# Anti-Vehicle Mine Contamination in Afghanistan
# Impact and MAPA Response

Rebecca Roberts, 9 November2018

## Executive Summary

The Directorate of Mine Action Coordination (DMAC) for Afghanistan calculates that anti-vehicle mines (AVM) contaminate over 350 million square meters of land and account for over 50 percent of the remaining legacy contamination. The Afghan government has committed to clearing the AVM contamination through its obligations to the Anti-Personnel Mine Ban Treaty and has included AVM clearance in its 2012 extension request and in its current strategic plan for mine action.

Although the humanitarian impact of AVM contamination is relatively small in comparison with the impact of other explosive hazards and the ongoing conflict, there is an impact on civilian lives and livelihoods and internationally-supported large-scale development and infrastructure projects intended to promote macro-economic development.

Clearing the remaining AVM contamination in Afghanistan is time-consuming and expensive because most of the AVMs have a minimal metal content making them difficult to detect, particularly when they have been laid sporadically, in small numbers, across large areas and without their location being recorded. Although non-technical survey (NTS) is used to reduce the size of hazardous areas, no effective technical survey methodology or technology has yet been identified to reduce the area to be cleared. As such, extensive clearance is undertaken, often with relatively few AVMs being found during each task. The area remaining to be cleared is large although many of these areas are still defined as SHAs and have not yet been re-surveyed and converted to CHAs.

In August 2017, the MAPA agreed a roadmap to address the AVM contamination which included:

- establishing a technical working group (TWG) for AVM;
- revising NTS approaches and analysing existing data to improve understanding of AVM contamination and impact;
- testing methods of mechanical and manual clearance to identify more rapid and cost-effective approaches;
- and developing a communications and advocacy policy for sensitizing Afghan ministries and donors to the problems and challenges of AVM contamination and clearance.

Progress has been made in developing and testing different methods of clearance, but other aspects of the Roadmap have yet to be tackled including the establishment of a TWG for AVM. Members of the MAPA confirmed their commitment to the Roadmap at a meeting in Kabul in April 2018. They requested external help to revise NTS methodology and analyse existing AVM data, and to develop a liability policy which they see as a complementary process for revising the NTS. The MAPA agreed to participate in a workshop to develop a resource mobilization strategy for AVM clearance.

During the preparation for this report, it became apparent that different data describing the extent of the AVM contamination, the percentage of overall contamination it represents, and the numbers of AVM cleared have been used in documents and presentations that are in the public domain. The discrepancies are a result of the different ways in which calculations are made and the changing understanding of the contamination. However, these discrepancies should be resolved and explained to ensure that credible information about the AVM clearance can be presented to donors. Qualitative

and quantitative Information available about the impact of AVM contamination and clearance at the local socio-economic level and macro-economic level is also limited.

## Recommendations

**Planning**

- If the MAPA decides to continue to focus on reducing the threat from AVMs it should establish the TWG, clearly allocate roles and responsibilities and agree and develop a strategy, implementation plan and timeline. Determine the most effective composition of the TWG and whether all members of the MAPA should be actively involved. Empower the TWG with the appropriate authority to revise approaches to reduce the threat from AVM.
- Review and revise the AVM Roadmap developed by the MAPA in August 2017.
- Produce accurate and clear data on the scale of AVM contamination and related statistics which should be used consistently by all members of the MAPA in all communications.
- Document case studies to show outcomes and impact of clearance of AVM.
- Document which large-scale development and infrastructure projects are contaminated by AVM and explain the impact of this contamination on these projects.
- Agree the terminology for AVM or ATM and use it consistently.

**Non-Technical Survey**

- DMAC should continue to work on the development of the liability policy and seek external support to finalize the policy.
- Sensitize members of the MAPA and all relevant staff to the liability policy.
- Analyse existing data and information of known AVM contamination and clearance tasks to identify potential criteria to improve the effectiveness of NTS and reduce the size of areas that are physically cleared.
- Based on analysis of existing data, case studies and affected-infrastructure projects, determine whether the current prioritization of AVM tasks or the criteria used to determine prioritization are appropriate.
- As agreed the MAPA should prepare and hold a workshop to revise the NTS standards. Consider whether external support would be beneficial and approach potential organizations for support if the MAPA agrees it would be useful.
- Revise the NTS standards and provide the necessary training.
- Update AMAS and SOPs as necessary.

**Technical Survey**

- As agreed, continue to explore new technology to see whether it enables technical survey to be conducted for AVM clearance.
- If potential new technology is identified begin rigorous testing as has been the case with clearance methods for AVM.

**Clearance**

- Continue mechanical testing jointly as the MAPA.
- Agree accreditation processes and expectations of clearance rates over the different terrains to ensure efficiency and to maintain quality.
- Compare the cost-effectiveness of the different approaches.
- Revise the Afghanistan Mine Action Standards (AMAS) and standard operating procedures (SOPs) as necessary

