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FIFTH EDITION

A GUIDE TO MINE ACTION



GICHD

The Geneva International Centre for Humanitarian Demining (GICHD) is an international expert organisation based in Switzerland that works to eliminate mines, explosive remnants of war and other explosive hazards. By undertaking research, developing standards and disseminating knowledge, the GICHD supports capacity development in mine-affected countries. It works with national and local authorities to help them plan, coordinate, implement, monitor and evaluate mine action programmes. The GICHD also contributes to the implementation of the Anti-Personnel Mine Ban Convention, the Convention on Cluster Munitions and other relevant instruments of international law. The GICHD follows the humanitarian principles of humanity, impartiality, neutrality and independence.

A GUIDE TO MINE ACTION

FIFTH EDITION



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LIST OF ABBREVIATIONS

APM

Anti-personnel mine

APMBC

Anti-Personnel Mine Ban Convention

ASA

Ammunition storage area

ATM

Anti-tank mine

AXO

Abandoned explosive ordnance

BAC

Battle area clearance

CASA

United Nations Coordinating Action on Small Arms

CCM

Convention on Cluster Munitions

CCW

Convention on Certain Conventional Weapons

CHA

Confirmed hazardous area

CMAA

Cambodian Mine Action and Victim Assistance Authority

CMAC

Cambodian Mine Action Centre

CMC

Cluster Munitions Coalition

DHA

United Nations Department of Humanitarian Affairs (now OCHA)

DPKO

United Nations Department of Peacekeeping Operations

EIA

Environmental impact assessment

EOD

Explosive ordnance disposal

ERW

Explosive remnants of war

GICHD

Geneva International Centre for Humanitarian Demining

GIS

Geographic information system

GMAP

Gender and Mine Action Programme

GPR

Ground penetrating radar

HAC

Hydro-abrasive cutting

HALO TRUST

Hazardous Areas Life-Support Organisation

HI

Handicap International

IACG-MA

UN Inter-Agency Coordination Group on Mine Action

IATG

International Ammunition Technical Guidelines

ICBL

International Campaign to Ban Landmines

ICRC

International Committee of the Red Cross

IED

Improvised explosive device

IMAS

International Mine Action Standards

IMSMA

Information Management System for Mine Action

ISACS

International Small Arms Control Standards

KAPB

Knowledge, Attitudes, Practices and Beliefs (or Behaviour)

LIS

Landmine Impact Survey

M&E

Monitoring and Evaluation

MAC

Mine action centre

MACC

Mine action coordination centre

MAG

Mines Advisory Group

MDD

Mine detection dog(s)

MOTAPM

Mines other than anti-personnel

MRE

Mine risk education

NATO

North Atlantic Treaty
Organisation

NGO

Non-governmental organisation

NMAA

National mine action authority

NMAS

National Mine Action Standards

NPA

Norwegian People's Aid

NSA

Non-State actor

NTS

Non-technical survey

OBOD

Open burning and open
detonation

OCHA

United Nations Office
for the Coordination
of Humanitarian Affairs

OECD

Organisation for Economic
Cooperation and Development

OHCHR

Office of the United Nations
High Commissioner
for Human Rights

OSCE

Organisation for Security and
Co-operation in Europe

PPE

Personal protective equipment

PCA

Post-clearance assessment

QA

Quality assurance

QC

Quality control

QM

Quality management

REST

Remote Explosive Scent Tracing

SALW

Small arms and light weapons

SAS

Small Arms Survey

SHA

Suspected hazardous area

SOP

Standing (or standard)
operating procedure

STANAG

NATO's Standardisation
Agreement

TS

Technical survey

UN

United Nations

UNAMIC

United Nations Advance
Mission in Cambodia

UNDP

United Nations Development
Programme

UNHCR

Office of the United Nations
High Commissioner for Refugees

UNMAS

United Nations Mine Action
Service

UNODA

United Nations Office
for Disarmament Affairs

UXO

Unexploded ordnance

VVAF

Vietnam Veterans of America
Foundation

VA

Victim assistance

OVERVIEW

CHAPTER 1

General introduction to anti-personnel landmines, cluster munitions and explosive remnants of war (ERW) as well as their use and consequences. Mine action (MA), the role of international conventions and the first national mine action programmes.

CHAPTER 2

Mine action programmes: their life cycle including the different phases of transition to national ownership.

CHAPTER 3

The laws and standards in MA: main international legal instruments (Convention on Certain Conventional Weapons, Anti-Personnel Mine Ban Convention, Convention on Cluster Munitions). International and national standards of mine action and how they apply to the different components of mine action.

CHAPTER 4

Management of MA programmes: strategic considerations, the importance of quality management (QM) and results-based management (RBM) to measure performance. The fundamental role of information management. Gender and diversity and how to mainstream them in MA programmes. Environmental issues.

CHAPTER 5

The different stages of land release (including survey activities and clearance), how it is achieved, what the greatest advances in the field have been. The problem of residual contamination from mines/ERW. Manual, animal, mechanical systems used for clearance. Legal aspects of land release (contracts, insurance aspects).

CHAPTER 6

Ammunition safety management (ASM) and the increasing concern about unplanned explosions of ammunition stockpiles. Methods and techniques for stockpile destruction of ammunition, anti-personnel mines, cluster munitions. International efforts.

CHAPTER 7

Mine risk education (MRE) as an integral part of mine action planning, implementation, monitoring and evaluation. How it promotes safe behaviour. Stages of MRE management. Community liaison.

CHAPTER 8

Definition of victim and victim assistance by international human law. How it should be integrated in broader contexts and policies. Mine action organisations' role through data collection and dissemination, advocacy, and coordination.

CHAPTER 9

Broader security and development issues. Mine action and a country's broader social, political and economic context. The 'do no harm' approach.

FOREWORD

Mine action is developing at a rapid pace and the sector has evolved in recent years with a continuous improvement of methodologies, the adoption of new approaches and a broadened scope.

This fifth edition of the *Guide to Mine Action* is the GICHD's response to these changes. It takes into account the most recent developments and covers all aspects of mine action. Shorter than former editions, the *Guide to Mine Action* includes numerous references and links to allow the reader to deepen its understanding on specific issues.

The guide is divided into two parts. The first explains what mine action is, and the second discusses how to deal with the problem. This includes: managing mine action programmes, survey and clearance operations, stockpile destruction, ammunition safety management, mine risk education, victim assistance and broader security and development issues.

This guide is a living document for which the community should feel a sense of ownership. There are references to our website (www.gichd.org) throughout the publication and feedback is always welcome. Please feel free to get in touch with us and interact on specific topics – we are looking forward to hearing from you.

We are grateful for the support from the Swiss government which was instrumental in making this publication a reality.



Ambassador Stefano Toscano
GICHD Director



PART I – WHAT IS MINE ACTION?

INTRODUCTION AND HISTORY OF MINE ACTION

KEY MESSAGES

- Anti-personnel landmines, cluster munitions and explosive remnants of war (ERW) are defined in international treaties and conventions.
- Landmines and cluster munitions have been used extensively around the globe since World War II.
- Quantifying the level of contamination and the number of mine victims around the world has been difficult, but is becoming better as a result of improved survey and reporting processes.
- The Anti-Personnel Mine Ban Convention (APMBC) and the Convention on Cluster Munitions (CCM) have played a key role in the development of the sector.
- National level mine action programmes have successfully evolved over the years and landmines/ERW are increasingly seen as a development issue.

INTRODUCTION

Mine action is the combination of activities designed to:

- reduce real and perceived risks to affected populations of landmines, cluster munitions, ammunition stockpiles and ERW;
- address consequences of accidents upon victims;
- reduce economic, social and developmental consequences of contamination; and
- advocate developing, adopting and complying with appropriate instruments of international humanitarian law (IHL).

Each of these elements of mine action is addressed in this publication. It is, however, important to understand that mine action is most effective when all its different component activities take place together, in a coordinated and reinforcing programme. Doing so is difficult, requiring the combined attention and efforts of international and national government agencies, international institutions, militaries, non-governmental organisations (NGOs), commercial companies and representatives of women, girls, boys and men in affected populations.

Mine action is not a static process that has already been defined and perfected. It evolves over time, as a result of changes in local circumstances and conditions, and also as experience is gained and policies, processes and techniques are tried, tested, accepted and improved or discarded.

The scope of mine action also changes over time. In its earliest days it focused on landmines exclusively. It soon became clear that other forms of unexploded ordnance had to be addressed, that affected people needed risk education and that victims required assistance. The urgent need to develop effective laws and treaties to stop continuing expansion of the problem was another early and significant enhancement. Later focus on cluster munitions as a specifically significant threat resulted in further modification to the scope of mine action. Today, with acceptance that stockpiles, other weapons and explosives pose an important risk to affected populations, the scope of mine action continues to evolve.

