



Turabna - Janoub Soil Monitoring

Pilot Assessment Findings

Nabatieh and Marjaayoun Districts, Lebanon
August - November 2025

IN BRIEF:

- **40 Soil Samples Analysed**
- **122 Farmers Interviewed**
- **3 Focus Group Discussions**



Main Takeaways

- Livelihood loss and environmental destruction leave farmers unable to cultivate their land.
- Soil analysis indicates diffuse regional contamination and a few “hotspots” with elevated metal concentrations.
- No substantial evidence of soil contamination uniquely linked to white phosphorus use was found.

Assessment Overview

Following the Israeli invasion of Lebanon and the 2024 ceasefire violations, [Amel Italia](#), [Amel Association International](#) and [Source International](#) launched a joint soil contamination assessment. With environmental remediation now a priority, this initiative strengthens local awareness by providing reliable, data-driven findings on the impact of military operations.

Turabna is a project conducted in collaboration with:



🚧 Destruction, displacement and loss of livelihoods

👤➔ **75%** of consulted farmers were displaced following the Israeli attack on Southern Lebanon in 2023

🚒 **46%** of consulted farmers were directly affected by military activities

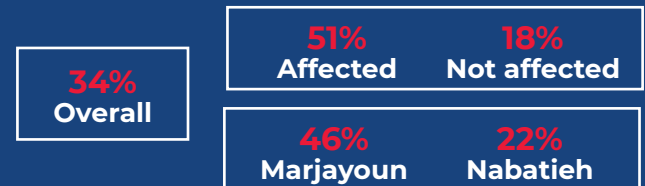
✈️ Of the directly affected, **96%** reported having been hit by at least one airstrike

🐄 **49%** decrease across affected farmers in number of livestock owners at the time of data collection

☣️ **95%** of farmers reported not having received any soil assessment

☣️ **81%** of farmers reported not having received a UXO* assessment

🌾 Farmers reporting being unwilling or unable to cultivate their land at the time of data collection:



🌿 Environmental toll

"Our land is shared. We share the same air, the same water, and the same molokhia that we eat together"

- Farmer from Nabatieh



FIRES

39% of farmers in Marjaayoun reported a **fire occurring** in their land as a consequence of military activities.. **20%** across overall farmers.



DRINKING WATER**

75% of farmers reported **bottled water** as main source of drinking water. **17%** reported water trucking.



TREES DESTRUCTION

Among farmers directly affected, **88%** reported that their **olive trees were damaged or destroyed**. **25%** reported **vegetation not recovering** after being burned.



IRRIGATION WATER**

60% of farmers reported using **water trucking** as main source to irrigate their field, **37%** reported relying on **rain**.

☣️ Focus on soil contamination

Chemical analysis revealed a clear link between warfare and soil contamination. The findings demonstrate 24 years of sustained land degradation and underscoring a legacy of pollution that extends beyond the most recent conflict and affects the entire study area. Only a few "hotspot" locations have concerning concentrations of toxic heavy metals in soil.

Median increase in heavy metals directly associated with warfare between 2001 and 2025

+ 2.5 TIMES
COPPER

+ 3.6 TIMES
ANTIMONIUM

+2.6 TIMES
ZINC

+ 1.5 TIMES
LEAD

WHITE PHOSPHORUS & DEPLETED URANIUM

No traces of environmental impacts directly attributable to white phosphorus use was found, nor evidence of depleted uranium use.

Methodology and limitations

Soil samples were collected between August 12 and 20, 2025, in areas identified through the triangulation of georeferenced airstrikes and confirmed white phosphorus strikes, specifically focusing on locations accessible through UNIFIL and Lebanese Army facilitation. **Samples were taken using international standard procedures by a recognized expert from Source International and analyzed by an accredited Italian laboratory.** The full methodology is available in the technical report.

Key informant interviews were conducted remotely by phone using a structured questionnaire on KoboCollect. The respondents interviewed were randomly selected by district from lists of participants registered in previous Amel Association International programs or trainings. **Data collection took place between August and November 2025.** The three focus group discussions included farmers from both the Marjaayoun and Nabatieh districts, who had been previously interviewed and agreed to participate in a group discussion.

As Southern Lebanon remained under the direct threat of Israeli airstrikes and violations, data collection and field visits were limited to areas accessible through humanitarian coordination systems. Access to areas closer to the border and to territories currently under Israeli occupation was therefore impossible. **Given the purposive nature of this assessment, the findings presented should be considered indicative rather than exhaustive.**

ABOUT AMEL ITALIA

Amel Italia is the Italian branch of Amel Association International, a Lebanese organization working on the frontline in the defense of the most vulnerable communities in Lebanon. Amel Italia contributes to their efforts in Lebanon by co-developing environmental interventions. In Italy, Amel Italia works on mainstreaming environmental action through science in communities in affected areas.



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