**Advocacy**

- As agreed, develop a MAPA communications and advocacy policy for AVM. Produce standard data and information to be used by all partners in all communications.
- Produce a brief factsheet on the DMAC website about AVM contamination and clearance.
- Identify the strongest arguments for justifying the clearance of AVM and ensure that the necessary evidence is clear and documented to support those arguments. Decide whether all humanitarian, livelihoods and macro-economic arguments for clearance should be used or whether resource mobilization focusing on a few of these arguments would be more effective.
- Although civilian deaths and injuries from AVM are limited, displaced populations have been affected by the contamination. Some information describing this impact has been identified but it seems limited. If there are more examples, these should be documented to strengthen the rationale for AVM clearance for humanitarian purposes.
- Available information about the impact of AVM contamination and clearance on civilian livelihoods from operators is limited and the Post-Demining Impact Assessment (PDIA) does not explain the change that has occurred because of the clearance, only the outcomes. To justify the livelihoods argument for clearance, more case studies are necessary and the final PDIA documents should include baseline data so that the impact of clearance can be understood.
- Determine how many macro-economic projects are affected by AVM contamination and whether, some or none of these affected projects should be used to try to mobilize resources.
- Develop a resource mobilization plan based on strategic decisions about the most effective arguments for clearing AVM contamination. If appropriate:
    - build on the National Mine Action Strategic Plan (NMASP) to demonstrate how mine action contributes the SDGs;
    - Identify key projects supported by Afghan Ministries and donors that are affected by AVM contamination and lobby for the inclusion of clearance costs in the budget;
    - with relevant actors develop a cost-benefit analysis for clearance and a projection of the macro-economic benefits for clearance.

**Policy**

- Examine how DMAC liaises with other government entities and non-mine action actors to raise awareness about AVM contamination in particular and explosive hazards in general. Identify ways to raise the profile of mine action with other actors to improve the mainstreaming of mine action into other sectors and development projects to facilitate clearance for actors outside the mine action sector and the processes for obtaining clearance certificates, and to provide the mine action sector with opportunities to access a wider range of funding resources.
- Decide whether it is appropriate for members of the MAPA to undertake commercially funded projects or does it jeopardize the MAPA's humanitarian credentials and limit the mine action resources available for clearance that will benefit livelihoods of the local population.
- Confirm whether the clearance of AVM is included in the National Mine Action Law. If necessary, advocate for AVM inclusion and for the law to be enacted.

# Contents




**Acknowledgements**

The author is grateful to staff from DMAC, the MAPA and GICHD for giving up their time to participate in this study and for providing data and documentation. She is particularly grateful to DMAC and the MAPA for their participation in a discussion in Kabul in April 2018 which provided a valuable contribution to the report. This work was facilitated with support from the UK Government's Conflict, Stability and Security Fund.

# 1. Introduction

The Government of the Islamic Republic of Afghanistan (GoIRA) includes clearance of anti-vehicle mines (AVM) as part of its commitment to the Anti-Personnel Mine Ban Treaty (APMBT) because of their negative impact on civilian life and the long-term development potential of Afghanistan.[1] Uncleared AVM also pose a threat to civilian security as they typically contain around 6-9kg of explosives. They are known to have been reused by the Taliban and other armed opposition groups because they have a high explosive content but also have a low metal content which makes them difficult to detect. In some cases, their explosive fill has been removed to make IEDs.[2] According to DMAC, as of 7 May 2018, AVM contamination included 109,008,614 sqm of confirmed hazardous areas (CHA) and 254,015,858 sqm of suspected hazardous areas (SHA) totalling an area of 354,024,472 sqm. Based on current calculations, this means that AVM SHAs and CHAs account for 54.4 percent of the remaining legacy contamination.[3]

AVM were used predominately by the Mujahedeen and the Taliban who laid them sporadically without recording their location. The most common AVMs used in Afghanistan have a low metal content making them difficult to detect. Consequently, clearing AVMs is time consuming, particularly as the different terrain of the contaminated areas demands different clearance techniques. Since March 2017, the Directorate of Mine Action Coordination (DMAC) and its implementing partners, which together comprise the Mine Action Programme of Afghanistan (MAPA), have been working to improve the efficiency and effectiveness of interventions to reduce the threat from AVM. During a two-day workshop in August 2017, the MAPA agreed to examine aspects of analysis, planning, prioritization and technical approaches for clearing AVM contamination. A second workshop held in November 2017, focused on testing and improving clearance of AVM through various mechanical and manual methods. This paper contributes to the ongoing efforts to improve the MAPA's response to legacy AVM contamination by assessing the scope of the problem,[4] the impact of AVM contamination, the activities to date to reduce the threat posed by AVM and the remaining gaps to be addressed.

# 2. Anti-Vehicle Mine Impact

AVM contamination has a humanitarian impact, an impact on the livelihoods of individual households and communities, and a macro-economic impact by impeding access to or efficient use of resources and by preventing the implementation of large-scale development and infrastructure projects. Mine action is part of humanitarian action and widely recognized an enabler for development and the achievement of the Sustainable Development Goals (SDGs).[5] Mine Action's role as an enabler for development is acknowledged by the MAPA which commits itself to facilitating national and provincial development plans in Afghanistan in goal one of the National Mine Action Strategic Plan. Despite this, little information about the impact of explosive hazards contamination and clearance on development plans has been identified, and the mine action sector had limited information about the impact of contamination and clearance of AVM on local populations. This section provides a brief overview of impact of AVM based on the information identified.

[1] GoIRA, 2012.

[2] HALO Trust, 2017a

[3] These figures include AVM contamination which is found in areas contaminated with other explosive hazards. Data provided by DMAC via email, 7 May 2018. Data analysed for this report reveal discrepancies in the AVM statistics used by the MAPA. The MAPA should review the data, confirm the figures it believes to be correct and use these figures consistently in all presentations and documentation.

[4] Legacy contamination occurred pre-2001.

[5] GICHD-UNDP, 2017

**2.i Humanitarian Impact**

AVM can lie undetected for decades because of the force required to detonate them. They are indiscriminate and can be detonated by civilians travelling in vehicles, using machinery to build or farm or while constructing buildings including schools, health centres and houses or infrastructure such as irrigation systems electricity cables and water pipes. The threat can be real or perceived but the fear of detonating an AVM has a negative psychological impact, prevents civilians from going about their daily lives and is a constant reminder of the ongoing insecurity and past conflicts.