Mine action will continue to change over time and this is of benefit to mine action. Readiness to think about the context surrounding mine action, to ask challenging questions and to be ready to accept difficult answers are all hallmarks of an enquiring, professional approach to doing the right job and doing it well.

Mine action is a complex, challenging and often frustrating collection of activities, but it is also fascinating, rewarding and has the potential to make a real difference to the lives of people in affected countries. This book is an introduction to the purposes and practices of mine action. Much more information is available on the different activities that make up mine action, much of it through the GICHD's own website¹. A selected bibliography is provided at the end of this publication.



Cluster bomb, World War II

What are landmines?

In their simplest form, landmines² are victim-activated explosive traps, whether the intended target is a person or a vehicle. A mine comprises a quantity of explosive, normally contained within some form of casing (typically in metal, plastic or wood), and a fuzing mechanism to detonate the main explosive charge. Some



V69 bounding fragmentation anti-personnel mine

are buried under the ground, while others are placed on stakes or fixed to objects above the ground. They can be activated by a range of mechanisms including pressure, trip wire, electrical command or magnetic influence. Some modern mines can be initiated using other forms of electronic sensor.

Landmines are generally classified into two categories: anti-tank (or anti-vehicle) and anti-personnel. Anti-personnel mines are also commonly further divided into four categories based on their primary method of causing injury: blast; fragmentation; bounding fragmentation; and directional fragmentation.

Both the terms 'mine' and 'anti-personnel mine' are defined in separate instruments of international law – the APMBC and the Convention on Certain Conventional Weapons (CCW). The

APMBC defines an anti-personnel mine as: 'a mine designed to be exploded by the presence, proximity or contact of a person and that will incapacitate, injure or kill one or more persons.' Anti-tank or anti-vehicle mines are often referred to in international negotiations as 'mines other than anti-personnel mines' or MOTAPM.

What are cluster munitions?

A cluster munition is a conventional munition that is designed to release multiple submunitions (in some cases called 'bomblets') over a large area. The general definition describes both the container (also called a dispenser or 'parent munition') and the submunitions it holds. In the broadest definitions submunitions may contain explosives, smoke, tear gas, chaff, pyrotechnics, leaflets or other items. The number of submunitions varies from as few as two up to many hundreds

and the size of the individual submunitions may vary considerably. They can be dispersed or released from aircraft, drones, rockets or artillery.

The CCM³ was designed specifically to address weapons that cause ‘unacceptable harm’ and has a narrower definition of cluster munitions. They are defined as those containing only explosive submunitions, each of which weighs less than 20 kilograms. It does not include the following:

- A munition or submunition designed to dispense flares, smoke, pyrotechnics or chaff; or a munition designed exclusively for an air defence role.
- A munition or submunition designed to produce electrical or electronic effects.
- A munition that, in order to avoid indiscriminate area effects and the risks posed by unexploded submunitions has all of the following characteristics:
 - ▶ Each munition contains fewer than ten explosive submunitions
 - ▶ Each explosive submunition weighs more than four kilograms
 - ▶ Each explosive submunition is designed to detect and engage a single target object.
 - ▶ Each explosive submunition is equipped with an electronic self-destruction mechanism.
 - ▶ Each explosive submunition is equipped with an electronic self-deactivating feature.



Cluster munitions (Vietnam)

What are explosive remnants of war?

Protocol V to the CCW⁴ adopted in 2003 states that the term ‘explosive remnants of war’ or ERW refers to unexploded ordnance (UXO) and abandoned explosive ordnance (AXO). Ordnance is a general term that covers military weapons and ammunition (not to be confused with ordinance – which refers to a law or regulation).

Unexploded ordnance or UXO refers to munitions (bombs, rockets, artillery shells, mortars, grenades and the like) that have been used but failed to detonate as intended. Failure rates may be as low as 1 or 2 per cent, or as high as 30 to 40 per cent, depending on a range of factors, such as the quality of original manufacture, the age of the weapon, storage conditions, the method of use and environmental conditions.

Abandoned ordnance or AXO refers to explosive ordnance that has not been used during an armed conflict, but which has been left behind or dumped by a party to an armed conflict, and which is no longer under the control of the party that left it behind or dumped it. Abandoned explosive ordnance may or may not have been primed, fuzed, armed or otherwise prepared for use.



Explosive remnants of war (Lao)

History of landmines

‘Modern’ explosive landmines were first used during the American Civil War when a Confederate general ordered his troops to prepare buried artillery shells so that they could be detonated by pulling trip wires or by being stepped on.⁵ Despite concerns, on both sides in the civil war, use of the weapons continued.

Anti-tank mines were developed on the Western Front during World War I as a defensive countermeasure to the newly invented tank – examples from that conflict continue to be unearthed today. Anti-personnel mines, on the other hand, were not widely deployed on the battlefield during the war. Some were placed in barbed wire entanglements, but they were often as dangerous to the side that laid them as they were to the enemy.⁶ Some anti-personnel mines and booby traps were laid in abandoned trench positions in anticipation of an enemy advance.

In contrast, in World War II, both anti-personnel and anti-tank landmines were used on a huge scale. According to the United States Defense Intelligence Agency, more than 300 million anti-tank mines were used during the war, including 220 million by the Soviet Union.⁷ By the end of the war Germany is believed to have manufactured 16 different types of anti-tank mine, 10 different types of anti-personnel mine, and used many different types of improvised devices and captured mines. This included the development and incorporation of an anti-handling device⁸ and the first use of an aerially-delivered anti-personnel mine, able to be scattered.

Since 1945, the design of mines has concentrated on five criteria: effectiveness, size, detectability, logistic effort and speed of laying.

Rapid technological advance has also resulted in rapid obsolescence and by the 1990s more than 600 different types of landmines had been produced.⁹

Anti-personnel mines were used widely in the wars in Korea (where they accounted for nearly five per cent of US troop casualties) and in Vietnam.¹⁰ As a result of experience during the Korean War, particularly following human wave attacks against United Nations (UN) positions, the US developed the M18 Claymore directional fragmentation mine. When detonated, either by trip wire or by electric command wire, hundreds of steel ball bearings are forcefully expelled from the mine casing in a 60 degree arc, with a lethal radius of around 50 metres.

The first widespread use of 'remotely delivered' or 'scatterable' mines took place in the Vietnam war by US forces seeking to stop the flow of men and material from North to South Vietnam through Cambodia and Laos. Aerially delivered anti-personnel landmines had a number of military advantages over manually laid mines – they could be deployed rapidly, required little logistic support and could be laid deep within enemy territory with minimal risk to air-crews. However, they represented a threat to advances by friendly forces. This led to the development of anti-personnel mines fitted with self-destructing or self-neutralizing mechanisms.

While mine technology has advanced rapidly over the past few decades, the most prevalent and typical use of landmines involves the manual emplacement of low-technology anti-personnel and anti-tank mines in internal armed conflicts, by both government forces and armed opposition groups.

In Afghanistan, Angola, Bosnia-Herzegovina, Cambodia, Ethiopia, Iraq, Mozambique, Nicaragua, Somalia, Sudan and many other war-torn nations, anti-personnel mines were widely used as part of a deliberate military strategy to terrorize civilians and control their movements. Proliferation was fuelled by ready availability and low cost, with typical prices ranging from US\$ 3-15 per mine.

More recently, and in particular in the conflicts in Iraq and Afghanistan, the use of 'Improvised Explosive Devices' or IEDs has grown rapidly. While under international law these devices fall under the category of a 'booby trap', some exhibit characteristics of an anti-personnel mine. Many are command-detonated by wireless signal, whereas others rely on person stepping onto a pressure plate or a vehicle setting them off.



World War II clearance site layout

History of cluster munitions

The development of cluster munitions took place much later than landmines. By their nature they rely on a relatively complex delivery system to dispense them from aircraft, rockets or artillery. One reason for their development was

that unguided aircraft bombs were very inaccurate. The bomblets within cluster bombs were intended to cover a wide area and be suitable for attacking targets that were difficult for a single bomb to hit with precision, such as massed troops in the open, columns of armoured vehicles, airfield runways, buildings and bridges.

Cluster bombs were first used in World War II by Germany and the Soviet Union. In 1943 Soviet forces used air-dropped cluster munitions against German armoured troops and German forces used SD-1 and SD-2 butterfly bombs against artillery in the Kursk salient. In that year German aircraft also dropped more than 1,000 SD-2 butterfly bombs on the port of Grimsby in the UK.

