

## CASE STUDIES ON LAND AND CONFLICT IN THE ARAB REGION

### SOUTH LEBANON

### War lives in the soil, threatening lives and livelihoods



Figure 1. A bomb-diffusing robot, Lebanon. Source: UN Photo/John Isaac (2020).

#### NATURE OF THE CONFLICT

This case study examines the impact of the 2006 war in Lebanon, one of the major military confrontations in the long-standing conflict between Lebanon and Israel<sup>1</sup> and it provides an example of how violent conflict shapes access to land and livelihoods.

The war started on 12 July 2006 and lasted until the ceasefire brokered by the United Nations on 14 August 2006<sup>2</sup>. The conflict resulted in large scale destruction of the densely populated Southern Suburbs of Beirut and tens of villages and towns in South Lebanon. Key infrastructure was damaged, and industry, tourism, and

agriculture were disrupted in these areas. Approximately one million Lebanese people were displaced (Darwish, Farajalla and Masri, 2009).

Huge quantities of landmines and unexploded ordnance (UXO) were scattered across South Lebanon, rendering large areas practically inaccessible (Yamine, 2007). Israel launched several cluster munition<sup>3</sup> strikes during the first two weeks of the conflict and it dramatically increased the dispersal of such munitions over a vast area in the final 72 hours of the conflict. Ninety per cent of the strikes happened during this brief period (OCHA, 2006) hitting more than 850 sites, in an example of “saturation cluster bombing” or “carpet bombing” (Human Rights

1 Known in Lebanon as the July War.

2 Some consider that it did not end until 8 September 2006, when Israel lifted its naval blockade of Lebanon (Darwish, Farajalla, and Masri, 2009).

3 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. The Convention on Cluster Munitions (2008) prohibit the use of cluster munitions due to immediate and long-term harm they pose to civilians.

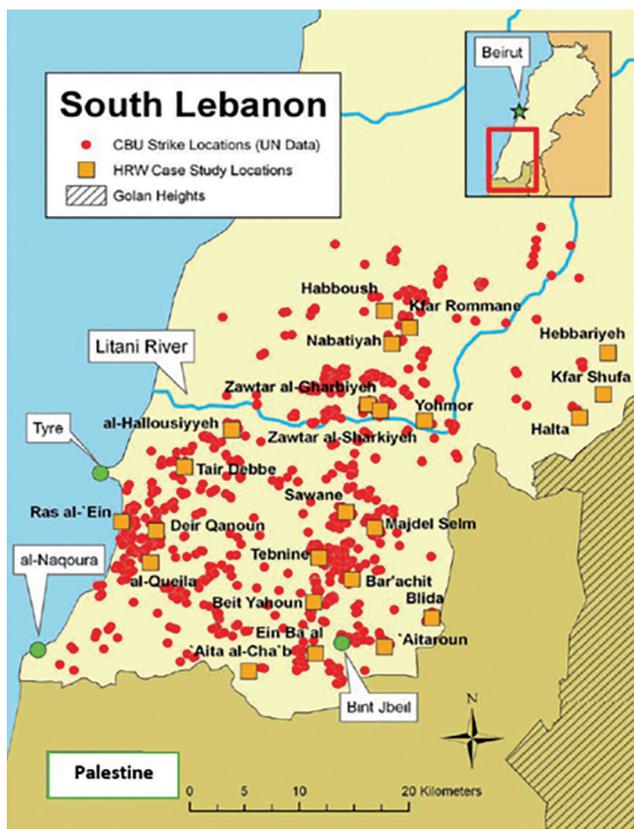


Figure 2. Distribution of cluster bomb strikes. Source: UN Data, U.S. National Imagery and Mapping Agency.

Watch, 2006). Of the 4 million sub-munitions deployed in the most extensive use of cluster munitions since the 1991 Gulf War, it is estimated that up to one million remained unexploded in South Lebanon (Landmines and Cluster Munition Monitor, 2021), harbouring danger of injury and death. UXO will continue to undermine land access and use until demining is completed.

## EFFECTS OF THE CONFLICT ON LAND

### LOSS OF LIVELIHOODS AND FOOD INSECURITY

The unexploded ordnances 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 away farmers from their fields, leaving high-maintenance crops unattended. Losses of up to 90 per cent were reported (FAO, 2006). 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 of land use and/or productivity (Díaz-González and Morales-Opazo, 2021).

Large numbers of livestock perished or had to stay 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<sup>4</sup>. 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).

### PROTRACTED EFFECTS OF CONFLICT

The maps below show 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 figures show that many of the areas previously cleared of UXO by the state with help from other countries and local and foreign NGOs was reinfested with munitions due to 2006 war.

