

Forum: Environmental Commission (EC)

Issue: Battling Water Shortages in Lebanon

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INTRODUCTION

Water is a fundamental substance for every living organism. Humans not only consume water but also use it in various ways to cover all of their needs, both directly and indirectly. That means that water is used both for direct human consumption, such as washing, and indirectly for producing several human goods, like food. Therefore, the water needs of humans are relatively high. Additionally, the water they use must be fresh and clean, which implies that it does not contain any other chemical substances and its use and consumption are safe. Unfortunately, these standards -quantity and quality- are not met in all the regions of the world. A Member State greatly suffering from freshwater shortages is Lebanon.

Lebanon has been struggling to provide its citizens with adequate clean water since its establishment in 1943.¹ Over time, the issue has shaped Lebanon's population as the available freshwater sources can not cover the demand of the entire population. Consequently, they are forced to either pay a lot of money to receive freshwater or to consume contaminated water, which can pose serious health risks. The issue has been long-standing since Lebanon's declaration as a state, with periods of worsening, particularly during times of crisis. As of 2021, "nearly 1.7 million people have access to just 35 litres a day, compared with the national average of 165 litres before 2020, or a nearly 80 percent decrease."² This statistic clearly indicates that the situation has deteriorated over the past years and that there is an urgent need for its mitigation, as it affects the lives of the majority of Lebanese citizens.

¹ *University of Central Arkansas | UCA.*

uca.edu/politicalscience/home/research-projects/dadm-project/middle-eastnorth-africapersian-gulf-region/lebanon-1943-present.

² "Lebanon: Public Water System on the Verge of Collapse, UNICEF Warns." *UN News*, 27 July 2021, news.un.org/en/story/2021/07/1096312.

LEBANON

Millions facing critical shortages

Over 70 percent of Lebanon's population faces critical water shortages with many at risk of running out of water in the coming days, according to UNICEF.

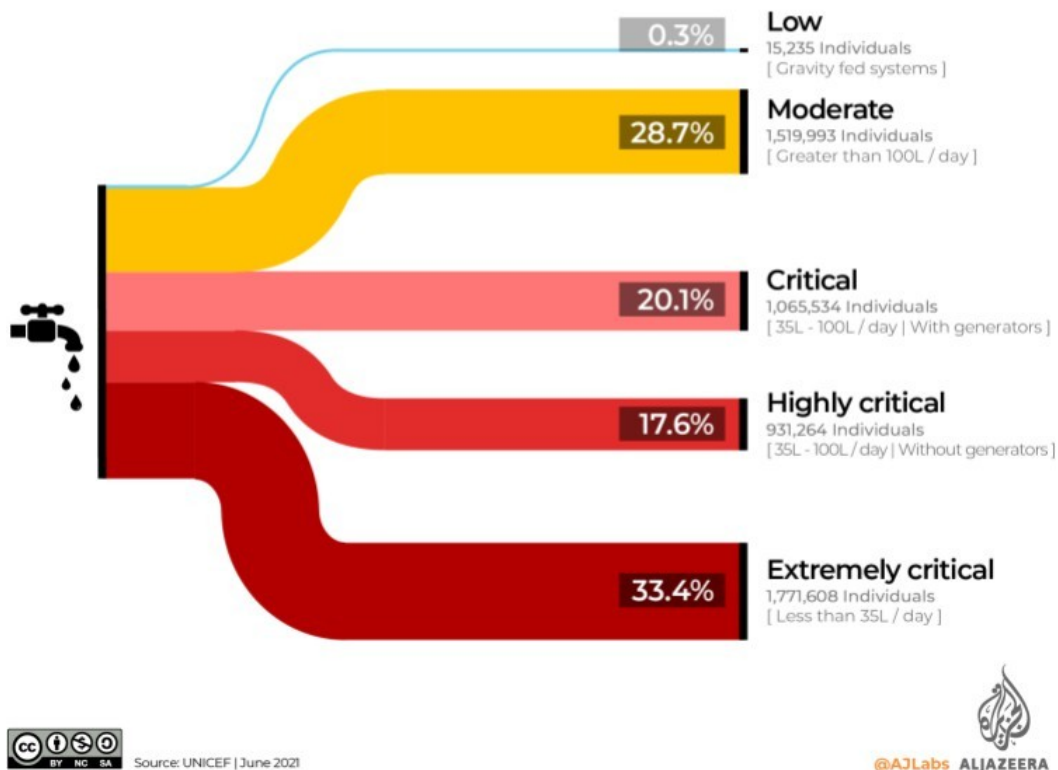


Figure 1:³ Graph indicating the percentage of Lebanon's population struggling due to water shortages.

