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Flash Report

Household Water Access in Baalbek-Hermel and Bekaa:

Constraints and Coping Mechanisms

October 2025

Credit: REUTERS/Jamal Saidi

The Lebanon Crisis Analytics Team (LCAT) provides reactive and in-depth context analysis to inform the aid community in Lebanon. The information and analysis contained in this report is therefore strictly to inform humanitarian and development actors and associated policymaking on Lebanon.

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Introduction

Lebanon is experiencing its worst drought on record,[1] driven by a 50%[2] year-on-year drop in rainfall between November 2024 and May 2025. Combined with low snow melt, this has depleted the natural springs and wells that provide 83% of Lebanon's annual water consumption,[3] leaving households and the agricultural sector facing severe water scarcity. The crisis is made worse by the annual loss of 30% to 50% of the country's water reserves through evapotranspiration[4] and other factors.[5]

This flash report focuses on access to water in the governorates of Baalbek-Hermel and Bekaa – two regions that were among the hardest-hit by the drought. It complements an earlier LCAT publication[6] that examined how drought has affected the public sector, agriculture, and households, as well as the government's responses to water shortages. By focusing on a specific region of Lebanon, we aim to offer a more granular view of perceptions of drought and water shortages – using feedback and information from households and water distributors – in a bid to better inform development and humanitarian responses.

[1] Arab News, Lebanon's worst drought on record drains largest reservoir September 19, 2025
[2] L'Orient Today, Saddi: Lebanon faces unprecedented water shortage August 26, 2025
[3] A UNDP survey estimated Lebanon had between 55,000 and 60,000 unlicensed private wells, as well as 20,537 officially registered ones. However, only 2,888 registered private wells have exploitation permits. There are 841 public wells in Lebanon.
United Nations Development Programme, Assessment of Groundwater Resources of Lebanon January 11, 2016
[4] Evapotranspiration is the process by which surface water is transferred to the atmosphere. It happens through evaporation on surfaces and transpiration through plants.
[5] Lebanon receives around 8.6 billion cubic meters of precipitation every year. According to the Ministry of Energy and Water, the country only captures some 2.7 billion cubic meters. Ministry of Energy and Water, Updated National Water Sector Strategy 2020-2035 2022;
L'Orient Today, Summer water rationing looms after light winter snowfall June 14, 2023


Credit: AFP

Methodology

LCAT obtained data from Post Distribution Monitoring (PDM) surveys carried out in August by Mercy Corps' SAFER[7] program. The surveys covered 121 households in villages in Baalbek-El Hermel. To enable LCAT to quantify the effects of the drought on beneficiaries' purchasing power and coping strategies, the SAFER survey team added drought-specific questions. Households were asked about access to water, increased water or household costs, and their expectations should drought conditions persist. LCAT also conducted key informant interviews (KIIs) with private water distributors[8] in Zahle and Mekseh in Bekaa to better understand how their sector is functioning and how the drought is affecting their businesses. Finally, LCAT conducted a desk review of primary and secondary sources.

Access to water in Baalbek-El Hermel

Public water access for Lebanese households varies. In the governorates of Beirut and Mount Lebanon, some 93% of the population has access to state-managed water sources.[9] Outside the major population centers (Beirut and Mount Lebanon), however, coverage by regional utilities ranges from 33% to 66% of the population, depending on region.[10]

To compensate, particularly during the dry season, many Lebanese households turn to private distributors that transport water by truck. In 2023, 44% of households nationwide depended on privately trucked water,[11] and this figure has likely risen in 2025.

[6] Mercy Corps Lebanon, No Rain, No Gain: Situational Analysis on Drought in Lebanon July 8, 2025.
[7] Services and Assistance For Enabling Recovery, an emergency cash assistance program that targets Lebanon's most affected households.
[8] For the purposes of this report, "distributors" refers to those who provide water to households and other customers, primarily by truck, while "suppliers" refers to those who own the water sources (usually wells).
[9] American University of Beirut, Investment Plans in the Water Management Structure of a Post-War Country: The Case of Lebanon Challenges
[10] Nora Fayssal et al., Navigating the water–energy nexus amidst the Lebanese economic crisis 917–929 AQUA - Water Infrastructure, Ecosystems and Society, May 3, 2024
[11] ibid.

