RECOMMENDATIONS FOR ACTION

- Syria 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, Syria has obligations under international human rights law to clear mines in areas under its jurisdiction or control as soon as possible.
- Syria should establish a mine action authority and facilitate access for international demining organisations to facilitate development of a credible humanitarian demining programme.
- Syria should initiate a programme of mine survey and clearance as soon as possible and take other measures to reduce the risk to civilians of mines and explosive remnants of war.

ANTI-PERSONNEL MINE CONTAMINATION

Syria is heavily contaminated by mines and mines of an improvised nature used extensively by parties to the country’s eight-year old conflict. It also has mined areas left by successive Arab-Israeli wars since 1948.

Landmines, whether commercial or of an improvised nature, affect all regions and vary according to the armed groups active there, but contamination appears to be particularly dense in areas that were occupied by Islamic State. Continuing hostilities and persistent use of mines have prevented a determination of the extent of contamination.\(^1\) Mines and improvised explosive devices (IEDs) make up only part of Syria’s massive contamination by explosive remnants of war (ERW).

The Syrian government reportedly laid mines along borders with Turkey and Lebanon in 2012 and Turkish authorities claimed five years ago that between 613,000 and 715,000 mines had been planted along the Turkish-Syrian border, making clear they were not emplaced by Turkish forces.\(^2\) In Manbij, close to the Turkish border, heavy casualties from mines, including those of an improvised nature, occurred after Kurdish forces pushed out Islamic State in mid-August 2016 and were still occurring as a result of continuing conflicts in 2019.\(^3\) Islamic State heavily mined the approaches to Manbij and around the Tishreen dam to the east of it, using young boys disguised as shepherds to lay the mines, the United Nations Commission of Inquiry monitoring the conflict in Syria reported in March 2017.\(^4\)

In Aleppo and neighbouring Idlib governorates, volunteers similarly report mines and other explosive devices planted in agricultural fields, next to roads, inside villages, and around schools and hospitals.\(^5\) Rebel forces which subjected the towns of Foua and Kfraya to years of siege are said to have left hundreds of mines in surrounding fields as well as individual explosive devices in many homes.\(^6\)

Further south in Hama and Homs governorates, open-source reports of mine casualties, although unconfirmed, are suggestive of significant contamination left by all sides during years of conflict.\(^7\) The Syrian Observatory for Human Rights said that between 24 February and 17 March 2019 it documented the death of 44 people in mine and IED explosions in Homs, Hama and Deir Ezzour. It also documented casualties from mines, including those of an improvised nature, around towns in the southern province of Dara.\(^8\)

From Raqqa, former capital of the self-proclaimed Islamic State caliphate, to Hassakeh governorate in the north-east, and south to Deir ez-Zor and Barghuz (the last remaining Islamic State stronghold overrun in May 2019), retreating Islamic State forces left massive contamination by mines of an improvised nature and other improvised devices that have taken a heavy toll on civilians returning in their wake. Medical non-governmental organisation (NGO) Médecins sans Frontières reported that the number of victims of mines and other explosive devices it treated in north-east Syria doubled between November 2017 and March 2018. Half of them were children. Its patients reported discovering mines and booby-traps on roads, alongside fields, on rooftops, and under staircases, as well as rigged in common household items from refrigerators and air conditioners to televisions and cooking pots.\(^9\)
PROGRAMME MANAGEMENT

Syria does not have a national mine action authority or a national programme for survey and clearance. Mine action has been conducted by a wide range of organisations. In areas under government control, these have included Russian and Syrian military engineers, other parties to the conflict, and civil defence organisations.

Russia deployed several hundred military deminers from the Armed Forces Demining Centre from 2017 and conducted clearance with manual teams supported by mine detection dogs and Uran-6 mine detection robots. Russian troops also provided training courses for Syrian army engineers at Hmeimim air base and at training centres established in 2017 in Aleppo and Homs. By the start of January 2018, Russian armed forces reported they had trained 900 Syrian engineers.19

In 2018, Russia started to withdraw troops, including deminers, from Syria and appealed to other countries to provide support. Armenia became the first country to respond to the appeal, sending an 83-man team to Syria in February 2019, planning to focus its work on the northern governorate of Aleppo.20 Armenia rotated a new team to replace the first after four months.21

National operators included Syrian Civil Defence (SCD), which, at the start of 2018, was working in five governorates (Dar’a, Hama, Homs, Idlib, and Quneitra) with the support of Mayday. SCD’s three teams in Dar’a and two teams in Quneitra operated until early July 2018 when operations were halted and the teams disbanded. SCD also had one clearence team working in Hama governorate and another in Idlib in 2018. By mid-2019, SCD had five clearance teams working in three provinces: Hama (1 team), Idlib (2 teams) and Aleppo (2 teams). It also planned to deploy two non-technical survey teams, one each in Hama and Idlib.22 AFAK, a Syrian NGO working in partnership with The HALO Trust, conducted clearance in the southern provinces of Dar’a and Quneitra in the early part of 2019 until a Syrian army drive took control of the area.23

In areas outside government control in the north east, humanitarian demining organisations and commercial companies, including Tetra Tech, have conducted large-scale clearance in areas recaptured from Islamic State. A small national organisation, Roj Mine Control Organization (RMCO), was conducting clearance in north and north-east Syria but reportedly sustained heavy casualties among its deminers attempting clearance of improvised devices.24

Tetra Tech, started work in northern Syria in October 2016 but since 2017, worked in the north east operating in Raqqa, Deir Ezzour and, after its recapture in 2019, in Barguz. Funded by the US Department of States, Tetra Tech focused on critical infrastructure such as hospitals, schools, water pumping stations, and electricity generating plants. By 2018, Tetra Tech had approximately 400 personnel but after President Trump’s December 2018 announcement of the US intention to withdraw from Syria it reduced capacity from seven multi-task teams to two, working with two risk education teams. Three international staff have been killed during clearance operations in Syria.25

The United Nations Mine Action Service (UNMAS) signed a Memorandum of Understanding (MoU) with the Syrian government in July 2018 under which it deployed two staff to Damascus. In January 2019, it started a first risk education training course for 26 Syrian personnel, of whom 16 were women.26 Russia announced in March 2019 it would provide funding of US$1 million to support UNMAS’s activities in Syria.27 In April 2019, UNMAS announced “Humanitarian Mine Action Support to Syria (31 March 2019–31 March 2020)” project, supported by a $1.4 million grant from Japan, which is expected to deliver risk education to 43,000 people and conduct contamination impact surveys in 85 communities, as well as marking and fencing off explosive hazards.28

LAND RELEASE

Continuing conflict prevented a coordinated national programme of mine action in 2018 and 2019. Mine action interventions reportedly gathered significant momentum, albeit at levels that varied in different regions according to the level of security. International operators have conducted significant amounts of clearance of land and buildings in the north east but did not release details. No coordinated and comprehensive information on outcomes of survey and clearance in other areas was available.

Syrian deminers were reportedly to have conducted clearance of mines and explosive devices in the Damascus suburbs of Eastern Ghouta and Douma after government forces and their allies retook control in April 2018.29 As government forces extended their control in southern governorates in 2018, Syrian army deminers were reported clearing mines and ERW in Dar’a.30

Armenia’s Centre for Humanitarian Demining and Expertise reported that the Armenian army engineers sent to Syria in February 2019 had cleared around 35,000m² by July, tackling 29 landmines and explosive devices. An Armenian deminer was injured in the explosion of a mine or IED in March resulting in amputation of a foot.31 They planned to clear five minefields near Aleppo covering a total area of about 1.3km² in operations coordinated with Russian and Syrian military engineers.32 Between 8 June and 22 July 2019, the deminers reportedly cleared 8,534m².33 Demolitions of cleared items are conducted by the Syrian military.34
Email from Gilles Delecourt, Senior Programme Manager, United Nations Mine Action Service (UNMAS), 22 May 2018.


See, e.g., “5 killed, 6 injured in landmine blast in Hama countryside”, IRNA, 3 September 2018; and “4 Civil Defence workers killed clearing landmines in northern Homs”, Zaman al Wasi, 18 May 2018.

“Russia calls for international support for demining efforts in Syria”, Xinhua, 3 April 2019; and interview with Gilles Delecourt, Senior Programme Manager, UNMAS, in Geneva, 7 February 2019.


Email from Adam Boyd and Rob Syfret, HALO Trust, 18 May 2018; and HALO Trust, “Survey and Explosive Hazard Removal in Dar’a and Quneitra Governorates, Southern Syria”, undated but 2018; and interview with Tim Porter, Director of Programmes, HALO Trust, in Geneva, 5 February 2019.


Interview with Gareth Hawkins, Tetra Tech, 10 May 2019.


UZBEKISTAN

RECOMMENDATIONS FOR ACTION

■ Uzbekistan 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, Uzbekistan has obligations under international human rights law to clear anti-personnel mines in areas under its jurisdiction or control as soon as possible.
■ Uzbekistan should be more transparent in detailing the extent of its mine contamination and clearance operations.

ANTI-PERSONNEL MINE CONTAMINATION

Uzbek forces have laid mines along its international borders at various times, including on its borders with Afghanistan in 1998, with Kyrgyzstan in 1999, and with Tajikistan in 2000. While Tajikistan and Uzbekistan settled most of their 1,283km-long border dispute following the collapse of the Soviet Union, certain areas have not yet been delineated and therefore the exact location of mined areas is not known. In 2010, the Secretary-General of the United Nations (UN), Ban Ki-moon, criticised as “unacceptable” Uzbekistan’s emplacing of mines along parts of its border that have not been delineated.