DEFINITION OF KEY-TERMS

Fresh Water

"Water that is considered suitable for consumption."⁴ Freshwater shall not contain any chemical substance or salt.

³ Haddad, Mohammed. "Infographic: Lebanon Is About to Run Out of Water." *Al Jazeera*, 26 Aug. 2021, www.aljazeera.com/news/2021/8/25/lebanons-critical-water-crisis-interactive.

⁴ "Freshwater." *Merriam-Webster Dictionary*, www.merriam-webster.com/dictionary/fresh%20water.

Water Shortages

“Insufficient freshwater resources to meet the human and environmental demands of a given area.”⁵ It is also known as water scarcity.

Water Sources

“Bodies of water that provide water to public drinking water supplies and private wells. These bodies of water can include rivers, streams, lakes, reservoirs, springs, and water under the ground.”⁶

Water Treatment

“The process of eliminating impurities from water to make it safe for human consumption, industrial use, and to protect the environment from pollution. It involves physical, chemical, and biological methods to ensure water quality and safety.”⁷ It is imperative that the water is treated before its use or consumption.

BACKGROUND INFORMATION

The Geography of Lebanon

Lebanon is a small Middle Eastern state located on the eastern shore of the Mediterranean Sea. It borders on Syria to the east and the north and on Israel to the south. Its climate is Mediterranean with hot and dry summers; however, during the winter, there is adequate rainfall, especially in its western part. There are two parallel mountain ranges in the north and the south, which are snow-capped during the winter, and create many small and medium-sized rivers. Between these two mountain ranges, there is a valley where most of the population resides. Therefore, the geography and climate of Lebanon are capable of providing adequate fresh water to meet the population’s needs if the water sources are managed appropriately.

Fresh Water Supply System

The provision of fresh water is a long procedure that requires the implementation of several measures. First of all, there must be a source from which the necessary water will be collected. The most common water sources are lakes and rivers; however, there are multiple sources which can be used as alternatives when lakes and rivers can not provide adequate water to meet the demands of a region. The most common alternative water sources, which are suitable for Lebanon based on its geography, include the harvesting of rainwater, the recycling of wastewater and the desalination of seawater. Once the necessary water has been collected, it must then be transferred through pipes to the buildings so that individuals can safely consume

⁵ Petruzzello, and Melissa. “Water Scarcity | Description, Mechanisms, Effects, and Solutions.” *Encyclopedia Britannica*, 14 June 2025, www.britannica.com/topic/water-scarcity.

⁶ “Drinking Water Sources: An Overview.” *Drinking Water*, 10 Jan. 2024, www.cdc.gov/drinking-water/about/drinking-water-sources-an-overview.html.

⁷ “Water Treatment.” *sciencedirect.com*, 2024, www.sciencedirect.com/topics/chemistry/water-treatment#definition.

it. During the transmission process, the water shall not be contaminated because its use might become dangerous to health. So, the water supply system must be constructed securely, without leaks, and must be continuously monitored to identify any gaps.

Causes of Water Scarcity in Lebanon

Lack of Water Infrastructure, Management and Treatment Facilities

The government of Lebanon has not invested enough of its resources over the years in the creation of infrastructure for clean water provision, management and treatment. As a result, although the available water is sufficient to meet the population's needs, it is not utilised efficiently, resulting in untreated and unreclaimed water after agricultural or industrial use. For instance, "90% of wastewater remains untreated and flows directly into the rivers and the Mediterranean Sea."⁸ Despite that, in some regions, the water infrastructure necessary for water provision exists; however, there are no treatment facilities, which can remove the dangerous substances and chemicals from the water, resulting in its safe consumption.

