

Drying up

Lebanon's water supply system:
on the verge of collapse

July 2021

“Lebanon’s critical water infrastructure is reaching a breaking point. Unless immediate action is taken, the public water supply networks will collapse and, directly or indirectly, eliminate access to safe water to more than four million people”.

So concludes a UNICEF-supported assessment based on data collected by the country’s public Water Establishments in May and June 2021¹.

The assessment describes the water supply system as operating unsustainably due to the economic crisis roiling Lebanon.

The correlation between the decline in access to electricity nationwide and water production is at the centre of the water system's rapid deterioration. Blackouts and intermittent power supplies are threatening the capacity of the water system to treat, pump and distribute water.

Water providers couldn't afford to buy spare parts for maintenance or fuel for their electricity generators as they had no access to hard currency due to the collapse of the Lebanese currency against the US dollar.

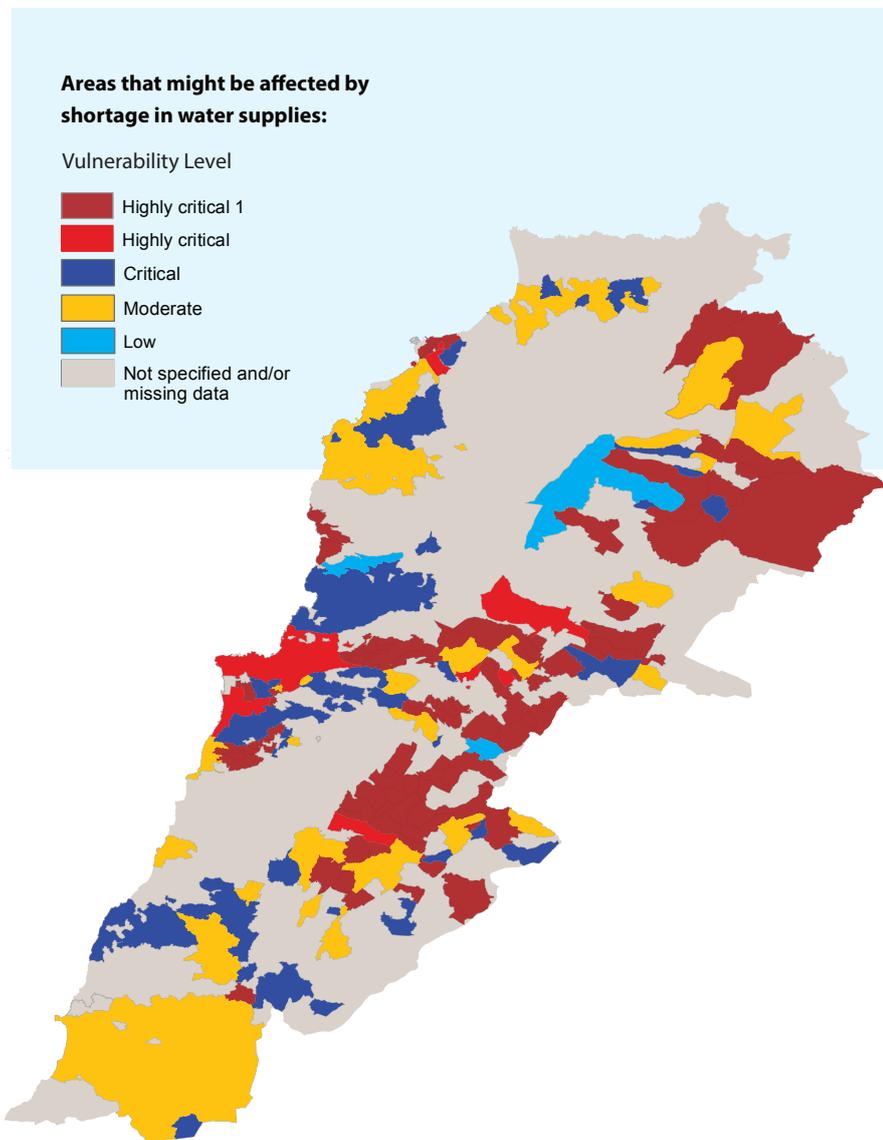
Since 2019, the Lebanese pound’s (LBP) devaluation has caused a thirteenfold increase in the cost of water provisioning and the operation and maintenance of the system, including consumables and supplies.

