranean

As part of the UfM member countries, the Mediterranean region enjoys a large youth population which must be prepared for an expanding water sector job market in response to COVID-19 and beyond. In particular, the MENA region is made up of 200 million young people (between the ages of 18-24 years).¹⁶ However, despite a large youthful population, unemployment rates of this age demographic are the highest they have been in nearly 25 years, reaching 30% in 2017.¹⁷ Additionally, youth in the region often undergo a delayed transition to work post-graduation.¹⁸

The Corona virus is leading to a global recession which could also lead to youth unemployment in the European Union and MENA region as well. For example, in Spain the unemployment rate for 15 to 24-year-olds was 33.1 % in March 2020, 32.4 % in Greece and 28% in Italy.¹⁹ These trends of youth unemployment, counter the need for a skilled labor force entering the water sector.

The Wake of COVID-19: Stimulus Packages to Support the Water Sector and Its Jobs

Amidst water sector jobs trends, and youth unemployment in the Mediterranean, the economic recovery responses to COVID-19 are beginning to pave a way for opportunities in the water sector. With the onset of COVID-19, the focus of government stimulus packages has rightly been prioritized to help with immediate health crisis needs. In relation to water, this has come in the form of aiding WASH initiatives in various developing countries to ensure all communities have access to safe water and soap for hygiene and handwashing.

¹⁵ WWAP (World Water Assessment Program). 2016. World Water Development Report 2016: Water and Jobs. UNESCO. Paris, France.

¹⁶ ASDA'A Burson-Marsteller. 2016. 8th Annual ASDA'A Burson-Marsteller Arab youth survey: Inside the hearts and minds of Arab youth. Dubai, UAE: ASDA'A Burson-Marsteller

¹⁷ Dasgupta, Sukti & O'Higgins, Niall & Bárcia de Mattos, Fernanda & Brewer, Laura & Elder, Sara & Gardiner, Drew & Larue, Josée-Anne & Nebuloni, Valter & Pinedo, Luis & Gonzalez, Susana & Tobin, Steven & Stefan, Kühn & Milasi, Santo & Horne, Richard. (2017). Global Employment Trends for Youth 2017: Paths to a better working future.

¹⁸ Kabanni, Nader. 2020. Youth employment in the Middle East and North Africa: Revisiting and reframing the challenge. Brookings. Date Visited: April 27, 2020. <https://www.brookings.edu/research/youth-employment-in-the-middle-east-and-north-africa-revisiting-and-reframing-the-challenge/>

¹⁹ Statista. Coronavirus: New Fear of Youth Unemployment. 26 May 2020. Date Accessed: 18 November 2020. Web. <https://de.statista.com/infografik/21820/jugendarbeitslosenquote-in-ausgewaehlten-eu-laendern/>

And while economic recovery falls next in line of government stimulus priorities in the wake of the coronavirus, many countries have begun to include green measures as a central part of their COVID-19 stimulus packages. The implications of these green measures are anticipated to have real impact on the future of Mediterranean waterways and water jobs.

As it relates to water resources, the greatest COVID-19 relief packages offered to other countries, including Mediterranean countries, have primarily come in the form of aid for WASH projects, especially in more developing countries where access to safe water and sanitation services are lacking for hand washing and maintaining proper hygiene. WASH funding announcements in 2020 to support WASH totaled \$3.3 trillion.²⁰ This area of COVID-19 stimulus funding emerged as needs of vulnerable groups have become better understood.¹⁶ Only a few of these recovery packages have been distributed to UfM member states, one of them including Jordan. The German Federal Ministry for Economic Cooperation and Development provided 7 million euros to secure water supply and hygiene articles in Jordan.¹⁶ In April 2020, the United States Agency for International Development (USAID) announced it had supported 41 new projects to support health, water, and sanitation. Most of these projects were located in Africa.¹⁶