Informal water provisioning[12] poses serious health and environmental risks stemming from overuse of natural or man-made wells and streams, which can be exacerbated by drought conditions. Wells can easily be contaminated by surface runoff and sewage, particularly in densely populated areas, and subsequently spread waterborne pathogens and toxic chemicals. A 2024 study of six water sites in Baalbek-Hermel found that four were unsafe for human consumption, mainly due to bacterial contamination.[13] Meanwhile, over-extraction depletes aquifers and causes land subsidence.

According to the United Nations High Commissioner for Human Rights, Bekaa and Baalbek-Hermel were hardest hit by the drought.[14] As of August 2025, 25% of wells in the Bekaa valley have run dry while irrigation canals have been repurposed to supply water to 30,000 residents. The Bekaa Water Establishment introduced water rationing in July.[15,16] Figure 1 lists the various water sources on which SAFER households in Baalbek-El Hermel primarily rely. Households typically source water based on ease of access, but this dynamic has shifted amid severe drought conditions. Nearly one-quarter of surveyed households reported that they primarily rely on water from private sector distributors, an inconvenient solution that requires deliveries by truck. Household tap water[17] ranked second. The share of water drawn from publicly available sources such as taps, wells, and springs remains relatively minimal (between 0.83% and 15%), either due to drought or lack of easy access.

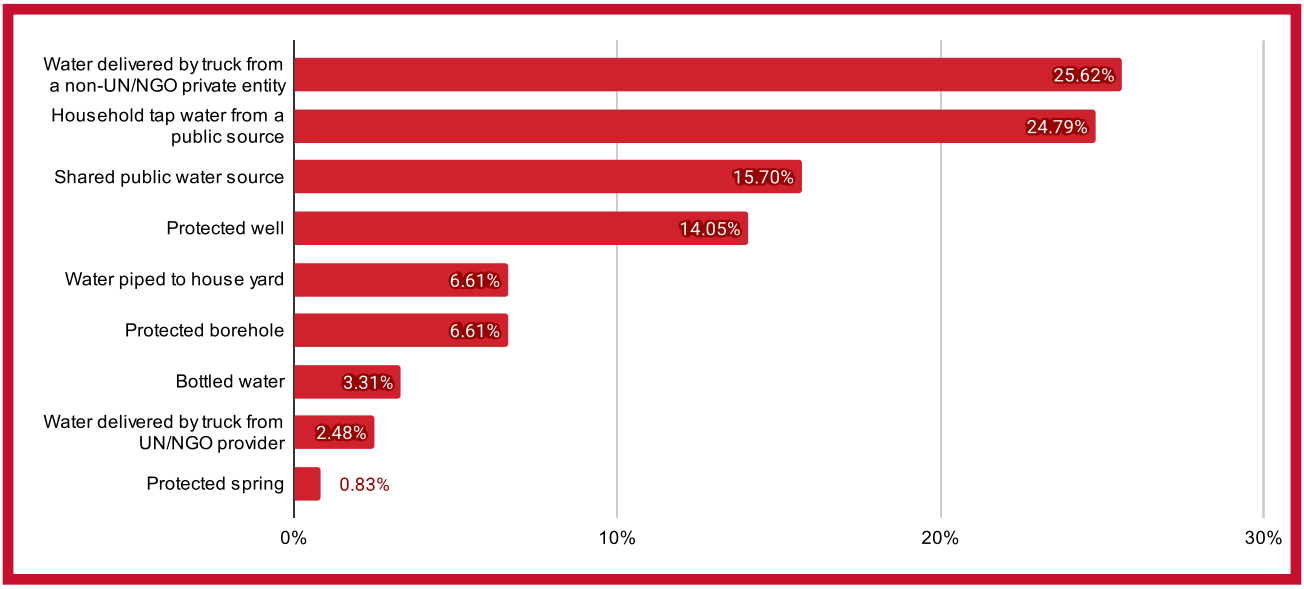


Figure 1: *What is your household's main source for water?*

[12] Informal water provisioning refers to the extraction and transportation (or transmission) of water from unmonitored secondary sources such as private wells, boreholes, natural springs, and streams.
[13] Haidar CM, Awad A, Diab W, Kanj F, Younes H, Yaacoub A, et al. Comparative Analysis of Water Wells and Tap Water: Case Study from Lebanon, Baalbeck Region September 5, 2025
[14] UNHCR, Lebanon Response Plan: Water Scarcity & Drought Preparedness & Response 2025 - At a Glance September 12, 2025
[15] WaSH Sector Alert, Water on the Edge: Lebanon's Drought Crisis Demands Immediate International Support (2025) July 3, 2025; GrandLB, البقاع يهدد العطش June 22, 2025
[16] Zahle Politics, تراجع معدلات المياه في مدينة زحلة وبرنامج تقنين جديد إبتداءً من الإثنين المقبل July 12, 2025
[17] This is the water arriving to households through the formal water networks established by the public institutions, whether a water authority, municipality, or other public water bodies.


