

KEY DEVELOPMENTS

The Lebanon Mine Action Centre (LMAC) and its national and international partners continued to make progress in mine clearance in 2020, although annual clearance output was down on the previous year, in part because of the challenges posed by COVID-19. In a positive development, on 30 January 2020, the United Nations Interim Force In Lebanon (UNIFIL) and LMAC signed a memorandum of understanding (MoU) on demining, with UNIFIL commencing clearance for humanitarian purposes for the first time from June 2020, in addition to its ongoing standard demarcation operations on the Blue Line. Lebanon seemingly moved closer to accession to the Anti-Personnel Mine Ban Convention (APMBC) in 2020. In another positive development, LMAC commissioned an external study on operational efficiency in 2020, and plans to review and adopt the recommendations from the study, especially those calling for increased emphasis on evidence-based technical survey prior to clearance.

RECOMMENDATIONS FOR ACTION

- Lebanon should accede to the APMBC as a matter of priority.
- Lebanon should clear anti-personnel mines in areas under its jurisdiction or control as soon as possible, consonant with its obligations under international human rights law.
- Wherever possible, evidence-based non-technical survey and technical survey should be used to define areas of mine contamination more accurately prior to initiating clearance. This is particularly important in non-pattern minefields, such as the militia/scattered minefields in Mount Lebanon and for contamination from anti-personnel mines of an improvised nature in the north-east of the country.
- Where appropriate, LMAC should consider using demining machinery and mine detection dogs (MDDs) as primary as well as secondary clearance assets.

UNDERSTANDING OF AP MINE CONTAMINATION

At the end of 2020, Lebanon had nearly 18.23km² of confirmed mined area, including along the Blue Line, across 1,256 confirmed hazardous areas (CHAs) (see Table 1).¹ A total of 41,241m² of previously unrecorded anti-personnel mine contamination was added to the database in 2020.²

This is a small reduction of estimated contamination compared to the end of 2019, when Lebanon had more than 18.65km² of confirmed mined area, including along the Blue Line, across 1,353 CHAs.³ LMAC also cleaned up contamination data in its database in 2020, in preparation for the planned migration to IMSMA Core.⁴

Table 1: Mined area by province (at end 2020)⁵

Province	CHAs	Area (m ²)*
Al Beqaa	53	991,178
Al Janoub and Al Nabatiyeh (south Lebanon)	902	7,611,521
Jabal Loubnan (Mount Lebanon)	261	9,406,774
Al Shimal (north Lebanon)	40	218,107
Totals	1,256	18,227,580

* Includes 406,548m² containing anti-personnel mines of an improvised nature at in Al Beqaa in north-east Lebanon.

In addition, as at end of 2020, "Dangerous Areas" totalling more than 812,000m² were suspected to contain booby-traps and which required non-technical survey.⁶ These "Dangerous Areas" relate predominantly to rapid response or explosive ordnance disposal (EOD) spot tasks and are often the result of accidents having been reported to LMAC by the local community,⁷ for which further investigation/survey is required in order to confirm the existence, type, and extent of any contamination.⁸

The majority of mined areas are in the south of Lebanon, are in conventional minefields, laid according to a pattern, and where the location of the mines is identified on minefield maps. The minefields in north Lebanon and Mount Lebanon are typically "militia" or "scattered" minefields (i.e. were laid without a pattern and for which minefield records and maps do not exist), and were laid by multiple actors during the civil war.⁹ In addition, there is a small amount of contamination from anti-personnel mines of an improvised nature (victim-activated improvised explosive devices (IEDs), totalling 0.41km² and located in north-east Lebanon in Al Bekaa province.¹⁰

Lebanon's mine problem is largely a legacy of 15 years of earlier civil conflict and Israeli invasions of south Lebanon (in 1978 and 1982) and subsequent occupations that ended in May 2000, and there is a small amount of new mine contamination in "Jroud Aarsal" on the north-east border with Syria, resulting from spill-over of the Syrian conflict onto Lebanese territory in 2014–17.¹¹ The Lebanese territory in question was fully regained by the Lebanese Armed Forces (LAF) in August 2017 and was assigned to LMAC for survey and clearance. In addition to anti-personnel mines of an improvised nature (victim-activated IEDs), contamination in the north-east includes CMR and other ERW.¹²

The LAF continue to play a major role in this northern region, as the number of rapid-response missions remains high. The increased number of returnees for economic purposes has led to more ERW being found.¹³ Furthermore, in its annual report for 2019, LMAC noted that it has had to address the challenge posed by contamination from mines migrating from the north Syrian border, through floods and river beds, to new areas in Wadi Khaled and Wadi Nahle in the north.¹⁴ This continued to represent a continued concern and challenge for LMAC, as mine migration can happen anywhere along the border river and LMAC only knows about the migrated mines through the reporting of accidents. LMAC surveyed the location of accidents and submitted a report to the LAF headquarters, recommending that where possible the berms are raised in these locations, to prevent future migration. The LAF Engineering Regiment search and clear large fade out areas and put fences and marking up where possible, and mine risk education is conducted.¹⁵

A study on operational efficiency, conducted in 2020 by an international consultant, highlighted the need for greater emphasis on technical survey as part of the land release process in Lebanon, in order to reduce land found not to be contaminated, including in the fade-out, and thereby to prevent unnecessary clearance.¹⁶

For details on CMR contamination, see Mine Action Review's *Clearing Cluster Munition Remnants* report on Lebanon.

PROGRAMME MANAGEMENT

Lebanon's mine action programme is under the control of the military. The Lebanon Mine Action Authority (LMAA), which has overall responsibility for Lebanon's mine action programme, is the responsibility of the Ministry of Defence and is chaired by the Minister of Defence. In 2007, a national mine action policy outlined the structure, roles, and responsibilities within the programme, and LMAC was tasked to execute and coordinate the programme on behalf of the LMAA.¹⁷

LMAC, part of the LAF, is based in Beirut. Since 2009, the Regional Mine Action Centre in Nabatiyeh (RMAC-N), which is a part of LMAC, has overseen operations in south Lebanon and western Beqaa, under LMAC supervision.¹⁸ At the end of 2018, a new regional mine action centre, RMAC-RB, was established in the north-east of Lebanon in the village of Ras Baalbek, to oversee the mine action operations in this region.¹⁹ To a large extent LMAC has a well-functioning capacity, but, as they are army officers, the senior management of LMAC and RMAC are typically routinely rotated (every two years or so), which can hamper development and continuity in the management of the three mine action centres.²⁰ The current director of LMAC started in March 2019, replacing his predecessor who had served as director for two years.²¹

A new standing operating procedure (SOP) for LMAC was developed in 2020 and approved on 9 November 2020. The SOP specifies the roles of each section of LMAC and clarifies the responsibilities and cooperation between sections. It is hoped that this will help preserve institutional memory, assist new LMAC staff, and reduce the impact of staff rotations.²²

UN Development Programme (UNDP) personnel, funded by the European Union (EU), are also seconded to LMAC, providing support for capacity building, including transparency reporting, strategic reviews, Information Management System for Mine Action (IMSMA) database entry, community liaison, and quality assurance (QA). In 2020, there was one team of seven UNDP personnel supporting LMAC.²³