Soviet troops also laid mines on the Uzbek-Afghan border. Uzbekistan had reportedly cleared 95% of the minefields along the Tajik border by the end of 2007 in demining operations conducted by Uzbek army deminers in cooperation with Tajik border troops.

The first ever state visit of the President of Uzbekistan to Tajikistan took place in March 2018, and several agreements were signed between the two countries, including one on demarcation of the separate regions of the Tajik-Uzbek border. Any demining operations will require agreement and cooperation between the two nations; as at July 2019, the Tajik Ministry of Foreign Affairs (MoFA) was reported to be in negotiation with the Uzbek MoFA regarding survey of the Tajik-Uzbek border (see Mine Action Review’s Clearing the Mines report on Tajikistan for further information).

In 2005, media reports cited Kyrgyz officials in Batken province as saying Kyrgyz border guards had checked previously mined areas of the border around the settlements of Ak-Turpak, Chonkara, and Otukchu, which had been cleared by Uzbek deminers, and confirmed that they were free of contamination. According to the most recent information available (2005), Uzbekistan has no plans to clear mines laid on its 150km border with Afghanistan.

PROGRAMME MANAGEMENT

There is no functioning mine action programme in Uzbekistan.

LAND RELEASE

There are no reports of any survey or clearance occurring in 2018.
RECOMMENDATIONS FOR ACTION

- Vietnam 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, Vietnam has obligations under international human rights law to clear anti-personnel mines in areas under its jurisdiction or control as soon as possible.
- Vietnam should prepare and publish a detailed assessment of remaining mined areas.
- The Vietnam National Mine Action Centre (VNMAC) should draw up a strategic plan for completing mine clearance.
- VNMAC should provide regular detailed reporting on the progress of demining.

UNDERSTANDING OF AP MINE CONTAMINATION

Vietnam's mine problem is certainly small compared with its explosive remnants of war (ERW) contamination, though its full extent is unknown. A survey conducted between 2010 and 2014 reported anti-personnel mines in 26 of 63 cities and provinces but gave no further details.1 Between 2014 and 2019, Danish Demining Group (DDG) identified 13 previously unrecorded minefields in four districts in Quang Nam province and one district in Thua Thien Hue province. In 2018, DDG identified three anti-personnel mined areas of 12,652m² in A Luoi district, Thua Thien Hue province. Local residents were aware of the presence of mines and reported to DDG that they tended to avoid these areas.2

Most mines were left by conflicts in the 1970s with neighbouring Cambodia and China, and affect areas close to its borders with those countries.3 Clearance had been reported by Vietnam along its northern border with China in the 1990s and from 2004 onwards, but mined areas further inland are believed to persist.4 It was reported in 2013 by the Engineering Command that clearance had been completed in the Cambodia border areas.5 Many ports and river deltas were mined extensively during the armed conflict with the United States and were not completely cleared when it ended. A number of sea mines have been found on the coast.6 Some mines have also been found around former United States (US) military installations.7

Vietnam also has extensive contamination from cluster munition remnants (CMR) and other explosive remnants of war (ERW) (“See Mine Action Review’s Clearing Cluster Munition Remnants 2019 report on Vietnam for further information”).

NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

Vietnam’s mine action programme is restructuring, but management and operations continue to depend largely on the armed forces. According to the Decree on the Management and Implementation of Mine Action Activities, issued in February 2019 (hereafter, the 2019 Decree), the Ministry of National Defence (MoD) will continue to elaborate and preside over the national mine action programme, as the lead authority, in coordination with other relevant ministries and sectors.8 It also designates the MoD as the focal point for international cooperation in mine action.9

The Vietnam National Mine Action Centre (VNMAC) was established in 2014 by Prime Ministerial decision (No. 738 of 2013) to strengthen the direction of mine action and provide a focal point for mine action operations. The 2019 Decree instructed VNMAC, “under the direction of the Prime Minister and managed by Ministry of Defense, to monitor, coordinate and implement mine action tasks.”10 Although the VMAC is not yet fully functional, 2019 is a crucial year as the national programme develops its legal framework, structure, policies, and standards.11

Mines Advisory Group (MAG), Norwegian People’s Aid (NPA), the United Nations Development Programme (UNDP), and Golden West all provide capacity development support in Vietnam.12
GENDER

As at August 2019, Vietnam has not provided information on whether it has a gender policy and implementation plan for mine action.

International operators DDG, MAG, and NPA all report having organisational gender and diversity policies and state that they consult both women and children during community liaison activities with male and female members of community liaison/survey teams. They say they provide equal opportunities during the recruitment process and are working towards gender-balanced employment.13

INFORMATION MANAGEMENT AND REPORTING

Data quality and accessibility continues to be a major challenge in Vietnam. VNMAC is responsible for national information management and uses the Information Management System for Mine Action (IMSMA). However, with the exception of the UNDP Korea-Vietnam Mine Action Project (KV-MAP) project data, information is not shared with mine action operators.14 The ERW impact survey report released in 2018 noted that “regulations on reporting demining activities have not been strictly followed” and authorities had received clearance data for only two provinces, Ha Tinh and Quang Tri, where international donors have supported operations.15

The VNMAC information management unit intends to consolidate mine action data from the Technology Centre for Bomb and Mine Disposal (BOMICEN), the UNDP KV-MAP project, and Quang Tri province into the national information management system. With support from NPA, VNMAC is equipped with the necessary technical capabilities and knowledge, but legislation governing the collection and sharing of mine action data was lacking.16 However, the forthcoming guiding Circular, which as at June 2019 was being elaborated, is expected to provide clarity on the collection and sharing of mine action data, including data the military allow to be made public.17

Vietnam has a National Mine Action Standard, a Technical Mine Action Regulation, and various mine action-related procedures, each of which have their own data collection forms. These data collection forms are not consistent, nor are they used in a standard manner. However, this issue is expected to be addressed by the legal framework being developed.18

Mine action data collected by the provincial information management system in Quang Tri, also using IMSMA, is accessible to all mine action stakeholders. The database holds survey and clearance results, providing a basis for planning and tasking, as well as victim data. It has also received some data on clearance activity undertaken by the Provincial Military Command for 2000 to 2013.19 The data, which are believed to be accurate, up to date, and reliable, have been the catalyst for greater coordination across all stakeholders within the province.20 Live operations data can be accessed via QTMAC’s website, while the other Vietnamese provinces with active mine action programmes do not have databases, and operators maintain their own.21

Development of information management is an aim of the KV-MAP project, the goal of which is to improve available information for the UXO/mine action sector to support informed policy making and task prioritisation.22 In 2018, Coordination Offices and Database Centres for Mine Action were established in Quang Binh and Binh Dinh provinces with training provided to provincial staff. As at June 2019, these centres manage the data from the KV-MAP project which is then fed into the VNMAC database but the aim is for the centres to be sustainable and in the future manage the mine action data for the province.23

PLANNING AND TASKING

Decision 504, approved by the Prime Minister in April 2010, set out a National Mine Action Plan for 2010–25. The plan aimed to “mobilize domestic and international resources in making efforts to minimize and finally create impact-free environment for social economic development.” It called for ERW contamination clearance of 8,000km² between 2016 and 2025.24

A VNMAC action plan for 2018 included three main targets25:

- Finalise legislation, decrees, and guidelines for the mine action sector in order to provide a unified framework for the sector country-wide
- Clarify contamination estimates through the release of the landmine impact survey and develop risk education
- Clearance of some 300km² of ERW-affected land.

It is evident that at least partially these targets have been achieved: legislation has been introduced; clarifying guidelines are being developed; and the results of the ERW impact survey were released. As at May 2019, however, no information had been formally provided by VNMAC on the realisation of its 2018 goals or on its goals for 2019.

As at May 2019, there was no national prioritisation system for mine clearance. The prioritisation processes implemented in Quang Tri and Quang Binh are predominantly for CMR contamination. In Quang Tri province, there is a prioritisation plan in place and an effective system for task allocation.26 The prioritisation processes and accompanying forms were piloted in 2018 and were rolled out in May 2019, with QTMAC now managing the province-wide clearance task prioritisation process.27 The criteria are established based on consultation and agreement between QTMAC and operators. In Quang Binh province, MAG has been applying its own procedures and process to prioritise clearance tasks based on scores of consent, hazard assessment, and community benefits.28 While DDG uses a consultative approach at the province, district and village level to prioritise its clearance tasks.29
LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

Vietnam has both National Technical Regulations (QCVNs), which are legally binding and similar in content to standing operating procedures (SoPs), and National Mine Action Standards (TCVN), closely aligned with the International Mine Action Standards (IMAS), but considered optional by VNMAC and the MoD.19

OPERATORS

Most clearance in Vietnam is conducted by the Army Engineering Corps and military-owned commercial companies. Outside the central provinces its current strength and deployment are unknown. Officials have previously reported that it had 250 mine clearance and battle area clearance (BAC) teams nationally. The three Provincial Military Command (PMC) teams in the aforementioned provinces all conducted BAC throughout 2018. Vietnam reportedly has more than 70 military-owned companies undertaking clearance related to infrastructure and commercial and development projects.20

International operators active in 2018 included DDG, working in Quang Nam and Thua Tien Hue provinces; MAG, working in Quang Binh and Quang Tri provinces; NPA, working in Quang Tri and Thua Tien Hue provinces; and PeaceTrees Vietnam, which has been working in Quang Tri province since 1995.

LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

VNMAC has not shared any data on mine clearance activities in Vietnam in 2018 and operators did not report any anti-personnel mined area reduced or cancelled through survey or cleared in 2018.