Since 1989, DMAC has recorded a total of 1,494 AVM casualties (women 81, men 1,010, girls 90, boys 313).[6] The trauma of losing a loved-one or caring for a family member who is disabled is emotionally difficult but the economic impact of losing the main income generator or the medical costs of caring for a disabled family member or supporting one who is not economically productive can be a significant burden on a household.

Displaced populations are particularly vulnerable to explosive hazards as they move in unfamiliar areas, have limited local knowledge about the potential dangers and often have little choice over the routes they take or where they settled. The ongoing insecurity in Afghanistan and the region means that the country's population is highly mobile, unsettled and dynamic. In 2017, the United Nations High Commissioner for Refugees (UNHCR) facilitated the return of almost 60,000 individuals to Afghanistan and the agency projects a further 70,000 individuals returning in 2018. In the first four months of 2018, over 80,000 individuals have been internally displaced.[7]

Afghanistan also hosts an estimated 100,000 refugees from North Waziristan in Pakistan.[8] In 2014, the international community reacted quickly when refugees from Pakistan into Gurbuz District of Khost Province discovered that they had settled in an area contaminated with various explosive hazards. Tents were rapidly relocated away from areas considered hazardous and mechanical and manual demining teams were deployed. Over a twelve-month period, 1,735,461sqm of land was cleared of explosive hazards including 164 AVM.[9]

Mihtarlam district, the capital of Laghman province, is host to Afghan IDPs and returnees and refugees who discovered that they had settled in an AVM contaminated area. Some families remained in tents, which provided little protection against the environment, while others risked detonating AVMs by constructing dwellings from stone. There was limited safe land available for grazing and farming and many inhabitants deliberately avoided using mechanical farming methods. Following clearance, the population was able to graze their livestock and import building materials by vehicle from surrounding areas to construct dwellings that provided better and healthier living conditions than the tents. Post-clearance interviews with the previously affected population confirm that the clearance of the AVM contamination had a significant positive impact on their lives, not just by improving their accommodation and livelihoods opportunities but also by providing a safe environment for daily life.[10]

[6] Data provided by DMAC via email, 7 May 2018. More detailed data was not made available for this paper but, if it exists, analysis of it may help to understand who is most vulnerable to AVM explosives and to analyse the AVM contamination and plan and prioritize clearance.

[7] OCHA, 2018

[8] UNHCR, 2018

[9] HALO Trust, 2015c

[10] HALO Trust, 2018a, 2018b

**2.ii Livelihoods Impact**

AVM CHAs and SHAs affect 603 communities directly and 303 communities indirectly.[11] The contamination affects livelihoods by blocking access to natural resources and amenities preventing civilians from supporting themselves properly and efficiently. For example, they are unable to grow enough food because safe land is limited, or they avoid using labour-saving machinery which might detonate a mine. Such practices have long-term negative impacts on resilience, health, well-being and standard of living, and can damage the environment as some natural resources are over-exploited because contamination makes others inaccessible. The positive impact of AVM clearance for livelihoods can be immediate. In Kohsan district in Herat, it was reported that cultivation of wheat and construction of irrigation channels began within two weeks of clearance of AVM contamination.[12] The table below shows the resources blocked by AVM contamination and the size of the affected population.[13]

| Blockages | Population |
|---|---|
| Agriculture | 206,484 |
| Grazing | 462,623 |
| Housing | 107,079 |
| Infrastructure | 890 |
| Road | 116,009 |
| Water | 8,359 |
| **Total** | **901,444** |

In Arghandab district of Kandahar and Lashkar Gar, Nahri Sarraj and Nawa-i-Barak Zayi districts of Helmand, the local population reported that they could not farm their land or graze livestock because of AVM contamination. The population restricted collection of firewood and other natural resources and refrained from constructing buildings because they feared detonating AVM. People made long journeys to avoid contaminated areas to get to market, access healthcare and for the children to get to school. The clearance has enabled the population to farm their land efficiently to grow enough food to support the population, graze livestock and to access other facilities without concern for their safety or that of their children. In some areas buildings have been constructed and children report that they are able to play and take direct routes to school. The local population also benefited from the employment in the mine action sector which provided regular salaries in an area where the population could not support itself which has also facilitated investment in livelihoods post-clearance potentially leading to a sustainable impact from the clearance. Those who were employed were proud to be able to help their community and to contribute a regular wage to their household without having to travel abroad for work which entailed risks and separated families.[14]

[11] 276 communities are directly impacted by AVM SHAs only; 297 communities are directly impacted by AVM CHAs only; and 30 communities are directly impacted by both SHAs and CHAs. Data provided by DMAC via email, 7 May 2018 and confirmed via email 3 July 2018.

[12] HALO Trust, DIFD West one year report

[13] Data provided by DMAC via email, 7 May 2018. However, a DMAC presentation in November 2017 states that over 353,000 people are affected economically by contamination from mines other than anti-personnel mines. The size of the contaminated area of the socio-economic blockages is also different (DMAC, 2017).

[14] DAFA, 2015, 2016a, 2016b.