In the Mediterranean region, the priority of government aid to help economic recovery has been in the form of supporting households and firms during the crisis. According to a recent OECD report, various economic and social measures have been implemented in UfM member countries such as Algeria, Morocco, Tunisia, Egypt, Jordan, Lebanon, and Palestine. Banks and government officials have worked to lay out new policies and have rolled back old ones in order to help individuals find financial and job relief amongst the aftermath of COVID-19. Such benefits include relieving tax burdens, lowering interest rates, postponing loan payments, and

various financial assistance offerings for the unemployed.²¹

And while economic recovery has focused on the national level, many countries are taking green measures as a central part of their stimulus packages in the wake of COVID-19. It is anticipated that these stimulus measures will be taken as an opportunity to invest in technological innovations and economic changes centered on protecting the environment and mitigating climate change. These types of projects could include a bolstering of solar and wind energy projects, desalination, and greening public transportation. And while small enterprises and self-employed in the MENA region account for 70% of total employment,²² these green projects could be a major income generator for small businesses.

The Green Recovery Deal

The measures and goals laid out in the Green Deal provide opportunities for EU member states in their transition to a greener economy. As it relates to improved water resources, these opportunities include helping member states advance their own policies to protect water and natural resources as well as skills training opportunities for youth placement into new green and 'blue economy' jobs.

Launched in December 2019, the 'European Green Deal' aims to transform the European Union into a prosperous society, with a resource-efficient economy, with no net emissions of greenhouse gases by 2050. The deal also aims to protect and conserve the EU's natural capital and protect its citizens from environmentally related health risks and impacts. While potential opportunities for 'greening' the economy include decarbonizing electricity, and increasing the installation of solar home systems,²³ the Green Deal established the importance that climate neutrality will require smart infrastructures and digital technologies.

²⁰ DEVEX. 2020. Interactive: Who's funding the COVID-19 response and what are the priorities? Date visited: 4 Dec 2020. <https://www.devex.com/news/interactive-who-s-funding-the-covid-19-response-and-what-are-the-priorities-96833>

²¹ OECD. 2020. COVID-19 Crisis Response in MENA Countries.

²² OECD. 2020. COVID-19 Crisis Response in MENA Countries.

²³ WRI (World Resources Institute). 2020. Not Enough Climate Action in Stimulus Plans. <https://www.wri.org/blog/2020/09/coronavirus-green-economic-recovery>





While it is estimated that the Green Deal will amount to €1 Trillion in investment, specific amounts of funding dedicated to zero water pollution and enhanced monitoring have not yet been determined, nor has funding amounts been determined for distribution to member countries.

The Deal notes it will place a heavy investment on building a 'blue economy' amongst its member countries, which is expected to play a central role for alleviating high demands on EU's land resources.¹¹

The Deal's push for actions towards maintaining healthy oceans emphasizes nature-based solutions will play a bigger role in mitigating and adapting climate change. In fact, the European Commission will adopt a zero-pollution action for air, water and soil by 2021. The EU acknowledges it will invest in more digital technologies, and as it relates to water this will be in the form of distance monitoring of air and water pollution, as well as optimizing low energy and natural resources.¹¹ When it comes to protecting water quality from agricultural pollution, the EU will work with its member states to implement Farm to Fork strategies as is reflected in the ambition of the Green New Deal. With this, rewards for farmers will be given based on improved environment and climate performance measures such as managing and storing carbon in the soil, and improved nutrient management to protect water quality and reduce emissions.²⁴

Aspects of this Green New Deal will focus on developing skills for the green economy it aims to pave, also with a specific emphasis on youth. In section 2 of the Green New Deal 'Transforming the EU's economy for a sustainable future,' it aims to activate education and training. It states that schools, training institutions and universities will transition to become well prepared to engage with pupils to better develop skills and attitudes on climate change and sustainable development. Furthermore, the EU will develop a competence framework to help develop and access knowledge in climate change and sustainability.

The European Commission will work to provide its member states with new financial resources to make school buildings and operations more sustainable.

