

## KEY DEVELOPMENTS

In March 2018, the Lebanon Mine Action Center (LMAC) released its revised National Mine Action Standards (NMAS), which incorporated significant and welcome improvements to its accepted methodology for survey and clearance of anti-personnel mines. These included, among others, reduction of the required clearance depth from 20cm to 15cm and adjustments to the fade-out specifications for clearance in pattern minefields. Furthermore, Mines Advisory Group (MAG) and Norwegian People's Aid (NPA) were tasked to conduct non-technical survey in 2018, which previously had been executed mainly by the Lebanese Armed Forces (LAF).

## RECOMMENDATIONS FOR ACTION

- Lebanon should accede to the Anti-Personnel Mine Ban Convention (APMBC) as a matter of priority.
- Despite not yet being a State Party to the APMBC, Lebanon has obligations under international human rights law to clearance landmines in areas under its jurisdiction or control as soon as possible.
- Wherever possible, non-technical survey and technical survey should be used to more accurately define areas of actual mine contamination. This would help to more accurately establish a national baseline of mine contamination.
- LMAC should review empirical data from clearance operations on the Blue Line, and, in consultation with operators and partners, assess whether the required fade-out distance on the Blue Line can be further reduced to enhance efficiency.
- Where appropriate, LMAC should consider using demining machinery and mine detection dogs (MDDs) as primary as well as secondary clearance assets.
- The integration and consolidation of the LMAC and Regional Mine Action Center (RMAC) databases and servers should be completed as soon as possible.

## ANTI-PERSONNEL MINE CONTAMINATION

At the end of 2018, Lebanon had more than 19.6km<sup>2</sup> of confirmed mined area, including the Blue Line, across 1,399 confirmed hazardous areas (CHAs) (see Table 1).<sup>1</sup> This includes 27,197m<sup>2</sup> of confirmed mined area recorded in Jroud Aarsal, in the north-east of Lebanon, which is new contamination resulting from fighting that spilled over from the Syrian conflict.<sup>2</sup>

At the end of 2017, Lebanon reported a little over 20km<sup>2</sup> of confirmed mined area, including the Blue Line, across 1,415 CHAs.<sup>3</sup>

Table 1: Mined area by province (at end 2018)<sup>4</sup>

Province	CHAs	Area (m <sup>2</sup> )
Al Beqaa	46	967,267
Al Janoub and Al Nabatiyeh (south Lebanon)	995	7,927,953
Jabal Loubnan (Mount Lebanon)	307	10,466,303
Al Shimal (north Lebanon)	51	254,438
<b>Totals</b>	<b>1,399</b>	<b>19,615,961</b>

Lebanon is also contaminated with cluster munition remnants (CMR) and other explosive remnants of war (ERW) (see Mine Action Review's *Clearing Cluster Munition Remnants 2019* report on Lebanon for further information).

In addition, "Dangerous Areas" totalling nearly 15km<sup>2</sup> are suspected to contain nuisance mines, booby-traps, or other ERW other than CMR.<sup>5</sup> The "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,<sup>6</sup> for which further investigation/survey is required in order to confirm the type and extent of suspected contamination.<sup>7</sup>

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 on the north-east border with Syria, resulting from spill-over of the Syrian conflict onto Lebanese territory in 2014–17 (see New mine contamination section below).<sup>8</sup>

Mines affect the north and south of the country, and the Mount Lebanon governorate in the middle, though most are in the south. The minefields in north Lebanon and Mount Lebanon are typically "militia" 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. The minefields in the south are typically conventional minefields, laid in a pattern and where the location of the mines is identified on minefield maps.<sup>7</sup>

## NEW MINE CONTAMINATION

A total of 27,197m<sup>2</sup> of new/previously unrecorded confirmed mined area was recorded through survey by MAG and NPA in "Jroud Arsas" in the north-east along the border with Syria, as a result of spill-over in fighting from the Syrian conflict in 2014–17.<sup>10</sup> The Lebanese territory in question was fully regained by the LAF in August 2017 and was assigned to LMAC for survey and clearance. Contamination also includes improvised explosive devices (IEDs), CMR, and other ERW.<sup>11</sup>

## NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

Established in 1998 by the Council of Ministers, the Lebanon Mine Action Authority (LMAA) is the responsibility of the Ministry of Defence and is chaired by the Minister of Defence. The LMAA has overall responsibility for Lebanon's mine action programme. 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.<sup>12</sup>

LMAC, part of the LAF, is based in Beirut. Since 2009, the RMAC-N, based in Nabatiyeh, which is a part of LMAC, has overseen operations in south Lebanon and western Beqaa, under LMAC supervision.<sup>13</sup> At the end of 2018, a new regional 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.<sup>14</sup> The Director of LMAC is typically rotated every couple of years, and in recent years there has been a high turnover of the colonels who have run the RMAC. Both factors have the potential to negatively affect the management of the two mine action centres. The current director of LMAC started in March 2019, replacing his predecessor who had served as director for two years.<sup>15</sup>

United Nations 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). UNDP does not provide technical assistance on operational decisions.<sup>16</sup> However, EU funding for UNDP institutional support to LMAC was due to finish at the end of 2019, which will result in a gap in capacity development.<sup>17</sup>

A "Mine Action Forum" has been established in Lebanon in close partnership between LMAC and Norway, providing an informal platform for LMAC to continue dialogue and collaboration with donors, clearance operators, and partner organisations, and to discuss priorities and needs in cluster munition and landmine survey and clearance at the national level. The forum meets twice a year, with UNDP designated as the secretariat to follow up and develop progress reports.<sup>18</sup> 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.