A livelihoods report from an area of Herat where 32 AVM were cleared along with other explosive hazards states that post-clearance the population had better access to agricultural and grazing land and improved access to markets, all of which have improved household incomes. This had reduced travel time and therefore fuel consumption. Food security increased as more food was produced including meat and dairy. The improved nutrition, along with easier access to healthcare, has had a positive impact on the population's health. The increased incomes enabled the purchase of sewing machines and weaving looms, which generated more income contributing to the household and local economy and provided employment for women and girls who were unable to work outside the home. The improved access to electricity reduced the need for firewood and the use of generators so, in addition to the reduced fuel consumption for transport, the clearance also had a positive environmental effect. Some households also reported easier access to education and, overall, households were more resilient and better able to recover from shocks.[15]

The 2016 Post-Demining Impact Assessment (PDIA) conducted by DMAC in Western Afghanistan concluded that the clearance of 13 sites totalling 1,444,350 sqm in which nine AVM were found and safely destroyed directly benefited 630 households. On the cleared land they are able to graze 800 livestock, harvest 250,000kg of wheat annually worth 47,794 USD and 340,000kg of corn annually worth 45,000 USD and 400,000kg of fruit annually worth 58,824 USD.[16] Unfortunately the report does not provide the baseline data to calculate the change in agricultural production and determine the economic benefit of clearance to households in the locality.

**2.iii Macro-Economic Impact**

According to UNDP, 40 percent of the population of Afghanistan is unemployed, almost 36 percent lives below the national poverty line and the country ranked 169 out of 188 in the 2016 Human Development Index report.[17] Agriculture, both arable and livestock, accounts for almost a third of Afghanistan's gross domestic product. Around 80 percent of the population live in rural areas and most rely on agriculture for their livelihood.[18] The mountainous terrain means that only 12-15 percent of land is suitable for cultivation but, because of a lack of water and effective irrigation systems, much of this land is not used.[19] The World Bank and the Afghan government believe that investment in agriculture has the greatest potential of all sectors to generate economic growth for the country and contribute to the income of the rural poor.[20] Therefore, AVM contamination that affects agriculture has a national level impact as well as the livelihoods of individual households or individual settlements.

According to DMAC, large-scale internationally-supported infrastructure projects including roads, railways and power lines and exploitation of oil and copper are affected by AVM contamination.[21] These projects are important for the long-term economic development of Afghanistan but DMAC has found that ministries seem to be unaware of the threat of contamination and often make late requests for clearance or certificates to confirm that an area is clear.[22]

More information is needed to demonstrate how AVM contamination impacts on macro-economic development and provide an economic projection of the benefits of clearance. This would involve

[15] HALO Trust, 2017b
[16] DMAC, 2016: 10
[17] UNDP, 2018
[18] FAO, 2012
[19] FAO, 2012
[20] World Bank, 2014
[21] DMAC, 2017 and information from DMAC via email 7 and 28 May 2017. However, the number and types of projects varies so DMAC should clarify this information.
[22] Mohammad Shafiq Yosufi, Director, DMAC, Kabul, Afghanistan, 22 April, 2018

working closely with other Afghan ministries and organizations outside the mine action sector. Careful consideration is needed to decide whether the impact of AVM on infrastructure projects should be used to justify clearance. This is because some of the projects are controversial following accusations of corruption or destruction of archaeological sites and some projects have been impeded by insecurity, so clearance in such areas may be impossible or unnecessary in the immediate future. It may be more effective to focus on a few of the projects rather than all of them such as those that have the potential to benefit ordinary people and not large companies, or those managed by organizations which have established good relationships with the mine action sector.

Funding clearance for large-scale development projects should also be considered as it may be inappropriate to use MAPA funds to clear areas in support of commercial projects which could be used to clear areas affecting a local population. If commercial contracts for clearance are used it may compromise the MAPA's humanitarian credentials to undertake them, and reduce the resources available for clearance tasks which might benefit the local population but have a lesser macro-economic impact.

**2.iv Employment in the Mine Action Sector**

Many mine action processes are labour intensive but, in a country where unemployment can be as high as 40 percent,[23] the opportunity to enter formal employment and receive a regular salary provides a valuable source of income to an individual and his or her family and puts money into the local economy. As of April 2018, there were 5,370 Afghans employed in the mine action sector.[24] Through the community-based demining (CBD) approach, many more have been employed over the years. This involves local recruitment in a contaminated area which stimulates the local economy, especially in areas where it has been affected by explosive hazards contamination, helps to build trust with the local population improving the security of mine action organizations and its access to local knowledge about contamination. Deminers are respected by the population and households with a member employed in mine action have reported less reliance on badly paid casual labour and lower rates of migration to neighbouring countries for employment.[25]

# 3. The Response

The DMAC, a national entity under the Ministry of Disaster Management and Humanitarian Affairs, manages the MAPA which comprises national and international humanitarian mine action NGOs.[26] DMAC accredits the NGOs, tasks, coordinates and manages mine action operations, and is responsible for overseeing the Afghan government's fulfilment of its obligations to the Anti-Personnel Mine Ban Treaty (APMBT). Various mechanisms are in place to manage and maintain the quality of mine action and land release in Afghanistan including the Afghanistan Mine Action Standards (AMAS), processes for non-technical survey (NTS) and technical survey (TS), Standard Operating Procedures (SOPs), a system for ranking the priority of clearance tasks and the information Management System for Mine

[23] UNDP, 2018

[24] Figure provided by DMAC during the Afghanistan Donors and Implementing Partners Coordination Workshop for Mine Action, 9-11 April 2008, Geneva, Switzerland.

[25] HALO Trust, 2017b.

[26] Afghan NGOs include: Afghan Technical Consultants (ATC), Demining Agency for Afghanistan (DAFA), Mine Clearance Planning Agency (MCPA), Mine Detection and Dog Centre (MDC), and the Organization for Mine Clearance and Afghan Rehabilitation (OMAR).
International NGOs include: Danish Demining Group (DDG), HALO Trust, and the Swiss Foundation for Mine Action (FSD). Norwegian People's Aid (NPA) assumed oversight responsibilities for mine action operations funded by the United States in 2017.