In 2018, DDG identified 12,652m² of anti-personnel mined area in A Luoi district, Thua Tien Hue province.21 During explosive ordnance disposal (EOD) spot tasks, five anti-personnel mines were destroyed: one by DDG, one by MAG, and three by NPA.22

Vietnam has not set a deadline for completion of anti-personnel mine clearance. In 2013–17, the Legacy of War Coordination Centre (renamed the Quang Tri Mine Action Centre in 2018), recorded clearance of 497 mines, 6% of the total number of items cleared, but the number of mines cleared annually has fallen steadily.23 In Quang Tri province, from 2000 to 2018, 7.5% of the 435 incidents from explosive ordnance were due to landmines and of the 295,671 items of ordnance found through clearance during this time 6,866 (2.3%) were landmines.24

2 Questionnaire from DDG.
4 Information provided by Sr. Col. Phan Duc Tuan, PAVN, in email from Vietnam Veterans of America Foundation (VVAF), Hanoi, 24 September 2012; and in interview in Geneva, 30 June 2011.
5 Interview with Sr. Col. Nguyen Thanh Ban, Head of Bomb and Mine Department, Engineering Command, Hanoi, 18 June 2013.
7 Ibid.
9 Email from Simon Rea, MAG, 24 April 2019.
10 Draft Decree on the management and implementation of mine action activities, Hanoi, April 2018.
11 Emails from Simon Rea, MAG, 24 April 2019; and Resad Junuzagic, NPA, 6 May 2019.
13 Emails from Simon Rea, MAG, 24 April 2019; Resad Junuzagic, NPA, 6 May 2019; and Clinton Smith, DDG, 29 May 2019.
14 Email from Resad Junuzagic, NPA, 6 May 2019.
16 Email from Resad Junuzagic, NPA, 6 May 2019.
17 Skype interview with Nils Christensen, UNDP, 13 June 2019.
18 Ibid.
19 Meeting with Christopher Ramsden, Senior Technical Adviser, LWCC, Nguyen Duc Thien, Manager, LWCC; Nguyen Van Duc, Data Processing Officer, LWCC; and Snr Lt. Tran Van Hai, Operations Officer, Provincial Military Command, in Dong Ha, Quang Tri, 19 April 2018.
20 Email from Resad Junuzagic, NPA, 6 May 2019.
23 Skype interview with Nils Christensen, UNDP, 13 June 2019.
25 Interview with Nguyen Hang Phuc, VNMAC, Hanoi, 18 April 2018.
26 Email from Resad Junuzagic, NPA, 6 May 2019.
27 Email from Simon Rea, MAG, 16 June 2019.
28 Email from Simon Rea, MAG, 24 April 2019.
29 Email from Clinton Smith, DDG, 29 May 2019.
30 Email from Resad Junuzagic, NPA, 6 May 2019.
32 Questionnaire from DDG.
33 Emails from Simon Rea, MAG, 24 April 2019; Resad Junuzagic, NPA, 6 May 2019; and Clinton Smith, DDG, 29 May 2019.
RECOMMENDATIONS FOR ACTION

- While formal accession to the Anti-Personnel Mine Ban Convention (APMBC) is not currently possible for Kosovo, as it is not yet recognised as a state by the depository to the Convention, Kosovo should submit a letter to the United Nations (UN) Secretary-General stating that it intends to fully comply, on a voluntary basis, with the APMBC.

- This should include the submission of a voluntary Article 7 transparency report on an annual basis, as Kosovo has proposed in its Mine Action Strategy 2019–24.

- The Kosovo Mine Action Centre (KMAC) should continue its efforts to ensure timely and efficient clearance of anti-personnel mines, in line with the objectives in its latest mine action strategy and complete clearance by the end of 2024.

- KMAC and international mine action operators should increase their collaboration to seek additional funding and greater financial stability for mine action.

UNDERSTANDING OF AP MINE CONTAMINATION

Kosovo is contaminated by mines, cluster munition remnants (CMR), and other explosive remnants of war (ERW), primarily as a result of the conflict between the Federal Republic of Yugoslavia and the Kosovo Liberation Army (KLA) in the late 1990s, and between Yugoslavia and North Atlantic Treaty Organization (NATO) member states in 1999.1 At the end of 2018, 44 confirmed hazardous areas (CHAs) remained, covering almost 1.2km² in total.²

Both anti-personnel and anti-vehicle mines were used during the conflict, in fixed-pattern minefields as well as more randomly in “nuisance” minefields. Many anti-personnel mines had minimal metal content.³ Although the total number of mines emplaced during the conflict is not known, the UN Mine Action Coordination Centre (UNMACC) reported, as at 31 May 2000, a total of 7,232 mines cleared in the preceding year (3,448 anti-personnel mines and 3,784 anti-vehicle mines).⁴ The UN reported in 2002 that “the problems associated with landmines, cluster munitions and other items of unexploded ordnance [UXO] in Kosovo have been virtually eliminated”,⁵ but further investigation revealed that considerably more contamination remained to be addressed.⁶

Mines are found mainly on Kosovo’s borders with Albania and the then former Yugoslav Republic of Macedonia (now the Republic of North Macedonia), but also in the area of Dulie Pass in south-central Kosovo.⁷ Kosovo has gained an accurate assessment of remaining anti-personnel mine contamination on its territory as a result of 20 years of mine action operations, including surveys in 2013 and 2015.⁸

The 2013 survey of mined areas and cluster munition strikes across Kosovo, carried out by The HALO Trust and KMAC, confirmed 130 hazardous areas: 79 mined areas covering an estimated 2.76km² and 51 cluster munition strikes covering an estimated 7.63km².⁹ The total of 79 mined areas was a considerable increase on the 48 mined areas that had been identified at the end of 2012.¹⁰ By the end of 2014, KMAC reported the number of confirmed mined areas had fallen slightly, to 77 covering 2.75km².¹¹ During 2018, two areas of previously unrecorded anti-personnel mine contamination were added to the database with a total size of 55,166m².¹²

EXPLOSIVE REMNANTS OF WAR AND CLUSTER MUNITION REMNANTS

In addition to contamination from mines, Kosovo is contaminated with CMR (see Mine Action Review’s Clearing Cluster Munition Remnants 2019 report on Kosovo for further information) as well as other ERW. Kosovo Protection Force (KFOR) and Kosovo Security Force (KSF) explosive ordnance disposal (EOD) teams regularly dispose of ERW in response to information provided by the public and demining organisations.¹³
NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

In January 2011, the EOD Coordination Management Section became KMAC, responsible for managing survey and clearance of mines and ERW. KMAC prepares an annual workplan in cooperation with international demining NGOs and coordinates their operations along with the national demining teams of the KSF. It also coordinates survey, quality assurance, risk education, public information, and victim assistance activities. KMAC’s role and responsibilities as head of the national mine action programme under the auspices of the Ministry of Defence were established and institutionalised by Kosovo’s 2012 Law on Humanitarian Demining.

In 2018, KMAC had five permanent staff: a Director, a Senior Quality Assurance (QA) Officer, a QA Inspector, a Mine Risk Education (MRE) Officer, and a Public Information Officer.

Kosovo’s mine action programme is fully nationally owned, with a strong, longstanding commitment from the national government. The dedicated team of permanent national staff have been employed with KMAC since its creation. This has benefitted the programme with the retention of experience and institutional memory.

The Kosovo government provided approximately €135,000 in financial support to KMAC in 2018, consistent with the amount of funding for KMAC’s operations provided the previous year. The KSF received €980,000 for mine and ERW clearance in 2018, also consistent with the funding it received from the Kosovo government the previous year. KMAC expected to receive similar levels of funding in 2019.

Kosovo’s current Mine Action Strategy 2019–24 sets out the objective of intensifying resource mobilisation efforts in order to gain greater financial stability. While a specific strategy did not exist in 2018, operators reported that coordinated approaches with KMAC were made to potential donors such as the United States and the European Union.

Unfortunately, the misperception that mine, CMR, and ERW clearance in Kosovo was completed in 2001 persists, whereas the reality is that significant contamination remains. Kosovo remains a poor country and needs economic assistance to help it complete clearance in a timely manner, possibly in less than five years if sufficient support is provided. In 2019, KMAC identified funding and logistical support as the two primary areas where it could most benefit from assistance from international donors and mine action operators.

GENDER

Kosovo’s Mine Action Strategy 2019–24 reflects the commitment of the mine action programme to ensure that gender is taken into consideration in the planning, implementation, and monitoring of all mine action projects, with a view to promoting equality and quality. The Strategy stipulates that all mine action activities and assistance must reflect the needs of different ages and gender in a targeted and non-discriminatory manner, and that mine action and community liaison data is also to be collected systematically disaggregated according to sex and age.

Both KMAC and KSF had gender policies in place in 2018. KMAC reported that the KSF’s gender policy aims to facilitate the consultation of all groups affected by mines and ERW, expressly women and children. In 2018, a total of 8% of KSF staff employed in operational mine action roles were women, along with 5% of staff in managerial or supervisory positions. Within KMAC, one of its five staff was a woman.

Kosovo’s mine action strategy recognises the barriers that exist against equal employment in Kosovo society, including significant differences in employment levels between men and women, despite the number of men and women of working age being broadly similar. The Strategy notes that, as at 2019, more than four-fifths of women of working age were not employed in Kosovo’s labour market, and less than one in eight women of working age have been employed annually over the past five years. The primary reasons given by women for unemployment are child and family care obligations, which traditionally fall on women in Kosovo society. The Strategy notes the efforts of mine action operators to overcome these challenges and barriers to employment, such as through child care and parental leave, and gender-sensitive recruitment practices that encourage women to apply for positions traditionally seen as jobs for men. It further recalls the importance of employment of not only multi-gender, but also multi-ethnic, survey and clearance teams and the particular benefits of recruitment in areas affected by high unemployment and poor socio-economic conditions.