The Mine Action Forum in Lebanon has resulted in better coordination and greater transparency and enhancements to land release methodology (enshrined in the revised NMAS). These measures have all served to strengthen donor confidence and mobilise additional resources.<sup>19</sup> Lebanon secured an additional 43% of funding for mine action in 2018 compared to the previous year, for both mine- and CMR-related work.<sup>20</sup>

There is good coordination and collaboration between LMAC/the RMACs and clearance operators, with the operators consulted before key decisions are taken.<sup>21</sup> 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.<sup>22</sup>

A technical working group (TWG) was established in March 2018, under the auspices of LMAC, following the release of the revised NMAS. The TWG, which meets quarterly, 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, and potential ways to improve operational efficiencies.<sup>23</sup>

As in the previous year, Lebanon reported contributing US\$9 million annually in 2018 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; risk education; and victim assistance.<sup>24</sup>

A Regional School for Humanitarian Demining in Lebanon (RSHDL) has been established in partnership between Lebanon and France, with technical mine action support provided by a French military officer, to support the development of the curriculum on EOD disposal (EOD levels 1, 2, and 3) in compliance with the International Mine Action Standards (IMAS).<sup>25</sup> The Regional 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 demining.<sup>26</sup>

## GENDER

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.<sup>27</sup> 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 across the mine action centre.<sup>28</sup> Women and children are consulted during survey and community liaison activities.<sup>29</sup> According to LMAC, within the overall humanitarian clearance operators in Lebanon, approximately 20% of survey and clearance staff are women and 15% of managerial level/supervisory positions.<sup>30</sup>

Lebanon hosted a workshop on gender in mine action at the RSHDL in July 2018, attended by Iraq, Libya, Palestine, Somalia, Sudan, and Yemen, as part of the ARCP.<sup>31</sup>

HI, MAG, and NPA all reported having gender policies in place.<sup>32</sup>

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. However, while up to 60% of HI managerial/supervisory positions are held by women, only 2% of its survey and clearance staff are women, with one female community liaison officer out of a total of 50 operational personnel.<sup>33</sup>

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 15% of operational roles in MAG's survey and clearance teams in Lebanon, and 30% of managerial level/supervisory positions.<sup>34</sup>

As at April 2019, NPA was in the process of developing an implementation plan for its organisational gender policy for Lebanon, with support from the Geneva-based Gender and Mine Action Programme (GMAP, a programme of the Geneva International Centre for Humanitarian Demining (GICHD)), which was due to be finalised in 2019. NPA reported that its survey and community liaison teams are gender balanced, and 15% of employees in operational roles in NPA's survey and clearance team are women; 9% in managerial level/supervisory positions. NPA disaggregates data by sex and age.<sup>35</sup>

## INFORMATION MANAGEMENT

IMSMA is used by LMAC and RMAC to record contamination and land release in Lebanon. As at April 2019, efforts were underway to integrate RMAC's information management database with the LMAC server.<sup>36</sup> As at end 2018, there was a single IMSMA database and a synchronisation procedure in place between the two LMAC and RMAC databases, pending a hardware upgrade to establish a direct connection.<sup>37</sup> Full harmonisation and consolidation of the servers was expected to be achieved in the course of 2019, which will facilitate synchronisation, as IMSMA reports will be sent directly to LMAC for approval, improving the accuracy and efficiency of the process. The integration will also help better protect data while decreasing maintenance costs.<sup>38</sup>

Furthermore, LMAC is migrating from its current version of IMSMA (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.<sup>39</sup> Migration to IMSMA Core requires regular IMSMA back-ups and corrections to data. Migration is forecast to be achieved only in 2020.<sup>40</sup>

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.<sup>41</sup> Now, any area cleared in excess of the original task size is no longer recorded as additional tasks in the database, but as "productivity".<sup>42</sup>

In 2018, LMAC changed requirements for clearance operators to report operational data monthly in favour of daily and weekly reporting instead. According to NPA, this has resulted in closer and more regular checks of data by LMAC and RMAC QA officers.<sup>43</sup>

## PLANNING AND TASKING

In September 2011, LMAC adopted a strategic mine action plan for 2011–20.<sup>44</sup> The plan called for clearance of all CMR by 2016 and for completion of mine clearance outside the Blue Line by 2020. Both goals are dependent on capacity, but progress has fallen well short of planning targets,<sup>45</sup> which will not be met.