Action (IMSMA) database. DMAC and the MAPA operate under a strong and internationally recognised mandate. (The legal framework and mandate for addressing the threat of AVM is detailed in Annex 1.)

By May 2018, DMAC calculated that 417,913,973 sqm of land had been cleared of AVM contamination.[27] As the area affected by AVM makes up over 50 per cent of remaining legacy contamination considerable effort will be required to release this area. The MAPA acknowledges that past clearance has not always been successful. With less funding available for mine action in general, during a workshop in August 2017, the MAPA agreed a Roadmap for improving its response to AVM which included:

- establishing a technical working group (TWG) for AVM;
- revising the non-technical survey approaches and analysing existing data to improve understanding of AVM contamination and impact;
- testing methods of mechanical and manual clearance;
- and developing a communications and advocacy policy for sensitizing Afghan ministries and donors to the problems and challenges of AVM contamination and clearance.

Considerable progress has been made by the MAPA in developing and testing different methods of clearing AVM, but little progress has been made on the other activities agreed as part of the Roadmap. The section below summarizes progress to date and identifies areas that remain to be addressed.

**3.i The Technical Working Group**

Despite progress in testing methods of clearing AVM, the TWG for AVM has yet to be established.[28] DMAC and partners should consider how best to form the TWG. The mine action sector is busy and has ongoing commitments to implementation of mine action as well as to developing new approaches to improve implementation to reduce the threat from all explosive hazards. Therefore, it may not be necessary or appropriate to involve all members of the MAPA in the TWG AVM, especially if not all of them will be involved in implementing AVM-related activities. For example, analysis of existing data to determine whether it is possible to improve NTS, prioritization and understanding of the areas likely to be contaminated with AVM, may involve only a few individuals with expertise in data analysis and IMSMA. Similarly, not all MAPA members may be involved in NTS and use of mechanical clearance assets. The TWG for AVM should be formed to be as efficient as possible and have the necessary authority to make decisions to revise MAPA approaches to AVM. If it is decided that not all not all the MAPA should be involved in AVM, efforts must be made to up-date all partners on AVM progress.

**3.ii Non-Technical Survey**

The area remaining to be cleared of AVM contamination is large although many of these areas are still defined as SHAs and have not yet been re-surveyed and converted to CHAs. Non-technical survey (NTS) is conducted following reports of suspected contamination from the local population to determine whether contamination is present and the extent of it. NTS is intended to convert an SHA to a CHA and define the contaminated area to be cleared more accurately. It involves analysis and information gathering and does not use any technical interventions. One of the main challenges is the lack of records about AVM contamination and witnesses to the mines being laid. The MAPA has agreed criteria to assess whether an area is contaminated and whether the information collected can be considered credible and as direct or indirect evidence. During the development of the Roadmap in August 2017 and again at a meeting on 23 April 2018, the MAPA agreed to reassess its approach to NTS to see whether it can be made more efficient and identify more accurately what should be cleared. Currently, huge areas are being cleared but very few AVM found which is expensive and time-consuming.

[27] Data provided by DMAC via email 7 May 2018.

[28] TWG not established at time of writing, July 2018.

The lack of accurate information means that local populations live in fear of AVMs in areas where the mine action sector can find no evidence of them. It can be difficult to persuade local populations that an area is safe, but clearance activities which involve excavating, ripping or ploughing the land prove there is no contamination and can act as a confidence building measure. This benefits the population which, not only reassured, can then farm the land immediately. However, care is needed to ensure that civilians are not using suspected contamination as a way to have their land ploughed.

Some MAPA members thought that a simple way to improve the NTS would be to allow the survey team to spend longer in the area to liaise more closely with the local population and secure access to specific areas in the company of a relevant local representative. During short visits, it was argued that the survey teams do not have time to establish trust with the local population to gather detailed information and sometimes they cannot access an area if the appropriate local official is away. Technical teams that have followed the NTS team have been critical of the poor survey, but they have more time to build relationships with the local population and to assess the area more thoroughly. DMAC argued that the issue of time for NTS teams had been raised before and it has been agreed that the NTS teams should take as much time as they need to do a thorough survey.[29]

Some operators felt that not all NTS teams had the necessary capacity to complete the survey well. Others felt that more could be learned from looking at previous experiences of surveying and clearing AVM contaminated areas. For example, are there common factors in areas where a lot of land was cleared but no AVMs found, and could these factors be used to cancel suspected hazard areas. In cases where verification was used, were any AVMs found, if not, what criteria had operators used to determine that there was no contamination.[30]

As a result of AVMs being missed when technical survey was used, for example in Jebrail in Herat Province,[31] the Afghanistan Mine Action Standards (AMAS) forbid the use of technical survey for area reduction of AVM contaminated areas.[32] However, the MAPA thought it worth exploring the possibility of technological solutions which might be used in conjunction with NTS to speed up the process.[33]

Revision of the NTS would involve analysis of existing data and lessons learned from previous experiences to revise the standards and to develop a process that demonstrates 'all reasonable effort' has been expended to reach a decision about the likelihood of a particular piece of land being contaminated and the course of action the MAPA should follow based on that decision. Simultaneously, the MAPA would want to finalize the liability policy that DMAC is currently drafting. For the revision of the standards and the finalization of the liability policy, the MAPA would like external support. Once the standards and policy have been finalized, mine action operators would require training in the new processes, which again would require external support.[34]

In the Roadmap, the MAPA also agreed to look at prioritization for clearance of AVM contamination. While analysing available data for revising the NTS, there would be an opportunity to reassess prioritization to determine whether it is appropriate and sequences clearance to maximize impact.