A proposed European Social Fund will play an integral role in proactively reskilling and upskilling Europe's workforce to transfer from declining sectors to adapt to new processes. The Skills Agenda²⁵ and the Youth Guarantee will be updated to better inform employability in the green economy. The Youth Guarantee²⁶ is a commitment by all EU Member states to ensure that all young people under the age of 25 receive a good quality offer of employment, continued education, apprenticeship, and traineeship within a period of four months of becoming unemployed or leaving formal education.

New Water Jobs in a Shifting Market

As rapid transformation is shifting the job market at large, limited data makes it difficult to make dependable predictions as to where the water sector job market is shifting. Speculation, and overarching 2020 job trends post the onset of COVID-19 are our best predictors. And while remote work has transitioned the way we work, it is anticipated that emerging water sector jobs will require skill sets related to analyzing and processing big data for water conservation and city planning. Additional new skills related to digital technologies centered around water quality monitoring, and water supply defense are opted to be in demand. See the list of potential skills below:

- Data Science: for water conservation and city planning
 - Smart metering and sensors (internet of things)²⁷
 - Platforms for better engaging home users to their water use
 - Social platform for engaging individual water users, with the goal of conservation
 - Developing models on water usage

²⁴ EC (European Commission). 2019. The European Green Deal.

²⁵ The Skills Agenda is a five-year plan to help individuals and businesses develop more and better skills and to put them to use

²⁶ EC (European Commission). 2020. Employment, Social Affairs and Inclusion. <https://ec.europa.eu/social/main.jsp?catId=1079&langId=en>

²⁷ EC (European Commission). 2019. The European Green Deal.

- **Alternative Water Service Delivery:** Due to an increase in contactless delivery of goods and services, in countries where piped water is not as accessible, servicing water delivery in a contactless way is necessary during pandemic conditions and government regulations of social distancing.

- **Technology Design to detect COVID-19 in water resources:** Through the development of new technologies, the detection of COVID-19 can now be detected in wastewater streams to help indicate where large outbreaks might be occurring.²⁸

As washing hands and social distancing are the two modes of combating COVID-19, having safe and accessible community water supplies has heightened a much neglected need to update the world's water infrastructure. The pandemic has brought the need for improved water infrastructure to a higher priority, previously neglected by policy makers. With this it is anticipated that engineering, construction, and design, and utility related jobs will be on the rise.

Matching Skills with Water Sector Jobs

In both the Mediterranean and the world at large, indicators show that matching the right qualifications of select water jobs has proven to be difficult. These indicators are evidence that much of the workforce was not well prepared. Four bottlenecks exist for making these matches last. These include a human resources shortage for specializations in water, a difference in qualifications needed pending on a rural vs. urban setting, a lack of incentives for workers, and lack of coordination between industry needs and supply from educational institutions.²⁹

- **There is a large human resources shortage** for technical fields, in which are not specialized in water/ sanitation-mid-level technicians and engineers. The areas of work with the highest needs are Operations and Maintenance, Monitoring and Evaluation.³⁰

- **Qualification levels** and professional employee capacities differ between rural and urban systems, especially in countries where piped supplies in more rural settings are impractical or impossible. Rural areas rely more on informal workers, less complex technologies and or community-managed systems; while urban areas rely on higher qualified professionals to handle larger volumes (especially with higher urban populations) and more complex technologies.³¹

- The sector **lacks incentives for workers**^{32 33} especially in form of adequate payment, benefits for working in rural areas or for work done in the sanitation sector. More specifically there is a WASH staff shortage in many developing countries which is severe.³⁴ This is due to a variety of reasons ranging from a lack of proper investment in this component, strict government staff quotas, unattractiveness of the sanitation sector, and the absence of proper professional development.³⁰ In general, there seems to be a lack of human resource management, planning, development, and evaluation of staff in the water sector in many countries.

- **Lack of coordination between industry needs and supply from education institutes** (whether in academia and/or technical vocational training) result in a gap in skills required on the job.

²⁸ Booz Allen Hamilton. 2020. Booz Allen Foundation Innovation Winners: Urinall by Clemson University. Visited: 15 Nov 2020. <https://boozallenfoundation.org/innovationfund/winners/>

²⁹ WWAP (World Water Assessment Program). 2016. World Water Development Report 2016: Water and Jobs. UNESCO. Paris, France.