A first interim review of the strategy was conducted in January–March 2014 to assess progress towards the 2013 milestone, and to adjust the 2016 and 2020 milestones accordingly. The review revealed that in 2011–13 mine clearance was slow and suffered from underfunding (with consequently fewer operating teams).<sup>46</sup>

A second interim assessment, this time for 2014–16, was undertaken in 2016, but the results were only released in March 2018. The results similarly highlighted the huge gap between actual mine clearance output and planned output (when compared to the original strategic plan). This second milestone assessment also reflected on the achievements, challenges, and lessons learned, offering recommendations that reflected available resources (financial and human), as well as a qualitative roadmap towards completion.<sup>47</sup>

Prior to 2016, demining along the border with Israel had been said to depend on "political developments",<sup>48</sup> but the Lebanese government subsequently took the decision to initiate larger-scale, planned clearance on the Blue Line<sup>49</sup> and clearance by humanitarian demining operators began in November 2016.<sup>50</sup>

LMAC is now preparing a new strategic mine action strategy, planned by the end of 2019, through which a more accurate estimate for completion of mine clearance will be available, taking into consideration the updated NMAS and new methodologies. LMAC is also developing a long term clearance plan for each region, with yearly benchmarks.<sup>51</sup>

Lebanon has set four levels of priority for its land release. The first is to address infrastructure (e.g. housing, roads, hospitals, and schools); the second is to address utilities (e.g. water, electricity, drainage, and telephone lines); the third is to release agricultural land and grazing areas for livestock; and the fourth is to release land for other activities (e.g. nature reserves or areas used by wildlife).<sup>52</sup> In some

instances, task prioritisation is also influenced by requested specifications from donors, for example based on the geographical location.<sup>53</sup>

LMAC selects and assigns tasks for clearance based on the priorities set according to the initial survey, while updated information may lead to a change in priority for some areas. LMAC planned to survey all designated high-priority sites, to obtain accurate information, before tasking them for clearance.<sup>54</sup>

Clearance operators in Lebanon believe that reprioritisation is needed, as all of the current tasks fall between priorities 2 and 3, and reprioritisation has not occurred for some time.<sup>55</sup>

## LAND RELEASE SYSTEM

### STANDARDS AND LAND RELEASE EFFICIENCY

Lebanon developed its first NMAS in 2010.<sup>56</sup> Over the last two years, LMAC worked with UNDP and other partners, under a project funded by the EU, to revise the standards.<sup>57</sup> The aim of the revision has been to enhance efficiency by harmonising national standards with IMAS, as well as to add new modules not present in the original Standards.<sup>58</sup> LMAC adopted a consultative and constructive approach to the revision process.<sup>59</sup> The revised NMAS, formally approved in March 2018, 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 include reduction of the required clearance depth from 20cm to 15cm; revision of fadeout specifications for pattern minefields, and enhancements in how rapid response tasks are addressed and recorded.<sup>60</sup> These changes should improve the efficiency of land release in Lebanon.<sup>61</sup>

In March 2018, the new NMAS were presented to operators during a workshop at the RSHDL, during which LMAC discussed next steps in operationalising the new standards.<sup>62</sup> Demining NGOs have updated their standing operating procedures (SoPs) according to the new NMAS.<sup>63</sup> Furthermore, 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).<sup>64</sup>

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 the CHA based on discussion and agreement between LMAC operations officers and clearance operators.<sup>65</sup> 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 (with a minimum of 30% area covered by technical assets, including mechanical assets) from the edge of the 5-metre fadeout up to the minefield fence, for minefields in which the lanes have not been disrupted. Following discussions in the TWG, the 30% technical survey requirement was subsequently reduced to 10%.<sup>66</sup> 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.<sup>67</sup>

Previously, operators have been required to fully clear the area between the mine rows and the minefield fence, plus an additional two metres outside the fence, with one asset.<sup>68</sup>

MAG and NPA also noted that to further enhance efficiencies, fade-out requirements at the Blue Line could be further assessed based on empirical evidence. Evidence from clearance operations on the Blue Line to date reveals that no mines have been found outside of five metres from the outer mine row, in minefields in which the lanes have not been disturbed. In the operators' opinion, technical survey beyond the five-metre fadeout (up to the minefield fence or for ten metres in the absence of a fence) should only be required if there is sufficient evidence to suggest mines have migrated from the mine rows.<sup>69</sup> As mentioned above, it has been agreed that, on the Blue Line, technical survey beyond fade-out can be reduced to 10%, on a case-by-case basis, targeted to areas where there were missed mines in the mine rows.<sup>70</sup> MAG believes the five-metre fade-out could even be reduced to three metres, or double the distance of the mine row.<sup>71</sup>

Anti-vehicle minefields represent another challenge on the Blue Line because of their proximity to the fence. As at April 2019, LMAC was discussing the best way to render safe the anti-vehicle mines and move them away, in order to save time on anti-personnel mine clearance. LMAC and MAG were due to start various destruction trials in August/September 2019.<sup>72</sup>

Four new HSTAMIDS detectors were planned to be introduced for use on Blue Line operations in 2019, which were expected to increase efficiency. A training area prepared by MAG at the Hammana school, was completed in August 2019 and the detectors were due to arrive in late 2019 or early 2020.<sup>73</sup>

Since the release and implementation of the revised NMAS, national authorities in Lebanon have actively promoted the use of non-technical survey and technical survey, in order to define the presence or absence of an explosive threat.<sup>74</sup> This is evidenced by deployment of MAG and NPA teams to conduct non-technical survey of new contamination in the north-east region of Lebanon, bordering Syria.<sup>75</sup> Prior to 2018, the only non-technical survey capacity that was permitted was that of the LAF.<sup>76</sup> In 2019, LMAC was discussing with the NGO operators the option for each to have a non-technical survey team to re-survey for each new task prior to starting clearance, in addition to conducting survey of other mined areas.<sup>77</sup> As at August 2019, MAG was deploying five non-technical survey teams and NPA was deploying, one team, while HI had submitted a proposal for two teams.<sup>78</sup>