[29] Summary of discussion among MAPA members at a meeting in Kabul, 25 April 2018.
[30] Summary of discussion among MAPA members and workshop participants in August 2017 in Kabul and among MAPA members at a meeting in Kabul, 25 April 2018.
[31] HALO Trust, 2015b.
[32] A reference to the relevant AMAS entry should be added.
[33] Suggested by MAPA members at a meeting in Kabul, 25 April 2018.
[34] Request from MAPA members at a meeting in Kabul, 25 April 2018

**3.iii Mechanical and Manual Clearance**

Civilians have reported finding AVM on their land several years after the land had been in regular use, particularly if the land has been worked by hand, rather than mechanically.[35]Although many AVM have been in the ground for more than 30 years, it is believed that the majority of them are not degrading and will be fully functioning for decades to come.[36] As minimal metal AVMs can be ten times slower and more expensive to clear than metal cased AVMs and harder to detect than small anti-personnel mines,[37] there is a concern that donors and operators may chose to focus on clearance of explosive hazards other than AVMs that are quicker and easier to clear.

The challenges of conducting NTS for AVM contamination and the ban on using technical survey for area reduction of AVM has led the MAPA to test different methods of manual and mechanical clearance. They initiated the tests during a three-day workshop in November 2017 in Mazar-i-Sharif. Tests are ongoing but show that it is possible to increase clearance rates and that these methods are cost effective even if investment in new equipment is necessary. The tests involve trialling approaches on different soils to find AVM buried at different depths and recording the speed and accuracy of each approach. Some approaches use one machine (and therefore one movement through the soil) and others two, so productivity rates are being compared. During testing, tines have been broken on the rocky ground, but it has been possible to repair these in the field so, although the breakages cause delays, repairs are not reliant on sourcing spare parts or expertise from outside the locality which would be more time-consuming.

For large flat areas with soft ground, machines are ideal, and can facilitate post-clearance agriculture because they plough and turn the ground. However, few machines can cope with rocky terrain and are usually unsuitable for urban areas because there is not enough room for them to manoeuvre. Furthermore, they can damage infrastructure and agricultural areas such as land around orchards, and the local people dislike the dust they create.[38] The machines can also damage roads, especially those on sandy soil.

The main types of machines and ancillaries that have and are being tested include:

- Rotary mine comb
- Front-end loader with off-set rippers
- Excavator with ripper and cultivator
- Backhoe with ripper
- Dozer with v-shaped ripper array
- Flails and tillers

Tests have shown that some approaches are better suited than others to particular types of terrain and to finding mines at different depths, so the MAPA will need to make informed decisions about the most appropriate methods. The different mechanical approaches would need to be accredited and some agreement over the expected productivity rates reached. Some initial calculations by DMAC suggest that if mechanical clearance can be improved, productivity could be increased by 50 percent

[35] For example, reports collected by HALO Trust in Kandahar, shared with the author in April 2018.
[36] HALO Trust, 2015a
[37] HALO Trust, 2017
[38] HALO Trust, 2015a and HALO Trust staff 29 April 2018

on current average clearance rates.[39] Although increasing productivity is important, quality must be maintained so expectations for mechanical clearance rates must be realistic and take into account the soil type and clearance depth (which may change across a minefield) and capabilities of each mechanical asset.

Mine Detection Dogs (MDD) have a poor record in Afghanistan for clearing AVM. They were used in Jebrail in Herat Province where minimum metal mines were missed. Although numerous reasons have been identified for the mines being missed, the environmental conditions in Afghanistan are challenging for MDD and tests have shown that their performance can be inconsistent.[40]

Where it is not possible to clear AVM contaminated areas mechanically, sensitive metal detectors can be used to detect the minimal metal mines in conjunction with ground penetrating radar (GPR) detectors. These are more expensive than metal detectors, but tests show that one GPR detector can support around 20 metal detectors. In conducive conditions, GPR detectors can comfortably detect AVM to 20cm (the national standard) and often beyond.[41] Overhead power lines and underground water pipes make some detectors less effective and sometimes minimum-metal AVM are too deep to be found by a detector. In such cases, clearance by full manual excavation is necessary and this can be many times slower than using a detector.

**3.iv Advocacy and Communications**

Part of the Roadmap involves developing a communications and advocacy policy which the MAPA has already agreed to do jointly initiated through a workshop. The MAPA should agree common messaging and a strategy to raise awareness among donors and Afghan line ministries about the impact of AVM contamination and the benefits of clearance. The arguments about the impact of AVM on livelihoods, the economy and development have already been made in the NMASP and through the work of GICHD and UNDP which shows how mine action is an enabler for the SDGs.[42] The MAPA can draw on these documents to make strong arguments for the clearance of AVM. This is necessary because the humanitarian need and legal requirement to clear AVM is weaker than for other explosive hazards in Afghanistan. The MAPA should develop accurate datasets to record AVM contamination, clearance and impact and develop more qualitative information about the outcomes and impact of AVM clearance. The potential economic benefits of large-scale infrastructure projects contaminated with AVM should be calculated in collaboration with relevant authorities and donors to demonstrate the cost-benefit of clearance. Part of the communications and advocacy policy should involve a resource mobilization strategy to identify which donors are most likely to fund AVM clearance or improvements in AVM clearance, and to identify additional sources of funding that may come through mainstreaming mine action into Provincial and national development projects and facilitating the achievement of the SDGs in Afghanistan.