The situation has been exacerbated since 2019, when Lebanon began facing an economic and political crisis, in which hyperinflation, a collapse in the banking sector and dysfunctional political leaders and institutions have been shaping the country. Since then, there has been almost no attempt to create or improve the water infrastructure, treatment and recycling facilities.

Unsustainable Use of Water Sources by Agriculture and Industries

Industries and farmers usually have access to the available water sources. However, they tend to use it in a very damaging manner, which reduces the availability of fresh water for public use. That means that most of them do not take any measures to make the water use sustainable, and instead, they use unsustainable practices, which exacerbate the water shortages in Lebanon. Firstly, these practices include the unnecessary hyperconsumption of water, which is caused by the negligence and unawareness of both the employees and the employers of the issue, as well as the lack of mechanisms and filters which control the amount of water being consumed. That happens because almost every individual involved in agriculture and industrial production has never been educated on how to use water sustainably, and some are unaware of the existence of methods which can save water.

Additionally, in most cases, wastewater created from industrial or agricultural use is not being recycled, so it can not be reused. This issue is created by both the Lebanese government and private consumers. On the one hand, as already stated, the government of Lebanon has not invested enough in infrastructure, and therefore, the wastewater can not be recycled, since there are no facilities which could support this procedure, and the private consumers could not install them due to their expenditure. The government has also not established any regulation or framework which calls for the management of wastewater and the implementation of regulations to achieve that. However, even if these facilities and regulations existed, the agriculture and the

⁸ Leleu, Gary. "Water Scarcity in Lebanon and Its Impact on the Agricultural Sector." *REVOLVE*, 9 Sept. 2024, <https://revolve.media/features/water-scarcity-lebanon-agriculture>.

industries would most likely not comply with them, and the facilities would not be used. That would happen as the employers of these companies are unaware and negligent towards the issue, and it would be very difficult for the government to monitor every single farmer and industrial production unit.

The Syrian Civil War

Syria has faced a refugee crisis since 2011. “More than 14 million Syrians have been forced to flee their homes in search of safety, where 70% of the population needs humanitarian assistance and 90% live below the poverty line.”⁹ A very common destination of Syrian refugees is Lebanon because they border each other, and its capital, Damascus, is located in proximity to the border with Lebanon. As a result, millions of Syrians have immigrated to Lebanon in search of safety. This situation has increased Lebanon’s population by almost 30%¹⁰, resulting in an increasing demand for fresh water supply, therefore further limiting the water allocated to every individual.

Consequences of Water Scarcity in Lebanon

Undeniably, water scarcity brings about several negative effects to the country. First of all, plenty of individuals are deprived of access to adequate fresh water. Some traders and wealthy individuals exploit this situation and sell fresh water in bottles. However, its price is usually immense, and it can not be afforded by plenty of its citizens. As a result, many people in Lebanon are forced to consume contaminated water, which can be proven dangerous for their health as it contains harmful substances and pathogens. Often, they may develop several diseases as a result of its consumption. The most common diseases developed include cholera, hepatitis A, dysentery and typhoid fever,¹¹ which require treatment, as some can be proven life-threatening.

Moreover, the lack of water infrastructure facilities in some rural regions also affects agriculture, as even contaminated water is inaccessible. Consequently, agricultural production is shrinking when there are water shortages. This has direct effects, as many individuals depend on agriculture as their main source of income, and during drought periods with critical water shortages, they can not secure sufficient income for themselves and their families. Additionally, some food shortages are created as fewer nutrients are produced, and there are not many imported from abroad. Therefore, the humanitarian situation is exacerbating due to water shortages, as not only do the inhabitants face challenges in ensuring adequate fresh water, but they also face nutritional, medical and financial issues.

⁹“Syria Refugee Crisis Explained.” *The UN Refugee Agency*, 15 Mar. 2025, www.unrefugees.org/news/syria-refugee-crisis-explained.

¹⁰ BBC News. *Lebanon’s Shift From Safe Haven to Hostile Country for Syrian Refugees*. 27 May 2024, www.bbc.com/news/world-middle-east-69059929.