In 2018, The HALO Trust developed a gender policy in consultation with the Kosovo Women’s Network, an advocacy network of more than 140 member organisations, including women’s organisations of all ethnic backgrounds from throughout Kosovo, which was adopted in February. The policy aims both at increasing the recruitment of women, as well as retention of existing female employees through the provision of extra maternity leave and child care allowances. Recognising the significant deterrents to women’s employment of affordable child care and traditional gender roles as family caregivers, The HALO Trust’s gender policy provides female employees and single parents of either sex with stipends covering 75% of child care costs and increased the maternity leave allowance from four days as stipulated by national law, to two weeks of maternity leave. By the end of 2018, the number of women working for The HALO Trust in Kosovo increased to close to 15%, up from 3% at the start of the year.

In 2018, The HALO Trust’s dedicated Community Liaison Officer was female and the programme deployed a gender-balanced survey team, which tried to reach male and female respondents equally, including girls and boys with permission of their parents. As men are most often the primary respondents of the household, added effort was placed on access to, and inclusion of, women and girls in all project phases. The HALO Trust expected that with increasing community liaison and a stronger female presence within demining teams, further progress would be made to overcome the challenge of reaching women and encouraging women to take a greater interest in mine action in their communities. Data collected post-clearance is also disaggregated to ensure the understanding and analysis of impact of mine action activities also takes gender into consideration, it reported.

 OTHER AREAS  

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While The HALO Trust reported that it did not have any women in operational management positions in 2018, it stated that it was a priority for the programme address upward mobility for mobility for women within the organisation and was partnering with the Gender and Mine Action Programme (GMAP) in 2019 to this end. Additionally, in 2019, the programme planned to train more women in the use of Handheld Stand-off Mine Detection System (HSTAMIDS) mine detectors and to introduce new junior management positions into which women will have the opportunity to be promoted.39

Norwegian People’s Aid (NPA) reported that a target of 25% female staff was in place, and in 2018, 23% of its staff were women, including one of four team leaders, two of six medics, and one of four staff in the management team. Women were especially encouraged to apply for staff positions, and given priority over male applicants with equivalent skills and experience. NPA confirmed its survey and community liaison teams were gender balanced and ensured that the participation of all relevant social groups is always taken into account when conducting activities in local communities.40 NPA’s efforts to recruit and train multi-ethnic survey and clearance teams was also been a critical factor in allowing the deployment of teams in areas of particular ethnic and political sensitivities, extending the reach of mine action operations in north Kosovo, while also building bridges and friendships between the individual staff members and through their community liaison activities.41

### INFORMATION MANAGEMENT AND REPORTING

KMAC uses the Information Management System for Mine Action (IMSMA) New Generation version for its national mine action database. Data is disaggregated between mines, CMR, and ERW.39 Operators were positive in their assessments of the quality and accessibility of data contained in the database and of KMAC’s information management systems in general. Notably, operators report to KMAC on a weekly basis.42

Both NPA and The HALO Trust also emphasised the constructive and proactive working relationship with KMAC. Beyond weekly KMAC visits to operational sites, regular senior management coordination meetings between KMAC and mine action operators were held on a monthly basis in 2018, or more frequently when required, and quarterly meetings were also convened for operational planning.43

According to its most recent mine action strategy, KMAC intends, as a means to show its commitment to the APMBC, to submit voluntary Article 7 transparency reports on an annual basis.

### PLANNING AND TASKING

The Geneva International Centre for Humanitarian Demining (GICHD) supported the development of Kosovo’s new Mine Action Strategy 2019–24, bringing together a wide range of national and international stakeholders in a strategy stakeholder workshop in Pristina in October 2018. The strategy, formally approved in January 2019 and launched by the Ministry of Kosovo Security Services on 4 April 2019, has three goals:

- Mine/ERW threats managed and reduced
- Communication and awareness raising
- Management of residual contamination.

The strategy declares that all known mined and CMR-contaminated areas will be addressed by the end of 2024, leaving only residual contamination to be managed accordingly. It contains annual projections for anti-personnel mine clearance, including:

- all high priority anti-personnel mine tasks (8 as at October 2018) will be cleared by 2020
- all medium-priority anti-personnel mine tasks (25 as at October 2018) will be cleared by 2022; and
- all low-priority anti-personnel mine tasks (15 as at October 2018) will be completed by 2024.44

The strategy states it is based on a number of assumptions, including that the necessary funding will be secured and that no new mined or CMR-contaminated areas are identified. It notes, however, that “so far each year 3–4 different affected areas have been reported” and that should this trend continue, capacity and progress will need to be reassessed with regards to the 2024 deadline.45

As per the strategy, KMAC will develop annual operational workplans to implement the strategy’s goals.46 KMAC will also request an external mid-term review of the strategy in 2022 to evaluate progress and make any adaptations according to contextual changes if required.47 According to the strategy, a separate national strategy on the management of residual contamination will be developed by KMAC by 2023, in collaboration with other national actors, to clarify roles and responsibilities in order to manage a long-term residual contamination problem.48

In 2019, KMAC confirmed that it had developed annual operational workplans to target anti-personnel mined areas, according to impact-based criteria, including risk reduction, development priorities, and poverty reduction, along with the findings of a nationwide baseline socio-economic impact assessment carried out in 2018 by KMAC, with the support of The HALO Trust.49 The mine action strategy for 2019–24 also is in alignment with the objectives of Kosovo’s National Development Strategy 2016–2021.50

The HALO Trust reported prioritising in its areas of operations was based on impact, land use, seasonal access, and risk and contamination levels.51 While NPA confirmed that its operations in northern Kosovo continued to focus on high-impacted areas, it noted that it was also important for NPA to ensure both Serbian and Albanian-populated areas are prioritised equally, with sensitivity towards political, cultural, and ethnic affiliations.52
LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

National mine action standards for land release are in place in Kosovo, which according to KMAC are in accord with the International Mine Action Standards (IMAS).  

KMAC deployed two QA officers in 2018 who visited sites at least once a week to ensure compliance with the national standards and standing operating procedures (SoPs). NPA reported increasing its internal QA/quality control (QC) capacity during the year and confirmed that KMAC made frequent visits to its tasks, which it said provided highly valued input for QA. The HALO Trust confirmed that KMAC made weekly QA visits to its operations and reported it was exploring opportunities to restructure team management with the aim of enabling more effective QA/QC.

A 2014 evaluation of Kosovo’s mine action programme, conducted on behalf of the International Trust Fund (ITF) Enhancing Human Security, concluded that an increase in capacity and improvements to land release methodology and equipment deployed would be necessary if Kosovo were to complete clearance operations by 2024. Since the 2014 evaluation, a number of significant improvements have been introduced to the mine action programme, including the use of HSTAMID detectors by The HALO Trust and large-loop detectors on certain tasks.

OPERATORS

In 2018, Kosovo’s national mine action programme’s capacity consisted of two international operators, The HALO Trust and NPA, and national operator, the KSF. KFOR supports the KSF and Kosovo Police with EOD response tasks and organising mine and ERW demolitions in Mitrovica and the north of Kosovo, including NPA’s areas of operations. The demining season is from the end of March to the end of November, due to weather conditions.

In 2018, The HALO Trust maintained a 10-team-strong capacity to conduct both mine and CMR clearance. It reported that operational personnel are cross-trained and can move between activities, but generally the programme is split, with seven teams dedicated to mine clearance and three dedicated to cluster munition clearance. At the end of 2018, the programme employed 97 operations personnel, of whom 14% were women.

KSF operated four platoons in 2018: three for demining and one for EOD. The demining platoons are divided into five teams with a total of 75 staff, and the EOD platoon consists of six teams of five persons each. Of these, three teams are on standby for EOD call-outs in Prizren and three teams in Pomozotin. In 2018, KSF units conducted demining operations in five locations: Babaj i Bokës, Ferizaj, Ferizaj/Urosevac Park, Harilaq, and Paldenica.

OPERATIONAL TOOLS

Significant advances in operational productivity have been achieved by the use of tools such as HSTAMID detectors. NPA sought to introduce the use of mine detection dogs (MDDs) for a three-month pilot project to conduct targeted technical survey in areas contaminated with CMR, but as their use in CMR operations was not formally approved by KMAC in 2018 they were deployed for survey and clearance of mines instead. The presence of anti-personnel mines was not found in any of the suspected mined areas and NPA discontinued plans to use MDDs in its areas of operations in north Kosovo.

In 2019, KMAC informed Mine Action Review that the use of MDDs could, however, be considered for KSF operations in remaining minefield tasks along the Kosovo-Albanian border.

According to The HALO Trust, there were plans to increase HSTAMID operator capacity and the number of HSTAMIDs in use per team in 2019.

LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

LAND RELEASE OUTPUTS IN 2018

A total of 0.33km² of mined area was released in 2018, including 0.22km² through clearance and a further 0.11km² reduced through technical survey.

SURVEY IN 2018

Non-technical survey of suspected mined areas was not carried out in 2018. A total of close to 114,000m² was reduced through technical survey during the year. This is a slight increase from 2017, when just under 89,000m² was reduced through technical survey, all by The HALO Trust.