## OPERATORS

In 2018, manual mine clearance was conducted by international operators DanChurchAid (DCA) (one team), Humanity and Inclusion (HI) (four teams), MAG (nine teams), NPA (two teams), and by the Engineering Regiment of the LAF (two teams).<sup>79</sup> In addition, four mechanical teams were operated by the Engineering Regiment of the LAF and one by MAG; and seven MDD teams operated by the Engineering Regiment.<sup>80</sup> All LAF engineering companies have two teams of EOD-qualified personnel.<sup>81</sup> In addition, UNIFIL also has sufficient demining capacity to enable it to conduct its operations on the Blue Line.<sup>82</sup>

Non-technical survey capacity in 2018 consisted of 12 personnel from the LAF and 9 from MAG, plus the MAG and NPA non-technical survey teams deployed to the new contamination in "Jroud Aarsal" in the north-east of the country along the border with Syria. Technical survey capacity in 2018 consisted of just one team, at one site, but clearance teams can also be deployed for technical survey.<sup>83</sup> In 2019, LMAC intends to have specific plans for technical survey for all sites which non-technical survey recommends for reduction.<sup>84</sup>

In 2018, DCA deployed only one manual mine clearance team, as its other team moved to conduct battle area clearance (BAC).<sup>85</sup>

HI deployed four mine clearance teams in north Lebanon in 2018, totalling 28 deminers, plus supervisors, team leaders, and support staff.<sup>86</sup> This represents the same capacity as the previous year. 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.<sup>87</sup> 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.<sup>88</sup> According to LMAC, HI has expressed an interest in deploying a non-technical survey team in 2019.<sup>89</sup>

LAMINDA began mine clearance in 2018, having moved two BAC teams to manual mine clearance instead.<sup>90</sup>

MAG deployed nine manual clearance teams in 2019 (an increase of six teams compared to 2017), in addition to one mechanical team.<sup>91</sup> As at August 2019, MAG had seven multi-task teams operating in the "Jroud Aarsal" area in the north-east along the border with Syria, clearing conventional and improvised munitions.<sup>92</sup>

NPA deployed two manual mine clearance teams totalling 18 personnel, including 2 medics, from January to September 2018, with capacity then increasing to 26 personnel from October 2018.<sup>93</sup> In addition, NPA deployed five non-technical survey personnel in 2018 in the "Jroud Aarsal" area and will deploy non-technical survey staff in southern Lebanon in 2019.<sup>94</sup> NPA clearance capacity in the "Jroud Aarsal" increased to four multi-task teams in June 2019, with the teams becoming operational from August.<sup>95</sup>

The 2018 capacity of the Engineering Regiment (for combined mine and CMR operations) was said to comprise two mine clearance teams, four mechanical demining teams, and seven MDD teams.<sup>96</sup>

UNIFIL was established in 1978<sup>97</sup> to confirm 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.<sup>98</sup> 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. UNIFIL does not conduct clearance on the Blue Line for humanitarian purposes but only to facilitate placement of markers by clearing three-metre-wide lanes into mined areas,<sup>99</sup> and also to clear mines close to UNIFIL posts or which pose a danger to UNIFIL patrols. The UN Mine Action Service (UNMAS) continues to engage with UNIFIL regarding the possibility of UNIFIL re-engaging in humanitarian mine action.<sup>100</sup> LMAC is in ongoing discussions with UNIFIL to discuss an MoU for cooperation on humanitarian mine clearance.<sup>101</sup>

In 2018, operational assets were provided by two UNIFIL Troop Contributing Countries: Cambodia and China. Operational capacities and capabilities of UNIFIL are determined by operational need, and capacity as at August 2019 remained the same as the previous year and comprised five manual clearance teams, two EOD teams, and one mechanical team.<sup>102</sup>

UNMAS carries out confirmatory training with UNIFIL demining units when they rotate into the country.<sup>103</sup>

## OPERATIONAL TOOLS

The LAF uses MDDs for technical survey and as a secondary asset. The LAF also uses mechanical assets, and in addition, MAG has a demining machine. In Lebanon, machines are mostly used as secondary assets to support clearance teams (e.g. ground preparation, rubble removal etc. or for fadeout); in areas where manual clearance is difficult; and for technical survey and LTHA.<sup>104</sup> MAG, however, believes that mechanical assets could also usefully be deployed as a primary asset in South Lebanon, when the terrain permits.<sup>105</sup> In 2017, MAG was given permission by LMAC to use mechanical assets for missing mine excavations, which is saving considerable time.<sup>106</sup> Often, however, the terrain is not suitable for MDDs or machines.