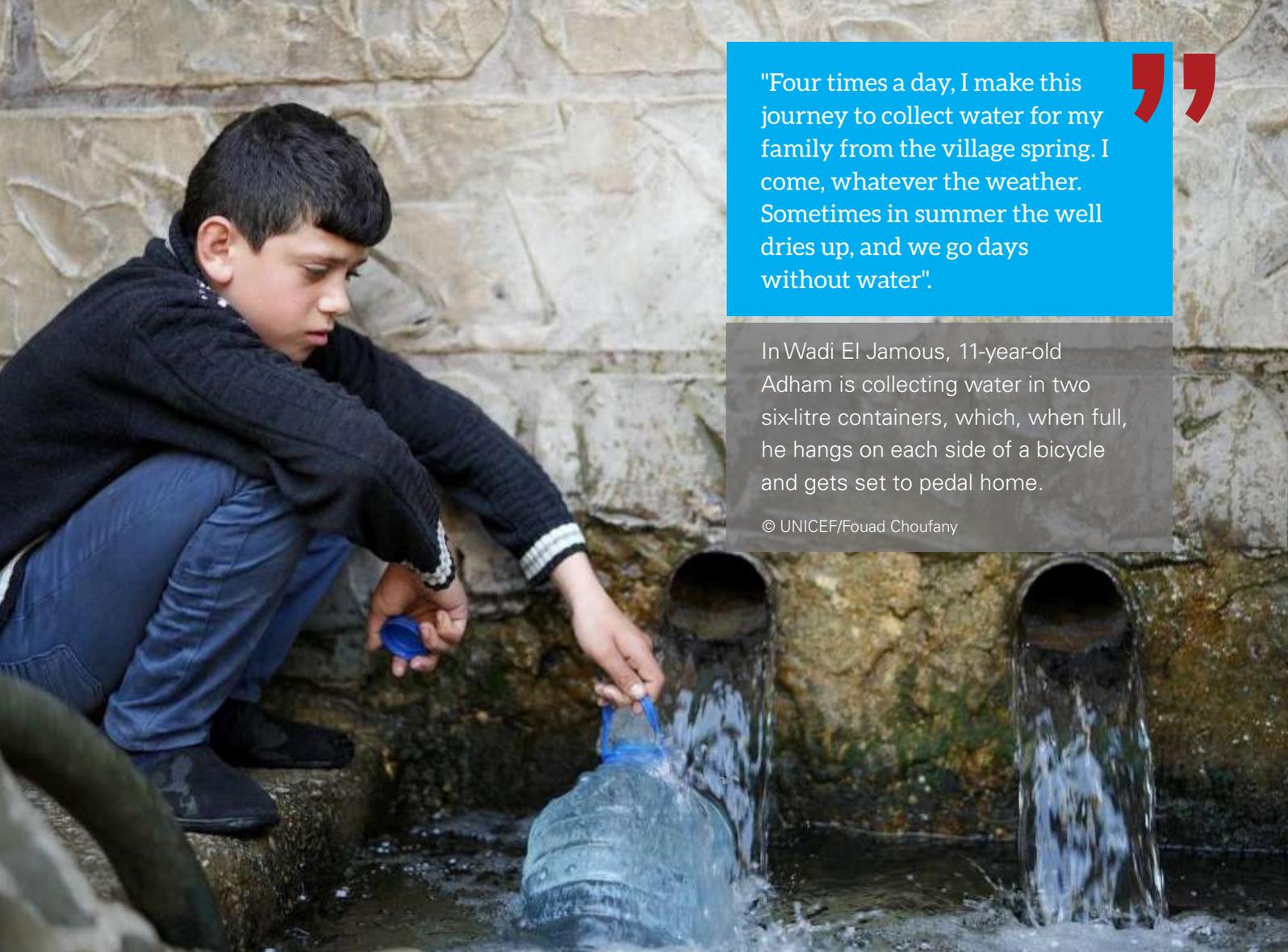
1 The assessment was based on data shared by the major water providers and focused on the daily production of the main water systems which relied on Lebanon’s two electricity suppliers, EDL & EDZ. The system’s vulnerability was calculated using the water provided per capita and the availability of electricity from fuel-operated stations.

The country's vital infrastructures are disintegrating. While this will inevitably impact the health, welfare and finances of the entire nation of almost 6 million Lebanese, Syrians, Palestinians and other nationalities, it will be babies and young children who are especially vulnerable as water and sanitation-related diseases remain one of the leading causes of death for children under five.

The North Lebanon Water establishment announced a state of emergency, and began rationing programmes. In a statement released on 9 July 2021, they referred to the "financial and economic conditions the country is facing, including the negative impact of the large increase in the prices of materials, spare parts and oil derivatives, the unprecedented cuts in the electricity supply, the scarcity of diesel and gasoline on the market, the decline in the readiness and ability of electric generators to bridge the power shortage." All of these have affected the continuity of work of water pumping stations and wells in various Lebanese regions.

On the same day, the Bekka Water establishment, alerted the public that "due to power outage at water pumping stations in Zahle District, we regretfully announce the cessation of water pumping in some areas".