¹¹Emhj. “River Water Pollution in Lebanon: The Country’s Most Underestimated Public Health Challenge.” *World Health Organisation - Regional Office for the Eastern Mediterranean*, www.emro.who.int/emhj-volume-30-2024/volume-30-issue-2/river-water-pollution-in-lebanon-the-countrys-most-underestimated-public-health-challenge.html.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

Syria

Syria has negatively affected Lebanon's water shortages due to the refugee crisis it has been facing since 2011.¹² The civil war there has forced several individuals to migrate to Lebanon, since the two countries border near Syria's capital, Damascus, where millions of individuals used to inhabit before the conflict. Their presence in Lebanon greatly affected its population, resulting in its increase by 1.5 million individuals,¹³ in 5 years. Consequently, there was a huge increase in the demand for fresh water, resulting in the issue being severely deteriorated, since the amount available for every individual was reduced significantly.

The International Water Management Institute (IWMI)

The International Water Management Institute (IWMI) is a Non-Governmental Organisation (NGO) which is working on a global scale to ensure that safe and clean water is accessible to all individuals. Lebanon is one of the regions they focus on due to its critical water shortages. More specifically, IWMI works in Lebanon to enhance the availability and security of clean water sources. To achieve that, they encourage the implementation of sustainable agriculture practices, which assist in increasing the amount of fresh water available. These practices include the management of wastewater after its agricultural use, thereby encouraging water recycling and reuse. To promote the management of wastewater across Lebanon, IWMI collaborates with regional NGOs and Intergovernmental organisations to monitor national efforts and review the existing standards and policies for water management and recycling, which reduces the impact of agriculture on water shortages.

The European Union (EU)

The European Union mainly operates missions and projects in its Member States. However, sometimes it also supports other regions. A country they help is Lebanon because of its critical water shortages and the influx of Syrian refugees in the region. The measures they implement for Lebanon include the continuous efforts to provide fresh water to abandoned villages in the northern part of the country, such as Tleil, Haytla, and Saidnay,¹⁴ where its provision is scarce due to the almost non-existent water infrastructure facilities and the continuous exploitation of water sources by the agricultural sector, while most of the Syrian refugees inhabit these regions. To achieve that, they have installed a water distribution mechanism in the region, whose water sources are the rivers of the region. The rivers continuously provide adequate water to cover the needs of the local population thanks to this

¹² BBC News. *Lebanon's Shift From Safe Haven to Hostile Country for Syrian Refugees*. 27 May 2024, www.bbc.com/news/world-middle-east-69059929.

¹³ Hussein, Hussam, et al. "Syrian Refugees, Water Scarcity, and Dynamic Policies: How Do the New Refugee Discourses Impact Water Governance Debates in Lebanon and Jordan?" *Water*, vol. 12, no. 2, Jan. 2020, p. 325. <https://doi.org/10.3390/w12020325>.

¹⁴ "Reviving Northern Lebanon: A Community Transformed Through Access to Water." *Enlargement and Eastern Neighbourhood*, enlargement.ec.europa.eu/european-neighbourhood-policy/eu-support-partner-countries-migration-and-forced-displacement/reviving-northern-lebanon-community-transformed-through-access-water_en.

construction, considering the high rainfall levels during the winter season and the mountain ranges there, which also provide water through the melted snow.

TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
22 November 1943 ¹⁵	Lebanon was declared an independent state.
4 July 1982 ¹⁶	Resolution 513 of the Security Council (SC) entered into force, calling for the restoration of the water supply system.
2011-2016 ¹⁷	The Syrian refugees migrated to Lebanon, increasing the demand for clean water.
30 September 2014 ¹⁸	The World Bank (WB) began the financing of the Birsi Dam Project, which would provide clean water to many Lebanese inhabitants.
1 January 2015	The UN set the 2030 Agenda for Sustainable Development, and through the sixth goal, support for clean water provision is sent to Lebanon.
2015-2021 ¹⁹	The Lebanon Water Project was operated in Lebanon, through which many individuals, mostly in rural areas, received access to fresh water.
2019 ²⁰	The economic and political crisis in Lebanon has exacerbated water shortages due to the scarce budget Lebanon has been investing in water facilities since then.
4 September 2020 ²¹	The WB cancelled the financing of the Birsi Dam project.