In the 1960s and early 1970s during the Vietnam War, US forces used cluster munitions extensively in bombing campaigns in Vietnam, Laos and Cambodia. The International Committee of the Red Cross (ICRC) estimates that in Laos alone millions of unexploded submunitions remain, and some 11,000 people have been killed or injured by them, more than 30 per cent of them children. It is estimated, based on analysis of US military databases, that 9,500 sorties in Cambodia delivered up to 87,000 air-dropped cluster munitions.

From the 1970s through the 1990s cluster munitions were used in conflicts as diverse as Afghanistan, Angola, Bosnia-Herzegovina, Chad, Chechnya, Ethiopia, Eritrea, the Falkland Islands/Malvinas, Kosovo, Serbia and Western Sahara. In Iraq, between 2003 and 2006, the US and UK used nearly 13,000 cluster munitions containing an estimated 2 million submunitions. In 2006 in Lebanon, Israeli forces used surface-launched and air-dropped cluster munitions against Hezbollah, and Hezbollah fired more than 100 Chinese-produced Type-81 122 mm cluster munition rockets into northern Israel. Most recently, cluster munitions have been used in the conflicts in Libya and Syria.¹¹

EXTENT OF GLOBAL CONTAMINATION

Initial estimates

It is impossible to give an accurate estimate of the total number of uncleared landmines, unexploded submunitions or other explosive remnants of war around the world. In the early 1990s international concern was focused on the humanitarian impact of landmines, especially anti-personnel mines. Initial estimates by the UN suggested that there might be 100 million anti-personnel mines buried in countries around the world. This figure was not based on any survey or quantifiable evidence and was quickly discounted as a gross exaggeration.

The first attempt to quantify the global problem of anti-personnel landmines was undertaken by the Vietnam Veterans of America Foundation (VVAFA) in 1994. VVAFA completed a series of surveys in a number of known mine-affected countries. The results were published in a book titled 'After the Guns Fall Silent – The Enduring Legacy of Landmines'.¹² The report identified 83 countries where landmine incidents had been reported in the past. VVAFA also undertook detailed household surveys in six countries: Afghanistan, Angola, Cambodia, Croatia, Bosnia-Herzegovina and Mozambique.

The report looked at landmines and humanitarian law, the social and economic costs of landmines, and emerging humanitarian demining operations in these countries. While it was a good first attempt to quantify the landmine problem, it was still not possible to put any meaningful number on the total number of landmines or area affected. The different types of data collected in the different countries made comparisons or summaries difficult.

Similarly, it has always been difficult to determine accurate numbers of landmine victims due to lack of data. Initial estimates were in the order of tens of thousands of new victims each year.

Affected country assessments

At the field level, maps of mined areas rarely existed or were unavailable, so demining programmes were forced to undertake their own surveys. Different terminologies were used but the three basic types of surveys undertaken were:

1. Non-technical surveys (or Level One surveys). Data was gathered through document searches, questionnaires and interviews with local people to determine if there was any knowledge of landmines in the area, any casualties etc.
2. Technical (or Level Two) surveys. Trained and properly equipped personnel would enter suspected areas to confirm the presence of mines, their type and the extent of the area contaminated.
3. Completion (or Level Three) surveys. Trained personnel checked an area to ensure that all mines had been cleared.

While this approach provided sufficient information for demining programmes to plan and start demining work at the country level, the information was often collected and stored in different ways and did not help much in determining national priorities or defining the global problem. The basis of this approach was often referred to as 'chasing minefields'.

Landmine Impact Surveys

In 2003, a consortium of non-governmental organizations called the Survey Action Center (initially a project of VVAF) instituted a new style of national surveys called Landmine Impact Surveys (LIS). The aim of the LIS was to move away from chasing minefields to focus on the impact landmines were having on communities, and then use this information to inform priority-setting. In turn this would add to global knowledge about the extent of landmine contamination, particularly given that the recent entry into force of the APMBC required all states parties to ‘clear all known mined areas’.

An Article about the LIS stated that ‘The primary rationale of the survey lies in the need to root mine action priority decisions in a firm understanding of the impact that landmines have upon communities. Data from four countries in which impact surveys have been completed indicate that only a small share of communities – perhaps as few as ten percent – can be categorised as high impact, another 25 percent as medium impact, and the remaining 65 percent as low impact. This has implications for the prioritisation of scarce mine action resources, but it also makes broad elimination of the impact of landmines within the dates specified by the Landmines Convention appear more realistic, even though total clearance may appear unrealistic.’¹³

The Article places the impact survey initiative in the context of the evolving humanitarian response to landmines, from an emerging realisation of the threat in the 1970s and 1980s to the present-day landmine response capacity working with other reconstruction and development initiatives. ‘The success of the sector ultimately hinges on the availability of solid and systematic data on impact.’¹⁴

LIS were undertaken in a total of 14 mine-affected countries.¹⁵ The initial surveys greatly improved knowledge and understanding of the landmine problem in these countries and they assisted with identifying priority areas. However, later LIS became large and expensive. Use of LIS data sometimes led to misunderstandings.

In particular, LIS data that defined areas where landmines were having an impact upon communities was often subsequently taken to offer definitions of where landmines were actually present: two very different things. The result was that slow, expensive and precious clearance assets were sometimes targeted on areas where landmines were not present.

Some commentators have presented such confusion and inefficiency as a shortcoming of the LIS themselves. A more reasonable approach is to view the problems of interpretation as ones arising from a misunderstanding of the original

purpose of LIS data and its later application in inappropriate ways for different purposes. LIS surveys sought to collect data to answer one question; when that data was later used to try to answer a very different question significant difficulties arose.

The lessons learnt as a result of the LIS and the difficulties over later use of data were of great importance in the development of the land release principles which are widely applied today.

Landmines and the APMBC

Without doubt, the one single event that eventually led to determination of the extent of global landmine contamination, and its impact upon affected countries, was the entry into force of the APMBC in 1997. Article 5.2 of the Convention states that: 'Each State Party shall make every effort to identify all areas under its jurisdiction or control in which anti-personnel mines are known or suspected to be emplaced and shall ensure as soon as possible that all anti-personnel mines in mined areas under its jurisdiction or control are perimeter-marked, monitored and protected by fencing or other means, to ensure the effective exclusion of civilians, until all anti-personnel mines contained therein have been destroyed'.¹⁶

Although it took some years for many mine-affected States Parties to address this obligation properly, progress has been made. This has been through annual Meetings of the States Parties (MSPs), the requirement to submit annual transparency reports and, more recently, submission of extension requests by States Parties that have not met their ten year deadline to clear all their known mined areas.

Landmine Monitor

The establishment of annual Landmine Monitor (LMM) reports issued by the International Campaign to Ban Landmines (ICBL)¹⁷ took place in parallel with the entry into force of the APMBC. These comprehensive reports have been published each year since 1999 and reflect a global reporting network that provides a report on each country in the world (plus eight other areas not internationally recognized as states).

While the exact number of landmines still buried in the ground is not known the LMM has helped track and quantify the number of affected states, the impact of landmines on communities, the number of new landmine victims each year and the steps being taken to address the problem.

Cluster munitions

Attempting to measure global contamination by cluster munitions is a more recent endeavour and follows the introduction into force of the CCM in 2010. While international focus had previously been on anti-personnel landmines, the reality was that demining organizations in the field cleared everything they found – anti-personnel landmines, anti-tank mines, cluster munition remnants and all other types of explosive remnants of war.

The requirement of Article 4, paragraph 2 (a) of the CCM for States parties to ‘Survey, assess and record the threat posed by cluster munition remnants, making every effort to identify all cluster munition contaminated areas under its jurisdiction or control’ introduced the need to quantify contamination caused by cluster munition remnants on a global level.

Fortunately, the ICBL-CMC (Cluster Munition Coalition) expanded its charter to include cluster munitions and since 2010 has produced a separate ‘Cluster Munition Monitor’. As in the LMM, the report:

- identifies countries or areas affected by cluster munition remnants;
- quantifies the extent of that contamination; and
- describes the impact they have on communities.

Unexploded ordnance

It is also impossible to give an accurate estimate of the number of uncleared UXO and abandoned munitions that remain to be destroyed. UXO continue to be uncovered in significant quantities on battlefields many decades after conflicts have come to an end. Some munitions from World War I include mustard gas or other chemical agents, resulting in an additional hazard for explosive ordnance disposal teams. In Belarus, disposal teams sometimes encounter munitions left over from the Napoleonic Wars of the early 19th century.¹⁸

As a result of international efforts to address the problems caused by mines and cluster munitions, the threat posed by UXO now receives more attention. In some subsistence economies civilians collect items of ordnance for their value as scrap metal or for the explosives they contain, and children may be killed or injured while playing with UXO they encounter in their daily lives. The consequences of not disposing safely of UXO have all too often been fatal.

Current assessments

Some national programmes are now more than twenty years old and it is possible to compare what was actually found with some of the earliest estimates.