Landmines and cluster bombs continue to impact agricultural lands long after the bombing ends. Exploded and unexploded ordnances 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 was 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 ordnances. According to FAO (2006),

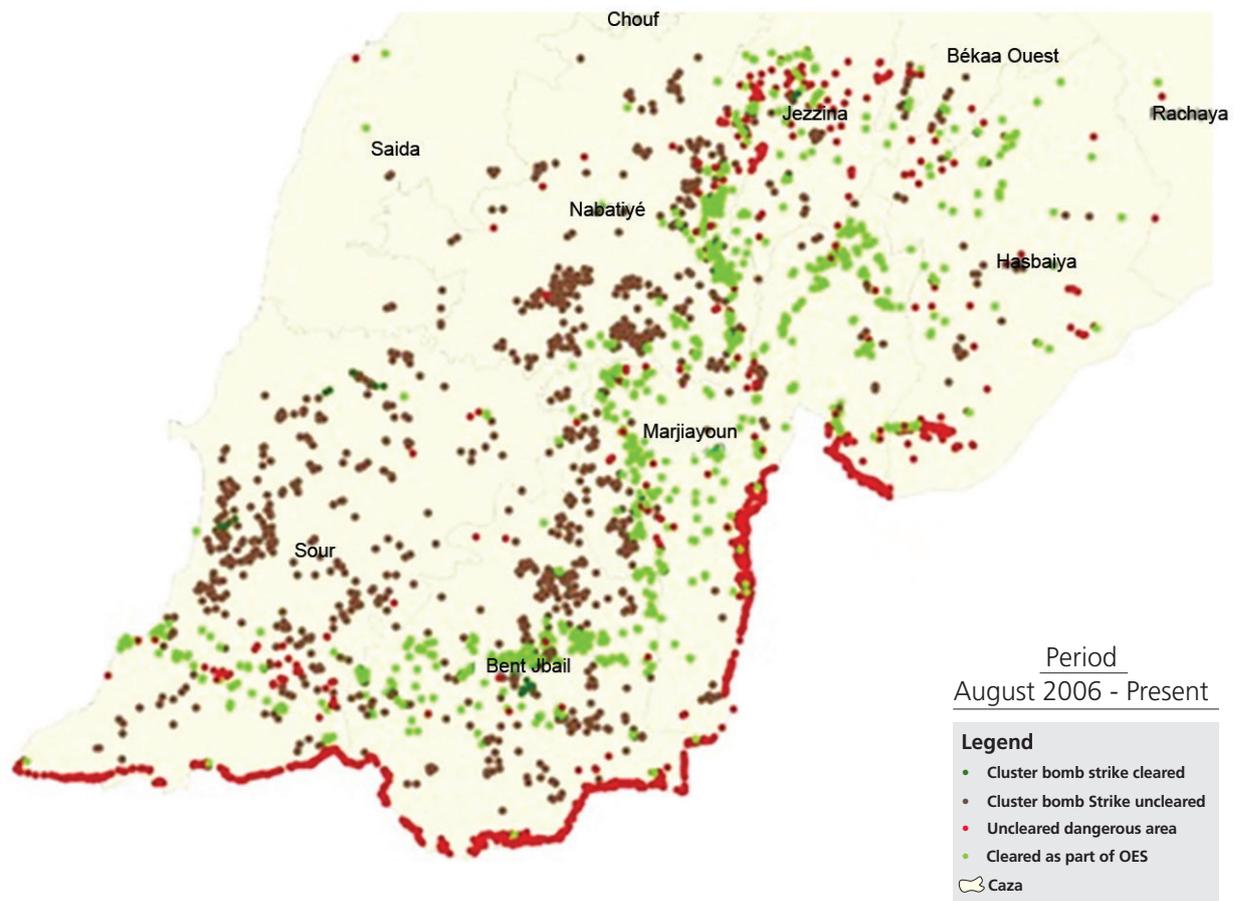
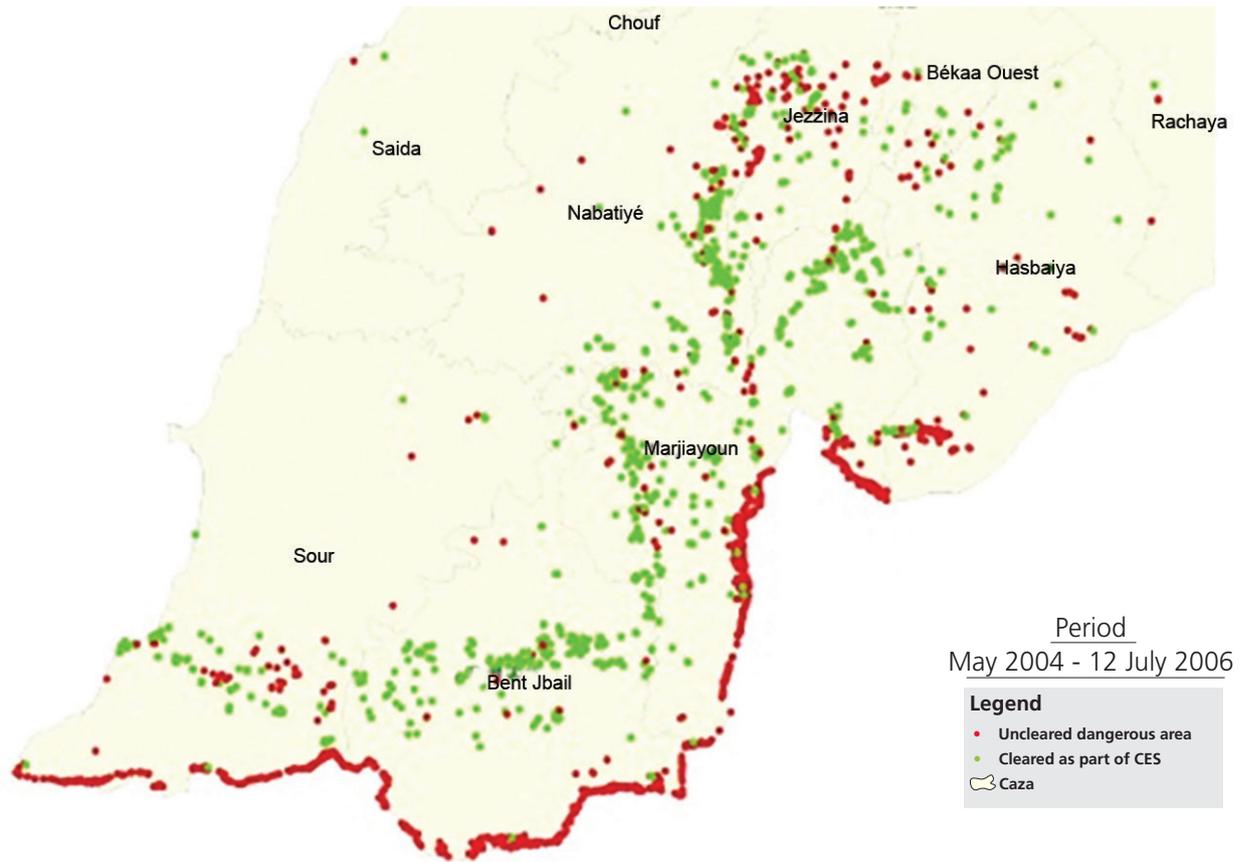