EU funding for UNDP institutional support to LMAC, which had been due to finish at the end of 2019, but which would have resulted in a gap in capacity development,²⁴ was extended. During this period, UNDP was providing expertise and support on operational efficiency, prioritisation, research into clearance in difficult terrains, and risk education for Syrian refugees.²⁵ UNDP also mobilised funds in 2020 from the Norwegian Embassy, and developed a three-year project proposal for 2020–23 in order to: assist with the strengthening of national capacity to document and prioritise clearance operations in line with Mine Action Forum recommendations; help LMAC to meet its national, regional, and international obligations and coordination functions and ensure follow-up of Mine Action Forum action points; and support LMAC in effectively communicating its results and establishing partnerships.²⁶ In April 2021, the Netherlands signed a three-year contract with UNDP for international funding to support LMAC in capacity building and institutional support.²⁷

A "Mine Action Forum" has been established in Lebanon in close partnership between LMAC and Norway. It provides an informal platform for LMAC to continue open dialogue and information sharing between the national authorities, implementing partners, and donors, on priorities and needs

for the survey and clearance of cluster munition remnants and landmines in the country.²⁸ Through the forum, the LMAA is "promoting a transparent and inclusive partnership with all HMA stakeholders".²⁹ The forum meets twice a year, with UNDP designated as the secretariat to follow up on action points and develop progress reports.³⁰ It is an example of what a "Country Coalition" under the Convention on Cluster Munitions (CCM) could look like, but in the case of Lebanon it was agreed the forum should be broadened to include landmines, and not just CMR. The Mine Action Forum in Lebanon is said to have resulted in better coordination and greater transparency as well as on enhancements to land release methodology, enshrined in the revised national mine action standards (NMAS).³¹

As of writing, the most recent Mine Action Forum was held on 22 January 2020, during which LMAC presented and discussed the new 2020–25 national mine action strategy, operational efficiencies, and a new explosive ordnance risk education (EORE) project.³² An open air Mine Action Forum meeting had been planned for November 2020, but could not take place because of COVID-19 restrictions. The meeting will take place in 2021, if the situation permits.³³

There is good coordination and collaboration between LMAC/ the RMAC and clearance operators, with the operators said to be consulted before key decisions are taken.³⁴ International clearance operators reported that an enabling environment exists for mine action in Lebanon, with no obstacles regarding visas for international staff, approval of MoUs, or the importation of equipment.³⁵

A technical working group (TWG) was established in March 2018, under the auspices of LMAC, based on recommendations of the Mine Action Forum and following the release of the revised NMAS. The TWG provides a useful forum for LMAC/the RMACs to meet collectively with clearance operators to review and discuss field issues, including implementation of revisions to the NMAS, to identify issues, and suggest further NMAS revisions and potential ways to improve operational efficiencies.³⁶ The TWG had been meeting quarterly, but due to the impact of COVID-19, TWG meetings were postponed during the first two quarters of 2020 before resuming in September 2020.³⁷

As in the previous year, Lebanon reported contributing US\$9 million annually in 2020 towards mine action in Lebanon (for both mine- and CMR-related work): to support costs associated with the running of LMAC (facilities and staff); the LAF Engineering Regiment companies working in demining (four teams, two of which work on CMR; in addition to mechanical and MDD support); risk education; victim assistance, and training. However, LMAC noted that the devaluation of the Lebanese Pound and the economic crisis Lebanon is facing will affect this amount.³⁸

A Regional School for Humanitarian Demining in Lebanon (RSHDL) was established in partnership between Lebanon and France.³⁹ The School became operational in 2017, enabling civilian and military personnel from Arab and other countries to benefit from an array of courses and workshops on non-technical survey, EOD, operational efficiency, and gender and diversity.⁴⁰

GENDER AND DIVERSITY

The gender and diversity-related policy applied at LMAC is that of the LAF military rules. According to LMAC, all its personnel are familiar with these rules and the specific provisions related to gender equality and inclusion, safeguarding, and behavioural codes.⁴¹

LMAC reported that it has taken several actions to mainstream gender in its implementation plan, including through inclusive policies, data disaggregation in risk education and victim assistance, and participation in courses at the RSHDL.⁴² In agreement with LMAC, the Geneva International Centre for Humanitarian Demining (GICHD) conducted a gender and diversity capacity assessment mission to Lebanon in July 2019. The aim was to reinforce a sustainable national capacity for gender and diversity mainstreaming in the LMAC and contribute to the achievement of gender equality and inclusion.⁴³ In August 2019, LMAC reported that it had appointed a new gender focal point, who will help mainstream gender-sensitive policies and procedures and monitor their implementation in the mine action centre and across the national programme.⁴⁴ LMAC's gender focal point participated in the Remote regional Arab Regional Cooperation Programme (ARCP) Gender Equality and Inclusion (GEI) capacity development programme held online from November 2020 to March 2021.⁴⁵

Lebanon's new National Mine Action Strategy 2020–25, approved by the LMAA in June 2020, includes considerations on gender and diversity.⁴⁶ Of the five objectives in the new strategy, the fifth states that: "The specific needs and perspective of women, girls, men and boys from all groups

of society are considered, in order to deliver an inclusive HMA [mine action] response". LMAC also acknowledges in the strategy that mine action "is a male-dominated environment and we have therefore a particular responsibility to empower women and ensure that we have a gender sensitive approach to our work".⁴⁷ According to its strategic implementation plan, LMAC is working on a draft code of conduct regarding gender, diversity, and inclusion which it planned to share with all stakeholders in 2021. Furthermore, national mine action standards will be updated no later than the end of 2022, to reflect a gender-sensitive approach and to comply with international standards.⁴⁸

Of LMAC's 175 personnel, 19 (11%) are women, a slight increase on the 16 reported for the previous year. With respect to operational roles, four women work for the operations section (double the number previously reported), one woman is a member of the non-technical survey team, and two women work in the Mine Risk Education section. With respect to managerial/supervisory level positions at LMAC, the head of the admin section is a woman.⁴⁹ The number of staff at LMAC is determined by the LAF headquarters, so LMAC has limited control over the number of women, but it consistently requests that the percentage of women be increased.⁵⁰ However, the proportion of women at LMAC is more than double the 5% average of the Lebanese armed forces and LMAC seeks to improve this ratio further.⁵¹

Humanity and Inclusion (HI), Mines Advisory Group (MAG), and Norwegian People's Aid (NPA) all reported having gender policies in place.⁵²

DanChurchAid (DCA) reported that 18% of its total staff in Lebanon are female, with women filling only 3% of managerial/supervisory positions and 9% of all operations positions.⁵³ DCA delivers gender and diversity training to its staff, which is based on the GICHD training package, and is making efforts to recruit more female staff when positions are advertised. As at July 2021, of the four recent DCA staff posts, three were filled by female staff.⁵⁴

HI disaggregates relevant mine action data by sex and age. HI also ensures that all population groups, including women and children, are consulted during its survey and community liaison activities. Of HI's total employees in Lebanon, 7% are women, but only 2% of HI managerial/supervisory positions are held by women and only 2% of its survey and clearance staff are female.⁵⁵

Prior to the organisation ceasing land release operations in Lebanon in August 2020, women had been employed in LAMINDA's clearance teams and one female staff member had been in a managerial position, as clearance team leader.⁵⁶