## DEMINER SAFETY

There were three demining accidents in 2018. A MAG site supervisor was injured when an uncontrolled demolition occurred during demolition of Israeli No. 4 mines.<sup>107</sup> An NPA deminer was injured in June 2018 during clearance of an Israeli No. 4 mine,<sup>108</sup> and in October 2018, an NPA site supervisor was injured from the explosion of an Israeli No. 4 mine fuze.<sup>109</sup> All accidents were investigated internally by the two respective NGOs, and by the LMAC Board of Inquiry, typically formed by QA, quality control, and operations officers. Investigation reports are then disseminated to all stakeholders, including NGOs.<sup>110</sup>



# LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

## LAND RELEASE OUTPUTS IN 2018

A total of more than 0.4km<sup>2</sup> of mined area (i.e. area suspected or confirmed to contain anti-personnel mines) was released in 2018, of which nearly 0.39km<sup>2</sup> was cleared, nearly 0.03km<sup>2</sup> was cancelled through non-technical survey, and a small amount (7,646m<sup>2</sup>) was reduced through technical survey. Nearly 0.03km<sup>2</sup> of new mined area was added to the database in 2018, following non-technical survey in Arsal, in the north-east of Lebanon bordering Syria.

## SURVEY IN 2018

In 2018, 28,633m<sup>2</sup> of land classified as being minefield (MF), was cancelled through non-technical survey and 7,646m<sup>2</sup> was reduced by MAG through technical survey.<sup>111</sup> This compared to the 1.2km<sup>2</sup> of mined area cancelled through non-technical survey in 2017 and a decrease on the 99,694m<sup>2</sup> reduced through technical survey.<sup>112</sup>

A further 2,817,200m<sup>2</sup> of "Mined Area" was cancelled in 2018, but strangely, 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. Therefore, these areas are not the same as those suspected or confirmed to contain anti-personnel mines. According to LMAC, in 2019, all mined area in the database has been cancelled because access to all these areas is now possible.<sup>113</sup>

In addition, the first stage of non-technical survey by MAG and NPA of "Jroud Arsal" in the north-east<sup>114</sup> began in July

2018 and was completed in October, with immediate follow-on clearance.<sup>115</sup> The survey resulted in 27,197m<sup>2</sup> of new/previously unrecorded confirmed mined area.<sup>116</sup> An additional 410,329m<sup>2</sup> was identified as containing "IEDs",<sup>117</sup> many of which are also anti-personnel mines of an improvised nature. NPA confirmed discovering 70 anti-personnel mines of an improvised nature during the survey, including tripwire-activated devices.<sup>118</sup>

Information for the survey was based on information available from LAF units present in the area and from locals, in particular shepherds. There are, however, still areas where no information is available, and these will constitute the second phase of survey, which began in March 2019.<sup>119</sup>

In 2019, the focus for the "Jroud Arsal" operations is technical survey and clearance, however non-technical survey will be an ongoing process according to needs and priorities.<sup>120</sup>

## CLEARANCE IN 2018

Lebanon reported clearing just under 0.39km<sup>2</sup> of mined area in 2018, destroying in the process 13,074 anti-personnel mines and 90 anti-vehicle mines (see Table 2).<sup>121</sup> Clearance in 2018 was down compared to the 0.51km<sup>2</sup> of mined area cleared in 2017.<sup>122</sup>

Table 2: Mine clearance in 2018<sup>123</sup>

Operator	Area cleared (m <sup>2</sup> )	AP mines destroyed	AV mines destroyed	UXO destroyed
DCA	1,003	1	0	0
HI	116,578	2,409	1	133
MAG	68,825	7,242	21	0
NPA	26,675	2,775	0	0
LAMINDA	1,735	71	0	0
LAF	180,070	576	68	*11,097
<b>Totals</b>	<b>394,886</b>	<b>13,074</b>	<b>90</b>	<b>11,230</b>

AP = Anti-personnel AV = Anti-vehicle \*destroyed during BAC and mine clearance

Table 2 above includes the destruction of 442 anti-personnel mines during spot tasks in 2018: 408 anti-personnel mines destroyed by the Engineering Regiment and 34 by the Combat Engineer companies in the Brigades.<sup>124</sup>

Furthermore, UNIFIL found and destroyed 2,372 anti-personnel mines during its 2018 operations along the UNIFIL patrol road, in the far south of Lebanon near the Blue Line.<sup>125</sup>

HI's clearance output decreased slightly in 2018, compared to the previous year, due to having to conduct full excavation for undetectable anti-personnel mines, and also working in narrow polygons which restricted deployment of full capacity due to required safety distances.<sup>126</sup>

HI reported that of the 16 tasks it cleared in 2018, 4 were found not to contain anti-personnel mines, representing 7% of HI's total clearance output.<sup>127</sup> 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 more accurately define areas of actual contamination. 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.<sup>128</sup>

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.<sup>129</sup>

## PROGRESS TOWARDS COMPLETION

It has been stated that “While Lebanon is not signatory to the Ottawa Convention, LMAC works in spirit of the treaty”,<sup>130</sup> and that LMAC adheres to its noble causes and tries to work along with the Maputo Action Plan.<sup>131</sup>

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.<sup>132</sup> Current mine clearance capacity is far lower. The second mid-term review, conducted in 2016, and finally released in March 2018, confirmed that progress against the strategy has fallen well behind schedule, and that significant increased capacity would be required to bridge the gap.

