

# LEBANON

## MINE ACTION PROGRAMME PERFORMANCE

For 2016

For 2015

Problem understood	6	6
Target date for completion of mine clearance	6	5
Targeted clearance	5	5
Efficient clearance	5	5
National funding of programme	7	7
Timely clearance	6	5
Land release system in place	4	4
National mine action standards	5	5
Reporting on progress	7	7
Improving performance	6	6
<b>PERFORMANCE SCORE: AVERAGE</b>	<b>5.7</b>	<b>5.5</b>

## PERFORMANCE COMMENTARY

In a positive development, mine clearance began along the Blue Line, in the far south of Lebanon, at the end of 2016. While clearance of the high-density mapped minefields in this region should aid progress towards completion, Lebanon is still falling behind its own targets for mine clearance. Ensuring and sustaining sufficient mine clearance capacity is a key factor impacting progress, but land release methodology in Lebanon

could also be improved. The Lebanese Mine Action Centre (LMAC) is in the process of revising the national mine action standards (NMAS), in consultation with clearance operators and the Geneva International Centre for Humanitarian Demining (GICHD), and it is hoped that enhancements to strengthen the NMAS will result in gains in operational efficiency, such as with regards to the specified clearance depth.

### RECOMMENDATIONS FOR ACTION

- Lebanon should accede to the Anti-Personnel Mine Ban Convention (APMBC) as a matter of priority.
- Where possible, non-technical survey and technical survey should be used to more accurately define areas of actual mine contamination, factoring in the required fadeout distance, especially with respect to militia minefields in northern Lebanon. This would also help to more accurately establish a national baseline of mine contamination.
- LMAC should improve its land release system to accord with international standards and best practice. Improvements should be reflected in the revised NMAS, and all mine action stakeholders should be consulted before their finalisation. As part of this process, LMAC should consider and reflect the views of humanitarian demining operators on issues such as the specified clearance depth and fadeout.
- Where appropriate, LMAC should use demining machinery and mine detection dogs (MDDs) as primary as well as secondary clearance assets.
- LMAC should also aim to engage with the clearance operators with regards to information management, and should provide regular IMSMA (Information Management System for Mine Action) reports to operators, as a means to help cross-checking and confirm data integrity.
- LMAC should report more accurately and consistently on the extent of mine contamination, in a manner consistent with the International Mine Action Standards (IMAS). It should also ensure that all land released through survey and clearance is entered and reflected in its database in a timely manner.
- The United Nations Interim Force in Lebanon (UNIFIL) should explore the possibility of resuming humanitarian demining operations.

## CONTAMINATION

As at the end of 2016, Lebanon had 20km<sup>2</sup> of confirmed mined areas (including approximately 6.5km<sup>2</sup> of mined area on the Blue Line), across 1,431 confirmed hazardous areas (CHAs), as set out in Table 1.<sup>1</sup>

In its Annual Report for 2016, LMAC put total mine contamination, including the Blue Line, at almost 27.8km<sup>2</sup>.<sup>2</sup> However, this total included 7km<sup>2</sup> of mined area that had already been cleared by the Engineering Regiment of the Lebanese Armed Forces (LAF) in the Aqoura area in Mount Lebanon, over several years, but which had not been yet entered into the IMSMA database.<sup>3</sup>

A further 25 “dangerous areas” totalling more than 0.78km<sup>2</sup> are suspected to contain mines, and an additional 3 dangerous areas totalling more than 0.55km<sup>2</sup> are suspected to contain mines and unexploded ordnance (UXO).<sup>4</sup> In addition, 95 dangerous areas totalling almost 2.8km<sup>2</sup> were suspected to contain “booby-traps”, some of which fall under the APMBC definition of an anti-personnel mine.<sup>5</sup> The designated “dangerous areas” are mainly the result of incidents having been reported to LMAC by the local community, and for which further investigation/survey is required in order to confirm the type and extent of suspected contamination.<sup>6</sup>

**Table 1: Mine contamination by province (as at end-2016)<sup>7</sup>**

Province	CHAs	Area (m <sup>2</sup> )*
Al Beqaa	38	1,104,893
Al Janoub (south Lebanon)	212	1,492,107
Al Nabatiyeh (south Lebanon)	790	6,719,065
Jabal Loubnan (Mount Lebanon)	330	10,556,483
Al Shimal (north Lebanon)	60	198,768
Beirut	1	1,000
<b>Totals</b>	<b>1,431</b>	<b>20,072,316*</b>

\* Including 6.5km<sup>2</sup> of mined area along the Blue Line.