MAG reported that it consults women during survey and community liaison activities; that all its community liaison teams are mixed; and that its data is disaggregated by sex and age. Overall, women account for 18% of MAG's Lebanon programme, including 16% of operational roles in MAG's survey and clearance teams in Lebanon, and 13% of managerial level/supervisory positions.⁵⁷ MAG considers

a wide range of elements under diversity as part of its operations, taking into consideration the diverse community and religious background of the areas in which it works and trying to consider these aspects during recruitment, to ensure they are reflected in MAG's personnel.⁵⁸

NPA was implementing its organisational gender policy for Lebanon, based on recommendations from the GICHD. It is encouraging more women to apply for field positions through job postings and social media. NPA also conducted training in gender equality, safeguarding, and its code of conduct in 2020. As at June 2021, following restructuring due to funding losses, NPA reported that 30% of its employees are women, including 23% of employees in operational roles, 50% of support staff, and 50% of senior management.⁵⁹ NPA disaggregates data by sex and age.⁶⁰

Both UNIFIL's Troop Contributing Countries (Cambodia and China) have female deminers and team leaders and in total there are seven women (11% of the total demining personnel).⁶¹

Women, girls, boys, and men are said to be consulted during survey and community liaison activities.⁶² According to LMAC, Lebanon's baseline of contamination has been developed over many years. As per Lebanon's NMAS, non-technical survey teams consult with women, girls, boys, and men, including, where relevant, minority groups, in order to make sure all available information is included.⁶³

INFORMATION MANAGEMENT AND REPORTING

LMAC is in the process of migrating from its current version of IMSMA (New Generation) to IMSMA Core, which it hopes will help facilitate the production of clearer reports that can be translated into dashboards for stakeholders, including donors, to monitor and follow.⁶⁴ As at March 2021, the risk education data had been migrated and was due to be tested, along with the non-technical survey data in the coming months. The remaining data will be migrated once it has been confirmed that the system is operating as planned and meets LMAC's needs.⁶⁵

In the process of migrating to IMSMA Core, LMAC discovered some overlap between its contamination records, which were checked by non-technical survey teams on the ground and the database clean-up was completed in July 2020.⁶⁶ The main causes for the duplications included that Israeli booby-trap lists and some minefield records were received twice on different dates and with different names, and were therefore entered into the database as two groups of dangerous areas. In addition, areas considered as suspected and provided by the Israeli army turned out to be overlapping with Israeli-laid minefields. And finally, there was also some overlap between minefields and cluster munition strikes.⁶⁷

The GICHD also provides support to LMAC under its Information Management Capacity Development Framework and conducted IM training sessions and workshops in 2020.⁶⁸

Some clearance tasks result in a clearance output in excess of the task size originally recorded in IMSMA, often due to fade-out. LMAC has reported that the system for database entry now more accurately reflects operational data.⁶⁹ Now, any area cleared in excess of the original task size is no longer recorded as additional tasks in the database, but as "productivity".⁷⁰

Some of the information in the database may not be accurate. This is especially the case with respect to scattered/militia minefields from civil war, for which non-technical survey was conducted many years ago, with limited reliable information available. It can be challenging to gain a clear picture of what contamination was cleared by the LAF and if the related clearance documents were transferred to LMAC and are included in the information management database.⁷¹ LMAC has said that non-technical survey will be extremely important for these scattered minefields.⁷²

DCA has been using Tiramisu Information Management Tool (T-IMS) for the past three years.⁷³ MAG is in the process of launching "Survey123" software in Lebanon. It has completed the design stage and prepared training material, but training and implementation had to be postponed to mid-2021, due to the impact of COVID-19.⁷⁴ In May 2021, MAG's global IM coordinator visited the programme for two months, during which the second phase of the development of the Operations Information Management System (OMIS) was completed and training provided to all relevant operational staff. Agreement was also reached on historic data to be included in the migration. The migration and launch was planned for August 2021. MAG also discussed with LMAC the possibility of integrating reporting mechanisms between MAG's internal system and LMAC's database, which could help eliminate double reporting and reduce errors.⁷⁵

In the second half of 2020, NPA introduced the Arc-GIS programme for data collection to its information management system, which has allowed more precise monitoring and evaluation of the programme's activities, efficiency, outputs, and reporting.⁷⁶

In the Lebanon Mine Action Strategy 2020–25, and the accompanying implementation plan, LMAC states that it will initiate voluntary APMB Article 7 reporting.⁷⁷ In its Annual Report for 2020 (published in 2021), LMAC again said that it would initiate the process for voluntary reporting to the APMB.⁷⁸ However, as at June 2021, no APMB voluntary Article 7 report had yet been submitted.

PLANNING AND TASKING

In September 2011, LMAC adopted a strategic mine action plan for 2011–20.⁷⁹ The plan called for clearance of all CMR by 2016 and for completion of mine clearance outside the Blue Line by 2020. Both goals were dependent on capacity, but progress fell well short of planning targets, which were not met.

LMAC has developed a new National Mine Action Strategy for 2020–25, with support from the EU funded UNDP project, in a participatory approach with national and international implementing agencies, mine action non-governmental organisations (NGOs), UN agencies, and donors.⁸⁰ The new strategy was signed by the LMAA in June 2020. A mid-term and final external review are planned, as well as annual reporting on progress.⁸¹ LMAC has also elaborated a strategic implementation plan for 2020–25, based on the new strategy and in collaboration with implementing partners, to operationalise the new strategy with objectives, outputs, and indicators.⁸² Results from the monitoring of the strategic implementation plan would be discussed at the operational level with implementing agencies at the TWG and a group of recommendations agreed and then presented at the biannual Mine Action Forum meetings.⁸³ The implementation plan will be revised annually by LMAC, the Institutional Support Programme (UNDP at present), and in consultation with humanitarian clearance operators.⁸⁴ LMAC also plans to develop annual work plans.⁸⁵

According to LMAC, increased urbanisation; clearance of the Blue Line; spill-over from Syria creating new contamination, including IEDs; and the sudden increase in residents, have combined to result in a change to clearance priorities.⁸⁶ LMAC therefore conducted a study, the results of which have informed a new national prioritisation system, based on three

strategic categories: safety, economy, and treaty compliance. Each category contains subcategories which take operational considerations and impact into account.⁸⁷ The re-prioritisation of clearance tasks was planned to start in 2021 based on the new system and corresponding criteria. LMAC will adopt a district-by-district prioritisation approach. Large districts may also be subdivided into sub-districts depending on size.⁸⁸ LMAC planned to release 10% of contaminated districts each year.⁸⁹

HI's prioritisation of tasks is based on proximity to populated area, but mine clearance operations in north Lebanon and the Mount Lebanon area are also determined by seasonal factors: clearance of low altitude minefields during winter (October to April), and then clearance tasks above 2,000 metres begin in April and continue through the summer, depending on snow. Most of the remaining demining tasks in the area in which HI has been operating since 2011 are in contaminated cedar forests at high altitude.⁹⁰

In 2020, MAG received task dossiers and maps for minefields in Blida, Houla, Meiss El Jabal, Markaba, Amra, and Arab El Louaize on the Blue Line well ahead of deployment, which allowed it to conduct non-technical survey and prioritise these tasks for increased impact. It also allows for effective use of resources and deployment of teams.⁹¹

Prior to 2016, demining along the border with Israel had been said to depend on "political developments",⁹² but the Lebanese government subsequently took the decision to initiate larger-scale, planned clearance on the Blue Line.⁹³ Clearance by humanitarian demining operators, which began in November 2016,⁹⁴ was still ongoing as of writing.

LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

Lebanon developed its first NMAS in 2010.⁹⁵ In 2017, LMAC revised and harmonised national standards with IMAS and added a number of new modules.⁹⁶ The revised NMAS, formally approved in March 2018 and made effective from 1 January 2019, have a solid focus on land release and evidence-based decision-making, in line with the IMAS, and based on recommendations and analysis of operational data. Notable enhancements included reduction of the required clearance depth from 20cm to 15cm; revision of fade-out specifications for pattern minefields, and enhancements in how rapid response tasks are addressed and recorded.⁹⁷

Further updates were made to the NMAS in late 2019 and a full review of the standards was completed at the beginning of 2020⁹⁸ and released to implementing partners in July 2020.⁹⁹ These included the introduction of a new NMAS (07.14) on Risk Assessment, and a new standard (09.31) on

improvised explosive device (IED) Disposal (IEDD), which were adopted in March 2020.¹⁰⁰ With regard to technical survey, the NMAS no longer specifies a minimum percentage of area over which technical survey must be conducted, which permits LMAC to reduce technical survey when appropriate, especially on the Blue Line minefields and for CMR.¹⁰¹ The NMAS also allows for areas under full clearance to be reduced (or in part reduced), based on information gathered during clearance, as well as for the original task boundaries to be changed based on experience during clearance. Changes were also made to the NMAS on demolitions.¹⁰²

Operators now have an opportunity to discuss specific land release considerations with LMAC for assigned clearance tasks, which arise during the pre-clearance assessment stage of operations. Such discussions might result in

the refining of the task size or approved land release specifications (e.g. use of technical survey, for all or part of the task, rather than full clearance).¹⁰³

At present, however, technical and non-technical survey activities are still not a routine part of the toolbox for all NGO operators for the release of tasks.¹⁰⁴ Instead, non-technical survey is assigned by LMAC, and a decision on the need for technical survey is based on the recommendations resulting from the results of non-technical survey. NGOs can also request permission from LMAC to conduct non-technical survey and technical survey.¹⁰⁵ This is particularly relevant to hazardous areas in the north-east that contain improvised mines.¹⁰⁶ International NGOs see collaboration between LMAC and clearance operators on application of evidence-based non-technical survey and technical survey, where needed, as being essential to targeted clearance.¹⁰⁷

Participants at the Mine Action Forum meeting on 22 January 2021 agreed on the need to strengthen the use of technical survey and analyse existing methods and tools to identify areas for potential improvement in operational efficiency.¹⁰⁸ As at May 2021, further updates to the NMAS on technical survey, battle area clearance (BAC), and minefield clearance were discussed in the TWG in 2021, shared with operators for feedback, and subsequently adopted by LMAC. LMAC has requested that operators review their SOPs in conformity with the changes made.¹⁰⁹

An external international consultant was contracted by LMAC in 2020, with UNDP's support and EU funding, to conduct a study on operational efficiency.¹¹⁰ The outcomes of the study recommended a comprehensive and in-depth harmonised understanding of, and training on, land release across stakeholders, with an emphasis on the importance of the use of evidence-based technical survey before moving into clearance.¹¹¹ Training was subsequently conducted in April 2021.¹¹² National land release standards need to be revised accordingly. Recommendations included allowing a more flexible marking system based on the NMAS (for CMR); extending the time slot for demolitions (for mines and CMR); and improving and expanding the role of animal detection systems (ADS) (for mines and CMR).¹¹³ The study also noted that the NMAS generally places heavy limitations on how mine action operators are able to operate and that this drastically affects efficiency. This was particularly evident in the north-east, where full clearance has to be undertaken although more appropriate methods of land release could be used.¹¹⁴

A final review of the recommendations made by LMAC's contracted consultant and proposed by mine action operators was scheduled for January 2021, but as at time of writing had been postponed due to COVID-19.¹¹⁵ LMAC planned to test the recommendations of the operational efficiency study in 2021 and apply them across the whole sector.¹¹⁶ As at June 2021, LMAC had updated its strategic implementation plan to reflect the increased focus on technical survey.¹¹⁷

Mined areas in pattern minefields/along the Blue Line have been reclassified into high-threat hazardous area (HTHA) and low-threat hazardous area (LTHA). The use of technical survey, instead of full clearance, is permitted for some parts of CHAs based on discussion and agreement between LMAC operations officers and clearance operators.¹¹⁸ In its annual report for 2020, LMAC said that the TWG has agreed that in minefields on the Blue Line in which mines are laid in an identifiable pattern, the area outside the rows of mines is LTHA that can be technically surveyed.¹¹⁹ International

operators confirmed that the NMAS had been amended in April 2021 with regard to technical survey, including in LTHA.¹²⁰ Previously, full clearance had been required for 15 metres from the mine rows, but in the revised NMAS this has been changed to a required fade-out of five metres from the mine rows, and technical survey from the edge of the five-metre fade-out up to the minefield fence, for minefields in which the lanes have not been disrupted.¹²¹ If there is no fence, 10 metres of technical survey is required from the edge of the 5-metre fade-out. Fade-out for anti-vehicle mines has been reduced from 20 metres to 10.¹²²

Based on empirical evidence, international operators have not found mines further than five metres from the outer mine row, in minefields in which the lanes have not been disturbed.¹²³ Arguably therefore, technical survey beyond the five-metre fade-out should only be required if there is sufficient evidence to suggest mines have migrated from the mine rows. However, while technical survey is still required beyond the five metres from the outer mine row, the amended NMAS now provides for improved flexibility in the percentage of area searched as part of technical survey. Technical survey requirements are now being decided more in line with operational observations and decisions are being made collaboratively with RMAC, with good effect.¹²⁴

Minefields in areas outside of the Blue Line, for example in the north-east and in Mount Lebanon, will be studied on a case-by-case basis, to determine where full clearance is required and where technical survey must be applied.¹²⁵ In the north-east, technical survey, including with MDDs or using large-loop detectors, could be highly efficient in addressing a low level of threat dispersed over a large area.¹²⁶ HI reported that following discussions in the TWG, the changes made to NMAS with respect to technical survey will improve efficiency and accelerate the clearance process, in particular with respect to addressing scattered minefields.¹²⁷

MAG believes the daily time window for demolitions, and the number of items permitted to be destroyed in each demolition, negatively impact the number of anti-personnel mines disposed of daily.¹²⁸

NPA believes changes could be considered to the procedure for missing mines in patterned minefields along the Blue Line. Many mines are missing due to water and soil-related movement or detonation by animals and the current "missed-mine" protocol is resource-intensive.¹²⁹ NPA believed a study of the empirical evidence would be useful, including how many missed mine drills each agency has performed and how many mines were discovered as a result.¹³⁰ In 2019, NPA began to consider using Ground Penetrating Radar (GPR)-equipped detectors as a solution and was planning to arrange a potential trial of United Nations Mine Action Service (UNMAS)-owned dual sensor equipment in 2020 to conduct missed-mine checks.¹³¹ COVID-19 lockdowns and evacuation of relevant UNMAS personnel, resulted in a delay of the planned trial in 2020. As at July 2021 NPA had received the detectors from UNMAS and was planning to trial them, and if successful, seek LMAC's approval to use the detectors in place of full excavation when there are missing mines.¹³² At the same time, following a TWG meeting in early 2021 in which international NGOs highlighted that missing mine excavations had not resulted in any missing mines being located, there has been increased flexibility from RMAC with regard to the "missing mine" drill. RMAC officers have permitted some of NPA's requests not to conduct the drill where there was evidence that the mine had been moved (and located nearby) or that it was previously detonated.¹³³

NPA also recommends that LMAC continues to review its requirement for "metal-free" in the north-east, with a view to enhancing clearance efficiency while also maintaining safety.¹³⁴ MAG also said that the mandatory metal-free rule for the areas which have already been cleared, but which need to be re-checked for metal debris after demolitions, negatively impacted efficiency.¹³⁵

OPERATORS AND OPERATIONAL TOOLS

In 2020, manual mine clearance was conducted by international operators DCA, HI, LAMINDA, MAG, and NPA, along with the Engineering Regiment of the LAF. In addition, from June 2020, UNIFIL began conducting clearance for humanitarian purposes for the first time, in addition to its regular demining operations for demarcation purposes on the Blue Line.