LMAC reported that in addition to a lack of funding, 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).<sup>133</sup>

Lebanon has cleared less than 4km<sup>2</sup> of mined area in the last five years, as detailed in Table 3. Based on almost 20km<sup>2</sup> of total mined area as at the end of 2018, and average clearance rates of less than 1km<sup>2</sup> per year, it will take many years for Lebanon to become mine-free. However, progress in land release is expected to be accelerated by adoption of better land release procedures in 2018, as enshrined in the revised NMAS. Crucially, LMAC’s demonstrated commitment to enhance the use of non-technical and technical survey will help to cancel or reduce areas more efficiently.<sup>134</sup>

**Table 3: Five-year summary of AP mine clearance (2014–18)**

Year	Area cleared (km <sup>2</sup> )
2018	0.39
2017	0.51
2016	0.55
2015	0.92
2014	1.28
<b>Total</b>	<b>3.65</b>

- 1 Email from Maj. Fadi Wazen, Operations Section Head, LMAC, 5 April 2019.
- 2 Ibid.; and LMAC, “Annual Report 2018”, p. 14.
- 3 Email from Brig.-Gen. Ziad Nasr, Director, LMAC, 27 April 2018; and LMAC, “Annual Report 2017”, p. 12.
- 4 Email from Maj. Fadi Wazen, LMAC, 5 April 2019. There is a slight discrepancy with the 19,473,287m<sup>2</sup> baseline of mine contamination, as per LMAC’s “Annual Report 2018”, p. 14.
- 5 LMAC, “Annual Report 2018”, p. 13; and email from Maj. Fadi Wazen, LMAC, 31 May 2019.
- 6 Interview with Brig.-Gen. Elie Nassif then Director, and Brig.-Gen. Fakh, then Head of Operations, LMAC, Beirut, 18 April 2016.
- 7 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 18 April 2016.
- 8 Emails from Maj. Fadi Wazen, LMAC, 7 March 2019; David Willey, Programme Manager, MAG, 7 March 2019; and Emile Ollivier, Grants Coordinator, NPA, 19 March 2019.
- 9 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 10 Email from Maj. Fadi Wazen, LMAC, 5 April 2019, and presentation in Beirut, 8 April 2018; and LMAC, “Annual Report 2018”, p. 14.
- 11 Email from Maj. Fadi Wazen, LMAC, 7 March 2019 and presentation in Beirut, 8 April 2018; and LMAC, “Annual Report 2018”, p. 14.
- 12 LMAC, “Mid-term Review to Strategy 2011–2020, Milestone 2013”, August 2014, pp. 4–5.
- 13 LMAC, “Lebanon Mine Action Strategy 2011–2020”, September 2011, p. 4.
- 14 Email from Maj. Fadi Wazen, LMAC, 21 August 2019.
- 15 Email from Brig.-Gen. Ziad Nasr, LMAC, 26 March 2019.
- 16 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016; and LMAC, “Lebanon Mine Action Strategy. Second Milestone Review 2014–2016”, March 2018; and “Mine Action Forum: Action Points 1st Quarter Progress Report, March 2018”.
- 17 LMAC, “2018 Annual Report Lebanon Mine Action Centre”, p. 36; interview with Brig.-Gen. Jihad Bechelany, LMAC Director, Maj. Fadi Wazen, LMAC, and Ariane Elmas, UNDP, Beirut, 16 April 2019; and email from Emile Ollivier, NPA, 19 March 2019.
- 18 LMAC, “2018 Annual Report Lebanon Mine Action Centre”, p. 23.
- 19 Email from Maj. Fadi Wazen, LMAC, 7 March 2019; and LMAC, “Annual Report 2018”, p. 23.
- 20 LMAC, LMAC, “Annual Report 2018”, p. 17.
- 21 Emails from Emile Ollivier, NPA, 19 March 2019; David Willey, MAG, 7 March 2019; and Mahmoud Rahhal, POD, 8 March 2019.
- 22 Emails from Emile Ollivier, NPA, 19 March 2019; and David Willey, MAG, 7 March 2019.
- 23 LMAC, “2018 Annual Report Lebanon Mine Action Centre”, pp. 4, 7, and 17; and emails from Maj. Fadi Wazen, LMAC, 7 March 2019; and Emile Ollivier, NPA, 19 March 2019.
- 24 Email from Maj. Fadi Wazen, LMAC, 31 May 2019.
- 25 LMAC, “Lebanon Mine Action Strategy. Second Milestone Review 2014–2016”, March 2018.
- 26 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; CCM Article 7 Report (for 2018), Form A; and Statement of Lebanon on International Cooperation and Assistance, CCM Seventh Meeting of States Parties, Geneva, 4–6 September 2017.
- 27 LMAC, LMAC, “Annual Report 2018”, p. 5; and email from Major Fadi Wazen, LMAC, 7 March 2019;
- 28 Email from Maj. Fadi Wazen, LMAC, 21 August 2019.
- 29 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 30 Email from Maj. Fadi Wazen, LMAC, 7 March 2019.
- 31 LMAC, LMAC, “Annual Report 2018”, pp. 5 and 19.
- 32 Emails from Emile Ollivier, NPA, 19 March 2019; David Willey, MAG, 7 March 2019; and David Ligneau, HI, 23 August 2019.
- 33 Email from David Ligneau, HI, 23 August 2019.