¹⁵ Kingston, et al. "Lebanon | People, Economy, Religion, and History." *Encyclopedia Britannica*, 27 June 2025, www.britannica.com/place/Lebanon#ref23385.

¹⁶ *Resolution 513*. [unscr.com/en/resolutions/doc/513](https://www.un.org/press/docs/1982/1982070513.html).

¹⁷ Hussein, Hussam, et al. "Syrian Refugees, Water Scarcity, and Dynamic Policies: How Do the New Refugee Discourses Impact Water Governance Debates in Lebanon and Jordan?" *Water*, vol. 12, no. 2, Jan. 2020, p. 325. <https://doi.org/10.3390/w12020325>.

¹⁸ "Lebanon Water Supply Augmentation Project (Bisri Dam)." *World Bank*, www.worldbank.org/en/programs/bisri-dam#2.

¹⁹ Lebanon—Water Project (LWP). *Browse Happy*. www.dai.com/our-work/projects/lebanon-water-project-lwp.

²⁰ Leleu, Gary. "Water Scarcity in Lebanon and Its Impact on the Agricultural Sector." *REVOLVE*, 9 Sept. 2024, revolve.media/features/water-scarcity-lebanon-agriculture.

²¹ World Bank Group. "Cancellation of Water Supply Augmentation Project (Bisri Dam Project)." *World Bank*, 4 Sept. 2020, www.worldbank.org/en/news/statement/2020/09/04/cancellation-of-water-supply-augmentation-project-bisri-dam-project.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

UN General Assembly Resolution 57(I)

The United Nations International Emergency Children's Fund (UNICEF) established in 1946 by UN General Assembly Resolution 57(I), is an international organisation of the UN aiming to defend all children's rights worldwide. The organisation has saved multiple children's lives and has helped them to fulfil their potential. Concerning its action in battling water shortages in Lebanon, UNICEF spends approximately \$40 million annually to keep the water infrastructure system functional, so that inhabitants avoid resorting to dangerous and unhealthy water sources. Additionally, UNICEF supports vulnerable children and young women in Lebanon, who inhabit regions with severe water scarcity, through providing them with clean and fresh water. Their action focuses mostly on urban regions, and Beirut is the most benefited area of the country from UNICEF's support.

The Sustainable Development Goal 6: Clean Water and Sanitation²²

The Sustainable Development Goals (SDGs), also known as the 2030 Agenda for Sustainable Development, comprise 17 goals set out by the United Nations in 2015, which must be accomplished by 2030. The sixth goal, "Clean Water and Sanitation", is responsible for ensuring the provision of clean and fresh water for individuals worldwide, as well as promoting hygiene through the creation of sanitation services. Regarding the action which has been taken in Lebanon to provide clean and fresh water to its citizens, the UN has operated 13 successful projects, thanks to the sixth SDG. As a result of these projects, the situation has slightly improved since 2015, with 48% of the population having access to clean water, compared to 46% in 2015.²³

Security Council (SC) Resolution 513 (1982)²⁴

Resolution 513 of the SC entered into force on July 4th, 1982 and was aimed at addressing the Israeli invasion in Lebanon and the humanitarian crisis created, owing to the conflict. The resolution called for the respect of the human rights of the Lebanese citizens by the Israeli authorities and military forces and for the restoration of vital supplies, which had been destroyed due to the invasion. The water supply system was one of them, as it had been destroyed by the conflict, resulting in water shortages, and the UN tried to manage that crisis through the resolution.

²² THE 17 GOALS | Sustainable Development. sdgs.un.org/goals.

²³ BAU - Beirut Arab University | 17.3: SDG6. www.bau.edu.lb/SDG/17-3-SDG6#.