Credit: Fouad Choufany

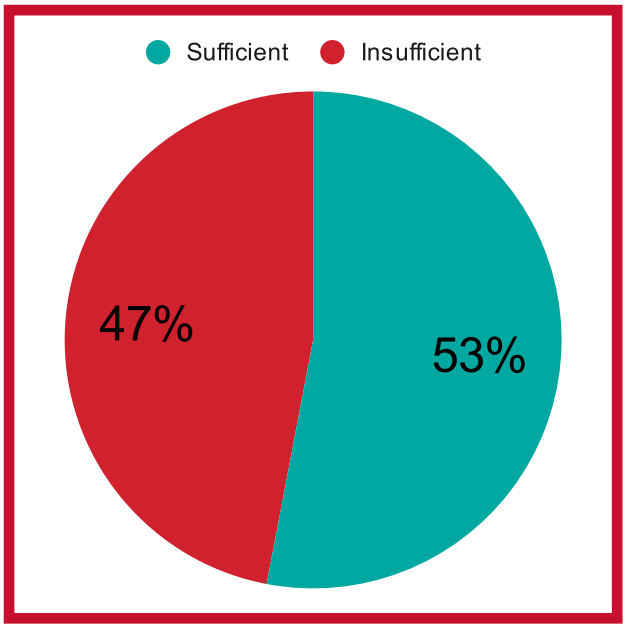
Water access amid severe drought

Private water truckers interviewed by LCAT in Bekaa said that water availability varied this summer, commensurate with temperature levels. They reported that private wells – their primary source of water – were more depleted than in previous years, particularly during July and August. One trucker who owns a private well said that his well's empty volume[18] increased from 13 meters last year to 48 meters this year, with the drop most noticeable during temperature spikes. Others who pay to access privately owned wells were forced to change suppliers an average of four times between June and September, due to both well depletion and pollution/contamination. Distributors also asserted that private well owners continued to grant access, but on a more limited basis. One trucker reported that a well owner allowed him to draw water only six times per day this past summer, whereas he had enjoyed unlimited access in previous years. Some wells reportedly ran dry in June, while alternative wells lasted for only 15 days on average.

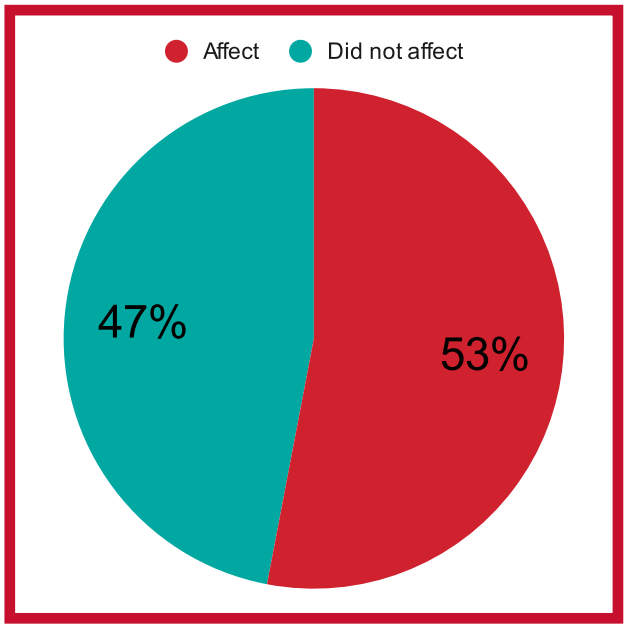
One distributor in municipal Zahle said that demand for his services increased during the 2025 dry season, and that he also received delivery requests from outside the area where he normally operates. He indicated that water truckers do not refuse requests unless they are unable to access clean water.

