



## LAND AND CONFLICT

INTERSTATE WAR LIVES ON IN THE SOIL, THREATENING LIVES AND LIVELIHOODS

This case study provides an example of how the aftermath of war shapes land and livelihoods. It examines the impact of the 2006 war, the latest military confrontation in the long-standing conflict between Lebanon and Israel.<sup>1</sup> The war started on 12 July 2006 and lasted until the UN-brokered ceasefire took effect on 14 August 2006. Some consider that it did not end until 8 September 2006, when Israel lifted its naval blockade of Lebanon (Darwish, Farajalla, and Masri, 2009).

The conflict resulted in the massive destruction of large parts of the densely populated suburbs of Beirut and tens of villages and towns in south Lebanon. Key infrastructure was also damaged, and industry, tourism, and agriculture were disrupted. Up to one million people fled their homes (Darwish, Farajalla and Masri, 2009).

The war scattered huge quantities of landmines and unexploded ordnance (UXO) across south Lebanon, rendering large areas practically inaccessible (Yammine, 2007). Israel launched a

<sup>1</sup> Known in Lebanon as the July War and in Israel as the Second Lebanon War.

number of cluster munition<sup>2</sup> strikes during the first two weeks of the conflict and dramatically increased its dispersal over a vast area in the final 72 hours of the conflict. Ninety per cent of strikes happened during this brief period (OCHA, 2006), when Israel knew that a settlement was imminent, hitting more than 850 sites, in an example of “saturation cluster bombing” or “carpet bombing” (Human Rights Watch, 2006). In total, 4 million sub-munitions were deployed, in the most extensive use of cluster munitions since the 1991 Gulf War. Considering that a large percentage do not detonate on impact, an estimated one million sub-munitions remained in south Lebanon (Landmines and Cluster Munition Monitor, 2021), harbouring the danger of injury and death. UXO will continue to undermine land access and use until demining is completed.

## Effects of the Conflict on Land

### ▪ Reducing and Threatening Livelihoods

The ordnance severely affected agricultural lands, impacting a sector that contributes up to 80 per cent of local GDP in the area (FAO, 2006). The conflict broke out at the peak of the crop harvest season, worsening the immediate damages. Intense bombing drove farmers away from their fields, leaving high-maintenance crops unattended.

Losses of up to 90 per cent were reported (FAO, 2006). Additionally, large numbers of livestock perished or had to do without feed. Following the cessation of hostilities, UXO continued to block access to crops and planting.

A damage assessment conducted by the Lebanese Ministry of Agriculture and FAO in the two most-affected governorates, South and Nabatiyeh, calculated USD 152 million in agricultural losses (47 per cent fruit trees, 15 per cent field crops, 1 per cent greenhouse crops, and 8 per cent farm equipment and machinery). As many farmers repay loans with their harvests, this loss of income left many farmers in debt and caused difficulties in the next crop cycle (FAO, 2006). Access to the Mediterranean was also curtailed, due to the targeting of ports, including Naqoura, Tyre, and Sidon in the south, and Ozai in Beirut. Israel also carried out a naval blockade and restricted the reach of boats in Lebanese territorial waters. As a result, approximately 3,500 fishermen lost their only source of income during the hostilities (FAO, 2006).

### ▪ Reducing and Threatening Food Security

By the end of 2006, the flow of fruits and vegetables to Lebanese consumers fell by 75 per cent (FAO, 2006). In the time since, Lebanon has seen a substantial increase in agricultural imports, indicating, at least in part, a long-term reduction in land use and/or productivity (Díaz-González and Morales-Opazo, 2021).