The 20km<sup>2</sup> of contamination, including the Blue Line, represents a decrease in overall baseline contamination over the 29km<sup>2</sup> of contaminated area as at the end of 2015.<sup>8</sup> The significant difference in the baseline mine contamination is for the most part explained by a delay in the reporting of several year's of mine clearance data by the LAF Engineering Regiment, in the Aqoura Area in Mount Lebanon, totalling 7km<sup>2</sup> of cleared area. The corresponding completion forms were only delivered to LMAC at the end of 2016, and the clearance data had not been entered into IMSMA previously.<sup>9</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. Mines affect the north and south of the country, though the majority 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 maps do not exist), and were laid by multiple actors during the civil war. The minefields in the south are typically conventional minefields, where the location of the mines is identified on minefield maps.<sup>10</sup>

Previously unrecorded contamination, notified by members of the public, and typically investigated by rapid response units, is only recorded as a CHA after survey.<sup>11</sup>

## 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 himself. 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>22</sup>

LMAC, part of the LAF,<sup>23</sup> is based in Beirut. Since 2009, the RMAC, based in Nabatiyeh, which is a part of LMAC, has overseen operations in south Lebanon and western Beqaa, under LMAC supervision.<sup>24</sup> The Director of LMAC is typically rotated every couple of years, and in recent years there has been a high turnover of the military personnel who have run the RMAC. Both factors have the potential to negatively affect the management of the two mine action centres. A new director of LMAC started in early 2017, while a new director of RMAC started in May.<sup>25</sup>

There is said to be generally good coordination and collaboration between LMAC/RMAC and clearance operators. In south Lebanon, coordination meetings between RMAC and operators take place at least monthly, during which clearance operations, quality assurance (QA), and other operational issues are openly discussed.<sup>26</sup> LMAC also manages risk education and victim assistance.<sup>27</sup>

A donor support group meeting is convened annually, which brings together donors, operators, and the national authorities.<sup>28</sup> UNDP personnel, funded by the European Union (EU), are also seconded to LMAC and RMAC, providing support towards capacity building,

The mid-term review of Lebanon's 2011–20 national strategy stated that as at end September 2013, of the total 44.5km<sup>2</sup> of mined area (excluding the Blue Line), almost 21.5km<sup>2</sup> (48%) had been cleared and 23km<sup>2</sup> (52%) remained.<sup>12</sup> The review also reported that, as at 2013, one-quarter of the 9.5 km<sup>2</sup> of Blue Line minefields had been cleared, leaving almost 7.3km<sup>2</sup> to release.<sup>13</sup> According to the mid-term review, clearance of Blue Line minefields was behind target, due to underfunding and political decisions.<sup>14</sup> However, since late 2015, permission has been granted for clearance to be undertaken of some of the Blue Line minefields, and clearance of the Blue Line commenced in November 2016.<sup>15</sup> According to LMAC, 98% of the Blue Line is still contaminated.<sup>16</sup>

Mines hinder socio-economic development, restricting access to land and productive resources. Most contamination is on valuable agriculture land.<sup>17</sup> According to LMAC, mines along the Blue Line negatively affect more than 200,000 people.<sup>18</sup> It has been reported that people are crossing the Blue Line to harvest olive groves and graze livestock.<sup>19</sup>

In 2016, one adult male civilian was injured by an anti-personnel mine in the north of Lebanon.<sup>20</sup> In addition, a further five civilians were injured in 2016: three men by UXO, one by a submunition, and one by an unknown device.<sup>21</sup>

including transparency reporting, strategic reviews, and IMSMA database entry, community liaison officers, and QA. UNDP does not provide technical assistance on operational decisions.<sup>29</sup>

In 2015, the Ministry of Defence, represented by LMAC, signed a Memorandum of Understanding with the GICHD to manage and coordinate the Arab Regional Cooperation Programme for Mine Action (formerly known as the Arabic-Language Outreach Programme for Mine Action).<sup>30</sup> Planning, management, and coordination of the Programme were due to be handed over to LMAC at the beginning of 2017,<sup>31</sup> and LMAC, through the Regional School for Humanitarian Demining in Lebanon (RSHDL), will serve as a regional centre for the Programme's activities.<sup>32</sup> As at April 2017, the buildings of the RSHDL in Hammana were being renovated.<sup>33</sup> As at September 2017, the renovation was complete and LMAC was looking to secure funding for furniture and equipment for the RSHDL.<sup>34</sup> Lebanon plans to offer explosive ordnance disposal (EOD) courses, among others, at the RSHDL.<sup>35</sup>

## Strategic Planning

In September 2011, LMAC adopted a strategic mine action plan for 2011–20.<sup>36</sup> The plan called for clearance of all cluster munition remnants (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.