LAND ACTION REVIEW

Table 1: Reduction of mined area through technical survey in 2018

<table>
<thead>
<tr>
<th>Operator</th>
<th>Area reduced (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALO Trust</td>
<td>76,771</td>
</tr>
<tr>
<td>KSF</td>
<td>26,500</td>
</tr>
<tr>
<td>NPA</td>
<td>10,550</td>
</tr>
<tr>
<td>Total</td>
<td>113,821</td>
</tr>
</tbody>
</table>
CLEARANCE IN 2018

In 2018, a total of just over 0.22km² of anti-personnel mined area was cleared, with 46 anti-personnel mines found and destroyed. This was close to results in 2017, when the KSF and HALO Trust cleared more than 0.23km².70

Table 2: Mine clearance in 2018

<table>
<thead>
<tr>
<th>Operator</th>
<th>Areas cleared</th>
<th>Area cleared (m²)</th>
<th>AP mines destroyed</th>
<th>UXO destroyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALO Trust</td>
<td>9</td>
<td>195,382</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>KSF</td>
<td>2</td>
<td>18,845</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>NPA</td>
<td>1</td>
<td>8,573</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>220,800</td>
<td>46</td>
<td>10</td>
</tr>
</tbody>
</table>

AP = Anti-personnel   AV = Anti-vehicle

A further six anti-personnel mines were destroyed by the KSF in EOD response tasks during the year.65 As Kosovo has strict national procedures for the management of explosives, the KSF, with support from KFOR in northern Kosovo, carries out the destruction of mines, CMR, and other ERW found by The HALO Trust and NPA.66

NPA deployed two MDDs in 2018 to verify information regarding landmines suspected to be inside cluster munition strikes in northern Kosovo. The dogs were deployed to Jerebinje, in Zubin Potok municipality, and Belo Brdo, in Leposavic municipality to investigate information about mine belts inside the strike areas. The tasks are located on the border with Serbia, where mines were alleged to have been laid by the Yugoslav National Army to protect military installations from the KLA and NATO. NPA stated that since cluster munition clearance uses less sensitive detectors than does mine clearance, it was not possible to deploy a BAC team in an area with mine contamination. In Jerebinje, it was determined that the mines had likely been removed, and in Belo Brdo, NPA found five ‘training’ mines which did not contain explosives.67

PROGRESS TOWARDS COMPLETION

Kosovo cannot formally adhere to the APMBC and therefore does not have a specific clearance deadline under Article 5. Nonetheless, it has obligations under international human rights law to clear anti-personnel mines as soon as possible.

As stated in Kosovo’s Mine Action Strategy 2019–24, which sets completion of mine and cluster munition clearance by the end of 2024, completion will only be achievable if sustained funding is secured.68 Specific concerns are elaborated in the strategy about the need to upgrade old equipment, including vehicles to proceed without unnecessary stand-downs or costly repairs.69

With adequate funding, KMAC and The HALO Trust predict that anti-personnel mine and cluster munition clearance will be completed by the end of 2024.70 This would be 25 years after the end of the conflict between the FRY forces and NATO and more than 20 years after the UN claimed that clearance was largely complete.

In 2019, The HALO Trust reported that it could complete clearance of remaining mined areas within its areas of responsibility with existing capacity by the end of 2024. It cautioned, however, that sustaining capacity over the strategy period will prove a challenge, and any reductions in funding could impede progress towards meeting the 2024 target.71

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Area cleared (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>0.22</td>
</tr>
<tr>
<td>2017</td>
<td>0.23</td>
</tr>
<tr>
<td>2016</td>
<td>0.15</td>
</tr>
<tr>
<td>2015</td>
<td>0.22</td>
</tr>
<tr>
<td>2014*</td>
<td>0.84</td>
</tr>
<tr>
<td>Total</td>
<td>1.66</td>
</tr>
</tbody>
</table>

* Mine and CMR clearance
RECOMMENDATIONS FOR ACTION

- Nagorno-Karabakh should make a commitment to respect the Anti-Personnel Mine Ban Convention (APMBC) and set a deadline for the clearance all anti-personnel mines.
- Despite not being a state party to the APMBC, Nagorno-Karabakh has obligations under international human rights law to clear anti-personnel mines in areas under its jurisdiction or control as soon as possible.
- The Nagorno-Karabakh authorities should commit to never use anti-personnel mines and provide resources for mine survey and clearance.
- Information management should be improved as inaccuracies in reported anti-personnel mine contamination, survey, and clearance data continue to occur.

UNDERSTANDING OF AP MINE CONTAMINATION

At the end of 2018, anti-personnel mine contamination throughout the whole of Nagorno-Karabakh, including both within the Soviet-era boundaries and in the adjacent territories, was estimated to cover just over 3.78 km² across 70 mined areas (see Table 1). Since 2017, the number of confirmed hazardous area (CHAs) has decreased (from 73 to 70), while total mined area has increased (from 3.56 km² to 3.78 km²). The difference in total mine contamination between the end of 2017 and end of 2018 cannot be explained or reconciled by the total area released during the intervening 12 months. Anti-personnel and anti-vehicle mine contamination covered a total of 82 areas over 5.1 km² as at the end of 2018.

The HALO Trust is currently conducting survey with a view to more accurately quantifying the mined area in Nagorno-Karabakh, covering areas that had not been surveyed in the past. In 2019, The HALO Trust doubled its survey capacity in order to try and complete the survey by the end of the year. In 2018, three CHAs were added to the database with an estimated area of 62,567 m².

All regions of Nagorno-Karabakh have been affected by mines and unexploded submunitions as a result of the 1988-94 conflict between Armenia and Azerbaijan and subsequent fighting. Mines were laid by both the Azeri and pro-Karabakh forces during the war, with a relatively high proportion of anti-vehicle mines being used in some regions. The mines were of Soviet design and manufacture, and due to the nature of the conflict certain areas were mined several times. In 2013, new anti-personnel mines were laid along the Armenian-Azerbaijani "line of contact" east and north of the disputed territory. At the time the Minister for Foreign Affairs of Nagorno-Karabakh stated that "due to the ongoing conflict with Azerbaijan ... today we are not in a position to refrain from using AP [anti-personnel] mines for defensive purposes along the line of contact." He noted further that, "these mines are neither aimed at the civilian population nor at the extermination of the adversary but for limiting its advances and ceasing any possible military aggression against us."

Nagorno-Karabakh is also contaminated with submunitions, estimated at 71.62 km² at the end of 2018, and other explosive remnants of war (ERW) (see Mine Action Review’s Clearing Cluster Munition Remnants 2019 report on Nagorno-Karabakh for further information).

Table 1: Anti-personnel mined area by province (at end 2018):

<table>
<thead>
<tr>
<th>Region</th>
<th>CHAs</th>
<th>Area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Askeran</td>
<td>7</td>
<td>0.33</td>
</tr>
<tr>
<td>Hadrut</td>
<td>20</td>
<td>1.90</td>
</tr>
<tr>
<td>Lachin</td>
<td>19</td>
<td>0.67</td>
</tr>
<tr>
<td>Martakert</td>
<td>18</td>
<td>0.54</td>
</tr>
<tr>
<td>Martuni</td>
<td>2</td>
<td>0.17</td>
</tr>
<tr>
<td>Shaumyan</td>
<td>4</td>
<td>0.17</td>
</tr>
<tr>
<td>Totals</td>
<td>70</td>
<td>3.78</td>
</tr>
</tbody>
</table>
NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

In 2000, The HALO Trust established the Nagorno-Karabakh Mine Action Centre (NKMAC), which is now moribund. In theory, its role was to consolidate all mine action-related information and to respond to requests from the government ministries, non-governmental organisations (NGOs), and local communities. In reality, there is no viable or tangible mine action centre in Nagorno-Karabakh.

A mine action coordination committee was responsible for liaising between the local authorities and The HALO Trust.

REGULAR COORDINATION COMMITTEE MEETINGS WERE HELD BETWEEN THE LOCAL AUTHORITIES, THE HALO TRUST, AND THE INTERNATIONAL COMMITTEE OF THE RED CROSS (ICRC) UNTIL 2018 WHEN THE HEAD OF THE COMMITTEE WAS MOVED TO A NEW POST. THE POSITION REMAINS VACANT, WITH HALO TRUST CONTINUING TO LOBBY FOR A SUITABLE CANDIDATE TO FILL THE ROLE.

The Nagorno-Karabakh authorities do not provide The HALO Trust with any funding to clear mined areas.

GENDER

The HALO Trust has an organisational gender and diversity policy which is incorporated into HALO’s Nagorno-Karabakh programme. In addition to fully briefing new recruits, HALO also conducts regular refresher training on all its policies, including its gender and diversity policy, for both national and international staff.

All groups affected by anti-personnel mines, including women and children are said to be consulted during survey and community liaison activities. However, the non-technical survey teams have been predominantly male with the first female team member only recruited in 2019. The HALO trust aims to recruit more female non-technical survey team members.

Relevant mine action data is disaggregated by sex and age. Gender is not taken into account in the prioritisation, planning, and tasking of survey and clearance activities.

The HALO Trust is one of the largest civilian employers in Nagorno-Karabakh, with 270 Karabakhi Armenian staff. And while there is equal access to employment for qualified women and men in survey and clearance, the number of women employed in operational roles is still quite low. In 2018, out of the total of 210 deminers only 15 were women of whom 2 were team leaders. In addition, three women were employed in managerial level/supervisory positions, and six of the support staff were women.

INFORMATION MANAGEMENT AND REPORTING

There is no national information management system in place. However, The HALO Trust operates its own country mine action database and is working to better tailor the database to its operations. For example, new fields were added to the database in 2018 to allow for further disaggregation of data. HALO Nagorno-Karabakh also continues to be supported by its United Kingdom-based specialist data management staff.

The Nagorno-Karabakh Army Liaison Officer shares information with HALO Trust on items found, incidents, CHAs, and clearance on a regular basis. HALO is not authorised to share this data with others.

PLANNING AND TASKING

There is no national mine action strategy currently in place in Nagorno-Karabakh.