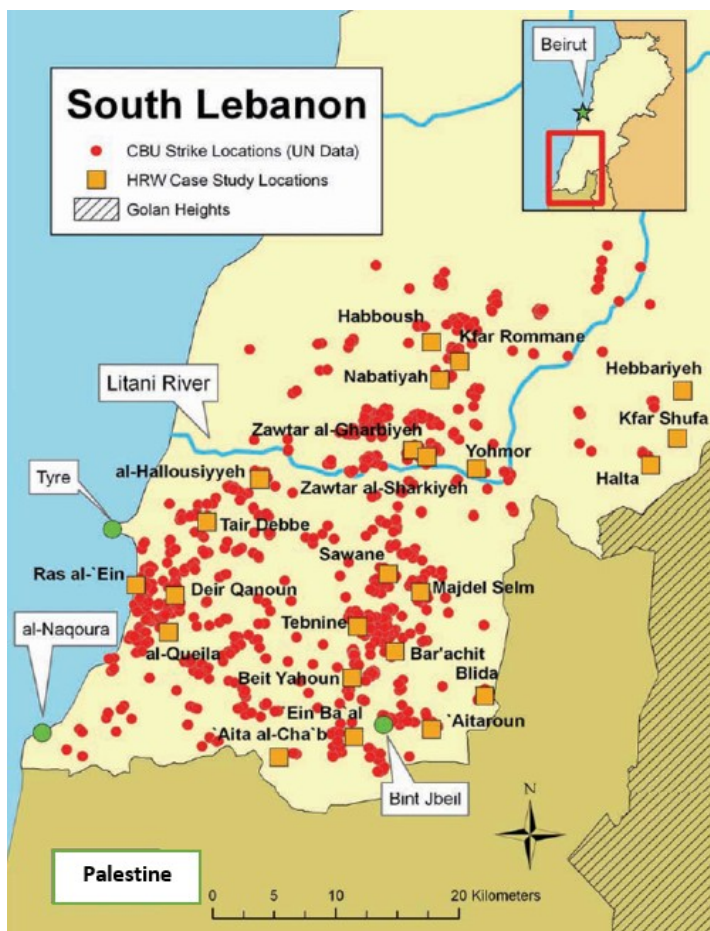


Figure 1: Distribution of cluster bomb strikes (UN Data, U.S. National Imagery and Mapping Agency)

<sup>2</sup> Cluster munitions consist of a large shell filled with hundreds or thousands of sub-munitions (also known as bomblets).

Fired from the air or ground, they open over the targeted areas to disperse the sub-munitions, which can cover up to a square kilometre with exploding bombs and unexploded ordnance.

## Protracted Effects of Conflict

Figure 2 below shows the coverage of minefields and cluster bomb strikes before and after the 2006 war. The brown areas mark where cluster munitions struck in 2006, while the areas in green show places that had been previously cleared of mines following the Israeli invasion and occupation of Lebanon from 1978 to 2000 (including significant aerial bombing campaigns in 1993 and 1996). The figure shows that many of the areas cleared of UXO by the state, with help from other Arab states and local and foreign NGOs, were reinfested with munitions.

Landmines and cluster bombs continue to impact agricultural lands long after the bombing ends. Exploded and unexploded ordnance leaked heavy metals into the soil, rendering it unsuitable for agriculture and infiltrating groundwater tables. In 2006, OCHA reported that around 94 km<sup>2</sup> of citrus fruit and banana orchards, 74 km<sup>2</sup> of field cropland, and 35 km<sup>2</sup> of pastureland were immediately contaminated, with heavy UXO density preventing safe access to agricultural fields long after the bombing had ceased. Despite intensive demining efforts, as of 2019, 1,176 hectares of agricultural land remained contaminated, while about half of the total remaining contamination is on grazing lands (UNDP, 2019).

Land use changes have come from the very real dangers posed by these ordinances. According to the FAO (2006), from 14 August to 19 October 2006, 150 civilians were injured, and 21 died as a result of post-war cluster bomb detonations. The casualties included farmers, herders, and children, who are especially at risk as most UXO look innocuous, and some are tied in ribbons or resemble toys or canned drinks (Murphy, 2006).

The bombings also had a lasting effect on irrigation infrastructure. The attacks destroyed canals that were watering over 10,000 acres of farmlands from the nearby Litani River. The state had planned on a USD 200 million expansion of the irrigation system to reach new sections of south Lebanon. Instead, dozens of villages were left without water.