# 4. Conclusion

AVM contamination in Afghanistan has an impact on civilian lives, livelihoods and national development process. The data available should be examined, discrepancies removed and all operators required to use the same agreed data. More qualitative information about the outcomes of and impact of AVM clearance should be identified or complied following future operations. The MAPA has a mandate to clear AVM. Minimum metal AVM that are sporadically laid in small numbers across

[39] DMAC, 2017
[40] HALO Trust, 2015b: 2; GICHD, 2005:64
[41] Daniels, Braunstein and Nevard, 2014
[42] GICHD-UNDP, 2017

large areas are challenging to clear but there are opportunities to increase the productivity of land release and mechanical and manual clearance. Test are ongoing, and the different approaches should be accredited, the necessary AMAS and standard operating procedures developed, and expected clearance rates on the different terrain which are considered acceptable and do not compromise quality. DMAC is in the process of developing a liability policy and the MAPA has agreed to examine the NTS and analyse existing data to see whether they can improve their understanding of the AVM contamination and develop criteria which reduce SHAs and improve NTS. Currently revising the NTS and developing new mechanical and manual approaches for clearance seem to be the best options but operators should continue to explore the use of technology as a means of improving NTS and TS. The MAPA needs to develop strong arguments for clearing AVM and sensitise donors and line ministries to these to garner support and access other sources of funding.

See Executive Summary for a full list of recommendations.

# 5. Annexes

## 5.i Legal Framework and Mandate for the Clearance of AVM in Afghanistan

*Anti-Personnel Mine Ban Treaty and Extension Request*
Afghanistan Is a State Party to the 1997 APMBT.[43] In February 2012, the Afghan government requested an extension to the Article V deadline until 2023. The extension request commits the government to clearing all known AVM contamination.

*The Mine Action Law*
The mine action law for Afghanistan, drafted in 2005, has never been promulgated. Currently, it forms an annex to a Disaster Management Law which has been approved by the Ministry of Justice but has yet to be presented to Parliament.[44] DMAC should confirm the status of AVM in the Mine Action Law.

*National Mine Action Strategic Plan (2016-2020)*
The National Mine Action Strategic Plan (NMASP) (2016-2020) reiterates the Afghan government's commitment to clearing AVM contamination as part of its APMBT Article V commitments. The strategy is aligned with Afghanistan's national and provincial development plans all of which are aligned with the SDGs.

*Convention on Certain Conventional Weapons*
The Afghan government has ratified the Convention on Certain Conventional Weapons (CCW) and its five protocols. The CCW restricts and prohibits the use of weapons which are 'excessively injurious and or have 'indiscriminate effects'. Amended Protocol II is binding for government and non-government armed forces and restricts the use of AVM under general rules, article 3 and specific rules article 6 paragraph 3 because they are indiscriminate, cause civilian casualties and do not self-destruct or become inert.[45]

*Security Council Resolution 2365*
Adopted on 30 June 2017, Resolution 2365 is the first stand-alone United Nations Security Council Resolution (UNSCR) on mine action. It expresses equal concern about anti-vehicle and anti-personal (AP) mines, explosive remnants of war (ERW) and improvised explosive devices (IED) and stresses the obligation of states, the international community and conflict parties to protect civilians and engage in activities to mitigate the threat of these explosive hazards.

*General Assembly Assistance in Mine Action Resolution*
The United Nations General Assembly Resolution on Assistance in Mine Action adopted on 7 December 2017 recognizes the that AV and AP mines and other explosive hazards impact on humanitarian, peacekeeping and development interventions including the achievement of the SDGs and pose an ongoing threat to civilian lives and livelihoods and long-term peacebuilding. The Resolution calls upon Member States to fulfil their obligations to the international mine action related treaties.

[43] Officially, The Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction. It was adopted on 18 September 1997 and entered into force on 1 March 1999.
[44] ICBL – CMC, 2016 and discussion via Skype with a senior Afghan official July, 2017.
[45] CCW, Amended Protocol II, 1996; ICRC, 2014

*International Humanitarian Law*

International Humanitarian Law (IHL), which is invoked during armed conflict, aims to protect civilians, prohibit direct attacks on them and attacks that kill or injure civilians indirectly. The four 1949 Geneva Conventions and the Additional 1977 Protocols are the core of IHL. The four Geneva Conventions, but not the Additional Protocols, have been universally ratified and are therefore universally applicable. Afghanistan ratified Additional Protocol II of 1977 in 2009 which is binding on all conflict parties active in Afghanistan. The APMBT and the CCW form part of IHL. Afghanistan's 2004 Constitution reinforces the government's commitment to international human rights and humanitarian law including the APMBT and CCW and other international conventions it has ratified.[46]

