



NMAS 07.11
Guide for Land Release

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Lebanon Mine Action Center-LMAC

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Warning

This document has been released on the date shown on the cover page. The National Mine Action Standards (NMAS) of Lebanon are subject to regular review and update, so users are advised to consult the most recent version. To ensure that you have access to the current version, contact the Lebanon Mine Action Center (LMAC) through the www.lebmac.org website or by sending an email to info@lebmac.org.

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Foreword

The National Mine Action Standards (NMAS) of Lebanon were first developed in the form of Technical Standards and Guidelines (TSG). These TSG were edited into the first edition of the NMAS in 2010 and were written to comply with the first edition of the International Mine Action Standards (IMAS). Since then, the scope of the IMAS has been expanded to include more components of mine action and amended to mirror the most recent changes to standards as required in today's operations. These changes, as well as changes in the local context of Lebanon, have necessitated a review and update of the NMAS.

As detailed in the National Mine Action Policy of 2007, the Lebanon Mine Action Center (LMAC) has the responsibility to execute and coordinate the Lebanon Mine Action Program (LMAP) on behalf of the Lebanon Mine Action Authority (LMAA), including the development and amendment of standards. Such standards shall be developed in a participatory approach that shall involve international, governmental, and nongovernmental organizations.

The NMAS shall be reviewed as needed to reflect amendments in the IMAS as well as incorporate changes to international obligations and local requirements. Such revisions shall be made available on the LMAC's website www.lebmac.org or can be obtained through contacting the LMAC via the email info@lebmac.org.

Acronyms

CCM	Convention on Cluster Munitions
CHA	Confirmed Hazard Area
ERW	Explosive Remnants of War
GIS	Geographic Information System
GPS	Global Positioning System
HMA	Humanitarian Mine Action
IA	Implementing Agency
IMAS	International Mine Action Standards
IMSMA	Information Management System for Mine Action
LA	Local Authority
LM	Landmine Monitor
LMAA	Lebanon Mine Action Authority
LMAC	Lebanon Mine Action Center
LMAP	Lebanon Mine Action Program
NMAS	National Mine Action Standards
NTS	Non-Technical Survey
QA	Quality Assurance
QC	Quality Control
SHA	Suspected Hazard Area
SOPs	Standard Operating Procedures
TS	Technical Survey
TSG	Technical Standards and Guidelines

Introduction

Clearance of mines and explosive remnants of war (ERW) can be an expensive undertaking that can drain both national resources and international aid. To achieve as much as possible with the funding available, demining operations must be conducted efficiently. The primary focus is on safety for the end users of the land because their safety is the primary goal of HMA. The safety of persons employed in mine action is of equal importance. A secondary focus is the optimization of efficiency so that unnecessarily excessive costs are avoided. The main outcome of HMA is the confident release of formerly hazardous land that has been searched and cleared in a manner that makes end-users safe from explosive hazards.

Land release is the process that is applied to release land that is known or believed to be hazardous to the community for socio-economic utilization. Land release is achieved by Non-Technical Survey (NTS), Technical Survey (TS), and/or area search and clearance. In Lebanon, Land release, whether conducted by the national authority or IAs, requires the demonstration of “all reasonable effort” having been expended to ensure the land is safe. All reasonable effort shall be demonstrated by ensuring first that appropriate information has been identified, gathered, and accurately analyzed to support informed decision-making, then by the application of appropriate demining procedures and processes that result in safe Land release.

The Lebanon Mine Action Center (LMAC) shall determine whether NTS is followed by TS or shall directly lead to area clearance, or to the release of the land without further intervention. To make these decisions reliably based on evidence, LMAC uses proven information management practices and data gathered from all available sources and manages this information with the aid of the Information Management System for Mine Action (IMSMA).

This NMAS provides general guidelines and principles for Land Release. It should be read in conjunction with NMAS 08.10 Non-Technical Survey, NMAS 08.20 Technical Survey, NMAS 09.10 Clearance Requirements, NMAS 09.13 Minefield Clearance and NMAS 09.11 Battle Area Clearance, as appropriate.

Guide for Land Release

1. Scope

This NMAS provides standards and guidelines explaining the responsibilities and obligations of the LMAC and the Implementing Agencies (IAs) that are involved in Land Release. The expression 'Land Release' refers to all of the LMAC approved stages from the identification of hazardous areas to their eventual release to the community as being free from any evidence of remaining EO hazards.

2. References

A list of normative and informative references is provided in Annex A.