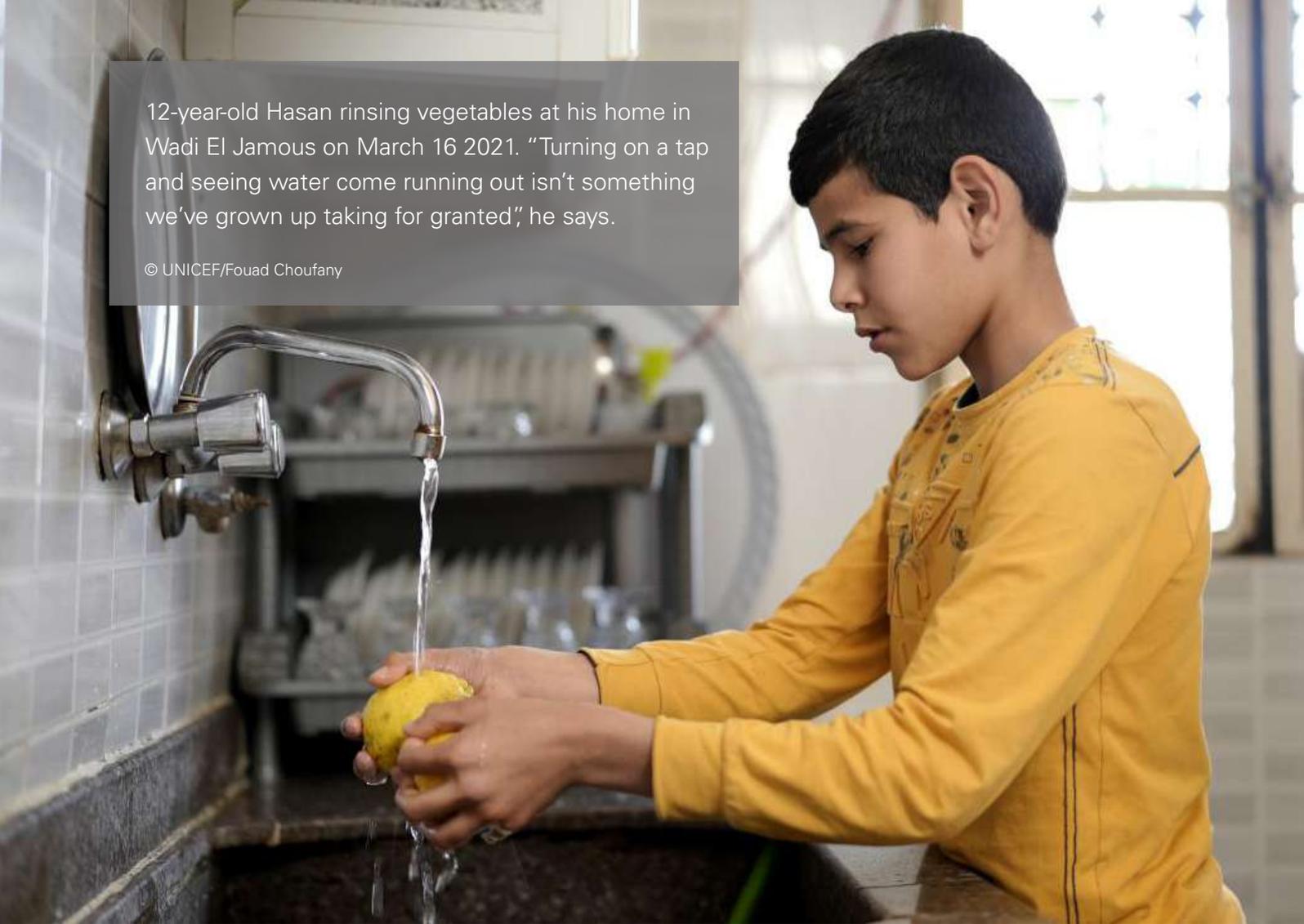
"Four times a day, I make this journey to collect water for my family from the village spring. I come, whatever the weather. Sometimes in summer the well dries up, and we go days without water".

In Wadi El Jamous, 11-year-old Adham is collecting water in two six-litre containers, which, when full, he hangs on each side of a bicycle and gets set to pedal home.

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"I come with my dad every day to help him collect water for my family", says Syrine, aged 10, as she juggles two large and newly refilled plastic bottles near her home in Wadi El Jamous on March 16, 2021. "I dream about turning on a tap in my home and seeing water come out!".



12-year-old Hasan rinsing vegetables at his home in Wadi El Jamous on March 16 2021. "Turning on a tap and seeing water come running out isn't something we've grown up taking for granted," he says.

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In Lebanon, four autonomous public sector water providers directly supply three million people. At the same time, the remaining population and one million refugees have access to water through alternative sources such as water trucking, illegal tapping, and private or municipal sources.

Since the beginning of the economic crisis in 2020, the providers have supplied more than 500 million litres a day to 750,000 households and businesses. However, the estimates are that about 40 per cent of the water produced is lost to illegal tapping and leakages.

The providers received no direct financial support from the government. Under their control, the water supply system was managed and operated only through tariff collections denominated in the local currency and pegged at an artificially high rate by the government.