The original estimates for Afghanistan suggested that up to 20 million mines might be present. To date, and with the great majority of mine-affected areas already addressed, the total number of mines found is around 610,000 (with more than 13 million items of UXO). In Mozambique almost 140,000 mines have been cleared, against early estimates of several million.

The situation is similar in most affected countries, suggesting that more appropriate estimates for global contamination levels are of the order of millions, rather than many tens of millions.

That is not to say that there are not areas where very large numbers of mines will still be found, such as along the Turkish/Syrian border or within the Demilitarized Zone between North and South Korea. In both cases mines are generally confined to controlled, fenced and off-limits zones, having relatively little direct humanitarian impact.

DEFINING MINE ACTION

Mine action is a broad set of efforts intended both to prevent and to address the problems caused by mines, cluster munitions and other explosive remnants of war. The term is more specifically defined by various actors. These include the UN, which did so in its policy document issued in 1998,¹⁹ although it had already been used in the ground-breaking studies of indigenous mine action capacities published the previous year.²⁰

The term originated in Cambodia in the early 1990s when Canadian Army engineers suggested that the body set up to administer and coordinate mine-related activities in the country be named the Cambodian Mine Action Centre, with a view to stressing the dynamic nature of the enterprise. It is now in general use, although the term 'humanitarian demining' is often still used, particularly when reference is made to the subset of mine action activities that concern the survey and clearance of mined areas.

The United Nations' International Mine Action Standards (IMAS)²¹ refer to mine action as 'activities which aim to reduce the social, economic and environmental impact of mines and (other) ERW including cluster munitions'. The relevant standard

provides that mine action 'is not just about demining; it is also about people and societies, and how they are affected by landmine and (other) ERW contamination. The objective of mine action is to reduce the risk from landmines and (other) ERW to a level where people can live safely; in which economic, social and health development can occur free from the constraints imposed by landmine and (other) ERW contamination, and in which the victims' needs can be addressed'.²²

According to the United Nations, mine action comprises five complementary groups of activities or 'pillars':

1. Mine/ERW risk education
2. Demining, ie mine/ERW survey, mapping, marking and clearance
3. Victim assistance, including rehabilitation and reintegration
4. Stockpile destruction
5. Advocacy against the use of anti-personnel mines and cluster munitions.

The definition further notes that a number of other enabling activities are required to support these five components of mine action, including:

1. Assessment and planning
2. Mobilisation and prioritisation of resources
3. Information management
4. Human skills development and management training
5. Quality management
6. Application of effective, appropriate and safe equipment.

FIRST MINE ACTION PROGRAMMES

Afghanistan

The origin of modern mine action can be traced back to October 1988, when for the first time the UN appealed for funds for a humanitarian response to the problems caused by landmines on behalf of Afghanistan. Prior to this period, activities intended to reduce the impact of mines, especially mine clearance, were largely the domain of national militaries, as had been the case in Europe after World War II. Afghanistan was a different case, though, as there was no functioning Afghan army and the Soviet troops were not willing or able to clear mines before their departure from the country.

The UN appeal was for funds for ‘humanitarian demining’, a new term which was understood to mean removal of emplaced mines, and also information and education activities to prevent injuries. The term ‘demining’ was used to denote mine clearance for humanitarian purposes and to distinguish it clearly from the military activity of ‘breaching’, which cleared paths through minefields to attain military mission objectives during combat operations.

After a period in which the UN, assisted by military contingents from donor countries, provided two weeks of basic mine clearance training to more than 10,000 Afghan refugees, the UN decided to support the creation of a number of Afghan Non-Governmental Organizations (NGOs) to survey, map, mark and clear landmines and UXO, and to conduct mine awareness for the civilian population.

More than two decades later, these NGOs are still at work, and a number of them have conducted operations in other countries utilizing their particular expertise in survey, use of mine detecting dogs and quality management.

Within this UN-supported humanitarian response to landmines, victim assistance was largely confined to casualty evacuation for deminers, although the ICRC had set up a number of prosthetic clinics to fit artificial limbs to amputees caused by the war. ICRC hospitals in Peshawar and Quetta treated wounded coming into neighbouring Pakistan from inside Afghanistan and the organisation had an independent hospital in Kabul from 1988 to 1992. In Peshawar and Quetta, 44 per cent (1,530) of the total wounded admitted were landmine victims.²³ Here was the first evidence of a humanitarian problem growing rapidly in severity.

Start of international mine action NGOs

The creation of the world’s first international humanitarian mine clearance NGO – the Hazardous Area Life-Support Organisation (HALO Trust) – occurred in 1988. Another British organization – the Mines Advisory Group (MAG) was set up the following year and in 1989, MAG conducted the first survey of the impact of landmines in Afghanistan.²⁴

In 1992, Handicap International²⁵, which had already been operating for 10 years as a humanitarian NGO implementing projects in favour of the disabled, including mine amputees and other victims, made an alliance with MAG to set up its first two demining programmes in Cambodia and northern Iraq, and took part in the creation of the ICBL.

Norwegian People's Aid (NPA)²⁶ has also participated in mine action since 1992. It first became involved in mine action in Cambodia and has since been operational in more than a dozen countries on three continents. A more complete list of over 350 current mine action organizations can be found on the GICHD website.²⁷

Commercial demining organizations

Following the 1991 Gulf war, clearance of mines and UXO, by a number of commercial demining companies, took place in Kuwait (well over 1 million AP and AT mines have been cleared during the following two decades).²⁸ The 1991–1993 clearance programmes involved a significant use of mechanical equipment and stimulated its development.

Subsequently, a number of commercial companies, such as Royal Ordnance, DSL, ELS, BACTEC, Mine-Tech and Mechem emerged, evolving through mergers and expansions into an active commercial industry. Today, international and many national companies compete for 'mine action' contracts for a range of clients serving humanitarian, development and commercial interests.

Cambodia, Mozambique and Angola

Following Afghanistan and Kuwait, the next major landmine challenge for the international community was in Cambodia. In January 1992, the UN Security Council expanded the mandate of the UN Advance Mission in Cambodia (UNAMIC) to include mine clearance and training²⁹ and in March the Office of the United Nations High Commissioner for Refugees (UNHCR) began the repatriation of some 360,000 refugees and displaced persons from Thailand.

In June 1992, the Cambodian Mine Action Centre (CMAC) was set up as the basis for a national programme. Later, in 2000, the Cambodian Mine Action and Victim Assistance Authority (CMAA) was established to separate the regulatory aspects of mine action from the operational work of CMAC.

Planning for mine action in Mozambique began in 1992, just after the UN had appointed an expert to the Department for Peacekeeping Operations (DPKO) in New York to focus on landmines and to set up the UN Demining Office. Experiences in Mozambique represented a watershed for UN-supported mine-related activities as criticisms mounted about the slow pace of action and the direction the UN had chosen to take. A subsequent study of the programme suggested that an indigenous capability should not merely be seen as a mine clearance capability: 'empowering national authorities to regulate, coordinate and sustain all mine action objectives should be a key objective.'³⁰

Significant problems were also encountered in Angola, where planning for mine action began in March 1993, although a Central Mine Action Office was not set up until August 1994. The UN Department of Humanitarian Affairs (DHA) 1997 report on the programme noted that as the youngest of the four programmes studied, it was, in theory, in a good position to benefit from the experiences of other programmes. In reality, it proved the most problematic as a promising start 'soon gave way to interminable bureaucratic in-fighting on overall programme objectives and approach and to disputes over assigned division of labour and responsibilities'.³¹ A number of hard lessons were learned.

Current situation

Around 40 countries have established some form of mine action programme, while in some other states and areas the UN oversees mine action activities. The size of these programmes varies considerably ranging from Afghanistan and Cambodia where they employ thousands of deminers, and have budgets in the tens of millions, to much smaller programmes as in Cyprus, the Falkland Islands/Malvinas or some Pacific Island states.

As of December 2013, a total of 25 States had declared that they had completed implementation of their mine clearance obligations under the APMBC. The national mine action authorities and mine action centres of those States have, for the most part, ended their operations. In one instance the national mine action authority has taken on new responsibilities related to responding proactively to UXO problems and dealing with ammunition stockpile management.

For a full description of current efforts by the Convention's States Parties with continuing demining efforts, see the Convention's website or the Landmine and Cluster Munition Monitor.³²

Global developments

Although the APMBC says that it is the responsibility of affected states to clear all known mined areas, there has been considerable international support for mine and other ERW-affected countries in setting up their national programmes. This has been through funding and establishing different trust fund mechanisms, as well as the development of international standards, improved equipment testing procedures and regular international meetings to share experiences.

Different training programmes have been established to train national mine action managers and there is growing cooperation and south-south exchange between mine-affected countries.