Surveyed households in Baalbek reported that access to their main water supply source, often private distributors, has declined. Slightly less than half of respondent households (47%) said that their primary source of water was insufficient to cover all their water needs.

[18] "Empty volume" refers to the space above the water level in a well.



is the primary water supply sufficient to cover all households needs? (cooking, hygiene, cleaning, and drinking water)?

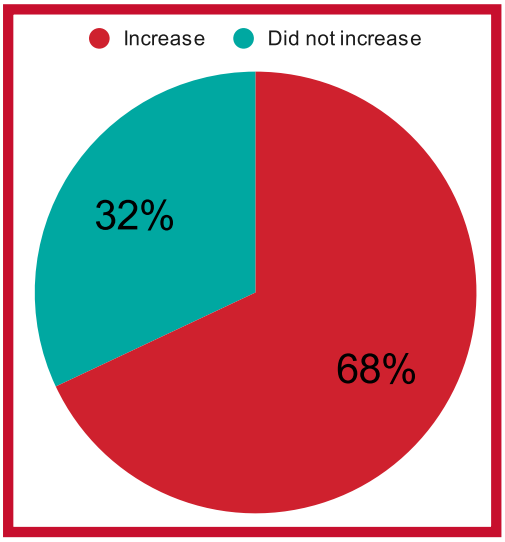


Has the recent drought affected your household's access to water for drinking, cooking, or hygiene?

Among households relying on household tap water, 53% said that their primary source is insufficient, whereas 58% of those who rely on private water trucks said that this method was insufficient. More than half of respondents (53%) thought that the drought has affected their access to water in comparison to previous years.

Water Costs

According to interviewed distributors, high demand during heat waves drove privately sourced water prices up by 20% to 100%.[19] The increase was primarily driven by higher fuel prices – trucks travelled farther and spent more time extracting water from depleted wells – though one distributor said that he raised prices simply due to demand. The surge in demand also created long queues at suppliers, prompting some distributors to charge premiums for expedited delivery. Customers unwilling to pay extra often faced delays, sometimes waiting days for water.



Did you household's expenses increase due to the drought (e.g. buying water, food, or transportation)?

Forty-seven percent of surveyed households said that the drought did not affect their access to water overall, compared to 53% who said it did. However, 68% confirmed that they faced higher miscellaneous costs in addition to costlier water. This likely has its roots in a confluence of factors, including higher prices for locally sourced staples, which the ongoing drought has made more expensive.[20]

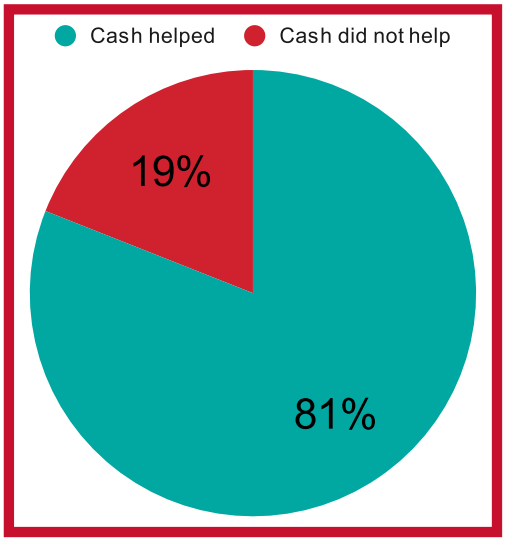
In 2024, monthly water costs varied between 1.5 million Lebanese pounds (LBP) and LBP 3 million on average for both drinking and other household uses.[21] Quotes by distributors in summer 2025 averaged LBP 1.75 million per delivery; the standard household requires 3.5 deliveries per month, including clean water for drinking and cooking. At these rates, a household would pay monthly water costs of LBP 6.13 million (68 US dollars [USD]). This is roughly 37% of the total cost of the food component of the survival minimum expenditure basket in Zahle in July 2025 – LBP 1.67 million (USD 185).[22]

[19] One trucker said that he only increased prices to cover extra fuel costs, while others said that they doubled their quotation (from USD 10 to USD 20 to fill an average house water tank) given the greater demand for water.
[20] Now Lebanon, The Next Disaster: Lebanon's Water Crisis Reaches Breaking Point September 12, 2025
[21] Waradana, Domestic Water Crisis: The Cost of Water Rising October 9, 2024
[22] Market price data and SMEB definition obtained from WFP-Lebanon.