³⁰ WHO (World Health Organization). 2014. Investing in Water and Sanitation: Increasing Access, Reducing Inequalities. Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) Report. Geneva, Switzerland, WHO.

³¹ WWAP (World Water Assessment Program). 2016. World Water Development Report 2016: Water and Jobs. UNESCO. Paris, France.

³² IWA (International Water Association). 2014. An Avoidable Crisis: WASH Human Resource Capacity Gaps in 15 Developing Countries. London, IWA Publishing.

³³ WHO (World Health Organization). 2014. Investing in Water and Sanitation: Increasing Access, Reducing Inequalities. Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) Report. Geneva, Switzerland, WHO. http://www.who.int/water_sanitation_health/glaas/2014

³⁴ IWA (International Water Association). 2014. An Avoidable Crisis: WASH Human Resource Capacity Gaps in 15 Developing Countries. London, IWA Publishing.





Adapting Skills to A New Water Sector Job Market

As the Mediterranean region works to combat a deepening youth unemployment rate, as well as prepares its youth for a changing water sector, a few discussions and projects in the region have highlighted core skills required for young job seekers in the water sector post COVID-19.³⁵ Among these discussions include a recent webinar hosted by UNESCO as part of the Youth Employment in the Mediterranean Project (YEM), which focused on 'Skills in the Water Sector in Lebanon: Overview of the Needs Post COVID-19.' Among those anticipated skills needed for adaptation include:

- Manufacturing capabilities – specifically where water is needed for operations.
- Plastic processing—sound scientific knowledge in the field of plastic processing with the role of importance of operators, engineers, and installers.
- Informatics – to help automate and make water systems more efficient through means of analyzing, processing, storing, and retrieving data.
- Solar Pumping and Solar Heating—skills related to technology development, installation, and operation.

Furthermore, while work modalities have transitioned to remote work, skills in the following tools and technologies have been urged by water resources management specialists: Water balance, GIS systems, SWMS, and SCADA systems.³¹

Survey Results: Mediterranean Youth Employment and Skills Needed in the Water Sector post COVID-19

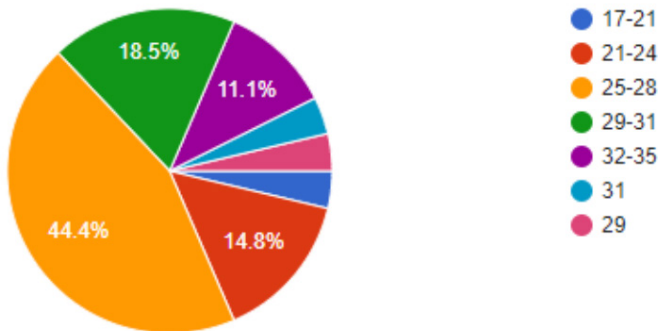
A short survey was shared with different water youth groups in the Mediterranean whose aim is to identify employment and capacity related gaps for Mediterranean youth within water related sectors. The survey also included specific questions about youth's perception about employability in the water sector within their countries of origin or current residence in the region. It also touched on youth's perception toward the compatibility of their traditional training at university and the job market needs. That is in addition to developing a better understanding of the skill sets necessary to better equip youth in order to meet the demands of the water job market of the future and key challenges for employment in the region.

Given the limited time available to fill out the survey, a focus group meeting was held with water youth from the Mediterranean region to gain reflections and thoughts on the different questions in the survey. The sections below represent key highlights from the survey responses and the focus group meeting. Seventeen water youth responded to the survey. Even though the level of participation was low, some key insights and reflections were reported.