Normative references provide cross-referencing to other standards referred to in this standard and which form an integral part of the provisions of this standard.

Informative references provide a list of documents that may be consulted for a clearer understanding of this standard.

3. Key Terms and Definitions

The following terms and definitions are used in this NMAS:

- *Area Clearance*: the acts or actions involved in searching an area of land using tools and procedures that ensures that any EO hazards within a specified depth beneath the ground surface are located and removed/destroyed. Often referred to as simply 'Clearance'.
- *Cancelled Area*: an area previously recorded as a hazardous area which, as a result of actions other than TS or Clearance, is found not to be contaminated with explosive hazards. This change in status will be the result of more accurate and reliable information and can only be authorized by the LMAC. The documentation of all cancelled areas shall be retained together with a detailed explanation of the reasons for their change in status.
- *Cleared land*: adopting the definition in IMAS 09.10, land shall be accepted as 'cleared' after systematic search and clearance actions have ensured the removal and/or destruction of all mine and EO hazards from the specified area to the specified depth.
- *Confidence*: the state of being sure that the required level of search and clearance has been achieved after ensuring that all reasonable effort has been exerted.

- *Confirmed Hazardous Area (CHA)*: an area where the presence of a contamination hazard has been confirmed based on direct evidence, such as an accident or incident or the reliable sighting of visible indications of EO hazards.
- *Demining organization*: an organization, national or international, accredited by the LMAC to conduct humanitarian demining activities in Lebanon. Demining organizations may also be referred to as *Employers* or *Implementing Agencies (IAs)*.
- *Efficiency*: the assessment of the value that a program, project, or intervention has achieved in relation to the inputs used to achieve the outcomes. It focuses on measuring the optimization of costs as they are transformed from inputs to outputs and outcomes.
- *Land Release*: the process that is applied to release land to the community for socio-economic utilization through NTS, TS, or area Clearance. Data gathered and recorded during the Land Release process shall demonstrate that ‘all reasonable effort’ has been applied. ‘All reasonable effort’ requires the ability to demonstrate that all predictable information has been identified, gathered and accurately analyzed to support logical and evidence-based decision-making.
- *Non-Technical Survey (NTS)*: the assessment of a defined area of land and categorization of the land (or parts of the land) as either hazard free, a suspected hazard area (SHA), or a confirmed hazard area (CHA). NTS is conducted in Lebanon using a desk assessment that involves the collection and analysis of historical records and the collection of primary data by interviewing members of the local community and the Local Authorities (LAs) in and around the area subject to NTS. NTS excludes the use of technical interventions but should involve visiting the area to gather evidence whenever practicable.
- *Reduced Area*: an area previously recorded as a hazardous area which, as a result of technical survey or during search and clearance activity is found not to present a risk from EO.
- *Suspected Hazardous Area (SHA)*: an area of land where the presence of an EO contamination hazard is suspected based on indirect evidence, such as information from witnesses or local community members.
- *Technical Survey (TS)*: the detailed topographical and technical investigation of a hazardous area identified during the NTS phase or previously known. It aims to determine where contamination is present as well as define the hazard type, and distribution. It investigates the environment of a hazardous area with a view to determining appropriate procedures and technical assets that can be used to search and clear the area safely. Frequently, it leads to an SHA being divided into areas that require Clearance and areas that can be released because there is no evidence of them containing EO contamination.

In addition to the above terms, NMAS 04.10 provides a glossary of terms and definitions used across all standards.

As in the IMAS, the terms 'shall', 'should' and 'may' are used across all standards to indicate the required degree of compliance. For any organization working in Lebanon, the use of 'shall' indicates a compulsory requirement. The term 'should' indicates the national preference which may be varied with LMAC approval. The term 'may' indicates a suggestion that is not obligatory.

Both NTS and TS support the national prioritization process. NTS may lead to the cancellation of a SHA or part(s) of it. TS may lead to area reduction of part or parts of the SHA. Following Quality Management principles of cyclic review and revision of decision making processes, TS could lead to cancellation of areas where no hazard is found and the information on which the NTS decisions were made is found to have been unreliable or otherwise inadequate.