Coping Strategies

Private water distributors reported severe household rationing throughout the summer. Some customers extended the waiting period between fill-ups from three days to five.[23] They also noted payment difficulties: some customers could not pay up front and had to resort to credit payments or bartering goods for water.

Most surveyed households (81%) said that cash assistance helped cover drought-related expenses. This shows that water is still accessible if the financials are there to cover expensive alternatives, mostly water trucks. In response to a question about the most needed support in the event of a prolonged drought, households mainly mentioned cash support rather than water deliveries by truck (see Figure 2).



Did the cash assistance help your household cover any drought-related needs?

This is because cash can be used to purchase water from different sources, offset other drought-related expenses such as higher food prices, or fund additional water for vegetable gardens or water harvesting systems.

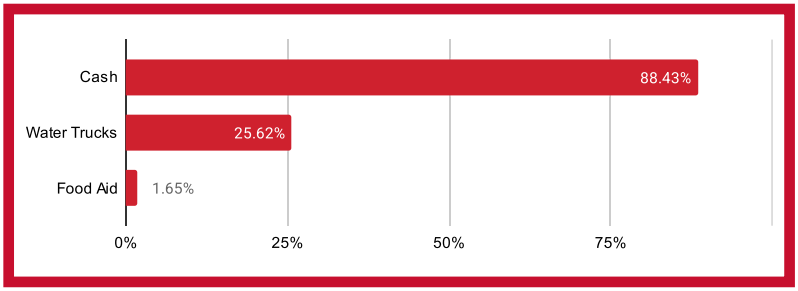


***Figure 2:** If the drought continues, what kind of support would your household need most?*

[23] Water served per delivery varies depending on the household's water facilities and their water reservoir(s) capacity, meaning the volume of water represented by one fill-up varies depending on the customer household.


Credit: L´Orient Le Jour

Social Tensions

Although UNICEF identified water scarcity as a driver of social tensions as far back as 2022,[24] including in Bekaa and Baalbek-El Hermel, no distributors reported water-related incidents or violent confrontations. One distributor stated that "both households and water suppliers are very understanding of the ongoing situation". While some distributors noted that they are under considerable pressure, one trucker reported referring clients to other suppliers and accommodating other truckers' clients as well. Indeed, disputes over shared, publicly available sources likely pose greater risks of driving social tensions than privately owned ones. In early July, a dispute over an artesian well in Kfar Dabash led to clashes that killed three people.[25]

[24] UNICEF, Water as a Tool for Defusing Socio-Political Tension May 2022
[25] L'Orient Today, Deadly clashes renew in Kfar Dabash over water dispute July 4, 2025


Credit: L´Orient Le Jour

Broader Implications and Programming Considerations

Perceptions among households in Baalbeck-Hermel and water distributors in Bekaa are indicative of broader water access restrictions across Lebanon. According to the World Bank, water availability in Lebanon during the dry season is expected to halve by 2040.[26] Data from the Ministry of Environment indicates that every 1°C increase in temperature could lead to an additional 8% reduction in freshwater supply.[27]

Water access will likely improve in late autumn across Baalbeck-Hermel and Bekaa. Private distributors in Bekaa estimated that demand had fallen by roughly 70% through mid-September, as expatriate Lebanese and returning Syrian refugees leave the region.

Despite near-term demand relief in some regions of the country, partially due to population movements, Lebanon still needs to better capture and more efficiently transmit water resources.[28] Absent significant upgrades and repairs, it is likely that Lebanon's public water infrastructure will continue to lack the efficiency and capacity to meet public demand. Safety should also be a primary focus, as private wells are largely unregulated. Additionally, based on our analyses, Multi-Purpose Cash Assistance (MPCA) remains crucial for addressing water scarcity and drought.