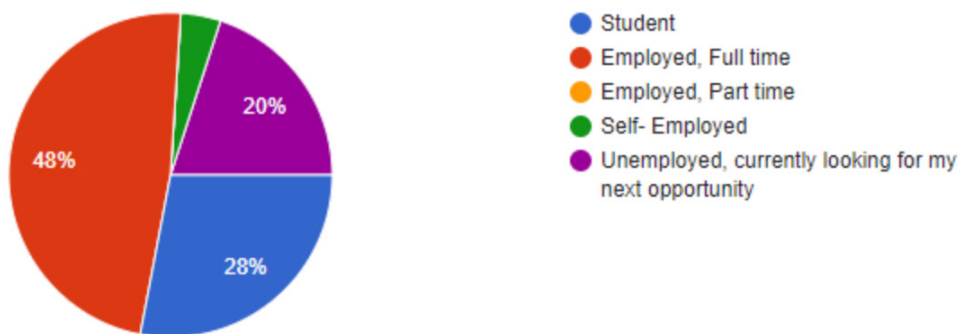
The survey respondents were predominantly > 25 years of age, post their first degree, either currently pursuing graduate education, or are currently part of the workforce. 13% of respondents reporting current unemployment, being in the process of looking for their next job opportunity. Survey respondents either are, or currently seeking employment at diverse types of organizations including NGOs, consultancies, and academia, including others who reported as entrepreneurs who are starting their own businesses. More than half of respondents indicated interest in employment in a water resource management job. Other responses were spread between water diplomacy, WASH, and water quality monitoring.

³⁵ UNESCO-UNEVOC. 2020. Skills in the Water Sector in Lebanon: Overview of the Needs After Covid-19. YEM Webinar Series. <https://unevoc.unesco.org/home/YEM+Lebanon+water+sector+webinar>

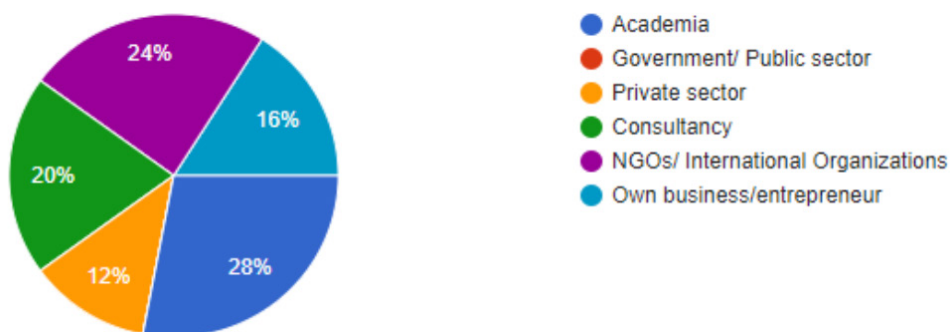
• Age group of survey respondents



• What is your current employment status?



• What type of organizations are you seeking employment in? If you are currently employed, then which of the following most closely describes the type of organization you are currently employed in?



• What field of the water sector are you seeking employment in? If you are currently employed, then which of the following most closely describes the field you are currently employed in?

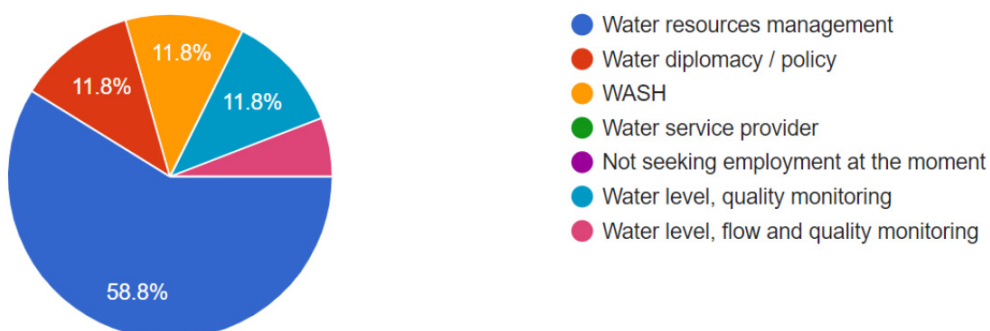




Table 1. Respondents perception toward the job market and their preparedness for it