4. Guidelines for the Land Release Process

4.1 General Principles

The Land Release process is part of the general demining management process illustrated in figure 1 below. The processes approved by the LMAC for use in Land release ensure that tasked IAs apply “all reasonable effort” at each stage. Those conducting NTS shall be able to demonstrate that all possible relevant information has been identified, gathered, and accurately analyzed to support evidence-based decision-making about the appropriate interventions that are needed to secure safe Land Release. Evidence-based Land Release may involve the identification of hazardous areas, the cancellation of SHA through NTS, the reduction of SHA through TS, and/or the search and clearance of CHA. By using the Land Release process the LMAC ensures that land areas requiring search and clearance are better defined, and this results in the more efficient use of demining resources with no reduction in safety.



Figure 1: Demining Management Process

Because efficient Land Release depends on the quality of information available for analysis during NTS, before starting this process the LMAC has conducted initial information screening to remove redundant, incorrect or duplicate hazardous area entries from the IMSMA database applying the guidelines provided in NMAS 05.10 on Information Management.

To maintain high confidence in the Land Release process, the LMAC applies the following rules.

- Land that has been cancelled, reduced or cleared shall only be handed over to its owner(s) after LMAC has applied a well documented, evidence-based process that leaves LMAC confident that the land is safe to use for the civil purposes projected. The land should be formally handed over with local participation to ensure that the relevant community shares LMAC's confidence and is ready and willing to use the land released.
- New information about hazardous areas not previously recorded shall be objectively assessed as evidence. Information, whether direct or indirect, that does not include evidence of the presence of EO hazards shall not result in new records of hazardous areas being registered and shall not affect the status of existing SHA or CHA.
- Hazardous areas are divided into SHA and CHA based on the type of evidence available and whether it is direct or indirect. Direct evidence of the presence of a contamination hazard shall result in recording a CHA, while indirect evidence shall result in recording a SHA. Areas that present limited information or that are inaccessible to be assessed shall not be recorded as SHA until such time as more evidence can be gathered. Community fear of an area does not constitute direct evidence and so shall not be considered sufficient evidence to record a SHA. However, when sustained community fear prevents use of an area with socio-economic significance, LMAC may choose to declare the area an SHA and task an IA to conduct TS in order to give the community confidence and allow the and to be released. A SHA or CHA assessed to have a low impact on the community should not be considered a priority task, rather it should be recorded as a low priority area.
- The LMAC shall determine whether NTS is followed by TS, by area Clearance or by the direct release of the land without further intervention. Although typically Land Release progresses from NTS to TS to area Clearance, the need for this sequential approach shall be determined by the LMAC on a case-by-case basis. In many cases, for example, the size and nature of the SHA may be revised after NTS and/or TS has been conducted and it may be appropriate to change the size of the original task. Areas may be reduced, or extended, during NTS, TS or area clearance, by agreement with the LMAC. Professional information management practices require that data be gathered continuously and needs reassessed whenever appropriate.

4.2 Indirect and Direct Evidence

Indirect evidence is necessary to record an area as a SHA. Examples of indirect evidence include but are not limited to:

- information from witnesses, local community members, or former combatants;

- potentially fertile land that is not in use by the local community;
- historical information and information about former conflict zones;
- mine/ ERW maps and records, where the reliability of such records is uncertain; and
- mine/ ERW accidents or incidents that do not include accurate information about the location of the accident/ incident.

Direct evidence is necessary to record an area as a CHA. Examples of direct evidence include but are not limited to:

- the visual spotting of a mine/ ERW, mine/ ERW parts, fragmentation, or craters by reliable witnesses or the survey/rapid response team members;
- mine/ ERW maps and records, where such records are deemed credible and reliable;
- the presence of signs associated with deliberate contamination, such as fencing; and
- mine/ ERW accident or incident reports that include an accurate record of the location of the accident/incident.

4.3 Defining Hazardous Areas

Hazardous areas are defined in terms of:

- a) the type of hazards found, such as anti-personnel mines, cluster munitions, ERW, UXO, IEDs or a combination of hazard types; and
- b) the presumed boundaries of the hazardous area.

These definitions help the LMAC to assess risk and impact, so making an informed decision over task prioritization. Knowing the nature of the contamination and its geographical extent and context allows LMAC to allocate the task to an appropriately equipped and accredited IA. In the event of there being insufficient evidence to determine the type of hazards present, the hazard type shall be recorded as unknown pending the results of TS.

5. Land Release Criteria

Whether land is released after cancellation, reduction, or clearance, the LMAC shall determine the level of confidence that is necessary to release land. In Lebanon, land can only be released after the demonstration of “all reasonable effort” having been expended to ensure that the land is safe. Confidence is achieved by demonstrating that all relevant information has been identified, gathered, and accurately analyzed to support sound decision-making.