The LAF Engineering Regiment has two BAC teams. A further three Engineering Regiment companies conduct rapid response call-outs. In addition, each deployed Combat brigade company has its own combat engineering company which can also conduct rapid-response call-outs.¹³⁶ The LAF has seven MDD teams¹³⁷ for technical survey and for use as a secondary asset supporting clearance of mined areas. Through the Engineering Regiment, LMAC provides mechanical assistance to clearance operators that lack this capacity.¹³⁸

Table 2: NGO Operational clearance capacities deployed in 2020¹³⁹

Operator	Manual teams	Total clearance personnel*	Dogs and handlers	Machines**	Comments***
DCA	3	24	0	0	Combined mine and BAC capacity.
HI	3	24	0	0	Clearance personnel also conduct technical survey when required.
LAMINDA	2	N/K	N/K	N/K	LAMINDA ceased land release operations in Lebanon in August 2020. ¹⁴⁰
MAG	7	70	0	12	This represents six full teams and one smaller team. LMAC reported MAG as having eight mine clearance teams, most likely splitting the six large teams into subteams.
NPA	7	18	0	0	Clearance personnel also conduct technical survey when required. LMAC reported NPA as having 8 manual mine clearance teams. NPA reported it had three teams on minefields along the Blue Line and four more manual clearance teams operating on IED tasks in north-east Lebanon, which also worked on CMR tasks.
UNIFIL	2	124	0	1	The demining machine is an armed excavator which can be used as a primary tool (using the bucket attachment for excavating and sifting) or for area confirmation or reduction (using the rotary attachment).
Totals	24	260	0	13	

* Clearance personnel may also conduct technical survey. ** Excluding vegetation cutters and sifters. *** Clearance teams also work on technical survey tasks. N/K = not known.

In addition, in 2020, clearance capacity was also provided by two UNIFIL Troop Contributing Countries, Cambodia and

China. Operational capacities and capabilities of UNIFIL are determined by operational need. UNIFIL capacity in 2020 remained the same as the previous year and comprised five manual clearance teams, two EOD teams, and one mechanical team, totalling 124 persons in total. Capacity was expected to remain the same in 2021. UNMAS provided refresher training, validation of the teams, and QA during UNIFIL demining operations in 2020. UNMAS also carries out confirmatory training with UNIFIL demining units when they rotate into the country.¹⁴¹

UNIFIL was established in 1978¹⁴² in order to confirm the withdrawal of Israeli forces from southern Lebanon (which occurred in 2000); restore international peace and security; and assist the Government of Lebanon to re-establish its authority in the area.¹⁴³ The primary task of UNIFIL mine clearance teams has been to clear access lanes through minefields in order to visibly demarcate the 118km-long Blue Line. Historically, UNIFIL has not conducted clearance on the Blue Line for humanitarian purposes but only to facilitate placement of markers by clearing three-metre-wide lanes into mined areas,¹⁴⁴ and also to clear mines close to UNIFIL posts or which pose a danger to UNIFIL patrols. However, in a positive development, on 30 January 2020, UNIFIL and LMAC signed an MoU on Humanitarian Demining, and planned to work together, with UNIFIL helping the LAF/LMAC clear areas contaminated by both mines and unexploded ordnance (UXO).¹⁴⁵ According to LMAC, UNIFIL Engineering Units subsequently started humanitarian demining in June 2020, with two teams.¹⁴⁶ As per the MoU, LMAC joined UNMAS in the accreditation of the UNIFIL teams and QA visits. The total number of visits executed in 2020 was 39, and the number of "unacceptable" reports was two.¹⁴⁷

With respect to non-technical survey capacity, in 2020, there were five non-technical survey teams deployed for both mines and CMR: LMAC had two teams (totalling four personnel);¹⁴⁸ Humanity and Inclusion (HI) had one team of three personnel (one team leader, one surveyor, and one driver/surveyor);¹⁴⁹ and MAG had one team of two personnel.¹⁵⁰

National operator LAMINDA ceased survey and clearance operations in Lebanon in August 2020, due to the economic situation in Lebanon and the inability to fund overhead expenses.¹⁵¹

HI's demining personnel decreased from four clearance teams in 2019 to three teams in 2020, due to reduced funding, but it expected clearance capacity to remain constant in 2021.¹⁵² MAG's EU grant ended on 31 January 2021, resulting in a reduction of one multi-task team in the north-east, and

MAG's UK Foreign, Commonwealth & Development Office (FCDO) grant ended on 31 March 2021, reducing capacity by 2.5 teams in the South.¹⁵³ Likewise, due to large and abrupt funding cuts at the start of 2021 (UK FCDO, EU, and United States (US)) and depending on the success of new fund applications, major changes were expected in the number of NPA personnel in Lebanon 2021. NPA will no longer operate its base in north-east Lebanon as a result of these funding cuts, and as at June 2021, NPA had lost 51 operations staff due to the funding losses.¹⁵⁴

NPA has moved to a multi-task approach, with all deminers, team leaders, and team supervisors trained to address all explosive ordnance types in Lebanon, which has enabled NPA to respond to changing priorities and operational constraints. This has been helpful in mitigating the impact of COVID-19 disruptions, such as reassigning deminers between mine and CMR tasks in the event the site supervisor tests positive for COVID-19.¹⁵⁵

In Lebanon, machines are mostly used as secondary assets to support clearance teams (e.g. for ground preparation, rubble removal, or for fade-out); in areas where manual clearance is difficult; and for technical survey and LTHA.¹⁵⁶ Often, however, the terrain is not suitable for machines. In its annual report for 2020, LMAC said the role of machines, including strengths and limitations, had not been fully explored, but there was evidence to suggest a 50% increase in efficiency when machines are deployed in the fade-out zone on the Blue Line.¹⁵⁷ DCA reported a significant increase in release of mined areas in 2020 compared to 2019, due to the deployment of a mechanical asset (DCA mini excavator, LAF excavator).¹⁵⁸

MAG introduced new technologies, which depending on funding could be deployed in 2021, such as the procurement of a new mechanical asset, GCS-200 mini flail, which will be deployed predominantly on the Blue Line to conduct technical survey in the areas between anti-personnel and anti-vehicle minefields. The use of the GCS-200 machine is expected to increase the area reduction in suspected hazardous areas and efficiently define high-threat areas.¹⁵⁹