A first mid-term review to 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, suffering from underfunding (with consequently few operating teams), while previously unrecorded contaminated areas were identified.<sup>37</sup> A second mid-term assessment was being undertaken in 2016, which was due to be completed in early 2017.<sup>38</sup> The assessment had not yet been completed as at June 2017, but LMAC expected it to be finished “very soon”.<sup>39</sup>

Prior to 2016, demining along the border with Israel was said to depend on “political developments”,<sup>40</sup> but the Lebanese government subsequently took the decision to initiate larger-scale, planned clearance on the Blue Line,<sup>41</sup> and clearance by humanitarian demining operators began in November 2016.<sup>42</sup>

Lebanon has set three levels of priority for mine action operations, based on socio-economic impact. The first is to address areas close to villages, which impact housing and agricultural land, or land blocking access to agricultural land; the second is to release agricultural land that is difficult to access; and the third is to release rocky/bushy areas. Areas in which mine-related incidents occur are immediately designated high priority.<sup>43</sup> LMAC aims to better monitor post-clearance activities and assess how clearance supports livelihood and socio-economic development.<sup>44</sup> Systematic pre- and post-impact surveys by operators, using an agreed format, could support this.<sup>45</sup>

In 2017, LMAC planned to focus landmine-survey on “dangerous areas” where the presence of mines is highly expected, and to conduct clearance across Lebanon, including the Blue Line, according to its plan.<sup>46</sup>

In its 2016 Annual Report, LMAC reported that it will “work on optimization of non-technical (pre-clearance) surveys, so they will be completed and their general results will be accurately and periodically updated on IMSMA. The international demining best practices have shown that the effectiveness of non-technical and technical surveys will increase the efficiency of clearance operation, therefore, LMAC will pursue its duty to ensure that these surveys will be conducted for the entire countries, including the Blue Line, and that their results will be updated on IMSMA”.<sup>47</sup>

## Standards

Lebanon developed its first set of NMAS in 2010.<sup>48</sup> Over the last two years, LMAC has been working with UNDP and other partners, under a project funded by the European Union, to revise the standards.<sup>49</sup> The revision is taking place with a view to enhancing efficiency while respecting IMAS, as well as to “add new modules that were not present in our NMAS version one, as well as relevant modules that are not present in the IMAS such as mine victim assistance”.<sup>50</sup> Once finalised, the revised NMAS will then need to be officially approved by the Ministry of Defence.<sup>51</sup>

Humanitarian demining operators who were consulted submitted recommendations for the NMAS revision.<sup>52</sup> In March 2017, LMAC distributed a revised draft NMAS to all partners, including clearance operators, for comment.<sup>53</sup> LMAC’s consultative approach regarding the revision of the NMAS is welcome, and it is hoped that key recommendations concerning land release for both

landmines and CMR are reflected in the final version. According to LMAC, the revised NMAS will include separate sections for landmine and CMR survey, and will permit and facilitate reporting of land release in accordance with IMAS (i.e. area cancelled by non-technical survey, area reduced by technical survey, and land released by clearance).

The revised NMAS will also include amendments in relation to the required depth of clearance, which operators had raised as an issue in the existing NMAS. Whereas the current IMAS requires clearance to 20cm, the clearance depth in the revised draft IMAS is reportedly based on the hazardous classification, i.e. whether an area is a high threat hazardous area (HTHA) or low threat hazardous area (LTHA). In general, the clearance depth will not be less than 15cm from the original surface in HTHA.<sup>54</sup> As at September 2017, the new requirements for clearance depth had been reflected in the latest draft of the revised NMAS.<sup>55</sup> The process for task prioritisation is also reported to be included in the revised NMAS.<sup>56</sup>

In September 2017, LMAC shared the most recent draft of the revised NMAS with the GICHD, for consultation and feedback.<sup>57</sup>

At present, clearance operators do have an opportunity to discuss with LMAC/RMAC specific land release considerations for assigned clearance tasks that arise during the pre-clearance assessment stage of operations. This may result in the refining of the task size or approved land release specifications.<sup>58</sup> However, this approach is contingent on the decision of individual LMAC/RMAC officials and the process would benefit from a more systematic approach using objective land release principles, including prioritising use of non-technical and technical survey. This could usefully be set out in the revised NMAS.