The LMAC can have the required confidence to release land for public use when either:

- all reasonable effort has been applied to gathering relevant information about areas where no evidence of contamination is found; or

- all reasonable effort has been applied to finding and removing all EO hazards within specified limits in those areas where evidence of EO hazards is found.

To help objectively identify whether reasonable effort has been applied, a set of criteria is provided by the LMAC in different NMAS. NMAS 08.10 provides criteria for categorizing the land through NTS, including criteria for Land Release through cancellation. NMAS 08.20 provides criteria for reducing land areas through TS, which may also involve area reduction or expansion. NMAS 09.10 provides criteria for clearance of CHA, which may also involve area reduction or expansion. NMAS 09.13 provides criteria for minefield clearance, which may also involve area reduction or expansion. NMAS series 7 provides criteria for Quality Management. NMAS 07.12 Quality Management includes criteria for post-clearance inspection. QA/QC monitoring is covered in NMAS 07.40.

6. Documentation

Efficient information management and clear documentation are vital to the Land Release process. They support informed decision-making and help to ensure that standards have been applied appropriately. Detailed documentation also allows decision making to be reviewed, assessed and improved in a continuous cycle of improvement. A well documented process allows shortcomings or errors to be identified and this can be critical when assessing liability.

NMAS 05.10 provides key standards related to information management. In addition to these standards, and noting that the physical nature of EO contamination is geophysical, in support of appropriate documentation the data collection requirements include:

- recording the presumed boundaries of a SHA and a CHA;
- recording what contamination was found, where and when; and
- recording what physical interventions were made, where, and when.

When EO hazards of any kind are found, the demining team (a search and clearance or a survey team) shall record to the best of its ability:

- the type(s) of hazard found;
- the depth of the each hazard;
- the GPS location of the each hazard; and
- the condition of each hazard.

Whenever possible, geographical information should be collected with the assistance of a Global Positioning System (GPS)/ Differential GPS (DGPS) and documented within the Geographic Information System (GIS).

The documentation of hazardous area conditions and any contamination or hazards shall be recorded using the various LMAC reporting forms related to the Land Release process.

7. Reporting

All demining organizations should provide the LMAC with appropriately detailed and accurate reports in the timeframe required. The default schedule below shall be complied with unless a variant is formally authorized by the LMAC.

Type of Report	Submission Deadline
Dangerous Area Report (if required) –	Within 72 hours.
Completion/Suspension Report	Within 72 hours of task completion.
Weekly Summary Report	Weekly, within 2 working days after the end of each week.
Monthly Summary Report	Monthly, within 2 working days after the end of each month.
Weekly Intentions plan	Weekly, 2 days before the end of operations each week.
EOD Completion Report	Within 72 hours of demolitions.
Minefield Report	Weekly and within 72 hours of task completion.

8. Residual Risk and Liability

Adherence to the Land Release process outlined in this NMAS is designed to decrease residual risk and help to determine liability should errors occur and the quality of work be questioned. Within the context of this NMAS, liability refers to the legal responsibility held by the LMAC or by an IA with regard to events arising in the course of conducting HMA interventions in Lebanon.

A well-documented, transparent, evidence-based approach to Land Release that demonstrates the application of “all reasonable effort” to achieve the release of safe land provides the primary defense against questions of liability for residual risk. The use of this process is designed to give decision-makers at all levels the necessary confidence to take appropriate decisions efficiently.

When determining liability, the following criteria apply:

- An IA or the LMAC may be held legally liable for injuries or losses caused by missed mine/ERW contamination when an independent investigation of the accident/incident

determines that either party has failed to conduct its activities to the required standard in Lebanon. The application of “all reasonable effort” to achieve an end in which the residual risk is “tolerable” may need to be demonstrated in a court of law. The required demonstration may be achieved using the detailed documentation required in the Land Release process.

- An IA may be held legally responsible for errors if it is found to have been conducting HMA activities without the required accreditation from LMAC. Any IA found to have been conducting HMA activities without the required accreditation from LMAC shall be subject to the laws of Lebanon regarding that omission.
- Neither an IA or the LMAC shall be held liable for injuries or losses caused by missed mine/ERW contamination when an independent investigation of the accident/incident determines that the parties have applied “all reasonable effort” to achieve an end in which the residual risk is “tolerable” and have adhered to the NMAS.

When an independent investigation finds that no negligence or willful misconduct took place on the part of the party conducting NTS, TS, or search and clearance activities, the results of the investigation should relieve the LMAC or the IA of legal liability. In such instances, any liability may rest with the Government of Lebanon.