Mine action programmes have also moved from being seen just as ‘emergency’ programmes, with greater emphasis now placed on national capacity development and on integrating mine action into broader development and human security.

ENDNOTES

- 1 Geneva International Centre for Humanitarian Demining (GICHD) (online). Available from: www.gichd.org (accessed: 20 July 2013).
- 2 The term landmine is used to distinguish the weapon from sea mines, which are not considered in this book.
- 3 CCM. *Convention on Cluster Munitions*, adopted on 30 May 2008, entered into force on 01 August 2010 (online). Available from: <http://clusterconvention.org/files/2011/01/Convention-ENG.pdf#page=4> (accessed: 20 July 2013).
- 4 The full title of the instrument is the United Nations Convention on Prohibition or Restrictions on the use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects.
- 5 Croll, M. (1998) *The History of Landmines*. UK, Leo Cooper, p. 16
- 6 The Institution of Royal Engineers (1924) *The Work of the Royal Engineers in the European War 1914-1919*. Chatham, Kent, UK, p. 257.
- 7 US Defense Intelligence Agency (1992) *Landmine Warfare – Trends and Projections*. DST-1160S-019-92, Washington DC. Section 2-1.
- 8 Anti-handling devices are features of a mine specifically designed to detonate the mine when it is lifted, moved or otherwise disturbed by someone trying to clear it.
- 9 Croll, M. (1998) *The History of Landmines*. UK, Leo Cooper, p. 96.
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- 20 Eaton, R. et al. (1997) *Study Report: The Development of Indigenous Mine Action Capabilities*. DHA, United Nations, New York.
- 21 For a detailed definition see Chapter 3 Laws and Standards in Mine Action
- 22 Mine Action Standards (November 2009) *IMAS 04.10 Glossary of mine action terms, definitions and abbreviations* (online). Edition 2010, Definition 3.173. Available from: <http://www.mineactionstandards.org/> (accessed: 20 July 2013).
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LIFE CYCLE AND INSTITUTIONAL DEVELOPMENT OF MINE ACTION

KEY MESSAGES

- Mine action programmes typically transition from a post-conflict setting, through reconstruction, to a development phase and eventually to shut down, residual capacity or realignment towards other issues.
- This transition may not be linear and different phases may be apparent in different areas of a country at the same time.
- National authorities are encouraged to take 'ownership' of the landmine/explosive remnants of war (ERW) problem, to pass legislation and create national authorities able to address the problem.
- Issues such as accreditation of operators, liability, and obligations under international treaties need to be taken into consideration.

LIFE CYCLE OF MINE ACTION PROGRAMMES

Stages in the life cycle

Mine action programmes go through a life cycle much like any other project or programme: they start up, they develop, they reach maturity, they decline towards some limited residual capacity, and they shut down or are pointed in a new direction to pursue new challenges.

The different circumstances found in different countries, often as they emerge from extended periods of conflict, mean that the look of individual mine action programmes can vary greatly. In some of the earliest programmes initial activity was conducted almost entirely under the direction of supranational United Nations agencies. In other more recent cases national entities have taken a leading role from the earliest stages.

The prevailing security situation and extent of physical destruction of infrastructure influence the need for reconstruction and the freedom to carry out work. Programmes in countries that have suffered less contamination may run through their life cycles within a few years. Others may still be active after several decades.

Changing context for mine action

Most mine, cluster munition and other ERW contamination stems from periods of conflict. In many cases, and increasingly over the past few decades, these have been internal conflicts creating what have been termed ‘complex emergencies’. These are situations where the legitimacy of the state is challenged, or has collapsed, in large swaths of the country; where peace can prevail for long periods in some parts of the country while conflict persists, or is intermittent, in others; where civilians and their livelihoods are often targeted by the warring factions.

Warring parties frequently ask the international community to provide assistance in the form of peace-keeping or broader peace-building missions. Where such efforts appear to be successful – or where major countries deem their national interests are at stake – the peace-keeping phase may lead to a major reconstruction effort, financed by donor countries and multilateral financial institutions (such as the World Bank and regional development banks).

Although in many cases ‘traditional’ development work (eg new investments in infrastructure, social services, and private sector development) does not stop entirely, the government and major donors may focus initially on peace-keeping/building and subsequently on the reconstruction programme. As the restoration of key infrastructure (roads, railways, ports, electrical utilities, water systems and so on) and basic public services (education, health, policing, etc.) progresses, attention increasingly shifts to more traditional development programmes.

Up to four major stages can be defined in a country’s transition:

1. Conflict
2. Immediate post-conflict stabilisation (including peace-keeping/building)
3. Reconstruction
4. Traditional development with assistance from international donors and financial institutions.

This depiction of the transition from conflict to development is a stylised one. In some cases a dormant conflict resumes, halting transition to the reconstruction and development phases. Especially unfortunate countries may suffer from simmering conflict for prolonged periods, perhaps becoming a forgotten emergency, receiving little attention from the international community. In such cases the transition from conflict to development is uncertain and prone to reversals, and may proceed at different rates in different parts of the country. Moreover the start and end points of the different phases may not be clear cut, with the various phases overlapping.

The general dynamics of such transitions, as well as the implications of such dynamics, are important for those planning and managing mine action programmes, rather than the details of an individual country's transition. In particular:

- The country's social, political, and economic environment will evolve over time, in some aspects, quite rapidly.
- The size and relative importance of the different types of international assistance programmes – humanitarian, peace-building/immediate post-conflict, reconstruction, and development – will evolve over time and, because of this.
- The international actors present in the country, their primary objectives, and their relative power to influence local affairs, will change over time.

Implications for mine action

The principal outputs of mine action (safe land and facilities; information; people aware of the dangers posed by landmines, cluster munitions and other ERW; numbers of stockpiles destroyed) are not ends in themselves. Each mine action output is a means to an end. Mine action is (or should be) at the service of the citizens of a mine-afflicted country. At any given time, the majority of its resources should be deployed in support of the most strategically important efforts underway in the country at that time.

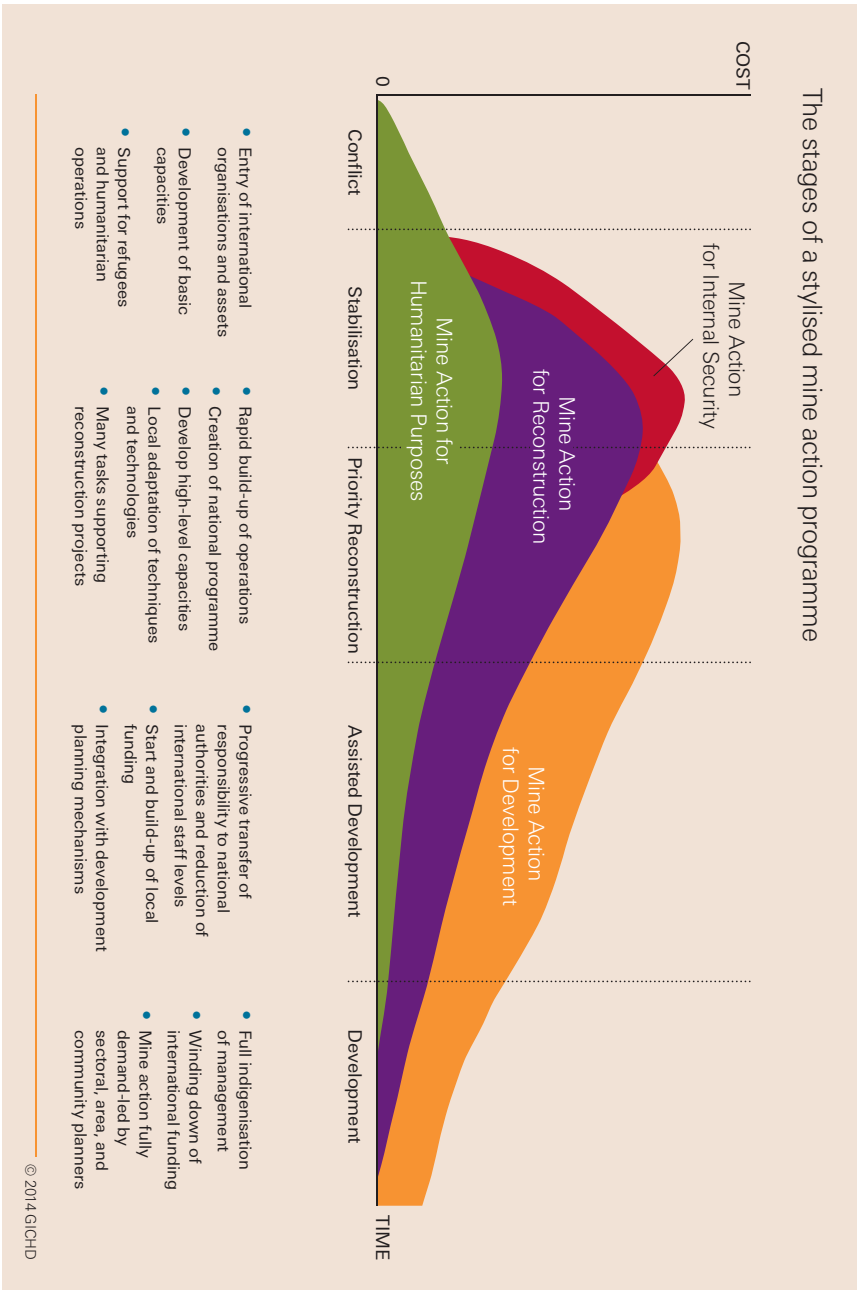
Mine action priorities in a post-conflict environment – and the programme's allocation of resources – should also change as the emphasis shifts from humanitarian assistance through stabilisation and reconstruction to development. Typically these are incremental shifts over time rather than abrupt changes, so there may be periods when the mine action programme is working in support of, say, three types of programmes: humanitarian, reconstruction and development.