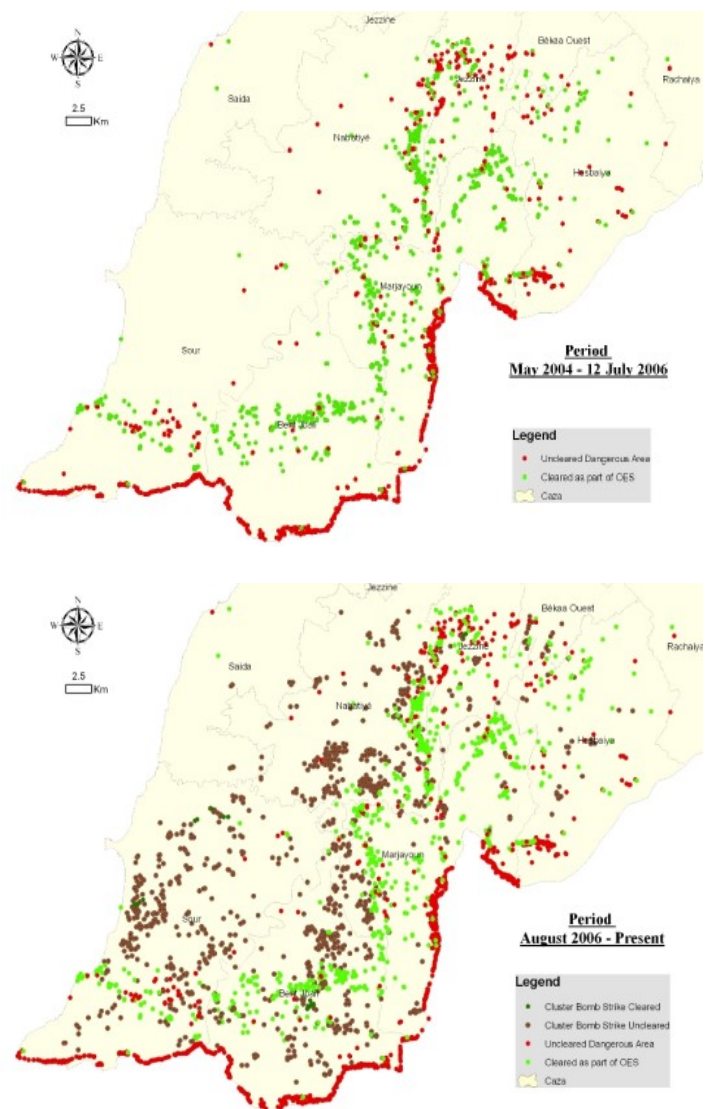


Figure 2: Minefields and dangerous areas prior to the war (above) and minefields, cluster bombs strike areas and other dangerous areas after (below) (Yammine, 2007).

Deployment of explosive devices on agricultural lands, whether landmines or highly defective cluster munitions, is a military tactic to 'starve the enemy' and force residents to relocate either to explosive-free areas or refugee camps. Cluster bombs with high failure rates were used, and the strikes greatly intensified immediately before the end of the war in south Lebanon to create long-lasting effects on land use and to create an empty "buffer area" through the displacement of residents. The targeting of agricultural land underscores the nationwide impact of war on land, both as a productive resource for food and livelihoods as well as an unexploded ordnance threat after the conflict's ostensible end. In some ways, the 2006 war lives on in the soil.

## Resolution of Impacts

Tensions between Lebanon and Israel persist. Israel continues to occupy the Shab'a farms, the Kfarchouba hills, and parts of the village of Ghajar, on the southeast border of Lebanon at the foothills of the occupied Syrian Golan, and regularly violates Lebanese air space. The Israeli government has refused to submit all maps and coordinates where cluster munitions were deployed or detail the types of munitions used. Such disclosure would help to resolve some of the effects of conflict on the land and promote safe access. While the broader issues remain open, significant progress has been made to address the problem of unexploded ordnance from the 2006 war.

In the immediate aftermath, farmers desperate to regain their lands would occasionally resort to demining their own properties. They would set fire to their fields or pay other civilians to do so (OCHA, 2006). This dangerous practice of community clearance points to the risks of a slow-moving or underfunded response. Lebanon has carried out a large-scale demining operation in collaboration with national actors, civil society groups, and international NGOs. Because of the large number of landmines and unexploded ordnance from previous conflicts, Lebanon already had an extensive demining programme in place. The Lebanon Mine Action Authority (LMAA) was established in 1998 by the Lebanese Council of Ministers to coordinate mine action within the government. Meanwhile, the Lebanon Mine Action Centre (LMAC), a part of the Lebanese Armed Forces, coordinates the Lebanese National Mine Action Program and implements demining operations. The UN Mine Action Service oversees the UN Interim Force in Lebanon's demining efforts in cooperation with LMAC.

UNDP gives logistical support to LMAC. Numerous NGOs and local communities are involved, also in educating the local population on the dangers of unexploded ordnance.

The intensive demining efforts did deliver significant results, as an estimated "68% of the total contaminated land has been cleared by the

end of 2017;" however, the remaining 30 per cent still covers large tracks of agricultural areas (1,176 ha), pastures (2,404 ha) and forests (650 ha) (UNDP, 2019, pg. 51). The LMAC aims to clear all areas by the end of 2026.



Figure 3: Residents of Zibqin have turned the casings of cluster bombs into garden ornaments. (Al Jazeera)

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**Authors (by alphabetical order):** Mariam Al Jaajaa, Elle Ambler, Minerva Sadek, Rami Zurayk

**Reviewers (by alphabetical order):** Khalil Hussein, Razan Zuayter.

**Layout and adaptation:** Batoul Ibrahim

**Cover photo:** Julien Harneis on [Flickr](#), (CC BY-SA 2.0)

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