## Quality Management

Between 10% and 40% sampling is conducted during clearance operations by the organisation site supervisor and QA officer; 10% sampling is conducted by the LMAC QA/QC (quality control) officer during work. Up to 30% sampling is conducted by LMAC’s sampling team at the end of the task, but the decision to conduct sampling is decided on a case-by-case basis, and not all released areas are sampled.<sup>59</sup>

Quality management incorporates weekly visits by the QA officers to field sites to ensure all quality requirements are being met, as per NMAS and the standing operating procedure (SOP) of each organisation. During mine clearance and BAC in 2016, 1,095 monitoring visits took place, of which 1,047 resulted in acceptable results, 19 led to required improvements, and 29 found unacceptable practices.<sup>60</sup>

## Information Management

IMSMA is used by LMAC and RMAC to record land release in Lebanon. LMAC has reported that the system for database entry now more accurately reflects operational data, especially in instances where the task size/area of mine-contamination exceeds the original task size in the database.<sup>61</sup> Previously, any area cleared in excess of the

original task size was entered into the database as a new task. Now, while the contaminated area and area cleared are both recorded, area in excess of the original task size is not recorded as additional tasks in the database.<sup>62</sup>

Information management in Lebanon would arguably benefit from a comprehensive review of the existing baseline of mine contamination in Lebanon, in addition to objective cross-checking of new data entered into IMSMA, and the entry and extraction of land release data.

## Operators

In 2016, mine clearance was conducted by international operators DanChurchAid (DCA), Handicap International (HI), and Mines Advisory Group (MAG), and by the Engineering Regiment of the LAF. Capacity was of a total of eleven mine clearance teams (nine working for international non-governmental organisations (NGOs) and the other two working for the LAF Engineering Regiment); five mechanical teams (four operated by the Engineering Regiment and one by MAG); and seven MDD teams operated by the Engineering Regiment.<sup>63</sup> This represents a decrease of one MDD team over 2015. In addition, LMAC had two non-technical survey teams in 2016.<sup>64</sup>

At the beginning of 2017, a fourth international operator, Norwegian People's Aid (NPA), which was already operational in Lebanon for CMR clearance, started mine clearance operations in southern Lebanon along the Blue Line.<sup>65</sup>

MDDs and machines are mostly used as secondary assets, and in some cases for technical survey, based on needs and the terrain of the area. Machines are used for ground preparation, including rubble removal and vegetation cutting.<sup>66</sup> However, often the terrain is not suitable for MDDs or machines. LMAC has consistently raised concerns over lack of survey and clearance capacity to address mine and CMR contamination, which it ascribes to a lack of funding.<sup>67</sup>

In 2016, DCA deployed two manual mine clearance teams.<sup>68</sup>

HI deployed 48 demining staff in north Lebanon in 2016, comprising four teams (each with one national site supervisor, a team leader, a deputy team leader, seven deminers, a paramedic, and an ambulance driver). This represents the same capacity as the previous year.<sup>69</sup> HI's mine clearance operations in north Lebanon and the Mount Lebanon area are determined by seasonal factors:

clearance of minefields below 1,000 metres occurs during winter (October to April), and then clearance tasks above 1,000 metres begin in April and continue through the summer, depending on snow.<sup>70</sup> HI expected its demining capacity to remain the same in 2017.<sup>71</sup>

In 2016, MAG deployed three manual clearance teams and one mechanical team.<sup>72</sup> MAG's staffing increased from 40 to 50, thanks to increased funding from Japan, and conversion of teams from BAC to multi-task teams. As at April 2017, MAG was the only humanitarian clearance operator in Lebanon with mechanical assets, to support manual clearance operations.<sup>73</sup> MAG was expecting additional funding in 2017 for mine clearance on the Blue Line, which would enable it to further increase capacity.<sup>74</sup>

The 2016 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>75</sup>

UNIFIL was established in 1978<sup>76</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>77</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 generally 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>78</sup> The UN Mine Action Service (UNMAS) continues to engage with UNIFIL regarding the possibility of UNIFIL re-engaging in humanitarian mine action, but as at September 2017, this had not yet occurred.<sup>79</sup>