Consequently, the UNICEF assessment determined the water providers income fell far short of covering the cost of production and undermined their viability.

The LBP collapse also meant that they could no longer afford to import US dollar-denominated maintenance equipment.

To date, providers have managed to remain solvent through receiving subsidised fuel, delaying urgent maintenance and international donor support. However, in late June, the government decided to decrease subsidies on fuel imports till September.

If the fuel subsidy is totally removed, UNICEF has estimated that water providers relying on generators for their pumping stations may collapse within months in Beirut and Mount Lebanon and within weeks across the rest of the country.

On top of this, the water sector is affected by rolling breakdowns and rationing in the power generation networks. As in the water sector, the electricity grid cannot afford the cost of fuel it must purchase with hard currency. The water sector is not exempt from rationing either, and it suffered from the same blackouts and reductions in power supplies as the general public. In many regions across Lebanon, this often amounts to blackouts of up to 12 hours a day.

1.7 million people could soon receive less than 35 litres of water a day, against Lebanon's average rate per capita of 165 litres. In addition, lack of chlorine storage at the water stations could create a severe health hazard.

The water sector is being squeezed to destruction by dollarised maintenance costs, water loss caused by non-revenue water, the parallel collapse of the power grid and the threat of rising fuel costs.



UNICEF implementing partners installing new water tanks in August 2020, helping reconnect homes to fresh water supplies interrupted by damage to infrastructure caused by the Beirut Port explosions.

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For the Poor, a Trickle

The economic crisis is not only affecting water providers' capacity to pay but their end-users too. The chart below reflects the water vulnerability groups based on litres per capita per day . A loss of access to the public water supply would force households to make tough decisions regarding their basic water, sanitation and hygiene needs.

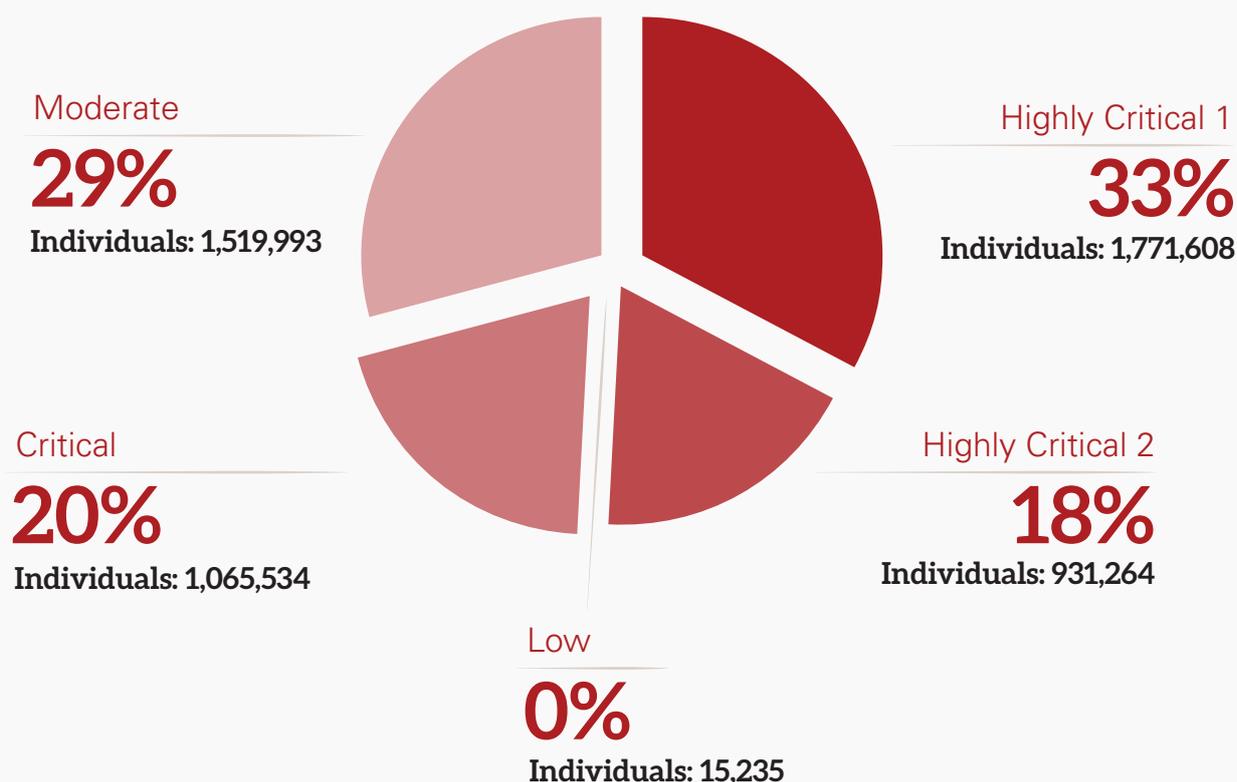


Chart vulnerability criteria:

- Highly Critical (Level 1): EDL with and without Genset Calculation at less than 35 L/c/day only on EDL
- Highly Critical (Level 2) :EDL no Genset 35-100L/c/day
- Critical: 35-100L/c/day EDL and Genset (Calculation of production only on EDL)
- Moderate: >100 L/c/day EDL and Genset and/or PVs (Calculation of production only on EDL)
- Low: Gravity fed systems

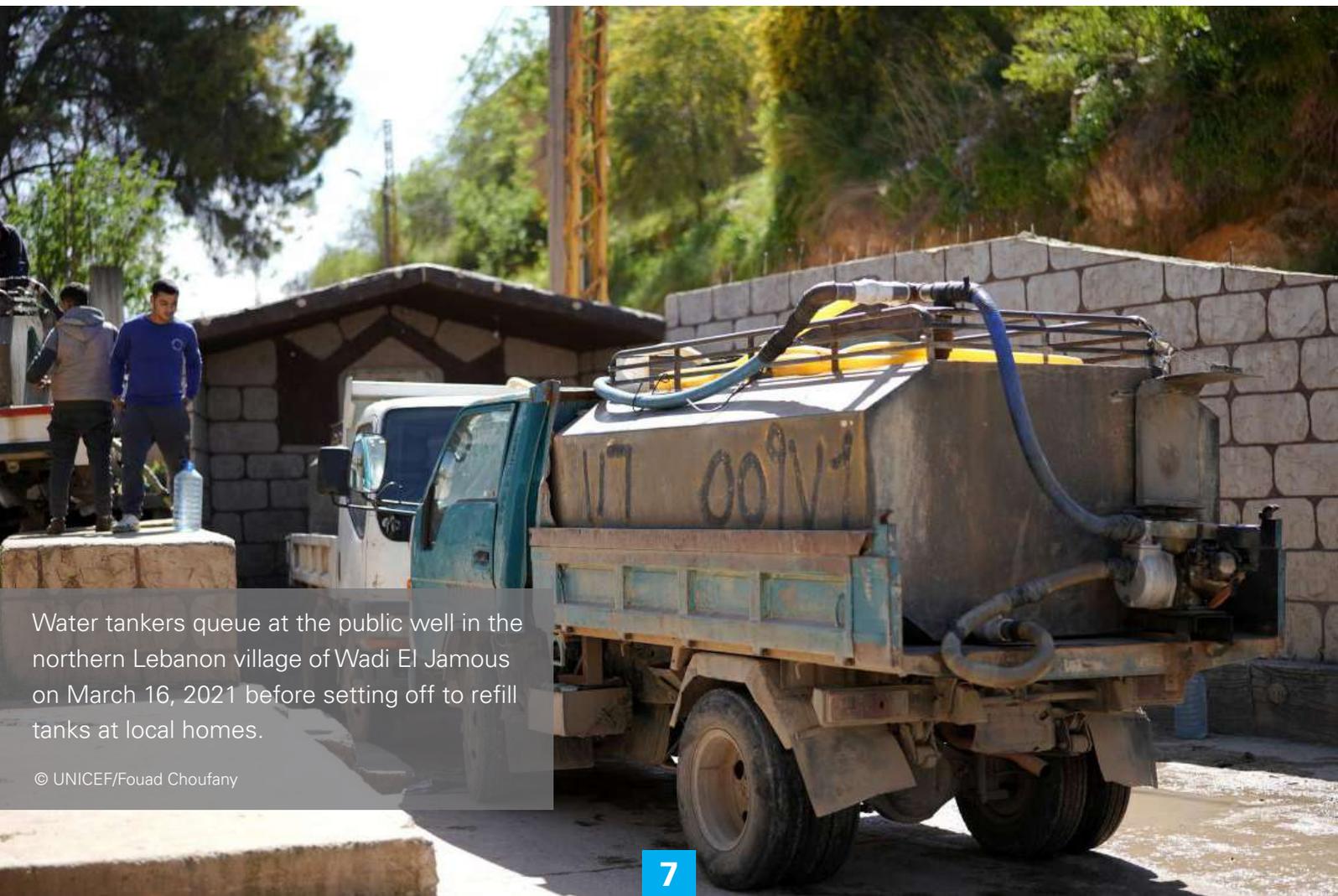
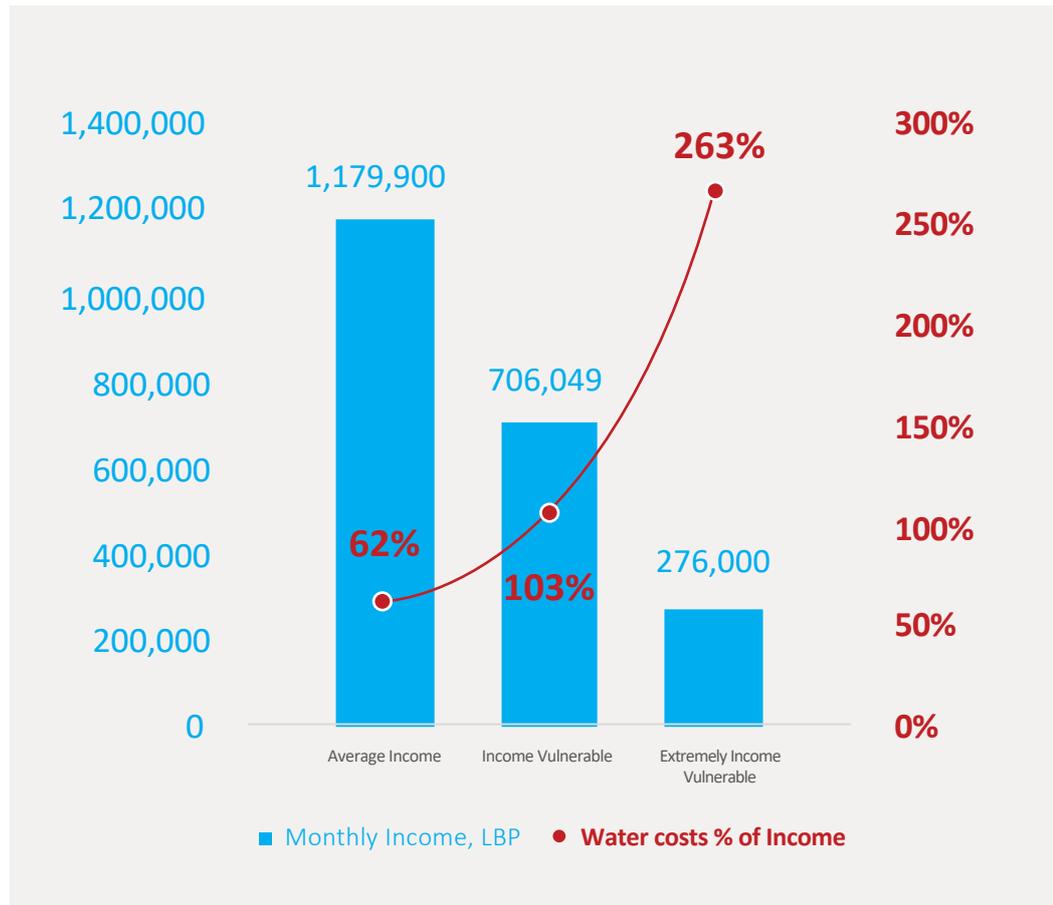
UNICEF estimates that water costs could skyrocket by 200 per cent a month when securing water from alternative or private water suppliers if the public system collapses. To cover these costs, families already struggling to make ends meet would need to spend 263 per cent of the monthly average income of an extremely income vulnerable family².