The HALO Trust prioritised clearance of minefields in Nagorno-Karabakh that have confirmed accidents and which will be used immediately following clearance. In 2018, most mined areas remaining were only accessible during the dry summer months of May to October, and HALO Trust expanded its clearance capacity over this period. Clearance outside of the Traditional Oblast was focused on high- and medium-priority tasks in the Lachin corridor, with private funding; with clearance of the remaining minefields within the Traditional Oblast boundary conducted using USAID funding. This approach continued into 2019.

LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

No local mine action standards exist in Nagorno-Karabakh.

As at April 2019, however, the Nagorno-Karabakh police were planning to lobby the government to develop standards and The HALO Trust was planning to work closely with the authorities to support the process.

The HALO Trust follows its own standing operating procedures (SoPs) for demining and battle area clearance.

As at April 2019, HALO’s survey and anti-personnel mine clearance SoPs were under review, with a view to incorporating best practice from other HALO country programmes.
OPERATORS
Since 2000, The HALO Trust has been the main organisation conducting land release in Nagorno-Karabakh. The Nagorno-Karabakh Rescue Service conducts explosive ordnance disposal (EOD) spot tasks and one Nagorno-Karabakh army unit conducts limited demining. Since the April 2016 conflict, The HALO Trust has collaborated with the Nagorno-Karabakh Rescue Services when gathering information about mines and other ERW, and part of its quality assurance (QA) process involves participation in the official handover ceremony with community representatives.

The HALO Trust does not field separate teams dedicated solely to either mine or ERW clearance. Operational staff are trained and experienced in working in both tasks. HALO is currently working to increase its non-technical survey capacity in support of its mine clearance operations, while decreasing its technical survey capacity. HALO recruited 30 new deminers in 2018. It had hoped to recruit more but a demining accident in March 2018 (see below) is thought to have deterred many potential applicants.

OPERATIONAL TOOLS
HALO conducts both manual and mechanical clearance in Nagorno-Karabakh. Machines are used to clear roads with a plastic anti-vehicle mine threat and in areas with high levels of metal contamination which makes manual clearance extremely inefficient.

DEMINER SAFETY
In March 2018, a HALO vehicle with a technical survey team on board detonated an anti-vehicle mine on their way to an anti-personnel mine clearance task, killing three staff and injuring two others. The accident was internally investigated by The HALO Trust, which also commissioned an external expert investigation. A further investigation by the Nagorno-Karabakh police was ongoing as at 1 May 2019. As a result of the internal investigation probing was halted as a safety precaution until the exact causes of the accident were understood. Mechanical clearance and clearance with detectors have since superseded its use. Copies of HALO Trust’s internal and external reports will be available once the police investigation is finalised.

LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION
LAND RELEASE OUTPUTS IN 2018
A total of almost 0.26km² of mined area was released in 2018, of which 0.25km² was cleared, and 3,148m² was reduced through technical survey.

In addition, three CHAs were added to the database with an estimated area of 62,567m².

SURVEY IN 2018
No anti-personnel mined area was cancelled through non-technical survey in 2018 but a total of 3,148m² was reduced through technical survey (see Table 2). This is a massive reduction from the 0.29km² of mined area cancelled through non-technical survey and 0.27km² reduced through technical survey in 2017.

CLEARANCE IN 2018
In 2018, a total of 253,804m² was cleared across 26 areas with 96 anti-personnel mines and 40 items of unexploded ordnance (UXO) destroyed (see Table 3). This is a drop from the 292,176m² cleared in 2017 and 188 anti-personnel mines found and destroyed. In 2017, The HALO Trust found one mine for every 1,974m² of land cleared while in 2018 it was one mine for every 2,644m² cleared.

### Table 2: Reduction of mined area through technical survey in 2018

<table>
<thead>
<tr>
<th>Province</th>
<th>Area reduced (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Askeran</td>
<td>1,629</td>
</tr>
<tr>
<td>Hadrut</td>
<td>376</td>
</tr>
<tr>
<td>Lachin</td>
<td>1,136</td>
</tr>
<tr>
<td>Martuni</td>
<td>207</td>
</tr>
<tr>
<td>Total</td>
<td>3,148</td>
</tr>
</tbody>
</table>
In addition, the HALO Trust destroyed 27 anti-personnel mines during 13 EOD spot tasks in 2018.37

Progress in mine clearance has fluctuated over the last five years, as shown in Table 4, but with clearance output averaging below 0.5km² annually. As at 2014, 95% of mine contamination in Soviet-era Nagorno-Karabakh had been addressed, and this figure had risen to 97% by April 2017.38 Following a commitment from the United States to fund the completion of clearance of all known remaining minefields within Soviet-era boundaries, the HALO Trust had previously reported that this could be achieved by the end of 2019.39 However, in April 2019, the HALO Trust stated that it does not anticipate clearing the minefields within the Soviet-era boundaries by the end of 2019 or in the foreseeable future. The HALO Trust had based the original completion date on a rate of clearance it is no longer able to achieve due to difficulties in access, challenging terrain, high levels of contamination which in some cases can only be cleared using full excavation, and difficulties with staff recruitment and retention as a result of the March 2018 accident.40

In addition, there is significant mine contamination outside of the Soviet-era boundaries of Nagorno-Karabakh but the HALO Trust finds it difficult to secure funding for these areas. Since 2015, clearance has been conducted through private sources of funding.41

Table 3: Mine clearance in 201837

<table>
<thead>
<tr>
<th>Province</th>
<th>Areas cleared</th>
<th>Area cleared (m²)</th>
<th>AP mines destroyed</th>
<th>AV mines destroyed</th>
<th>UXO destroyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Askeran</td>
<td>2</td>
<td>8,849</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Hadrut</td>
<td>9</td>
<td>116,306</td>
<td>23</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Lachin</td>
<td>6</td>
<td>48,599</td>
<td>27</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Martakert</td>
<td>7</td>
<td>69,398</td>
<td>43</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Martuni</td>
<td>2</td>
<td>10,652</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>26</td>
<td>253,804</td>
<td>96</td>
<td>0</td>
<td>40</td>
</tr>
</tbody>
</table>

Table 4: Five-year summary of mine clearance (2014–18)

<table>
<thead>
<tr>
<th>Year</th>
<th>Area cleared (km²)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>0.25</td>
</tr>
<tr>
<td>2017</td>
<td>0.29</td>
</tr>
<tr>
<td>2016</td>
<td>0.12</td>
</tr>
<tr>
<td>2015</td>
<td>0.21</td>
</tr>
<tr>
<td>2014</td>
<td>0.54</td>
</tr>
<tr>
<td>Total</td>
<td>1.41</td>
</tr>
</tbody>
</table>

* Figures for clearance in 2014–17 include both anti-vehicle and anti-personnel mines.
RECOMMENDATIONS FOR ACTION

- The Saharawi Arab Democratic Republic (SADR) should reaffirm its written commitment to respect and implement the Anti-Personnel Mine Ban Convention (APMBC), including clearance of all anti-personnel mines east of the Berm, consonant with its human rights obligations.

- Facing significant challenges due to a decrease in operational capacity and funding for 2019, Western Sahara’s mine action strategy targets for completing mine survey and clearance should be reassessed, and a revised mine action strategy developed.

- A resource mobilisation plan should be developed with the aim of attracting international donor support.

- Greater support should be provided to the Saharawi Mine Action Coordination Office (SMACO) to enable it to continue to coordinate mine action in Western Sahara and ensure that capacity development efforts are not lost.

- Mine action in Western Sahara must not become forgotten or overlooked by the international mine action community. Support must still be given to address remaining mine, cluster munition, and other explosive remnants of war (ERW) contamination.

UNDERSTANDING OF AP MINE CONTAMINATION

The exact extent of mine contamination across Western Sahara is not known, although the areas along the Berm are thought to contain some of the densest mine contamination in the world. The contamination is a result of fighting in previous decades between the Royal Moroccan Army (RMA) and the Popular Front for the Liberation of Saguia el Hamra and Rio de Oro (Polisario Front) forces.

According to the UN Mine Action Service (UNMAS), the primary mine threat in Western Sahara east of the Berm, excluding both the Berm itself and the buffer strip, is from anti-vehicle rather than anti-personnel mines; cluster munition remnants (CMR) are also a major hazard. As at end 2018, no areas suspected or confirmed to contain solely anti-personnel mines remained to the east of the Berm, and the majority of mine contamination identified during ongoing and historical clearance efforts was from anti-vehicle mines. However, UNMAS reported that, during the year, as a result of non-technical survey conducted in the Agwanit Area of Responsibility, a number of large minefields previously thought to contain only anti-vehicle mines were found to also contain anti-personnel mines.

At the end of 2018, land in Western Sahara to the east of the Berm contained a total of 26 areas confirmed and suspected to contain mixed anti-personnel and anti-vehicle mine contamination covering a total of nearly 216.3 km², as set out in Table 1. This is an overall decrease of one area with a size of approximately 1.85 km² from that remaining at the end of 2017.

In September 2018, UNMAS reported that following non-technical survey efforts, 10 of the then 27 mined areas, were reported to remain covering an estimated total of almost 120 km², and are located within the 5km-wide buffer strip and are inaccessible for clearance. Clearance of the buffer strip of mines and ERW is not foreseen in United Nations Mission for the Referendum in Western Sahara (MINURSO) mission agreements, which, according to the UN, considerably limits the ability of MINURSO military observers to patrol and verify developments.