[26] World Bank, New World Bank Program to Improve Water Supply and Quality and Advance Water Sector Reforms January 15, 2025
[27] The Badil, Here We Flow Again: Beirut Water Project Set to Keep Taps Dry and Debts High July 31, 2025
[28] One initiative that could help alleviate the effects of drought is the Second Greater Beirut Water Supply Project (SGBWSP), which aims to boost water supply and improve water quality for nearly 1.8 million residents of the Greater Beirut and Mount Lebanon areas. This project, which has recently obtained a USD 257.8 million loan from the World Bank, entails the construction of a vital bulk water network – comprising pipelines, tunnels, and the Wardanieh Water Treatment Plant – in a bid to increase the surface water supply so that it can meet up to 70% of the dry season demand.
World Bank, New World Bank Program to Improve Water Supply and Quality and Advance Water Sector Reforms January 15, 2025;
The MediaLine, World Bank Approves $257.8 Million To Improve Lebanon's Water Supply January 16, 2025

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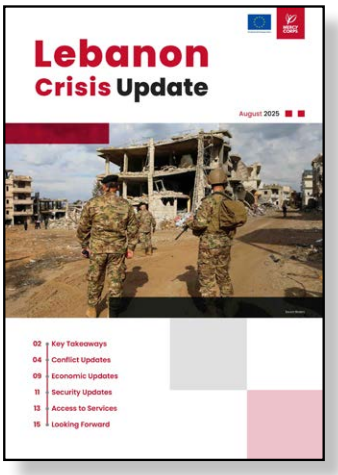

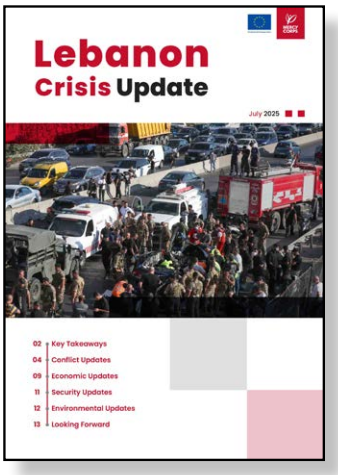

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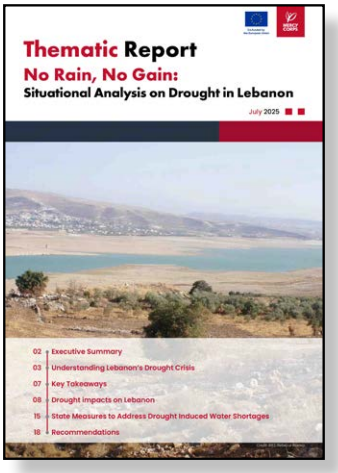

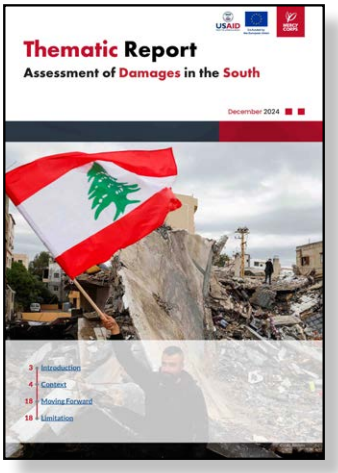

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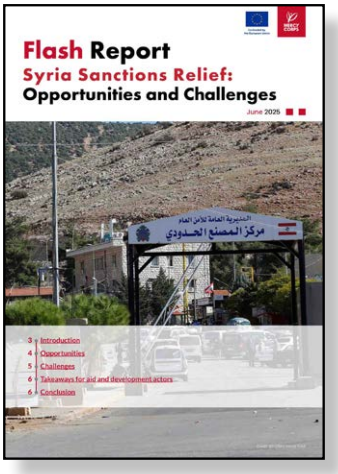

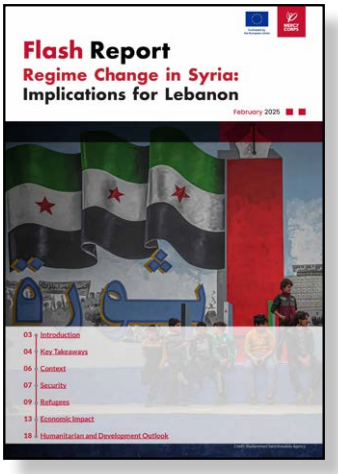

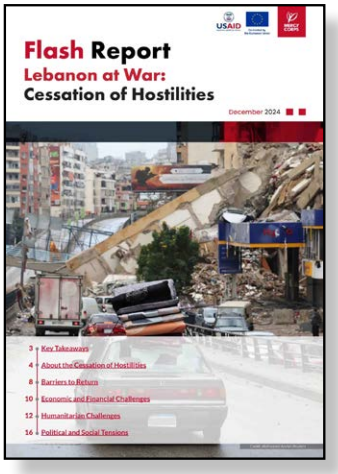

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