As part of non-technical survey on the north-east border of Lebanon, contaminated during spill-over of the Syrian conflict in 2014–17, drones were used for the first time, and proved very helpful in helping inform survey efforts according to LMAC.¹⁶⁰

At present, the NMAS restrict the use of the explosive detection dog (EDD) team operations to technical survey, but NPA believes the EDD team could also be used in clearance.¹⁶¹

DEMINER SAFETY

There was one demining accident in 2020, during which a female DCA deminer was injured by a N4 anti-personnel mine during clearance operations in South Lebanon in Alma Shaab village on the Blue Line.¹⁶² DCA conducted an internal investigation and LMAC conducted an external investigation, and both investigations concluded that there had been no breach of NMAS.¹⁶³ DCA did, however, amend its SOP to help ensure this sort of incident would be further mitigated and the impact would be much less if this type of accident occurred again. DCA provided psycho-social support to all teams. Lessons identified were shared with other operators during the TWG meeting.¹⁶⁴

LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

LAND RELEASE OUTPUTS IN 2020

A total of 673,449m² of mined area (i.e. area suspected or confirmed to contain anti-personnel mines) was released in 2020, of which 347,109m² was cleared, 226,562m² was reduced through technical survey, and 99,778m² was cancelled through non-technical survey.

A total of 41,241m² of unrecorded anti-personnel mine contamination was added to the database in 2020.¹⁶⁵

SURVEY IN 2020

In 2020, 99,778m² of mined area was cancelled through non-technical survey and 226,562m² was reduced through technical survey (see Tables 3 and 4).¹⁶⁶ This is a reduction compared to the 204,343m² of mined area cancelled through non-technical survey in 2019 and an increase on the 109,191m² reduced through technical survey in 2019.¹⁶⁷

A total of 41,241m² of unrecorded anti-personnel mine contamination was added to the database in 2020.¹⁶⁸

HI conducted non-technical survey activities for the first time in 2020, surveying three previously unrecorded mined areas in the cedars reserve of Hadath El Jebbeh in north Lebanon, during which it identified 10,800m² of contaminated area.¹⁶⁹

MAG increased the amount of mined area it reduced through technical survey in 2020, compared to the previous year, due to use of technical survey on the Blue Line. MAG also received approval to commence non-technical survey in 2020, specifically in Chouf (Mount Lebanon), leading to cancellation outputs in 2020, compared to none in 2019.¹⁷⁰

Table 3: Cancellation through non-technical survey in 2020¹⁷¹

Province	Operator	Area cancelled (m ²)
South Lebanon	MAG	2,424
Mount Lebanon	LMAC and MAG	94,354
North Lebanon	HI	3,000
Total		99,778

Table 4: Reduction through technical survey in 2020¹⁷²

Operator	Area reduced (m ²)
DCA	6,629
HI	16,819
MAG	188,719
NPA	14,395
Total	226,562

CLEARANCE IN 2020

A total of 347,109m² of mined area was cleared in Lebanon in 2020 (209,955m² by demining NGOs and UNIFIL, and 137,154m² by LAF), destroying in the process a total of 16,234 anti-personnel mines (14,227 by demining NGOs and UNIFIL; and 2,007 by the LAF, including 27 during EOD spot tasks), 28 anti-vehicle mines, and 9,041 items of other UXO (see Table 5).¹⁷³

Total clearance in 2020 was a decrease on the 0.48km² of mined area cleared in 2019 (0.36km² by demining NGOs and 0.12km² by LAF).¹⁷⁴

LMAC has its own category for IED tasks and they are not registered as mine clearance. However, any victim-activated IEDs discovered are included in the total of anti-personnel mines destroyed.¹⁷⁵

Table 5: Mine clearance in 2020¹⁷⁶

Operator	Area cleared (m ²)	AP mines destroyed	AV mines destroyed	UXO destroyed
DCA	33,261	2,378	0	15
HI	68,497	68	0	13
MAG	65,333	7,398	3	39
NPA	23,830	3,123	0	8
LAMINDA	12,955	385	0	23
LAF	137,154	2,007*	24	8,943**
UNIFIL	6,079	875	1	0
Totals	347,109	16,234	28	9,041

AP = Anti-personnel AV = Anti-vehicle UXO = unexploded ordnance

* Includes 27 anti-personnel mines destroyed by the LAF combat engineers during rapid response call-outs across Lebanon.

** UXO destroyed across all LAF operations, including BAC.

HI reported releasing five mined areas, totalling 23,695m²

in which no anti-personnel mines were found. Of the five

tasks, two were cleared and three were subject to technical survey.¹⁷⁷ DCA reported clearing four mined areas, totalling 4,652m² in which no anti-personnel mines were found. The areas in question had been tasked to DCA based on evidence of incidents occurring or items being found and subsequently destroyed by LMAC.¹⁷⁸ MAG reported that it cleared a total of 33,549m² of mined area in 2020 which was found not to contain anti-personnel mines.¹⁷⁹ NPA reported that none of the tasks cleared in north-east Lebanon (totalling 11,606m²) proved to contain explosive devices, including anti-personnel mines of an improvised nature.¹⁸⁰ Many of MAG and NPA's clearance tasks in 2020 had been generated as CHAs, based on explosive IEDs that had been previously found and destroyed by the LAF, and then no further IEDs were subsequently found by the operators during clearance. To address this, and increase operational efficiency, the NMAS was adjusted in 2021 to allow instead for technical survey of CHAs. MAG and NPA are discussing with LMAC/RMAC being permitted to conduct technical survey in 2021, prior to clearance.¹⁸¹

Due to the nature of the militia minefields in north Lebanon, there is sometimes a lack of clearly defined CHAs. Accordingly, in certain areas, additional non-technical survey and technical survey could help to define areas of actual contamination more accurately. Unfortunately, deployment of MDDs or demining machinery to help facilitate survey and clearance in north Lebanon is limited in scope, due to the climate and terrain of many of the tasks in the region.¹⁸² NPA underscored the importance of the use of evidence-based non-technical survey and technical survey to more accurately define areas of actual mine contamination prior to initiating clearance, in particular in areas suspected to be contaminated by improvised anti-personnel mines in north-east Lebanon.¹⁸³

PROGRESS TOWARDS COMPLETION

According to Lebanon's Statement as an observer at the Fourth Review Conference of the APMBC in Oslo in November 2019, Lebanon's national mine action policy affirms its aspiration to become a State Party to the APMBC. The Minister of Defence, who also heads the LMAA, sent a letter to the Ministry of Foreign Affairs stating that the Ministry of Defence has no objections to Lebanon acceding to the Treaty. LMAC will work in the spirit of the APMBC and LMAC also asserts that it will implement the Oslo Action Plan, adopted at the Fourth Review Conference of the APMBC.¹⁹³

Clearance of mined areas was originally expected to be completed by the end of 2020, in accordance with the 2011–20 national strategy, but meeting the target was contingent on deployment of considerable resources: 125 manual clearance teams (45 for minefields excluding the Blue Line and 80 for the Blue Line), 2 mechanical teams, and 9 two-strong MDD teams.¹⁹⁴ Actual mine clearance capacity was far lower and progress against the strategy fell well behind schedule.