In 2016, operational assets were provided by two UNIFIL TCCs: Cambodia and China. These assets comprised four manual clearance teams (one Cambodian team and three Chinese teams), one Cambodian mechanical clearance team, and one Chinese EOD team. UNIFIL expected to maintain that capacity throughout 2017.<sup>80</sup> This represents a decrease in capacity of one manual clearance team compared to the previous year.<sup>81</sup>

UNMAS Lebanon, a project of UNMAS trains UNIFIL demining units and monitors and validates UNIFIL mine clearance along the Blue Line to ensure compliance with IMAS. UNMAS Lebanon operating funds come from UNIFIL's assessed peacekeeping budget.<sup>82</sup>

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## LAND RELEASE

Total mined area released by clearance in 2016 was almost 0.55km<sup>2</sup>. No land was reported as reduced by technical survey, but a further 0.01m<sup>2</sup> was reported to have been cancelled by non-technical survey.

### Survey in 2016

In 2016, 14,171m<sup>2</sup> in four suspected hazardous areas (SHAs) was cancelled by LMAC/RMAC non-technical survey teams. In addition, 195,139m<sup>2</sup> was confirmed as mined, in 32 SHAs.<sup>83</sup>

### Clearance in 2016

LMAC reported clearance of almost 0.55km<sup>2</sup> in 2016, across 31 mined areas, with the destruction of 417 anti-personnel mines, 53 anti-vehicle mines, 21 submunitions, and 62 other items of unexploded ordnance (UXO) (see Table 2). This is a significant decrease compared to the 0.92km<sup>2</sup> of mined area cleared in 2015.

Table 2: Mine clearance in 2016<sup>84</sup>

Operator	Areas cleared	Area cleared (m <sup>2</sup> )	AP mines destroyed	AV mines destroyed	Submunitions destroyed	UXO destroyed	Comments
DCA	8	29,021	63	0	5	7	4 of the 5 UXO destroyed by LAF
HI	13	109,127	296	3	0	27	19 of the 25 UXO destroyed by LAF
MAG	5	24,384	57	49	0	19	
LAF Emergency Response	5	401,474	1	1	16	9	
<b>Totals</b>	<b>31</b>	<b>564,006</b>	<b>417</b>	<b>53</b>	<b>21</b>	<b>62</b>	

AP = Anti-personnel

AV = Anti-vehicle

An additional 108,420m<sup>2</sup> was cleared by the LAF during rapid response call-outs in 2016, during which 59 anti-personnel mines, 28 anti-vehicle mines, 133 submunitions, and 794 other items of UXO were destroyed.<sup>85</sup>

Furthermore, UNIFIL reported destruction of 25 anti-personnel mines during its 2016 operations on the Blue Line.<sup>86</sup>

According to LMAC, mine clearance focuses on CHAs, and most of the tasks assigned for clearance were found to have mines.<sup>87</sup> However, HI reported that in eight of the thirteen areas it cleared, representing 28% of the overall mined area cleared, it did not find mines.<sup>88</sup> This was said to be largely due to the unconventional nature of the militia minefields being cleared by HI in North Lebanon and the fact that the CHAs of these minefield tasks are not always accurately defined. Some clearance tasks were created due to mine incidents having occurred, but subsequently no further contamination was discovered. There have also been incidences of clearance tasks created due to a fear of mines, rather than actual evidence of contamination.<sup>89</sup>

HI's clearance output increased by 12% in 2016, compared to the previous year, and the daily productivity of the deminers increased by 17%. HI attributed this increase to the experience of the HI teams; good collaboration with LMAC, especially with regards to the allocation and management of tasks; and to regular internal and external QC visits.<sup>90</sup>

While some clearance task areas do not contain any contamination, others require clearance of a much larger area than recorded in the IMSMA database. HI reported that since its first mine clearance operation in Lebanon in 2011, it has cleared 71% more area than the CHA initially tasked and outlined in the task dossiers received from LMAC.<sup>91</sup> Again, this is largely due to the lack of clearly defined CHAs for militia minefields. There have also been reports of mines being found completely outside the task area, and which were destroyed during clearance of access lanes.

In addition, the CHAs tasked by LMAC to clearance operators do not include obligatory fadeout distances, which can considerably increase the overall size of the task.<sup>92</sup>

Accordingly, in certain areas, additional non-technical survey and technical survey could help to more accurately define areas of actual contamination in the militia minefields. 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>93</sup>

Under the current NMAS, the search/clearance depth for mines in Lebanon is 20cm.<sup>94</sup> While LMAC reports that the LAF have occasionally found mines at a depth of 20cm, humanitarian clearance operators have reported that based on empirical evidence from their own operations, mines are typically found much closer to the surface, and not below 15cm.<sup>95</sup> As such, operators view clearance to 20cm as unnecessary, and have recommended that the mandated clearance depth could and should be reduced.<sup>96</sup> Those mines that are found deeper than 15cm are much deeper than 20cm, and hence would not be detected based on a specified clearance depth of 20cm.