When broken down in this manner, the pattern of mine action expenditures over time might appear as depicted in Figure 1.

Two other types of change also influence the performance of a country's mine action programme. First, the programme's capacities will grow with new assets, training, the introduction of better organisational management systems and experience. Some of the likely developments over time for a mine action programme are listed at the bottom of Figure 1.

FIGURE 1

THE EVOLUTION OF A MINE ACTION PROGRAMME



Second, mine action planners and managers will acquire additional information over time, allowing them (in theory at least) to make more informed decisions and better projections concerning future developments that are likely to affect the programme.

Some of the data categories that are important to a mine action programme are those concerning:

- Hazards (location, distribution, numbers and types of devices, what community assets hazards are blocking, etc.).
- Livelihoods – how individuals, households, and communities survive and prosper (this requires socio-economic data disaggregated by sex and age).
- National governance – how governments are formed and replaced and how the machinery of government functions.
- International aid and government financing – the key actors and their principal objectives at national, regional and community levels.

In general terms, planners should expect three broad trends:

1. Increasing levels of national ownership of the mine action programme – the national government may assume responsibility for the mine action centre (MAC), for instance. This implies an increase in the responsibility (and associated capacity) of the national government relative to the group of donors in setting priorities for the country's progress.
2. Increasing input from sectoral agencies (government departments, state-owned organisations etc.) as planners in the various sectors (agriculture, transportation, utilities, environment, etc.) begin to grapple with the problems created by contamination for their sector development plans.
3. Increasing input from different levels of government as provincial and local government capacities are rebuilt following the conflict and they gradually assume their responsibilities mandated by the constitution and legislation.

Mine action in emergency contexts

Mine action activities are often undertaken in emergency contexts in countries or areas where the security situation is changing or uncertain. In these circumstances activities are usually undertaken by the United Nations (UN) (particularly UNMAS) – in the context of a United Nations Peace-keeping Mission.

Programmes are normally authorized by a UN Security Council resolution. They most often support the role of the overall peace-keeping mission, such as clearing mines or ERW to allow border patrols, monitoring and facilitating elections or weapons collection activities, enabling refugee movement, delivering relief supplies and so on. Recent examples include Cyprus, Darfur, Lebanon, Libya and South Sudan. The funding for such programmes usually comes from member states assessed contributions to the UN¹, but on occasion may be supplemented by voluntary contributions.

Increasing attention is now being given to the role of mine action in support of efforts to achieve or maintain peace within and between countries. A study by the Peace Research Institute of Oslo (PRIO), published in 2006, concluded that: 'Mine action can play an important role in peace-building. Emerging mine action initiatives may help foster confidence between parties in conflict, as it has in recent years in Sri Lanka and Sudan... Engagement in mine action may also support reconciliation at various levels, as illustrated by the relationships between former fighters in Afghanistan's Mine Action for Peace programme. Ultimately, mine action breeds general support for the peace process through its direct impact on people's daily lives – eliminating risks, reopening transport routes or freeing up scarce resources, such as land and water sources. Carefully designed, implemented and coordinated mine action interventions provide a flexible and robust tool for peace-building.'²

A number of specific areas in which mine action can support peace-building include:

- reducing unemployment (particularly among groups who might resort to violence in the absence of alternative livelihoods);
- coordination and information management;
- building social capital at local community level; and
- confidence-building at regional level.

Reducing unemployment

Unemployment is often very high at the end of a prolonged armed conflict. Mine action has comparative advantages over many other sectors in providing employment through its ability to recruit, train, procure, deploy and partner quickly, delivering an early peace dividend. In Afghanistan, for example, the mine action programme was, for a time, the largest civilian non-governmental employer in the country.

This puts money in the hands of ordinary people who need it to survive. Such (relative) economic security can encourage grass-roots support for a peace process. It can also provide a much needed source of income for women and men who have become heads of household or providers as a consequence of the conflict or of a landmine/cluster munition/ERW accident.

Coordination and Information Management

Mine action has an impressive ability to develop standardised coordination and information management models. This is essential for the timely delivery of services in post-conflict environments. In Kosovo, data diplomacy undertaken by the United Nations to populate the spatial planning tool in the Information Management System for Mine Action (IMSMA) database was a spur to other sectoral areas to exploit the potential of Geographic Information Systems (GIS).

The high levels of support to develop local and national capacities for coordinating and managing mine action are relevant far beyond the sector. In particular, the experience and expertise gained in assessment and planning, through senior and middle management training, can be readily transferred to other sectors.

Building social capital at local community level

Mine risk education, especially through community liaison work, helps to identify local concerns and priorities and communicate them to higher authorities. It can also help to mobilise men and women in their communities to take greater responsibility for managing the mine, cluster munition and ERW threat.

This support for building social capital at community level can help sustain risk education initiatives long after specialist teams have left, and bring corresponding benefits to community mobilisation in the difficult tasks of building trust and cooperation in the post-conflict period.

Confidence building at the regional level

Confidence building can also take place at the regional level. South Eastern Europe, having seen some of the most brutal fighting on the continent since World War II, pioneered moves towards the regional coordination of mine action. The South Eastern Europe Mine Action Coordination Council (SEEMACC) is a regional cooperation body for mine action programmes in the Balkans. The Council consists of the Directors of the mine action centres of Albania, Bosnia and Herzegovina, Croatia, and Serbia.

Mine action in support of reconstruction and development

As a humanitarian emergency ends and the security situation improves in a mine-affected country, mine action priorities adjust to support priority reconstruction and development programmes. The priority reconstruction programme following a conflict is typically planned by the World Bank, the relevant regional development bank and major donors, to last for three to five years. At the programme end the country's major infrastructure should have been rebuilt with the support, where necessary, of mine action organisations, especially through survey and clearance operations.

In addition to reconstruction of key infrastructure and restoration of basic public services, an important objective of a large post-conflict reconstruction programme is to restore the recipient government's capacity to plan and manage the ongoing development effort. Given that government management capacities may have been severely reduced during a prolonged conflict, it often has only modest input into the plans for the priority reconstruction programme, including mine action priorities. However, during this period, a progressive transfer of responsibility to national authorities takes place, including for setting survey/clearance priorities, and there is often a corresponding reduction in international mine action advisory staff positions.

As government capacity increases, and it starts to play an increasingly prominent role in setting development priorities and aid coordination, national budgetary support for mine action is often initiated and starts to increase slowly. Typically, during the reconstruction phase, there is a shift in the most influential international actors involved from the UN system and international humanitarian NGOs to the World Bank, regional development banks, and major donors. Ideally, national mine action authorities try to ensure linkages with reconstruction planning mechanisms and organisations to ensure alignment between mine action and reconstruction priorities.

Existing survey/clearance priorities evolve and new priorities are added. Survey/clearance may be taking place in one part of a country for the express purpose of saving lives and limbs. At the same time, survey/clearance assets may be deployed elsewhere for broader development objectives, eg to re-open roads to build schools and clinics, and facilitate access to markets.

During this phase, an emphasis is placed on the implementation of a structured information management programme with a focus on sustainability and national capacity development. It is vital at this point for national mine action authorities and the international mine action community to consider which national body will assume responsibility for the mine action information management system.