Lebanon's new National Mine Action Strategy 2020–25 sets out annual targets for the next six years. LMAC expects Lebanon to be free from known mined areas in ten years, with the application of efficient land release methodology and subject to securing the necessary funding.¹⁹⁵ However, this looks to be very ambitious, considering the extent of the remaining mined area (18.23km²) and annual mine clearance

The CHAs tasked by LMAC to clearance operators do not include obligatory fade-out distances, which can considerably increase the overall size of the task.¹⁸⁴

In 2020, LMAC said that on average NGOs lost 46 working days because of the impact of the COVID-19 pandemic, compared to the 2020 implementation plan.¹⁸⁵ Despite new SOPs on safe behaviour, positive cases resulted in multiple demining personnel being required to self-isolate.¹⁸⁶ HI's operations were suspended between mid-March and mid-May 2020, due to national lockdowns. HI prepared a new SOP containing instructions on precautionary measures to avoid the spread of COVID-19.¹⁸⁷ DCA said COVID-19 impacted negatively on its land release operations and resulted in 33 working days (across mine and CMR operations) being lost in 2020. DCA worked with LMAC to acquire an exemption to lockdown movement, which meant its staff could operate while using its vehicles. Some non-technical survey activities were conducted online/conducted in person with less people in attendance due to social distancing and restrictions on meeting sizes. DCA made up some lost days by weekend working.¹⁸⁸ According to MAG, the 42 working days it lost due to COVID-19 related lockdown periods and curfew were the equivalent of around 45,000m² of land release.¹⁸⁹ NPA reported 40 operational days lost due to COVID-19 related lockdowns and said that operational capacity was often further reduced due to individual staff contracting COVID-19 and needing to isolate.¹⁹⁰

As in the previous year, roadblocks due to civil unrest also prevented teams from getting to their site on some days.¹⁹¹ DCA, HI, MAG, and NPA reported that the political unrest did not, however, impact their landmine operations in 2020.¹⁹²

rates of considerably less than 1km² per year, with a total of only 2.3km² of mined area cleared in the last five years (see Table 6).

It will take at least a decade for Lebanon to become mine-free. However, progress in land release is expected to be accelerated by adoption of better land release procedures since 2018, as enshrined in the revised NMAS. Crucially, LMAC's demonstrated commitment to enhance the use of non-technical and technical survey should help to cancel or reduce areas more efficiently.¹⁹⁶

Rocky and forested terrain continued to pose a challenge to demining operations, in addition to lack of minefield records for much of the contamination (especially in the North).¹⁹⁷

The economic and political crises have led to hyper-inflation, currency collapse, and problems with already strict and reducing budgets. This has resulted in supplies being more expensive, fuel being harder to come by, and protests and roadblocks hampering the security situation. The impact of this is particularly challenging in respect to funding from some donors which do not fund the full cost of operations.¹⁹⁸

In 2020, LMAC said an average of 46 working days were lost by operators because of the impact of the COVID-19 pandemic.¹⁹⁹ The COVID-19 pandemic impacted the whole of Lebanon's mine action programme and all operations were

suspended from 12 March 2020 for more than two months. After the relaxation of general mobilisation measures by the government of Lebanon, a TWG meeting was held and the phases for restarting operations and necessary safety measures relating to COVID-19 were developed and adopted. Operations resumed in early May 2020, under the new guidelines and safety measures, and as at July 2020 NGO clearance operators were fully operational.²⁰⁰ Furthermore, each new positive COVID-19 case resulted in colleagues from their clearance team needing to self-isolate, further impacting operational output.²⁰¹

Table 6: Five-year summary of AP mine clearance

Year	Area cleared (km ²)
2020	0.35
2019	0.48
2018	0.39
2017	0.51
2016	0.55
Total	2.28

PLANNING FOR RESIDUAL RISK AFTER COMPLETION

According to LMAC, the strategic implementation plan, which will support the new National Mine Action Strategy 2020–25, will address an exit strategy and long-term risk management.²⁰²

LMAC provided summary information on its plans regarding an exit strategy with respect to addressing remaining cluster munition remnant contamination, and residual risk after CCM Article 4 fulfilment,²⁰³ though further details have yet to be provided on an exit strategy and long-term risk management strategy for mined areas.

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- 132 Email from Valerie Warmington, NPA, 23 July 2021.
- 133 Ibid.
- 134 Emails from Valerie Warmington, NPA, 28 May 2020; and Hala Amhaz, NPA, 17 March 2021.
- 135 Email from Sylvain Lefort, MAG, 24 March 2021.
- 136 LMAC, "Annual Report 2019", p. 11.; emails from Lt.-Col. Fadi Wazen, LMAC, 19 March 2020 and 15 June 2021; and Article 7 Report (covering 2019), Form I.
- 137 LMAC, "Annual Report 2019", p. 13.
- 138 Ibid., p. 11; and email from Brig.-Gen. (ret.) Badwi El Sakkal, LAMINDA, 18 March 2020.
- 139 Emails from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021; Matthew Benson, DCA, 24 May 2021; Danila Zizi, HI, 15 July 2021; Sylvain Lefort, MAG, 24 March 2021; Hala Amhaz, NPA, 17 March 2021; Lt.-Col. (CHN) Yakun Zhang, J3 Combat Engineer Section, UNIFIL Force HQ, 4 August 2021; and Hassan Nouredine, J3 Combat Engineer Section, UNIFIL Force HQ, 16 August 2021.
- 140 LMAC, "Annual Report 2020", p. 8.
- 141 Email from Lt.-Col (CHN) Yakun Zhang, UNIFIL Force HQ, 4 August 2021.