The assessment showed that people living in more impoverished high-density communities would be the worst affected as they might not have sufficient income to pay for cheap and safe alternatives. They would become dependent on unsafe sources of water.

² https://www.ilo.org/beirut/publications/WCMS_732567/lang-en/index.htm

Lebanon has seen the price of bulk trucked water increase by 35 per cent over the past year, mainly due to fuel price hikes, and the cost of bottled water has nearly doubled.

Water supplies through public water operators would remain the best option for most of the population, as it costs less than LBP1,000 per day for one cubic meter through a stable public water supply system.



Water tankers queue at the public well in the northern Lebanon village of Wadi El Jamous on March 16, 2021 before setting off to refill tanks at local homes.

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No One is Immune



UNICEF and partners supported families affected by the Beirut Port explosions by repairing water and sanitation facilities.

© UNICEF/Stephen Gerard Kelly

As access to clean water and energy diminishes daily, everyone in Lebanon will live with the consequences, regardless of income.

The immediate adverse effect would be on public health. Hygiene would be compromised, and Lebanon would see an increase in diseases exacerbated by the dry season. Women and adolescent girls would face particular challenges to their personal hygiene, protection and dignity without access to safe sanitation.

The lack of access to safe water services for a prolonged period would very likely lead to waterborne disease outbreaks, including diseases long since eradicated in Lebanon, such as cholera.

The cost of inaction will also impact hospitals, schools, and public health care centres. If they don't have running water, disease outbreaks will increase in health care facilities. This, in turn, could limit the capacity of Lebanon to deal with the COVID-19 pandemic – at a time where Lebanon is facing an increase of cases due to the Delta variant of COVID-19.

The collapse of the water sector would impact society beyond the health sector. It would negatively impact industry and agriculture, which would deepen the economic crisis and greatly exacerbate the rise in poverty.