## 5.ii Acronyms

| | |
|---|---|
| AMAS | Afghanistan Mine Action Standards |
| ANDMA | Afghanistan National Disaster Management Authority |
| AP | Anti-Personnel |
| AVM | Anti-Vehicle Mine |
| CBD | Community Based Demining |
| CCW | Convention on Certain Conventional Weapons |
| CHA | Confirmed Hazardous Area |
| DMAC | Directorate of Mine Action Coordination |
| ERW | Explosive Remnants of War |
| IDP | Internally Displaced Person |
| IED | Improvised Explosive Device |
| GICHD | Geneva International Centre for Humanitarian Demining |
| GIRoA | Government of the Islamic Republic of Afghanistan |
| GPR | Ground Penetrating Radar |
| IED | Improvised Explosive Device |
| IHL | International Humanitarian Law |
| IMAS | International Mine Action Standards |
| IMSMA | Information Management System for Mine Action |
| IRoA | Islamic Republic of Afghanistan |
| MAPA | Mine Action Programme of Afghanistan |
| MBT | Mine Ban Treaty |
| MDD | Mine Detection Dog |
| NGO | Non-Governmental Organization |
| OCHA | Office for the Coordination of Humanitarian Affairs |
| NMASP | National Mine Action Strategic Plan |
| NPP | National Priority Programme |
| NTS | Non-Technical Survey |
| PDIA | Post Demining Impact Assessment |
| RMC | Rotary Mine Comb |
| SHA | Suspected Hazardous Area |
| SOPs | Standard Operating Procedures |
| TS | Technical Survey |
| UNDP | United Nations Development Programme |
| UNHCR | United Nations High Commissioner for Refugees |
| UNMAS | United Nations Mine Action Service |
| UNSCR | United Nations Security Council Resolution |

[46] Kamali, 2014: 23

## 5.iii Bibliography


Daniels, D.; Braunstein, J. and Nevard, M. (2014) *Using MINEHOUND in Cambodia and Afghanistan,* Journal of Conventional Weapons Destruction, Vol 18 Issue 2

Demining Agency of Afghanistan (DAFA) (2015) *Hilmand – 05 AT Project 1st Quarter Case Study*, 30 November, 2015

Demining Agency of Afghanistan (DAFA) (2016a) *Helmand 05 AT Project Q4 Case Study Report,* 20 February 2016

Demining Agency of Afghanistan (DAFA) (2016b) *Kandahar Demining Project – 04 AT/A Case Study Report,* April 2016

Directorate of Mine Action Coordination (DMAC) (2016) Post-Demining Impact Assessment (PDIA) 1395 (2016)

Directorate of Mine Action Coordination (DMAC) (2017) *Challenges of Anti-Vehicle Mine Clearance in Afghanistan* presentation at the CCW Meeting of States Parties, 22-24 November 2017, Geneva, Switzerland

Directorate of Mine Action Coordination-United Nations Mine Action Service (DMAC-UNMAS) (2017) *Report of the Technical Meeting and Demonstration of Technologies Used for Anti-Vehicle Mine Clearance in Afghanistan*, Balkh Province, 26-28 November 2017

Food and Agriculture Organization (FAO) (2012) *Country Programming Framework 2012-2015,* Food and Agriculture of the United Nations, August 2012

Geneva International Centre for Humanitarian Demining (GICHD) (2005) *Detection of Landmines by Dogs: environmental and Behavioural Determinants*, GICHD, Geneva https://www.gichd.org/fileadmin/GICHD-resources/rec-documents/Detection-of-landmines-by-dogs-GICHD-2005.pdf (accessed 9 November 2018)

Geneva International Centre for Humanitarian Demining (GICHD) & United Nations Development Programme (UNDP) (2017*) Leaving No One Behind: Mine Action and the Sustainable Development Goals*, GICHD-UNDP, Geneva, June 2017

Government of Islamic Republic of Afghanistan (GoIRA) (2012) The Convention on the Prohibition on the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction. Request: for extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5

HALO Trust (2015a) *Technical Challenges in the Humanitarian Clearance of Anti-Vehicle Mines: a field perspective*, presentation, 9 April 2015

HALO Trust (2015b) The HALO Trust's Clearance of Jebrail Township, Herat Province, Afghanistan

HALO Trust (2015c) *Clearance of Gulan Refugee Camp and Surrounding area, Gurbuz District, Khost Province,* 4 August 2015, https://www.halotrust.org/media-centre/impact-stories/clearance-of-gulan-refugee-camp-and-surrounding-area-gurbuz-district-khost-province/ (accessed 13 May 2018)

HALO Trust (2017a) *HALO Afghanistan Impact Summary for NVESD*, February 2017

HALO Trust (2017b) *Mine Clearance in Northern and Western Afghanistan, Year 4 Final Report, 1 April 2016 – 31 March 2017*

HALO Trust (2018a) *Case Study: Haji Ashiqullah's Story, Qal'eh-ye-Shegeh village, Mihtarlam district, Laghman province*, January 2018

HALO Trust (2018b) *Case Study, Shergar and Omarzai villages,* March 2018

Kamali, Mohammad Hashim (2014), *Afghanistan's Constitution Ten Years On: What are the Issues?* Kabul: Afghanistan Research and Evaluation Unit (AREU), August 2014

International Committee of the Red Cross (ICRC) (2014) *1980 Convention on certain Conventional Weapons*, Advisory Service on International Humanitarian International Law, ICRC

Office for the Coordination of Humanitarian Affairs (OCHA) (2018) *Afghanistan: conflict induced displacements* https://www.humanitarianresponse.info/en/operations/afghanistan/idps (accessed 3 May 2018)

United Nations, *Protocol on Prohibitions or Restrictions on the Use of Mines Booby-Traps and Other Devices as amended on 3 May 1996, Amended Protocol II*

United Nations Development Programme (UNDP) (2018) *Afghanistan* http://www.af.undp.org/content/afghanistan/en/home/countryinfo/ accessed 3 May 2018

United Nations High Commissioner for Refugees (2018) *Afghanistan Factsheet*, March 2018

United Nations Security Council (UNSC) (2017), *Resolution 2365*, S/Res/2365 (2017), 30 June 2017

World Bank (2014) *Islamic Republic of Afghanistan: agricultural sector review – revitalizing agriculture for Economic Growth, Job Creation and Food Security*, The World bank Group, June 2014