INSTITUTIONAL DEVELOPMENT OF MINE ACTION COORDINATING STRUCTURES

Management and coordination of mine action

It is now a well-established principle that the primary responsibility for mine action lies with the government of the mine-affected State. This responsibility is normally vested in a national mine action authority (NMAA), charged with the policy, regulation and overall management of a national mine action programme, as well as resource mobilisation, particularly from the government.³ The NMAA is typically an inter-ministerial body and is ultimately responsible for all phases and facets of a mine action programme within its national boundaries, including the national mine action strategy, national mine action standards and technical instructions.⁴

The operational arm of the NMAA is the mine action centre (MAC)⁵. This body is the focal point for mine action activities on the ground. It carries out the policies of the NMAA and coordinates the day-to-day work of the various organisations and agencies conducting mine action operations. Together, the NMAA and the MAC should be the principal organs managing and coordinating mine action in a mine, cluster munition and ERW-affected country.

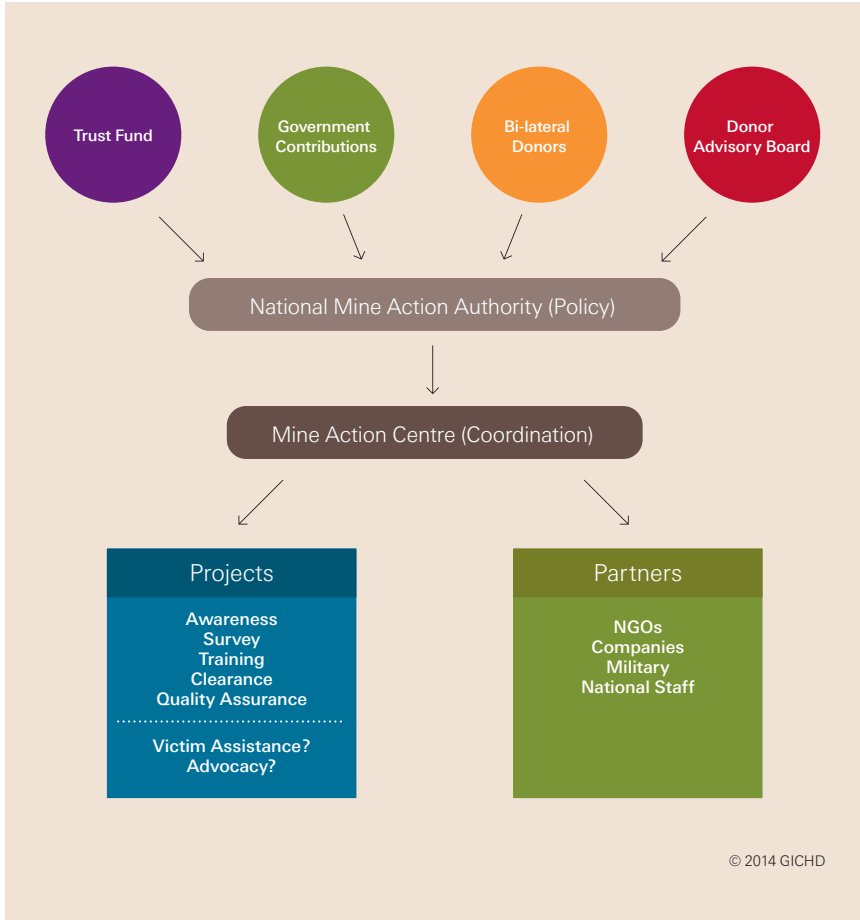
In some cases, the MAC coordinates a large number of operators and controls relatively large amounts of money, while in others it has more modest functions. In other cases, such as Angola and Cambodia, the MAC took control of its own operational demining teams. This approach proved to be less successful though, as the MAC became too focused on the work of its own teams and was not able to undertake its national coordination functions effectively. It also led to a conflict of interest, whereby the MAC, as the regulatory body, was being both 'referee' and 'player'.⁶

An example of a recommended national mine action structure is set out in Figure 2.⁷

In addition to the NMAA and the MAC, a number of other bodies may have input into the national mine action programme, most notably donors. There may also be technical committees or working groups set up under either the NMAA or the MAC, to which certain responsibilities are devolved.

FIGURE 2

MINE ACTION STRUCTURE



International actors assisting the development of national capacities

A range of actors or organizations can provide assistance to mine and ERW-affected countries. In 2013 the United Nations supports mine action in 30 countries and three territories. Sometimes UN services may be limited to one aspect of mine action — such as mine-risk education or victim assistance. In other places, the UN may be involved in every aspect of mine action, from clearing landmines to destroying stockpiles.

The extent of the United Nations' involvement depends on the scope of the problem, the assistance requested by national governments, and on any special circumstances. UNMAS has created MACs in a number of countries emerging from armed conflict, typically where there is a UN peace-keeping mission in operation. Similarly, UNDP provides support to national and local capacity building, including the establishment of national authorities and MACs.

The 'Strategy of the United Nations on Mine Action 2013 – 2018' presents the common objectives and commitment of the United Nations system to mine action; one of its objectives is the strengthening of national capacities in mine action. The strategy enhances the existing policy for UN support to mine action: Mine Action and Effective Coordination: The United Nations Inter-Agency Policy. The policy outlines the respective roles and responsibilities of the many UN agencies and bodies engaged in mine action.

Regional organisations, notably the Organization of American States (OAS), have focused on a regional approach to demining and the coordination of mine action activities. In addition, a number of States, including the United States, have also provided bilateral assistance to set up national MACs, typically referred to as 'national demining offices'.

As part of its support to national capacity-building the GICHD has provided training and technical assistance to many mine-affected nations in the areas of legislation, planning and management of mine action programmes, as well as in techniques for demining and mine risk education. It also plays a major role in assisting States to develop national mine action standards (NMAAS).

Need for national legislation

States use various legal instruments to create an NMAA and/or a MAC and to regulate mine action activities. These include laws passed by parliament, decrees and orders or similar legal instruments issued by the cabinet or office of the chief executive (prime minister or president) or by a government ministry. Mine, cluster munition and other ERW-affected countries are strongly encouraged to adopt national legislation to coordinate and regulate mine action.

National legislation refers to a public law passed by the country's legislative body (eg parliament or congress) and approved by the country's head of state. National legislation is preferred because it is normally the product of an extensive collaborative process between the executive, the national parliament and, in some cases, external agencies. It provides an opportunity for a thorough consideration of mine action issues, the activities to be undertaken, and the implications of the

proposed law. It also allows for inclusion of provisions on the responsibility of the executive to submit periodic reports on progress in the mine action programme to the legislature. This makes it easier for the legislature to hold the government to account.

Mine action legislation typically includes certain specific elements. These include provisions on:

- the establishment of the NMAA;
- the establishment of the MAC (and of any subordinate regional/provincial office);
- the implementation of mine action activities; and
- accreditation and monitoring of mine action operators.

National legislation provides the framework, authority and legitimacy for the main elements of the institutional architecture of a mine action programme. It does not normally concern itself with the fine detail of how mine action activities are carried out, although a small number of countries choose to bring elements such as Standard Operating Procedures (SOPs) within the remit of national legislation.

Doing so can bring a high level of enforceability and uniformity within mine action operations (clearance in particular), but it creates inertia and resistance to change in the system. Changes requiring high level legislative agreement are rarely updated – the process of drafting and agreement, and the associated burden on civil service and government time, make it unattractive and difficult to incorporate changes to formal documentation.

Basic principles of quality management, especially continual improvement, require an appropriate degree of flexibility and responsiveness, to allow processes, procedures and systems to adapt and adjust to changing circumstances and in light of new knowledge and experience.

Legislative action has an important role to play in establishing policies and basic standards for mine action, as well as in encouraging appropriate learning and development to support the effectiveness and efficiency of the mine action programme. The balance between centralised control and delegation of authority is an important one; it merits careful attention and thoughtful action.

Mine action legislation also relates to the obligations States have under the Anti-Personnel Mine Ban Convention (APMBC) and the Convention on Cluster Munitions (CCM). In addition to ensuring that prohibited activities are considered

illegal in a domestic context, legislation to give effect to these treaties can involve requirements to furnish information necessary to ensure compliance, for example on mined areas, the clearance of them, and on the possession of stockpiles.

National mine action authority

The NMAA is the principal entity responsible for overseeing mine action in an affected country. One of the purposes of mine action legislation is to create the NMAA and outline its functions. Legislation relating to a NMAA should include clear provisions in the following areas:

1. The establishment of the NMAA: the legislation should state clearly that an NMAA is to be created and that it shall meet regularly. The law should also indicate which government ministry or department or member of the executive is to oversee the work of the NMAA.
2. Membership: legislation should identify the ministries and/or officials who are to be members of the NMAA. Such bodies typically include officials from the government ministries or departments associated with mine action activities (eg Ministries of Agriculture, Defence, Education, Foreign Affairs, Health, Interior, and Social Services). The NMAA could also include representatives of international organisations and other bodies or organisations involved in mine action. These entities are sometimes invited to participate as observers in the NMAA's work. The law should also identify which ministry or department is to chair its meetings and which is to act as the secretariat for the NMAA, if the mine action centre does not perform this function.
3. Responsibilities: legislation should specify that the NMAA is the body charged with overall responsibility for mine action within the country. In this regard it is responsible for the broad strategic and policy decisions related to mine action. In particular, the law should indicate that the NMAA is responsible for:
 - the overall implementation of mine action legislation;
 - adopting a national policy, strategy, priorities and annual workplan to reduce the impact of mines and ERW (ie a national mine action plan);
 - approving National Mine Action Standards (NMAS);
 - reporting to parliament, the public, donors, the United Nations and other relevant fora on mine action progress;
 - overseeing the work of the mine action centre; and
 - fundraising from national resources and the donor community.