Figure 3. Minefields and dangerous areas prior to the war (above) and minefields, cluster bombs strike areas and other dangerous areas after (below). Source: Yammine, 2007.

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). In the immediate aftermath of the war, farmers desperate to regain their lands occasionally resorted 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.

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 leaving dozens of villages without water.

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 (Gray, 1997; Parlow, 1994; and Unruh et al., 2003). The use of cluster bombs with high failure rates resulted into a de-facto creation of an empty "buffer area" through the displacement of residents. The targeting of agricultural land underscores the nation-wide 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, and so is Israel's occupation of Shab'a farms, Kfarchouba hills, and



Figure 4. Unexploded bomb in Khiyam, South Lebanon. Source: Phil Coomes/Flickr.



Figure 4. Residents of Zibqin have turned the casings of cluster bombs into garden ornaments. Source: Al Jazeera.

parts of the village of Ghajar on the southeast border of Lebanon at the foothills of the occupied Syrian Golan.

While the broader issues remain open, significant progress has been made to address the problem of unexploded ordnance from the 2006 war. 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 United Nations Mine Action Service oversees the United Nations Interim Force in Lebanon (UNIFIL)'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, 2019b, pg. 51). The LMAC aims to clear all areas by the end of 2026.

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## ABOUT THE CASE STUDY

The case study “War lives on in the soil, threatening lives and livelihoods” was documented by the Arab Land Initiative of UN-Habitat and the Global Land Tool Network (GLTN), in partnership with the Arab Group for the Protection of Nature (APN) and the financial support of the Federal Ministry of Economic Cooperation and Development of Germany (BMZ). This study is part of a broader effort to examine land-related conflict dynamics across the Arab region. The analysis was developed by Mariam Al Jaajaa, Rami Zurayk, Minerva Sadek, and Elle Ambler, applying an analytical framework built around three core dimensions: the nature of the conflict, the effect of the conflict on land, and the resolution of impact. This case was originally published by the Arab Land Initiative in 2022.

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