LMAC encourages clearance operators to prepare an accurate pre-clearance report, and as and when required LMAC/RMAC discusses the required clearance depth for specific tasks with the operator, which may be approved at 13cm instead of 20cm.<sup>97</sup> However, this approach is contingent on the decision of individual officials and the process would benefit from a more systematic approach, which could usefully be set out in the revised NMAS. As at September 2017, the latest draft of the revised NMAS had been amended and the required clearance depth reduced from 20cm to 15cm.<sup>98</sup>

Manual clearance is LMAC's preferred primary asset for mine clearance in Lebanon, and a 10-metre fadeout is required for anti-personnel mines, and a 20-metre fadeout for anti-vehicle mines. In conventional minefields, the fadeout area is typically the responsibility of the LAF, which uses secondary assets to do so (MDDs and mechanical assets).<sup>99</sup> MAG, however, believes that mechanical assets could also usefully be deployed as a primary asset.<sup>100</sup>

## Deminer Safety

One deminer from MAG was injured by an anti-personnel mine in southern Lebanon in November 2016.<sup>101</sup>

## ARTICLE 5 COMPLIANCE

Lebanon is not a party or signatory to the APMBC, but nonetheless has obligations under international human rights law to protect life, which requires clearance of mines as soon as possible.

Clearance of mined areas was expected to be completed by the end of 2020, in accordance with the 2011–20 national strategy.<sup>102</sup> Meeting this target, though, depends on deployment of considerable resources: an estimated 125 manual clearance teams, 2 mechanical teams, and 9 two-strong MDD teams.<sup>103</sup> Current mine clearance capacity is far lower.

Lebanon has cleared 4.28km<sup>2</sup> of mined area in the last five years, as detailed in Table 3.

**Table 3: Mine clearance in 2012–16<sup>104</sup>**

Year	Area cleared (km <sup>2</sup> )
2016	0.55
2015	0.92
2014	1.28
2013	0.54
2012	0.99
<b>Total</b>	<b>4.28</b>

Lebanon has reported contributing US\$9 million annually towards mine action in Lebanon, to support the activities of LMAC, including mine and CMR survey and clearance, and QA/QC staff who manage and monitor clearance activities.<sup>105</sup> In addition, LAF provided companies for rapid response across Lebanon.<sup>106</sup>

Lack of international funding continues to pose a challenge to demining operations.<sup>107</sup> The EU has indicated that its funding for mine and CMR clearance, currently provided to DCA, HI, MAG, and NPA, will likely not be extended after the end of the current grant periods in 2018.<sup>108</sup>

According to LMAC, in order for Lebanon to complete mine clearance by the end of 2020, and in line with 2011–20 strategy, it would need the 138 clearance team capacity as specified in the strategy.<sup>109</sup> Current capacity is far below this level, and as such, Lebanon is well behind its targets for mine clearance. The impact of working in difficult terrain and weather conditions has also been identified as an obstacle to meeting this deadline.<sup>110</sup> Based on the reported 20km<sup>2</sup> of total mined area as at the end of 2016 (excluding the Blue Line), and average clearance rates of less than 1km<sup>2</sup> per year, it could take many years for Lebanon to become mine-free.

While operators agree that lack of capacity is certainly holding back clearance, they also believe that swifter progress could come from improved land release methodology.<sup>111</sup> This warrants further attention from LMAC as well as other mine action stakeholders in Lebanon.

LMAC has asserted that the results of the second mid-term review of the strategic mine action plan for 2011–20, conducted in 2016 and due to be completed in 2017, will help to reflect more accurately Lebanon's expected landmine clearance completion date.<sup>112</sup>

1 Emails from Brig.-Gen. Ziad Nasr, Director, LMAC, 24 April and 17 October 2017.

2 LMAC, "Annual Report 2016", p. 32.

3 Emails from Brig.-Gen. Ziad Nasr, Director, LMAC, 24 April and 17 October 2017.

4 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April and 9 June 2017.

5 Ibid.

6 Interview with Brig.-Gen. Elie Nassif, then Director, and Brig.-Gen. Fakhri, then Head of Operations, LMAC, Beirut, 18 April 2016.