Table 1: Mined area east of the Berm (at end 2018)

<table>
<thead>
<tr>
<th>Type of contamination</th>
<th>CHAs</th>
<th>Area (km²)</th>
<th>SHAs</th>
<th>Area (km²)</th>
<th>Total CHAs and SHAs</th>
<th>Total area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP mines</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AV mines</td>
<td>2</td>
<td>0.11</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0.11</td>
</tr>
<tr>
<td>AP/AV mines</td>
<td>14</td>
<td>90.19</td>
<td>10</td>
<td>125.96</td>
<td>24</td>
<td>216.15</td>
</tr>
<tr>
<td>Totals</td>
<td>16</td>
<td>90.30</td>
<td>10</td>
<td>125.96</td>
<td>26</td>
<td>216.26</td>
</tr>
</tbody>
</table>

AP = Anti-personnel  AV = Anti-vehicle  CHA = Confirmed hazardous area  SHA = Suspected hazardous area
Both the north and south of Western Sahara are known or suspected to contain anti-personnel mines, with 24 areas confirmed or suspected areas with a total size of almost 216.3 km² remaining to be addressed at the end of 2018, as set out in Table 2. This is compared to the end of the previous year, when a total of 11 areas confirmed or suspected to contain anti-personnel mines were reported to remain with a total size of more than 169.5 km².

According to UNMAS, a total of six additional mined areas with a size of just over 367,200 m² were added to the database in 2018.

A survey in 2006–08 by an international non-governmental organisation (NGO), Landmine Action, later renamed Action on Armed Violence (AOAV), identified 37 mined areas east of the Berm, nearly half of which were in Bir Lahlou, followed by Tifariti, Mehaires, and Agwanit.

Neither survey nor clearance has been conducted in the 5 km-wide buffer strip to the east of the Berm. The extent of contamination west of the Berm remains unknown, and as of 2019, no survey had been carried out there.

UNMAS reported in 2018 that there were areas of known contamination in the buffer strip that remained inaccessible for clearance due to military agreements. The RMA controls territory to the west of the Berm where it has been conducting large-scale demining. According to UNMAS, the RMA cooperates with the MINURSO mine action component and submits regular monthly reports, helping to build a clearer understanding of the mine and ERW threat across Western Sahara.

### Table 2: Mined area containing anti-personnel mines by province east of the Berm (at end 2018)

<table>
<thead>
<tr>
<th>Province</th>
<th>CHAs</th>
<th>Area (km²)</th>
<th>SHAs</th>
<th>Area (km²)</th>
<th>Total CHAs and SHAs</th>
<th>Total area (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Region</td>
<td>4</td>
<td>0.50</td>
<td>3</td>
<td>4.10</td>
<td>7</td>
<td>4.60</td>
</tr>
<tr>
<td>South Region</td>
<td>10</td>
<td>89.79</td>
<td>7</td>
<td>121.86</td>
<td>17</td>
<td>211.65</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>14</td>
<td>90.29</td>
<td>10</td>
<td>125.96</td>
<td>24</td>
<td>216.25</td>
</tr>
</tbody>
</table>

A survey in 2006–08 by an international non-governmental organisation (NGO), Landmine Action, later renamed Action on Armed Violence (AOAV), identified 37 mined areas east of the Berm, nearly half of which were in Bir Lahlou, followed by Tifariti, Mehaires, and Agwanit.

Neither survey nor clearance has been conducted in the 5 km-wide buffer strip to the east of the Berm. The extent of contamination west of the Berm remains unknown, and as of 2019, no survey had been carried out there.

UNMAS Western Sahara, formerly the MINURSO Mine Action Coordination Centre (MACC), manages and supports mine action activities, of which, survey and clearance activities were implemented by commercial contractor SafeLane Global (formerly Dynasafe MineTech Limited, DML) and humanitarian NGO Norwegian People’s Aid (NPA) in 2018. On 30 April 2019, MINURSO’s mandate was extended for an additional six months until 30 October 2019 under Security Council Resolution 2468 (2019). UNMAS Western Sahara serves as the UN focal point for mine action activities within the MINURSO area of operations. Its contracted teams work in areas east of the Berm only.

The Royal Moroccan Army operates its own demining operations in areas west of the Berm.

In 2013–14, the Polisario Front, with UN support, established the SMACO, which is responsible for coordinating mine action activities in Western Sahara east of the Berm, excluding the buffer strip.

In 2018, UNMAS continued to implement an ongoing capacity development project with SMACO, with funding from the German Federal Foreign Office, which concluded in October after 28 months. Emphasis was placed on building the programme’s capacity to translate local mine action requirements into proposals and budgets with the aim of ensuring that SMACO can independently seek funds and report on progress in the future. UNMAS stated that efforts were also aimed at regularly raising the profile of SMACO within the local and wider international communities. UNMAS informed Mine Action Review, however, that it had allocated non-earmarked funding to cover SMACO’s operating costs for 2019, and to include the development of a communications and resource mobilisation strategy during that year.

### Gender

UNMAS has reported that gender policies are implemented in accordance with UNMAS, the UN Office for Project Services (UNOPS), and MINURSO guidelines, as well as with direction from the Polisario. NPA reported that gender mainstreaming considerations were included in its Memorandum of Understanding with SMACO, in NPA’s internal strategy documents, and taken into account during recruitment. Additionally, during survey, efforts are made to ensure the needs of men, women, girls, and boys are taken into consideration for more effective and efficient operations, despite challenges presented by conducting survey activities targeting Bedouin populations.
In 2018, NPA reported that, during recruitment, the programme actively selected female candidates for interviews wherever possible. NPA has encouraged local journalists to highlight the work of female deminers and their ability to work equally well in a highly challenging environment, with the aim of overcoming widely held perceptions in local communities that demining is a job only for men. It stated that six women were employed in operational roles in 2018, or just over 18% of the total operational staff. Two women held managerial roles, including Head of Finance and Head of Human Resources, making up 40% of NPA’s management staff in Western Sahara.

INFORMATION MANAGEMENT AND REPORTING

According to UNMAS, the Information Management System for Mine Action (IMSMA) database for Western Sahara improved as a result of an ongoing data audit initiated at the end of 2015. Routine database clean-up was conducted throughout 2018. The Geneva International Centre for Humanitarian Demining (GICHD) has also provided ongoing support to correct database errors, and an upgrade to the latest database software version, IMSMA Core, was scheduled to take place in August 2019.

PLANNING AND TASKING

In July 2019, UNMAS informed Mine Action Review that a new mine action strategy specific to Western Sahara was under development and would be completed in 2019, in line with the newly published global UN Mine Action Strategy 2019–2023.

The previous mine action strategy for Western Sahara foresaw the completion of non-technical survey in 2017 or 2018 and a 50% reduction in the total number of recorded SHA and CHA remaining on the territory of Western Sahara by the end of 2022. In May 2019, UNMAS informed Mine Action Review that these targets were not met due to “changing priorities” for mine action. It reported that the new end state for completing the clearance of all known hazards to the east of the Berm would be the end of 2023 in the forthcoming revised strategy, given enough funding and enabling political and security conditions.

UNMAS and SMACO identify priorities for clearance of both minefields and cluster munition strikes to the east of the Berm in conjunction with MINURSO. Priorities are identified based on humanitarian needs for the safety and freedom of movement of local populations, while UNMAS ensures that observation patrol routes are safe for military observers and the transport of logistical supplies.

LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

Local mine action standards were in place and implemented in 2018. The standards were developed and finalised in 2016 by UNMAS, together with SMACO, and in coordination with mine action partners. NPA has reported that operators duly updated their standing operating procedures (SoPs), and that the local mine action standards set realistic benchmarks for efficient operations. A first annual review of the standards was completed in November 2018 with a review board consisting of representatives from UNMAS, SMACO, and all implementing partners. No significant changes were made, and UNMAS reported in June 2019 that translation of the standards into Arabic had been completed and shared with SMACO.

An external quality management system was in place in 2018 and implemented by UNMAS and SMACO to the east of the Berm. NPA confirmed a considerable increase in quality assurance (QA) activities in 2018, which it said was due to the relocation of UNMAS to Tindouf, Algeria, with easier access to territory under Polisario control. NPA confirmed that SMACO and UNMAS QA officers conducted many QA site visits in 2018, conducted accreditation for new NPA staff, monitored progress on tasks, and conducted quality control of completed areas.

OPERATORS

SafeLane Global (formerly DML) and NPA were the implementing operators conducting survey and clearance in Western Sahara in 2018. UNMAS reported no change in operational capacity during the year. The overall mine action capacity in Western Sahara in 2018 consisted of nine multi-task teams (MTTs) and one community liaison/survey team, with a total of 116 operational staff in the field. This included six DML teams and one community liaison/survey team. The total number of MTTs was reduced by one in July 2018.