Mine/ERW clearance is essentially a risk-management process where explosive hazards in an area are removed using assets that should achieve the same level of reliability as is achieved in other countries. The goal of removing all explosive hazards to a specified depth is enshrined in the IMAS because it is deemed achievable when appropriate procedures and assets are used.

Residual risk is the risk remaining following the application of all reasonable effort to identify, define, and remove all presence and suspicion of mines/ERW through non-technical survey, technical survey and/or clearance.

Manual search and clearance assets represent a limited resource and the LMAC risk management process seeks to use resources in ways that reduce risk effectively and rapidly. This shall never lead to the beneficiaries of HMA being encouraged to use land without all evidence showing that it is safe to use. When people avoid land because it is contaminated with explosive hazards, they have no risk of injury on that land. If that same land is released as “safe” incorrectly, the people will use the land and so be put at unnecessary risk. An unnecessary risk is an “intolerable” risk. Land that is cancelled or reduced shall never be released as “cleared”. Land that has been searched and “cleared” shall meet the IMAS definition of clearance and be free of explosive hazards to a pre-determined depth from the ground surface.

Residual risk is minimized when the Land Release process has been applied by competent IAs following approved procedures and processes. Residual risk may be quantified over time through the monitoring of cancelled, reduced and cleared areas to identify any incidents, accidents or evidence of missed items. This process shall lead to the review and revision of the decision making process to avoid repeating error whenever appropriate.

9. Roles and Responsibilities

9.1 Role of the LMAC


The LMAC shall:

- ensure that the Land Release process is applied appropriately and revised in light of lessons learned;
- ensure that all reasonable effort to achieve a tolerable level of risk has been made before Land Release;
- accredit those IAs using appropriate SOPs before assigning any tasks associated with Land Release to them;
- monitor the work of IAs to assure quality operations;
- conduct appropriate external QC on tasks before Land Release; and
- record and save all data and information related to the Land Release process.

9.2 Role of IAs

In their capacity as demining organizations, IAs shall:

- apply for and be granted accreditation from LMAC before working in Lebanon;
- submit SOPs for any Land Release activity they will conduct to the LMAC, and gain LMAC approval for the SOPs before engaging in that activity;
- comply with the all NMAS and ensure appropriate and timely data gathering, documentation, and reporting;
- support the LMAC in its Quality Management of the Land Release process; and
- conduct effective internal QA/QC on all demining tasks allocated to them.

	LEBANON NATIONAL MINE ACTION STANDARDS		Edition 2.1	NMAS 07.11
ANNEX A: Normative and Informative References				
March 2020				

The documents listed below constitute normative references and form an integral part of the provisions of this standard:

- Current LMAC and IMSMA reporting formats (request copies from the LMAC);
- NMAS 04.10 Glossary of Mine Action Terms, Definitions, and Abbreviations used in the Second Edition of the NMAS.
- NMAS 05.10 Information Management;
- NMAS 07.12 Quality Management (and Guide for the Inspection of Cleared Land);
- NMAS 07.14 Risk Management;
- NMAS 07.30 Guide for the Accreditation of Mine Action Organizations and Operations;
- NMAS 07.40 Monitoring Mine Action Organizations and Operations;
- NMAS 08.10 Non-Technical Survey;
- NMAS 08.20 Technical Survey;
- NMAS 09.10 Clearance Requirements;
- NMAS 09.11 Battle Area Clearance; and
- NMAS 10.60 Reporting and Investigation of Demining Incidents.

In addition to the normative references listed above, the following informative references may be consulted:

- ISO 9001: 2008; and
- IMAS 07.11 Land Release.

NMAAS 07.11, Edition 2.1: Amendment Record

The NMAAS are subject to a comprehensive or partial review by the Review Board periodically. Changes in the context as well as safety requirements and efficiency considerations may necessitate amendments to individual NMAAS standards more frequently. If this occurs, such amendments shall be given a number, dated, and detailed in the table below. The amendment should also be indicated on the header under the NMAAS edition number.

Whenever the formal review of the NMAAS is completed, a new edition shall be issued. Amendments that have taken place before the review date shall be incorporated in the new edition and the amendment record table cleared. Consequently, the recording of amendments shall start again until the next review.

The most recent revisions of the NMAAS shall be posted on the Lebanon Mine Action Center (LMAC) website on www.lebmac.org.

Number	Date	Amendment Details
1	March 2020	Minor revisions throughout.