- 34 Email from David Willey, MAG, 7 March 2019.
- 35 Email from Emile Ollivier, NPA, 19 March 2019.
- 36 LMAC, "Annual Report 2018", p. 15.
- 37 Email from Rana Elias, GICHD, 17 June 2019.
- 38 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; and interview with Maj. Ali Makki, Information Management Section Head, LMAC, and Ariane Elmas, UNDP, Beirut, 16 April 2019.
- 39 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; email from LMAC Operations Department, 28 June 2018; "Mine Action Forum: Action Points 1st Quarter Progress Report, March 2018"; and LMAC, "2018 Annual Report Lebanon Mine Action Centre", p. 14.
- 40 Email from Rana Elias, GICHD, 17 June 2019.
- 41 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 42 LMAC, "Annual Report 2018", p. 14; and interview with Maj. Ali Makki, LMAC, Beirut, 16 April 2019.
- 43 Email from Emile Ollivier, NPA, 19 March 2019.
- 44 LMAC, "Lebanon Mine Action Strategy 2011–2020", September 2011, p. 4.
- 45 Response to Cluster Munition Monitor questionnaire by Brig.-Gen. Imad Odiemi, LMAC, 2 May 2014.
- 46 LMAC, "Mid-term Review to Strategy 2011–2020, Milestone 2013", August 2014.
- 47 LMAC, "Lebanon Mine Action Strategy. Second Milestone Review 2014–2016", March 2018; LMAC, "2017 Annual Report Lebanon Mine Action Centre", undated; and email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 48 Presentation by Maj. Bou Maroun, RMAC, Nabatiye, 4 May 2012; and response to Landmine Monitor questionnaire by Leon Louw, Programme Manager, UN Mine Action Support Team (UNMAST), 7 May 2014.
- 49 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 50 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 51 Email from Maj. Fadi Wazen, LMAC, 5 April 2019; and interview, Beirut, 16 April 2019.
- 52 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 53 Interview with Maj. Fadi Wazen, LMAC, Beirut, 16 April 2019 and email, 5 April 2019.
- 54 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 55 Email from Dave Wiley, MAG, 19 August 2019.
- 56 Email from Brig.-Gen. Elie Nassif, LMAC, 17 June 2015.
- 57 Emails from Brig.-Gen. Elie Nassif, LMAC, 7 July 2015; and Rory Logan, Programme Manager, NPA, 20 April 2015; Statement of Lebanon, First CCM Review Conference, Dubrovnik, 7–11 September 2015; and email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 58 Emails from Brig.-Gen. Elie Nassif, LMAC, 7 July 2015; and Rory Logan, NPA, 20 April 2015.
- 59 Emails from Dave Wiley, MAG, 27 April 2018 and 7 March 2019; and Craig McDiarmid, NPA, 17 April 2018 and 19 March 2019.
- 60 Emails from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; Craig McDiarmid, NPA, 17 April 2018; and Dave Wiley, MAG, 27 April 2018; and LMAC, "Annual Report 2018", p. 17.
- 61 "Mine Action Forum: Action Points 1st Quarter Progress Report, March 2018"; LMAC, "2017 Annual Report Lebanon Mine Action Centre", undated; and emails from Dave Wiley, MAG, 27 April 2018; and Craig McDiarmid, NPA, 17 April 2018.
- 62 Emails from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; Craig McDiarmid, NPA, 17 April 2018; and Dave Wiley, MAG, 27 April 2018.
- 63 Emails from Emile Ollivier, NPA, 19 March 2019; David Willey, MAG, 7 March 2019; and Mahmoud Rahhal, POD, 8 March 2019.
- 64 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016; and with Maj. Fadi Wazen, LMAC, Beirut, 16 April 2019.
- 65 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 66 Email from Dave Wiley, MAG, 19 August 2019.
- 67 Emails from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; Craig McDiarmid, NPA, 17 April 2018; and Ali Nasreddine, MAG, 24 July 2018.
- 68 Email from Ali Nasreddine, MAG, 24 July 2018.
- 69 Emails from Ali Nasreddine, MAG, 24 July 2018; and Craig McDiarmid, NPA, 17 April 2018 and 8 April 2019.
- 70 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 71 Emails from Ali Nasreddine, MAG, 24 July 2018; and Dave Wiley, MAG, 19 August 2019.
- 72 Emails from Maj. Fadi Wazen, LMAC, 5 April and 21 August 2019; and Dave Wiley, MAG, 19 August 2019.
- 73 Ibid.
- 74 Emails from Dave Wiley, MAG, 27 April 2018; and Craig McDiarmid, NPA, 17 April 2018.
- 75 Emails from David Willey, MAG, 7 March 2019; and Craig McDiarmid, NPA, 8 April 2019; and LMAC, "2018 Annual Report Lebanon Mine Action Centre", p. 14.
- 76 Telephone interview with Craig McDiarmid, NPA, 15 June 2018; emails from David Willey, MAG, 7 March 2019; Emile Ollivier, NPA, 19 March 2019, and Maj. Fadi Wazen, LMAC, 5 April 2019.
- 77 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 78 Email from Maj. Fadi Wazen, LMAC, 21 August 2019.
- 79 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 80 LMAC, "Annual Report 2018", p. 12.
- 81 Email from LMAC Operations Department, 28 June 2018; and email from Maj. Fadi Wazen, LMAC, 7 March 2019.
- 82 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 83 Ibid.
- 84 Ibid.
- 85 Ibid.
- 86 Email from David Ligneau, HI, 9 April 2019.
- 87 Emails from Chris Chenavier, HI, 7 April 2016 and David Ligneau, HI, 9 April 2019.
- 88 Email from David Ligneau, HI, 29 August 2018.
- 89 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 90 Ibid.
- 91 Ibid.
- 92 Email from Dave Wiley, MAG, 19 August 2019.
- 93 Email from Craig McDiarmid, NPA, 8 April 2019.
- 94 Emails from Maj. Fadi Wazen, LMAC, 5 April 2019; and Craig McDiarmid, NPA, 8 April 2019.
- 95 Email from Jon Jensen, Interim Programme Manager, NPA, 20 August 2019.
- 96 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017 and 14 September 2018; and LMAC, "Annual Report 2017", p. 11.
- 97 UN Security Council Resolutions 425 (1978) and 426 (1978).
- 98 UNIFIL, "UNIFIL Mandate", at: [bit.ly/2YpCwuD](http://bit.ly/2YpCwuD).
- 99 Presentation by Maj. Pierre Bou Maroun, RMAC, Nabatiye, 4 May 2012; and emails from Henri Francois Morand, UNMAS, 2 October 2015 and 18 September 2017.
- 100 Emails from Henri Francois Morand, UNMAS, 18 September 2017; and Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 101 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 102 Email from Hassan Nouredine, UNMAS, 16 August 2019.
- 103 Email from Alan Macdonald, UNMAS, 15 August 2019.
- 104 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; Samuel Devaux, HI, 4 April 2017; Dave Wiley, MAG, 25 April 2017; and Maj. Fadi Wazen, LMAC, 5 April 2019.
- 105 Interview with Bekim Shala, MAG, Nabatiye, 14 April 2016.
- 106 Email from Ali Nasreddine, MAG, 24 July 2018.
- 107 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 108 Email from Craig McDiarmid, NPA, 8 April 2019.
- 109 Emails from Maj. Fadi Wazen, LMAC, 5 April 2019, and Craig McDiarmid, NPA, 8 April 2019.
- 110 Ibid.
- 111 Email from Maj. Fadi Wazen, LMAC, 5 April 2019; and LMAC, "Annual Report 2018", pp. 11 and 12.
- 112 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018; and LMAC, "Annual Report 2017", p. 13.
- 113 Email from Maj. Fadi Wazen, LMAC, 21 August 2019.
- 114 Email from Maj. Fadi Wazen, LMAC, 5 April 2019, and presentation in Beirut, 8 April 2018; and LMAC, "2018 Annual Report Lebanon Mine Action Centre", p. 14.
- 115 Emails from Craig McDiarmid, NPA, 8 April 2019; and Maj. Fadi Wazen, LMAC, 5 April 2019.
- 116 Email from Maj. Fadi Wazen, LMAC, 5 April 2019, and presentation in Beirut, 8 April 2018; and LMAC, "Annual Report 2018", p. 14.