In 2018, NPA continued to deploy one team to clear mined areas and two manual teams to address CMR in Bir Lahlou, along with five risk education teams operating in the Saharawi refugee camps in southern Algeria. The risk education project, funded by Germany and supervised by UNMAS/SMACO, ended in April 2018. NPA made the “difficult decision” to close down its programme, effective on 1 January 2019, after releasing the last known contaminated areas in Bir Lehlou province in August 2018.
LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

**LAND RELEASE OUTPUTS IN 2018**

A total of nearly 3.71 km² of mixed mined area was released in 2018: more than 2.38 km² through clearance and 1.32 km² through survey.\(^\text{45}\)

**SURVEY IN 2018**

According to UNMAS, of the 1.32 km² released through survey in 2018, more than 0.87 km² was cancelled through non-technical survey (see Table 3) and 0.45 km² reduced through technical survey.\(^\text{46}\)

**Table 3: Cancellation of mined area through non-technical survey in 2018**\(^\text{47}\)

<table>
<thead>
<tr>
<th>Region</th>
<th>Operator</th>
<th>Area cancelled (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>SLG</td>
<td>182,868</td>
</tr>
<tr>
<td>North</td>
<td>NPA</td>
<td>346,359</td>
</tr>
<tr>
<td>South</td>
<td>SLG</td>
<td>342,198</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>871,425</strong></td>
</tr>
</tbody>
</table>

**CLEARANCE IN 2018**

In 2018, according to UNMAS, a total of just over 2.38 km² of areas thought to contain mixed anti-personnel and anti-vehicle mine contamination was cleared, with the destruction of 37 anti-personnel mines, 35 anti-vehicle mines, and three items of UXO (see Table 5).\(^\text{49}\) This was a substantial increase from 2017, when close to 0.28 km² of area thought to contain anti-personnel mines contamination was cleared; however no anti-personnel mines were found. Thirty-two anti-vehicle mines and ten items of UXO were destroyed.\(^\text{50}\)

Western Sahara is not a state party to the APMBC. In June 2014, however, the SADR submitted a voluntary APMBC Article 7 transparency report to the UN “as a sign of the support of the Sahrawi State for the goals of the Treaty”.\(^\text{51}\)

In July 2019, UNMAS informed Mine Action Review that a new mine action strategy specific to Western Sahara was under development and would be completed by the end of year, in line with the newly published global UN Mine Action Strategy 2019–2023.\(^\text{52}\)

The previous mine action strategy for Western Sahara foresaw the completion of non-technical survey before the end of 2018 and a 50% reduction in the total number of recorded SHAs and CHAs remaining in Western Sahara by the end of 2022.\(^\text{53}\) In May 2019, UNMAS reported that the new end state for clearance of all known mine and ERW contamination to the east of the Berm would be set at the end of 2023.\(^\text{54}\)

In 2019, with the loss of NPA as a key mine action implementer, along with the cessation of both German and Norwegian funding for mine clearance activities, the future of Western Sahara’s mine action programme remained uncertain. Additional resources and capacity, along with support to SMACO, needed to be secured urgently. In July 2019, UNMAS informed Mine Action Review that mine action capacity had reduced by more than 50% and there was no indication of funding available to maintain capacity going forward.\(^\text{55}\)

**Table 4: Reduction of mined area through technical survey in 2018**\(^\text{48}\)

<table>
<thead>
<tr>
<th>Region</th>
<th>Operator</th>
<th>Area reduced (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>NPA</td>
<td>265,492</td>
</tr>
<tr>
<td>North</td>
<td>SLG</td>
<td>185,264</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>450,756</strong></td>
</tr>
</tbody>
</table>

This is almost two years earlier than UNMAS’ previous estimate, which had sought to release all high and medium hazardous areas in Western Sahara east of the Berm by 2025.\(^\text{56}\) UNMAS has reported that delays to clearing mined areas continued as a result of restrictions on accessing certain areas of the buffer strip established by various MINURSO mission agreements.\(^\text{57}\) NPA has cited other challenges to operations, including working in a remote desert environment allied to serious difficulties with the procurement of certain equipment and materials.\(^\text{58}\) Temperatures of up to 60 degrees Celsius, strong winds, sandstorms, and heavy rain during the wet season can also cause mine action activities to be suspended.\(^\text{59}\)

### Table 5: Mine clearance in 2018\(^\text{60}\)

<table>
<thead>
<tr>
<th>Region</th>
<th>Operator</th>
<th>Areas cleared</th>
<th>Area cleared (m²)</th>
<th>AP mines destroyed</th>
<th>AV mines destroyed</th>
<th>UXO destroyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>NPA</td>
<td>2</td>
<td>1,040,387</td>
<td>37</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>North</td>
<td>SLG</td>
<td>3</td>
<td>508,228</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>South</td>
<td>DML</td>
<td>2</td>
<td>834,911</td>
<td>0</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>7</strong></td>
<td><strong>2,383,526</strong></td>
<td><strong>37</strong></td>
<td><strong>35</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

\(^\text{AP} = \) Anti-personnel  \(^\text{AV} = \) Anti-vehicle
1 A 2,700km-long defensive wall, the Berm was built during the conflict, dividing control of the territory between Morocco on the west and the Polisario Front on the east. The Berm is 12 times the length of the Berlin Wall and second in length only to the Great Wall of China.


3 Email from Graeme Abernethy, UNMAS, 1 March 2018.

4 Emails from Robert Thompson, Chief of Operations, UNMAS, 31 July 2019; and Virginie Auger, UNMAS, 29 March 2017.

5 Email from Graeme Abernethy, UNMAS, 1 March 2018.

6 Email from Robert Thompson, UNMAS, 31 July 2019.

7 Email from Graeme Abernethy, UNMAS, 1 March 2018.

8 Email from Graeme Abernethy, UNMAS, 14 September 2018. The buffer strip is an area 5km wide east of the Berm. MINURSO, "Ceasefire Monitoring Overview", undated but accessed 1 June 2016, at: bit.ly/2Yxg1nv.


10 Email from Robert Thompson, UNMAS, 31 July 2019.

11 Ibid.


13 Email from Robert Thompson, UNMAS, 31 July 2019.

14 Ibid.

15 Email from Penelope Caswell, Field Programme and Geographic Information System Manager, AOAV, 18 May 2010.

16 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018; and UNMAS, "2017 Portfolio of Mine Action Projects: MINURSO".

17 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018.

18 Email from Graeme Abernethy, UNMAS, 14 September 2018; and UNMAS, "2017 Portfolio of Mine Action Projects: MINURSO".

19 Questionnaire response by Gerhard Zank, HALO Trust, 22 May 2017; and email, 17 May 2016.


21 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018.

22 Ibid.

23 Ibid.

24 Email from El Hadji Mamadou Kebe, NPA, 4 May 2019.

25 Ibid.

26 Email from Dandan Xu, UNMAS, 28 June 2019.

27 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018.


29 Email from El Hadji Mamadou Kebe, NPA, 4 May 2019.

30 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018.

31 Email from Robert Thompson, UNMAS, 29 April 2019.

32 Email from Robert Thompson, UNMAS, 31 May 2019.

33 Email from Robert Thompson, UNMAS, 31 July 2019.

34 Ibid.

35 Email from Robert Thompson, UNMAS, 31 May 2019.

36 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018.

37 Email from El Hadji Mamadou Kebe, NPA, 4 May 2019.

38 Email from El Hadji Mamadou Kebe, NPA, 14 March 2018.

39 Emails from Robert Thompson, UNMAS, 29 April 2019; and Dandan Xu, UNMAS, 28 June 2019.

40 Email from Robert Thompson, UNMAS, 29 April 2019.

41 Email from El Hadji Mamadou Kebe, NPA, 4 May 2019.

42 Email from Robert Thompson, UNMAS, 31 May 2019.

43 Email from El Hadji Mamadou Kebe, NPA, 4 May 2019.

44 Ibid.

45 Email from Robert Thompson, UNMAS, 31 July 2019.

46 Ibid.

47 Email from Robert Thompson, UNMAS, 31 July 2019.

48 Ibid.

49 Ibid.

50 Emails from Graeme Abernethy, UNMAS, 1 March and 5 May 2018.


52 Email from Robert Thompson, UNMAS, 31 July 2019.

53 Ibid.

54 Email from Robert Thompson, UNMAS, 31 May 2019.

55 Emails from Virginie Auger, UNMAS, 10 May and 29 March 2017; and Sarah Holland, UNMAS, 21 April and 18 May 2016.

56 Email from Virginie Auger, UNMAS, 15 March 2017.

57 Emails from El Hadji Mamadou Kebe, NPA, 8 April 2017 and 14 March 2018.


59 Email from Robert Thompson, UNMAS, 31 July 2019.

60 Email from Robert Thompson, UNMAS, 31 July 2019.
## ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIM</td>
<td>Abandoned Improvised Mines (Afghanistan)</td>
</tr>
<tr>
<td>AP</td>
<td>Anti-personnel</td>
</tr>
<tr>
<td>AV</td>
<td>Anti-vehicle</td>
</tr>
<tr>
<td>BiH</td>
<td>Bosnia and Herzegovina</td>
</tr>
<tr>
<td>CHA</td>
<td>Confirmed hazardous area</td>
</tr>
<tr>
<td>DDG</td>
<td>Danish Demining Group</td>
</tr>
<tr>
<td>ERW</td>
<td>Explosive remnants of war</td>
</tr>
<tr>
<td>FSD</td>
<td>Swiss Foundation for Mine Action</td>
</tr>
<tr>
<td>GICHD</td>
<td>Geneva International Centre for Humanitarian Demining</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic information system</td>
</tr>
<tr>
<td>HI</td>
<td>Humanity and Inclusion</td>
</tr>
<tr>
<td>IMAS</td>
<td>International Mine Action Standards</td>
</tr>
<tr>
<td>IP</td>
<td>Implementing Partner</td>
</tr>
<tr>
<td>MAG</td>
<td>Mines Advisory Group</td>
</tr>
<tr>
<td>MAPA</td>
<td>Mine Action Programme of Afghanistan</td>
</tr>
<tr>
<td>MDD</td>
<td>Mine detection dog</td>
</tr>
<tr>
<td>NMAS</td>
<td>National Mine Action Standards</td>
</tr>
<tr>
<td>NPA</td>
<td>Norwegian People’s Aid</td>
</tr>
<tr>
<td>QA</td>
<td>Quality assurance</td>
</tr>
<tr>
<td>QC</td>
<td>Quality control</td>
</tr>
<tr>
<td>SHA</td>
<td>Suspected hazardous area</td>
</tr>
<tr>
<td>SoP</td>
<td>Standing (or Standard) Operating Procedure</td>
</tr>
<tr>
<td>UNMAS</td>
<td>United Nations Mine Action Service</td>
</tr>
<tr>
<td>UXO</td>
<td>Unexploded ordnance</td>
</tr>
</tbody>
</table>