²⁴ Resolution 513. unscr.com/en/resolutions/doc/513.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

The Lebanon Water Supply Augmentation Project (Birsi Dam)

The Lebanon Water Supply Augmentation Project, also known as Birsi Dam, was a project operated by the government of Lebanon and was financed by the World Bank (WB). Its goal was the construction of a dam near Beirut, which would continuously provide clean water to more than 1.6 million inhabitants for less than 4\$ daily per person.²⁵ It was supposed to be filling naturally from the winter rains, and the water would be safely treated at the Wardanیه water treatment plant, located near Beirut. The government of Lebanon had wished to implement this project since the 1950s, but it was unable to provide the necessary funds for its construction due to its financial situation. In 2014, the WB decided to begin financing this project. However, in 2020, it cancelled all the funds dedicated to it because the government of Lebanon was not using the funds as it had been requested by the WB, and instead, it exploited them for other purposes. As a result, the project was cancelled. The failure of the Lebanese government to comply with the regulations of the WB indicates its negligence towards the issue. Since 2020, there has been no action by the government to improve the water services.

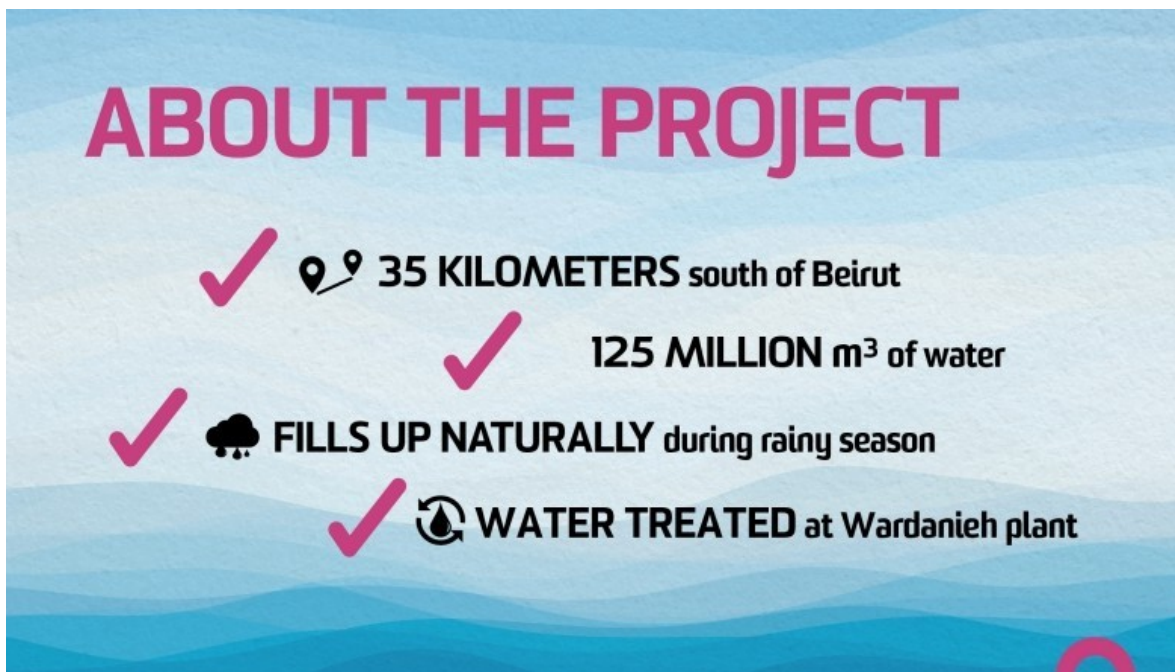


Figure 2:²⁶ Information about the Birsi Dam project.

²⁵ "Lebanon Water Supply Augmentation Project (Birsi Dam)." *World Bank*, www.worldbank.org/en/programs/birsi-dam#2.

²⁶ "Lebanon Water Supply Augmentation Project (Birsi Dam)." *World Bank*, www.worldbank.org/en/programs/birsi-dam#2.