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- 117 LMAC, "Annual Report 2018", p. 14.
- 118 Email from Craig McDiarmid, NPA, 8 April 2019.
- 119 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 120 Email from Craig McDiarmid, NPA, 8 April 2019.
- 121 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 122 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 123 LMAC, "Annual Report 2018", pp. 10 and 11; and emails from Maj. Fadi Wazen, LMAC, 5 April 2019; Craig McDiarmid, NPA, 8 April 2019; David Ligneau, Mine Action Programme Manager, HI, 9 April 2019, and Hiba Ghandour, Programme Officer, MAG, 27 August 2019. There were some discrepancies between data reported by LMAC and what was reported by HI, MAG, and NPA. HI reported destroying 2,419 (rather than 2,409) anti-personnel mines and 144 (rather than 133) other items of UXO during mine clearance in 2018. MAG reported clearing 102,890m<sup>2</sup> of mined areas and destroying 62 items of UXO, in addition to the 7,242 anti-personnel mines and 21 anti-vehicle mines. NPA reported destroying two items of UXO, in addition to 2,775 anti-personnel mines. DCA did not provide clearance data to Mine Action Review, so cross-verification was not possible.
- 124 Email from Maj. Fadi Wazen, LMAC, 5 April 2019.
- 125 Email from Hassan Nouredine, UNMAS, 16 August 2019.
- 126 Email from David Ligneau, HI, 9 April 2019.
- 127 Ibid.
- 128 Interview with Chris Chenavier, HI, Toula, 18 April 2016.
- 129 Ibid.
- 130 LMAC, "Annual Report 2017", Foreword.
- 131 Statement of Lebanon, APMBC Sixteenth Meeting of States Parties, Geneva, 20 December 2018.
- 132 LMAC, "Lebanon Mine Action Strategy 2011-2020", September 2011, pp. 16 and 17.
- 133 Email from Brig.-Gen. Ziad Nasr, LMAC, 27 April 2018.
- 134 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.