7 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.

8 Email from Brig.-Gen. Elie Nassif, LMAC, 21 May 2016.

9 Emails from Brig.-Gen. Ziad Nasr, Director, LMAC, 17 and 23 October 2017.

10 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakhri, LMAC, Beirut, 11 April 2016.

11 Ibid.

12 LMAC, "Mid-term review to strategy 2011–2020, milestone 2013", August 2014, pp. 18 and 37.

13 Ibid.

14 Ibid.

15 Email from Brig.-Gen. Elie Nassif, LMAC, 21 May 2016; interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakhri, LMAC, Beirut, 11 April 2016; and email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.

16 LMAC, "Annual Report 2016".

17 Emails from Brig.-Gen. Elie Nassif, LMAC, 12 May 2015; Jacqui Brownhill, Desk Office, Mines Advisory Group (MAG), 1 May 2015; and Catherine Smith, Deputy Desk Officer, Handicap International (HI), 20 March 2015.

18 Email from Brig.-Gen. Elie Nassif, LMAC, 21 May 2016.

19 Interview with Henri Francois Morand, UN Mine Action Service (UNMAS), Naqura, 14 April 2016; and Report of the UN Secretary-General on the implementation of Security Council Resolution 1701 (2006), UN doc. S/2016/189, 26 February 2016, p. 4.

20 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; and LMAC, "Annual Report 2016", pp. 20–21.

21 LMAC, "Annual Report 2016", pp. 20–21.

22 LMAC, "Mid-term Review to Strategy 2011–2020, Milestone 2013", August 2014, pp. 4–5.

23 LMAC, "2012 Annual Report Lebanon Mine Action Centre", March 2013.

24 LMAC, "Lebanon Mine Action Strategy 2011–2020", September 2011, p. 4.

25 Email from Brig.-Gen. Ziad Nasr, LMAC, 22 June 2017.

26 Interview with Col. Pierre Bou Maroun, then Director, RMAC, Nabatiyeh, 16 November 2016.

27 UNDP, "Mine Action in Lebanon: A Review of the Lebanon Mine Action Programme and UNDP Support to mine action in Lebanon", Final Report, September 2011, p. 9.

28 Interviews with Lt.-Col. Henry Edde, then Director, RMAC, Nabatiyeh, 12 April 2016; and Brig.-Gen. Elie Nassif and Brig.-Gen. Fakhri, LMAC, Beirut, 18 May 2016.