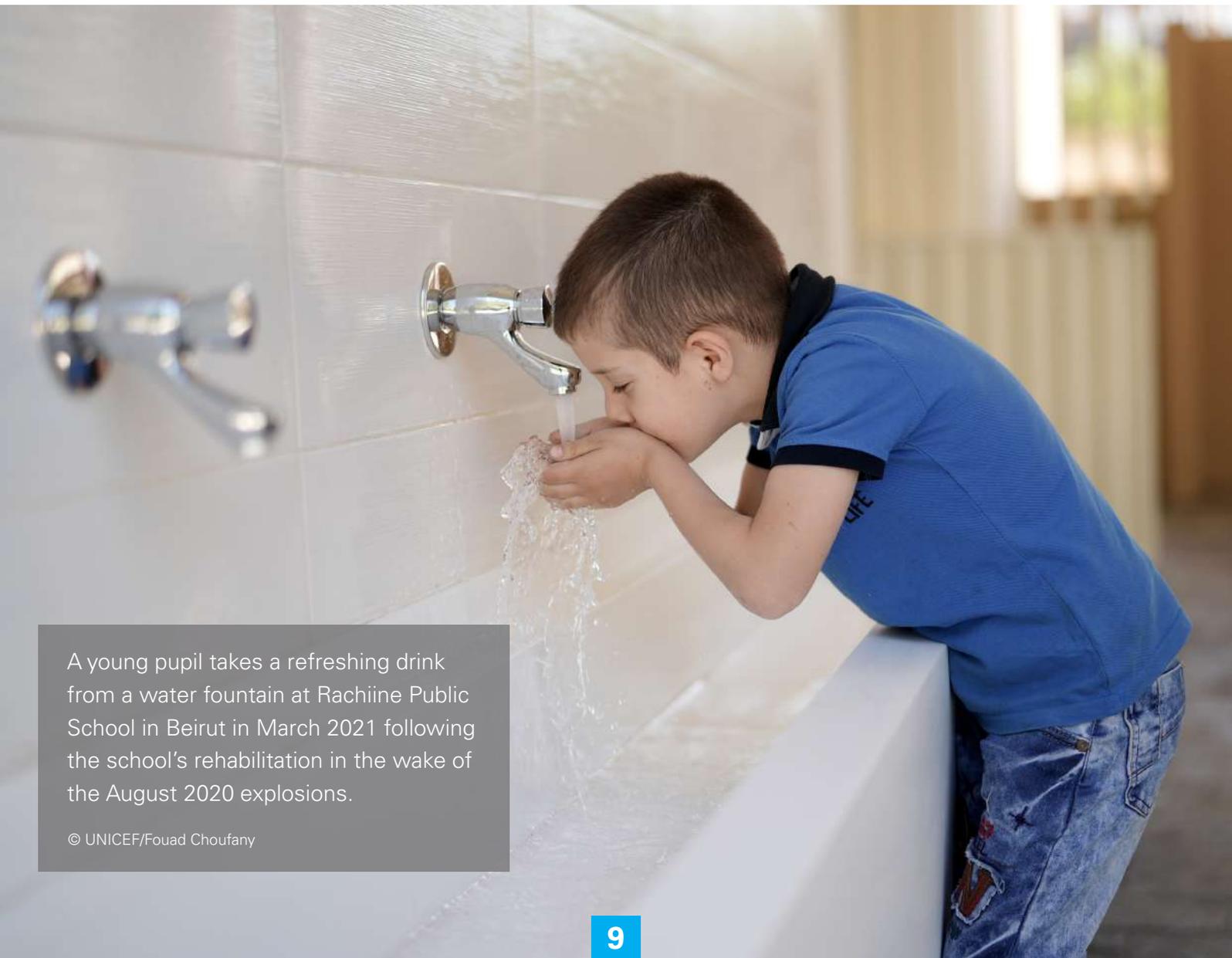
Families would be forced into drastic coping measures particularly affecting children, including using them for labour, reducing their attendance at school, and compelling them to carry heavy loads of water.

UNICEF has established urgent intervention modalities to support the public water supply infrastructure. Aiming to provide continuing access to water through existing infrastructure and systems by securing the minimum levels of fuel, spare parts and maintenance required to keep critical systems operational, UNICEF needs at least US\$40 million a year to keep the water flowing to people at risk.

UNICEF is already providing support to the water sector as the lead UN agency for water and sanitation as part of the international humanitarian relief effort in Lebanon. Since October 2020, it has worked with the four major water providers to reach the most vulnerable children and women in the country.

The assessment argues that the cost of not continuing its support would be too high for Lebanon, particularly its children.

International partners of the Lebanese people could only be expected to provide short to medium-term support. UNICEF remains steadfast in its support to communities as resources permit, but this alarming situation requires immediate and sustained funding to ensure that the most basic right to clean water is met for children and families at this critical time for Lebanon.