	Disagree	Neutral	Agree
I am confident that I will find the job I am looking for shortly after I graduate	48%	33%	19%
I am confident that I will find this job in my country of origin	60%	26%	14%
I am confident that I will find this job in my country of current residence	56%	28%	16%
The skills I have acquired during my education equip me to understand the complexities of water challenges of the future	22%	33%	45%
My education and training are highly interdisciplinary	15%	63%	22%
Future water jobs will require much more digital skills and literacy	0%	23%	77%
Future water jobs will require a workforce with an interdisciplinary skill set	0%	22%	78%

When asked about the **skills** necessary to better equip youth in meeting the demands of the water job market of the future, responses included a variety between technical and other soft skills. Technical skills included: spatial analysis (Arc GIS and other software), big data analysis, machine learning, literacy in digital and online platforms, technical writing, and ability to publish, systems thinking, water diplomacy, water law, water investment, and ability to understand complex systems. Other skills include creativity, critical thinking, interpersonal skills, international experience, ability to work in groups, remote working skills, innovation, management skills, leadership, communication, and languages.



Figure 2. Word Cloud Representing Respondents Answers About the Skills Required to Meet Future Job Market Demands

When asked about the **key challenges** which youth in the Mediterranean face in finding employment, or in advancing to the next stage in your career, responses included: demands for long years of experience for junior positions, specific language requirements, and lack of equitable opportunities. Other challenges included the lack of interest and understanding of the importance of the water sector, financial crises, lack of political stability, and lack of connections within the water sector.



Figure 3. Word Cloud Summarizing Key Challenges Faced in Finding Employment

Reflections about some of the challenges and skills required were echoed at the focus group meeting. Challenges included the lack of internship opportunities, digital literacy, language fluency requirements, short term work contracts, political barriers, and lack of capacity in understanding policy aspects related to water. Some necessary skills identified by the group include leadership, systems thinking, interpersonal skills, remote work, and digital literacy, among others. In terms of trends in water jobs, it was highlighted that while most advertised opportunities were mainly technical/engineering, more recently there is a growing number of opportunities in water policy and governance related jobs.

Conclusion and Recommendations

While the coronavirus has created a great impact on the economy at large, economic recovery packages are pushing European and Mediterranean countries towards a greener economy. While these packages provide specific aid to small businesses and individuals, examples such as the Green Deal will provide specific benefits for improving water resources conservation, and a blue economy. In turn, employment opportunities are anticipated to increase within the water sector, specifically in the areas of a digitized economy where skills in remote water monitoring, and data analysis of water systems will be in high demand.

Survey results from Mediterranean water youth points to a clear gap in matching water sector skills from traditional learning to the skills actually required for the water jobs of today. This skills mismatch is a clear opportunity for the Union for the Mediterranean to provide appropriate training and apprenticeship opportunities for its youth in the water sector. As this report points to the future water sector requiring more technical and digital skills, these similar skills have been echoed as a strong need from the Mediterranean youth in the survey. In this instance, the UfM may consider developing or offering training opportunities specifically in spatial analysis (such as Arc GIS), data analysis, and literacy in digital and online platforms.

These types of skills training correlate well also to the Green Deal's priority for reskilling in digital economies. Opportunities for training in technical writing and systems thinking would likewise be advantageous for Mediterranean youth looking to pursue a career in the water sector. It is recommended that the UfM utilizes financial and personnel resources proposed from the European Social Fund to help reskill its UfM member country youth that belong too to the European Union.

Furthermore, as survey results for youth in the Mediterranean show that only 24% of youth show confidence in finding the right job after graduation, with a lower percentage showing confidence in finding a job in their country of origin or current residence, it is recommended that the UfM seek opportunities from the Green Deal for tracking skills competence of youth pursuing a career track in the water sector. The EU has proposed in the Green Deal to develop a competency framework to help develop and access knowledge in climate change and sustainability. With this there may be an opportunity to collaborate on a core skills competency framework for youth entering the water sector and pursuing employment.





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