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- 38 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016; and email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
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- 40 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.
- 41 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 42 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 43 Ibid.
- 44 Email from Brig.-Gen. Elie Nassif, LMAC, 14 May 2016.
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- 46 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 47 LMAC, "Annual Report 2016", p. 35.
- 48 Email from Brig.-Gen. Elie Nassif, LMAC, 17 June 2015.
- 49 Emails from Brig.-Gen. Elie Nassif, LMAC, 7 July 2015; and Rory Logan, then Programme Manager, NPA, 20 April 2015; Statement of Lebanon, First CCM Review Conference, Dubrovnik, 7–11 September 2015.
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- 51 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 52 Interviews with Bekim Shala, then Programme Manager, MAG, Nabatiyeh, 14 April 2016; and Craig McDiarmid, NPA, Tyre, 12 April 2016.
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- 55 Emails from Samuel Davaux, Mine Action Coordinator, HI, 20 July 2017 and Craig McDiarmid, NPA, 31 August 2017; and interviews with Brig.-Gen. Ziad Nasr, LMAC, and Dave Willey, Programme Manager, MAG, in Geneva, 5 September 2017.
- 56 Email from Samuel Davaux, HI, 20 July 2017.
- 57 Interview with Rana Elias, GICHD, Geneva, 6 September 2017.
- 58 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 59 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
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- 61 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 April 2016.
- 62 Interview with Bekim Shala, MAG, Nabatiyeh, 14 April 2016.
- 63 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; and LMAC, "Annual Report 2016", p. 30.
- 64 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 65 Email from Craig McDiarmid, NPA, 30 March 2017.
- 66 Emails from Brig.-Gen. Elie Nassif, LMAC, 21 May 2016; Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; Samuel Davaux, HI, 4 April 2017; and Dave Willey, MAG, 25 April 2017.
- 67 Statements of Lebanon, CCM First Meeting of States Parties, Vientiane, September 2010; Fourth Meeting of States Parties, Lusaka, September 2013; Fifth Meeting of States Parties, Costa Rica, September 2014; Mine Action Support Group meeting, 18 October 2013; and CCM intersessional meetings, 9 April 2014; and CCM Article 7 Report (for 2013), Form F.
- 68 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
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- 70 Email from Chris Chenavier, HI, 7 April 2016.
- 71 Emails from Samuel Davaux, HI, 4 April 2017.
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- 74 Ibid.
- 75 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 76 UN Security Council Resolutions 425 (1978) and 426 (1978).
- 77 UNIFIL, "UNIFIL Mandate", at: <http://unifil.unmissions.org/Default.aspx?tabid=11553&language=en-US>.
- 78 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.
- 79 Email from Henri Francois Morand, UNMAS, 18 September 2017.
- 80 Ibid.
- 81 Emails from Sarah Holland, Programme Officer, UNMAS, 30 September 2016; and Henri Francois Morand, UNMAS, 13 October 2016.
- 82 Email from Sarah Holland, UNMAS, 30 September 2016.
- 83 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; and LMAC, "Annual report 2016", p. 28.
- 84 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; Samuel Davaux, HI, 4 April 2017; and Dave Willey, MAG, 25 April 2017. The area of cleared land reported by MAG was different to that reported by LMAC. MAG recorded clearing 25,167m<sup>2</sup>. Furthermore, there were some discrepancies between what was reported to Mine Action Review versus LMAC's Annual Report for 2016, which stated that MAG destroyed 56 anti-personnel mines, 50 anti-vehicle mines, and 18 other items of UXO; that HI cleared 299 anti-personnel mines; and that the Engineering Regiment cleared 494,009m<sup>2</sup>, and destroyed 60 anti-personnel mines, 29 anti-vehicle mines, and 2,382 other items of UXO. DCA declined to provide clearance data to Mine Action Review, so cross-verification was not possible.
- 85 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 86 Email from Henri Francois Morand, UNMAS, 18 September 2017.
- 87 Email from Brig.-Gen. Elie Nassif, LMAC, 21 May 2016.
- 88 Email from Samuel Davaux, HI, 4 April 2017.
- 89 Interviews with Bekim Shala, MAG, Nabatiyeh, 14 April 2016; and Chris Chenavier, HI, Toul, 18 April 2016; and email from Samuel Davaux, HI, 13 July 2017.
- 90 Email from Samuel Davaux, HI, 4 April 2017.
- 91 Email from Samuel Davaux, HI, 29 September 2017.
- 92 Interview with Chris Chenavier, HI, Toul, 18 April 2016.
- 93 Ibid.
- 94 LMAC, "Annual Report 2014", p. 29.
- 95 Interviews with Bekim Shala, MAG, Nabatiyeh, 14 April 2016; and Chris Chenavier, HI, Toul, 18 April 2016.
- 96 Interview with Chris Chenavier, HI, Toul, 18 April 2016.
- 97 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 18 April 2016.
- 98 Emails from Samuel Davaux, Mine Action Coordinator, HI, 20 July 2017; and Craig McDiarmid, NPA, 31 August 2017; and interviews with Brig.-Gen. Ziad Nasr, LMAC, and Dave Willey, Programme Manager, MAG, in Geneva, 5 September 2017.
- 99 Interviews with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 11 and 18 April 2016; and Bekim Shala, MAG, Nabatiyeh, 14 April 2016.
- 100 Interview with Bekim Shala, MAG, Nabatiyeh, 14 April 2016.
- 101 Emails from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; and Dave Willey, MAG, 25 April 2017.
- 102 LMAC, "Mid-term Review to Strategy 2011–2020, Milestone 2013", August 2014.
- 103 Ibid.
- 104 See Mine Action Review and Landmine Monitor reports on clearance in Lebanon covering 2012–16.
- 105 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017; and LMAC, "Annual Report 2016", p. 26.
- 106 Interview with Brig.-Gen. Elie Nassif and Brig.-Gen. Fakh, LMAC, Beirut, 18 April 2016.
- 107 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 108 Feedback from clearance operators during research field visit to Lebanon, May 2016.
- 109 Email from Brig.-Gen. Elie Nassif, LMAC, 21 May 2016.
- 110 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.
- 111 Interviews with Bekim Shala, MAG, Nabatiyeh, 14 April 2016, and Craig McDiarmid, NPA, Tyre, 12 April 2016.
- 112 Email from Brig.-Gen. Ziad Nasr, LMAC, 24 April 2017.