- 142 UN Security Council Resolutions 425 (1978) and 426 (1978).
- 143 UNIFIL, "UNIFIL Mandate", at: <http://bit.ly/2YpCwuD>.
- 144 Presentation by Maj. Pierre Bou Maroun, RMAC, Nabatiyeh, 4 May 2012; and emails from Henri Francois Morand, UNMAS, 2 October 2015 and 18 September 2017.
- 145 Emails from Lt.-Col. Zengliang Zhou, UNIFIL, 20 April 2020; and Lt.-Col. Fadi Wazen, LMAC, 19 March 2020.
- 146 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021; and LMAC, "Annual Report 2020", p. 17.
- 147 LMAC, "Annual Report 2020", p. 17.
- 148 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 149 Email from Danila Zizi, HI, 15 July 2021.
- 150 Email from Sylvain Lefort, MAG, 24 March 2021. LMAC reported MAG as having three non-technical survey teams. Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 151 LMAC, "Annual Report 2020", p. 8; and email from Lt.-Col. Fadi Wazen, LMAC, 15 June 2021.
- 152 Email from Danila Zizi, HI, 15 July 2021.
- 153 Emails from Sylvain Lefort, MAG, 24 March and 27 May 2021.
- 154 Emails from Hala Amhaz, NPA, 15 March 2021; and Valerie Warmington, NPA, 2 June 2021.
- 155 Email from Hala Amhaz, NPA, 15 March 2021.
- 156 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; Samuel Devaux, HI, 4 April 2017; Dave Willey, MAG, 25 April 2017; and Lt.-Col. Fadi Wazen, LMAC, 5 April 2019.
- 157 LMAC, "Annual Report 2020", p. 36.
- 158 Email from Matthew Benson, DCA, 24 May 2021.
- 159 Email from Sylvain Lefort, MAG, 24 March 2021.
- 160 Presentation by Lt.-Col. Fadi Wazen, LMAC, at the Regional School for Humanitarian Demining in Lebanon (RHDSL), Beirut, 8 April 2019.
- 161 Email from Hala Amhaz, NPA, 17 March 2021.
- 162 Emails from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021; and Matthew Benson, DCA, 24 May 2021.
- 163 Ibid.
- 164 Email from Matthew Benson, DCA, 24 May 2021.
- 165 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 166 Ibid. In Lebanon the term "Mined Area" is used to denote dangerous areas entered into the database when the first impact survey was executed, which were not accessible, and where the type of hazard was not identified. However, for the purposes of this report, mined area refers to areas suspected or confirmed to contain anti-personnel mines.
- 167 Email from Lt.-Col. Fadi Wazen, LMAC, 19 March 2020.
- 168 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 169 Email from Danila Zizi, HI, 15 July 2021.
- 170 Email from Sylvain Lefort, MAG, 24 March 2021.
- 171 LMAC, "Annual Report 2020", pp. 11 and 15; and emails from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021. There was a discrepancy between data reported by LMAC and what was reported by HI and MAG. HI reported cancelling 3,999,535m² of mined area in north Lebanon. The amount of cancelled area reported by HI included both dangerous areas (DAs) and minefields, while cancelled area reported by LMAC only included minefields (emails from Danila Zizi, HI, 15 and 27 July 2021). MAG reported cancelling 35,831m² of anti-personnel mined area in Chouf (Mount Lebanon) in 2020. MAG also reported cancelling a further 400m² of anti-vehicle mined area in Ras Baalbek (north-east Lebanon) (email from Sylvain Lefort, MAG, 24 March 2021). The reason for the discrepancies between LMAC and operator data may result from errors when data are transferred by the RMAC to LMAC.
- 172 LMAC, "Annual Report 2020", pp. 10 and 15; and emails from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021; Hala Amhaz, NPA, 17 March 2021; Matthew Benson, DCA, 24 May 2021; and Danila Zizi, HI, 15 July 2021. There was a discrepancy between data reported by LMAC and what was reported by MAG. MAG reported reducing 53,472m² of mined area on the Blue Line and 2,220m² in Ras Baalbek (north-east Lebanon) in 2020 (email from Sylvain Lefort, MAG, 24 March 2021). The reason for the discrepancies between LMAC and operator data may be due to errors when data are transferred by the RMAC to LMAC.
- 173 Emails from Lt.-Col. Fadi Wazen, LMAC, 19 March 2020; and LMAC, "Annual Report 2019", p. 7.
- 174 Email from Lt.-Col. Fadi Wazen, LMAC, 19 March 2020; and LMAC, "Annual Report 2019", p. 7.
- 175 Email from Lt.-Col. Fadi Wazen, LMAC, 5 August 2021.
- 176 LMAC, "Annual Report 2020", pp. 8 and 9; and emails from Lt.-Col. Fadi Wazen, LMAC, 15 March, 13 July, and 5 August 2021; Danila Zizi, HI, 15 July 2021; and Hassan Noureddine, J3 Combat Engineer Section, UNIFIL Force HQ, 16 August 2021. During its clearance in 2020, HI found six victim-activated improvised mines, consisting of a fuse, mortar, and trip-wire. The clearance totals in LMAC's Annual Report 2020 accidentally and erroneously excluded the 68,497m² and 68 anti-personnel mines destroyed by HI. Mine Action Review has included these in the clearance totals. In addition, there were some discrepancies between data reported by LMAC and what was reported by DCA, MAG, and NPA. DCA reported that it cleared a total of 150,448m² in 2020 on the Blue Line (south Lebanon) and in Baabda District (Mount Lebanon), with the destruction of a total of 2,080 anti-personnel mines. The discrepancy may be because DCA includes confirmation and mechanical asset data, whereas LMAC does not (emails from Matthew Benson, DCA, 24 May and 23 July 2021). MAG reported that it cleared a total of 114,066m² in 2020 on the Blue Line and in Rass Baalbeck, with the destruction of a total of 7,363 anti-personnel mines, 3 anti-vehicle mines, and 42 other items of UXO. The reason for the discrepancies between LMAC and operator data may be due to discrepancies when data is transferred by the RMAC to the LMAC (emails from Sylvain Lefort, MAG, 24 March and 23 July 2021). NPA reported that it cleared 23,830m² in Nabatiyeh in 2020, with the destruction of 3,123 anti-personnel mines, but that it also cleared a further 11,606m² of area contaminated by anti-personnel mines of an improvised nature (victim-activated IEDs), although no devices were discovered. The explanation for some of the discrepancies between LMAC and NGO clearance data is likely related to LMAC not including IED clearance as mine clearance (emails from Hala Amhaz, NPA, 17 March 2021 and Valerie Warmington, NPA, 23 July 2021; and Lt.-Col. Fadi Wazen, LMAC, 5 August 2021).
- 177 Emails from Danila Zizi, HI, 15 and 27 July 2021.
- 178 Emails from Matthew Benson, DCA, 24 May and 23 July 2021.
- 179 Email from Sylvain Lefort, MAG, 24 March 2021.
- 180 Email from Hala Amhaz, NPA, 17 March 2021.
- 181 Emails from Sylvain Lefort, MAG, 24 March 2021; and Valerie Warmington, NPA, 23 July 2021.
- 182 Interview with Chris Chenavier, HI, Toulou, 18 April 2016.
- 183 Email from Hala Amhaz, NPA, 17 March 2021.
- 184 Interview with Chris Chenavier, HI, Toulou, 18 April 2016.
- 185 Emails from Lt.-Col. Fadi Wazen, LMAC, 15 March and 15 June 2021.
- 186 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 187 Email from Danila Zizi, HI, 15 July 2021.
- 188 Email from Matthew Benson, DCA, 24 May 2021.
- 189 Email from Sylvain Lefort, MAG, 24 March 2021.
- 190 Emails from Hala Amhaz, NPA, 15 and 17 March 2021.
- 191 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 192 Emails from Matthew Benson, DCA, 24 May 2021; Danila Zizi, HI, 15 July 2021; Sylvain Lefort, MAG, 24 March 2021; and Hala Amhaz, NPA, 15 and 17 March 2021.
- 193 LMAC, Lebanon Mine Action Strategy 2020-25, signed June 2020, p. 4; and LMAC, "Plan for the Implementation and Monitoring of the LMAP Strategy (2020-2025)", p. 5.
- 194 LMAC, "Lebanon Mine Action Strategy 2011-2020", September 2011, pp. 16 and 17.
- 195 Emails from Lt.-Col. Fadi Wazen, LMAC, 19 March and 22 July 2020; and 15 March 2021; LMAC, "Annual Report 2020", p. 31; and LMAC, "Plan for the Implementation and Monitoring of the LMAP Strategy (2020-2025)", p. 9.
- 196 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; and emails from Craig McDiarmid, NPA, 17 April 2018; and Dave Wiley, MAG, 27 April 2018.
- 197 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 198 Email from Matthew Benson, DCA, 24 May 2021.
- 199 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 200 Emails from Lt.-Col. Fadi Wazen, LMAC, 22 July 2021; Sylvain Lefort, MAG, 23 June 2020; and Brig.-Gen. (ret.) Badwi El Sakkal, LAMINDA, 22 June 2020.
- 201 Email from Lt.-Col. Fadi Wazen, LMAC, 15 March 2021.
- 202 Email from Lt.-Col. Fadi Wazen, LMAC, 19 March 2020.
- 203 LMAC, "Annual Report 2020", p. 31.