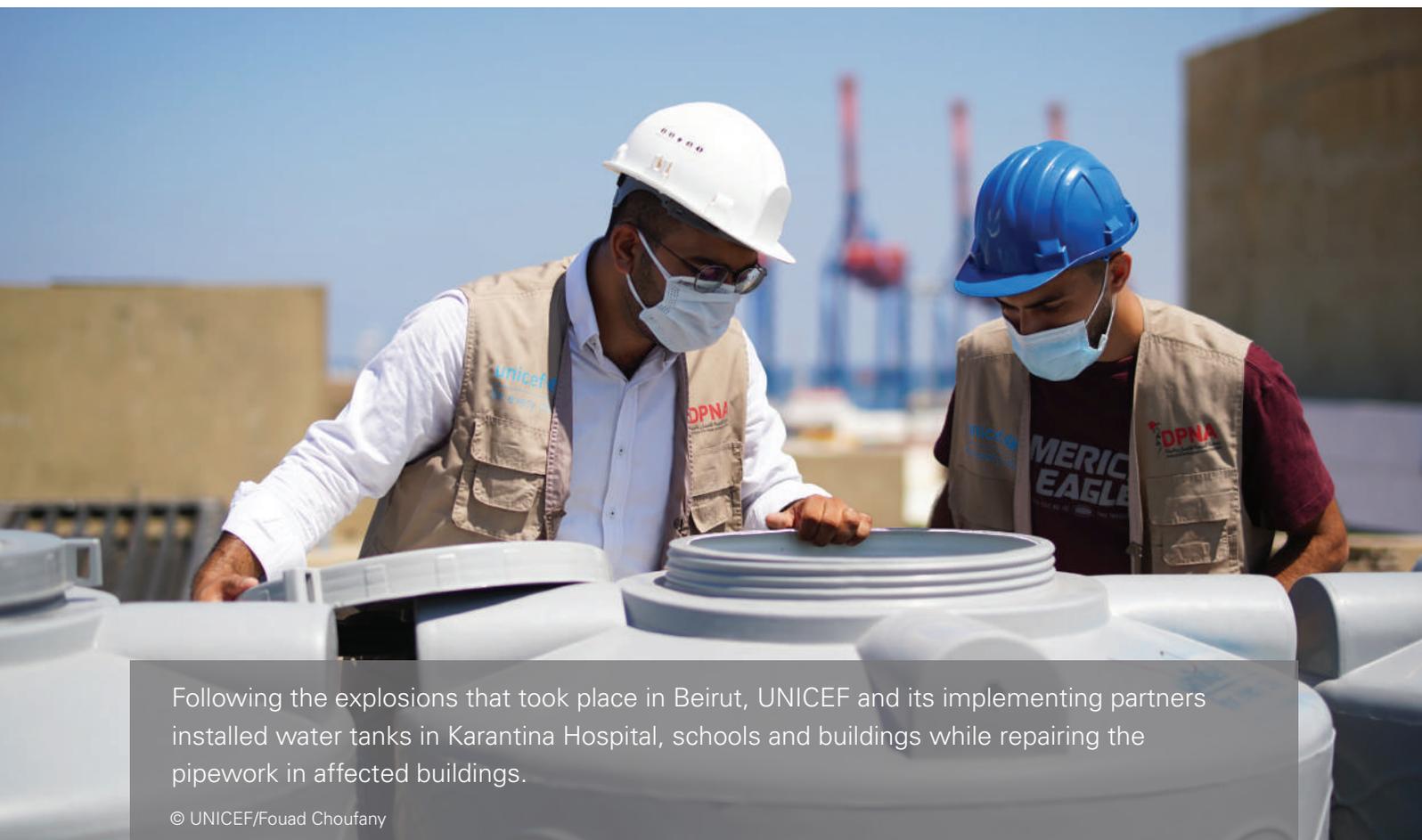


A young pupil takes a refreshing drink from a water fountain at Rachiine Public School in Beirut in March 2021 following the school's rehabilitation in the wake of the August 2020 explosions.

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UNICEF in action

Water, Sanitation and Hygiene (WASH)



Following the explosions that took place in Beirut, UNICEF and its implementing partners installed water tanks in Karantina Hospital, schools and buildings while repairing the pipework in affected buildings.

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- To avoid the complete collapse of Water Establishments as a result of the economic crisis, since October 2020, UNICEF has supported the four public water establishments with supplies, consumables, and quick repairs to secure water services to more than four million people in Lebanon.
- Over 184,690 people reached with critical WASH supplies, including hygiene items and services.
- Nearly 200,000 people assisted with temporary access to an adequate quantity of safe water for drinking and water for domestic use.
- 197,060 men/women/girls/boys with access to improved safe sanitation in temporary locations.
- Following the Beirut Port explosions in August 2020, 155 buildings reconnected to the public water systems, 873 water tanks installed in damaged households, and 4,485 hygiene kits and 462 baby kits distributed to affected families.
- Critical humanitarian supplies distributed worth US\$ 464,000, including baby kits, hygiene kits, water tanks, tarpaulins, as well as Personal Protection Equipment (PPE) and Infection Prevention and Control (IPC) items such as gloves, surgical masks and hand sanitisers.



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