The Lebanon Water Project (LWP)

The Lebanon Water Project (LWP) was operated by Development Alternatives, Inc. (DAI), an international company, during the period 2015-2021.²⁷ The goal of the project was to increase access to clean and fresh water in Lebanon, especially in rural areas, while improving the water management practices and enhancing the efficiency and sustainability of the public water utilities. To achieve that, DAI conducted some surveys to understand the needs of the population in order to create an action plan to tackle the issue. This plan included numerous actions to improve the water treatment and provision across the country, which were mostly related to the development of infrastructure. During the project, DAI benefited from Lebanon's climate and natural resources, such as the high amount of sunlight hours, to construct a solar-powered pumping station for water treatment. It also encouraged and supported private companies and farmers to use the water sustainably, resulting in a 35% decrease in water consumption in that sector, which was allocated for domestic use.²⁸ After the completion of the project, the country's water shortage situation in rural areas was massively improved, with thousands of individuals receiving access to fresh water.

POSSIBLE SOLUTIONS

Investing in Infrastructure Development

Lebanon's government did not benefit from the financing of the Birsir Dam project by the WB, and it now seems that it is not willing to invest in the development of infrastructure for clean water provision. However, the development of water infrastructure in Lebanon is essential because it is almost nonexistent, and through its development, adequate clean water can be ensured for the entire population. At the same time, there would be less need for humanitarian aid provision in Lebanon, as there would be fewer diseases which are currently transmitted through the contaminated water, and the water needs for agriculture could also be covered.

The development of infrastructure could include several measures. For instance, water treatment plants could clean the water so that it does not contain any chemical substances or salts, making it safe for consumption. Additionally, there is a need for water storage facilities which can ensure that there is adequate fresh water during drought periods, when rainfall is scarce. That could include a big dam or artificial lakes. The construction of distribution lines is also essential, as through them, the water can be safely distributed to all residences.

Lastly, although the most common water sources are lakes and rivers, there are multiple ways through which adequate water to cover the needs of Lebanon's population can be provided. Through using alternative water sources, Lebanon can benefit from its geographical position and its natural resources to provide fresh water to its citizens. For instance, since Lebanon has a big shore, the creation of water desalination facilities could be promoted. Considering the expenditure of these projects, it could not be implemented by an NGO. It would require the collaboration of many NGOs, as well as donations from other Member States and individuals, since the WB is not willing to finance Lebanon's attempts any more. That could be a

²⁷ Lebanon—Water Project (LWP). *Browse Happy*. www.dai.com/our-work/projects/lebanon-water-project-lwp.

²⁸ Lebanon—Water Project (LWP). *Browse Happy*. www.dai.com/our-work/projects/lebanon-water-project-lwp.

challenge in the implementation of this solution, as the collection of a large amount of funds is usually a difficult procedure, since quite a few individuals or Member States are willing to donate their funds for the implementation of a project that will not personally benefit them.

Establish guidelines for the Use of Water Sources by Private Companies

As already stated, private water consumers in Lebanon continuously exploit the available freshwater sources in a very damaging manner, thereby reducing the amount available for the public. Therefore, in order to mitigate this phenomenon, some regulations could be established, which would force all private water consumers to use the water sources sustainably, without contaminating them. These regulations would oblige companies to conduct a water consumption audit to understand the amount of water they consume and create an action plan to reduce it, while ensuring its use is sustainable. That implies that there could be wastewater recycling mechanisms, which would enable the reuse of wastewater for public consumption. The action plan could include the education of the employees on sustainable water use, the installation of water-efficient fixtures, and the restoration of leaks, which waste plenty of water. To ensure their success, there must be monitoring and control of all the private sector companies consuming water to evaluate whether they comply with the regulations.

Enhancing Humanitarian Aid Provision in Lebanon

Humanitarian aid is currently being provided to Lebanon by the UN. However, other bodies and NGOs could also assist Lebanon in its crisis, as all the abovementioned measures will take a long time to be implemented. The enhancement of the humanitarian aid provision could act as a temporary, short-term solution, which would assist Lebanon's inhabitants in various ways. It would not only support the provision of clean water, but it would also help Lebanon in mitigating the indirect effects of water shortages, which include water-related diseases and starvation in some regions due to agricultural issues. Therefore, the aid which must be furtherly sent to Lebanon must include fresh water, aliments, and medical aid provisions to cover the needs of Lebanon's population.

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