Mine action centre

The mine action centre (MAC) is the operational body that executes the policies of the NMAA and is the focal point for coordinating day-to-day mine action activities on the ground. In contexts where the mine and ERW problem is severe the centre is likely to have a wide range of responsibilities and duties.

Principal points governing the creation of a MAC that may be considered in developing national mine action legislation include:

1. The establishment of a national MAC and any subordinate regional/provincial offices. Similar to the NMAA, the MAC should be clearly established by the legislation and identified as the body coordinating mine action within the country.
2. Funding. The law should indicate the source of the MAC's funding. Its activities, including the salaries of its staff, are typically drawn from the national budget of the affected State. This helps ensure that the MAC has a reliable source of funding and can plan its activities accordingly. In addition to national sources, funds may also be obtained from international donors, as well as private and other sources.
3. Responsibilities. As the body overseeing mine action at the operational level, the MAC is charged with a range of responsibilities.

Legislation typically gives the MAC the authority to perform the following tasks:

- coordinate mine action within the country;
- manage and disseminate mine action information;
- prepare and implement a national mine action strategy and plan as well as annual work plans;
- set criteria for mine action priorities;
- accredit mine action operators and monitor mine action activities;
- draft national mine action standards;
- task mine action activities according to the national workplan;
- ensure the quality of mine action activities; and
- act as the secretariat for the NMAA.

It is often useful to grant the MAC the authority to adopt subsidiary or administrative directives or regulations related to the above tasks.

In addition to these responsibilities, many administrative and procedural issues, such as employee regulations and the requirements for the accreditation of mine action operators also need to be developed. Such measures are not normally included in mine action legislation but are left to internal orders and regulations. Legislation may give the MAC authority to develop such regulations when necessary and to submit them to the NMAA for approval.

Delegation of authority to the appropriate level plays an important part in maintaining the flexibility necessary for the programme to respond to changes in circumstances, conditions and understanding of the task.

Depending on the operational structure, the MAC may not necessarily be the body that coordinates advocacy, victim assistance or stockpile destruction.

Implementation of mine action legislation

Mine action legislation should identify the components of mine action that will take place within the country. As the principal coordinating body for mine action, oversight of most activities will be the responsibility of the MAC. It may undertake some operations itself but more typically coordinates interventions from government ministries, international organisations, NGOs and commercial operators.

Specific activities required in a particular country depend on the nature of its mine and ERW problem. Mine action legislation should be designed to address the specific needs in the national context. The following operations are common to situations where the mine and ERW problem is severe and are normally referred to in mine action legislation:

- Survey, mapping and marking of mine, cluster munition and ERW-contaminated areas. One of the primary activities overseen by the MAC is the identification, recording and marking of areas believed to be dangerous due to the presence of mines and ERW. Surveys are the starting point for other mine action activities, such as mine, cluster munition and ERW clearance, mine risk education and coordination of the activities of external agencies or local operators. Including these activities in mine action legislation provides a legal basis for granting surveyors and other personnel access to contaminated territory, government officials and information to allow them to carry out their functions.
- Land release. Following the application of non-technical and technical survey processes, hazardous areas are identified, recorded and marked before being prioritised for clearance. Mine action legislation helps clearance personnel

gain access to contaminated areas and to information to facilitate their work. Land release is a decision-making process relying on availability of information, and also on confidence amongst decision-makers that the decisions they take will not be used against them in the future. National legislation can play an important role in clarifying questions of responsibility and liability.

- Mine risk education. Teaching people how to live safely in environments contaminated by mines, cluster munitions and ERW is an important part of minimising the risk of victims of these weapons. Risk education is often neglected as an element of mine action legislation when it can provide great benefits. Legislation can provide the basis for incorporating mine risk education into school curricula, where appropriate, as well as into local and national media.
- Responsibility for mine and ERW data. The MAC is usually responsible for collating information on the location of areas affected by mines, cluster munitions and ERW, as well as mine and ERW accident information. The MAC usually controls the main database storing this information and, in coordination with mapping agencies, produces maps, charts and other information for use by mine action operators and other interested parties. Granting this responsibility in legislation provides the MAC with a legal basis to undertake these activities and helps avoid potential conflicts with other national mapping agencies.
- Stockpile destruction. States adhering to the APMBC are obliged to destroy all stocks of their anti-personnel mines within four years of becoming a party. A similar requirement to destroy stocks of cluster munitions exists within the Convention on Cluster Munitions (CCM). A number of States have included this requirement in their mine action or cluster munition legislation and assigned a role to the MAC. Inclusion in legislation provides a clear domestic legal basis for developing regulations on the possession, transport, storage and destruction of anti-personnel mines, cluster munitions and other similar weapons.
- Victim assistance. Providing medical care, rehabilitation and reintegration to those who have been injured by mines or ERW is an important part of mine action. Doing what is required to assist victims usually relates to responsibilities of ministries linked to public health, social services and disability. While lead responsibility for victim assistance normally rests in a Ministry of Health/Social Affairs and/or a State entity responsible for disability and disability rights, NMAAs and MACs also have a role to play. The UN's 2003 sectoral policy on victim assistance, while highlighting that 'mine action centres are not designed to take the lead role in victim assistance,

nor do they have the mandate, expertise or required resources,' suggests that MACs/NMAAs can contribute to assisting the victims in areas such as data collection and dissemination, advocacy, and coordination. Legislation can also be developed to address survivors' well-being and to guarantee their rights in a non-discriminatory manner, through the establishment of appropriate laws in favour of persons with disability.

Accreditation and monitoring of mine action operators

Part of the process of assuring the quality of mine action includes confirming that work is conducted by competent operators. Mine action legislation normally requires that operators be accredited prior to beginning activities in the country. This ensures that international agencies, NGOs and commercial companies are capable of planning and managing mine action activities and are competent to carry out particular mine action tasks. Requiring the accreditation of mine action operators helps ensure that mine action is conducted in accordance with accepted standards and national priorities.

Mine action legislation provides MAC authority to establish criteria for accreditation and identifies it as the body responsible for doing so. The process of accreditation typically includes the opportunity of an appeal to the NMAA in the event of an adverse decision. Accreditation generally applies to organisations involved in demining and mine risk education and, in some cases, stockpile destruction.

It does not generally make sense for a MAC to be empowered to accredit entities involved in assisting victims. As the activities involved are part of broader approaches to health care, social services and human rights, other relevant State actors normally take the lead.

Quality management is critical to the ultimate success of mine action. The MAC ensures that ongoing work and completed projects have been conducted according to national standards and in accordance with the priorities of the national mine action plan.

Additional elements to be considered

Definitions

Clear definitions are an important part of any legislation. Mine action legislation should include definitions of the mine action terms used in its provisions. These may include: mine action, land release, demining, mine risk education, victim assistance and other important terms. Definitions can be based on the IMAS and

doing so helps ensure consistency between standards and the terms of legislation. In some instances, the definitions may need to be modified to reflect the situation in the affected country.

If mine action legislation is to address the implementation of the APMBC, the CCM, or Amended Protocol II to the Convention on Certain Conventional Weapons, it is important that the legislation uses definitions contained in those instruments. This helps ensure consistency between the international treaties and the provisions of the national legislation.

Implementation of international treaty obligations

Some States that are party to the APMBC, the CCM or Amended Protocol II to the Convention on Certain Conventional Weapons (CCW) have also used the adoption of mine action legislation as a means to implement the requirements of these treaties. Among other things, the APMBC and the CCM require the marking and clearing of contaminated areas, and the destruction of stockpiles. Amended Protocol II also contains obligations for marking and clearance of mines, booby-traps and other devices. These activities often fall within the remit of the NMAA or MAC.

Other States have chosen to make the treaties the subject of separate implementing legislation. It is up to each State to decide the best method of meeting its mine action objectives and the implementation of the treaties to which it is a party.

Liability for accidents

Liability for mine and ERW accidents is a concern for many mine action operators. In recent years there have been instances where victims, or families of victims, have sought civil damages or brought criminal complaints for accidents which have happened on land previously certified as cleared, or where markings have deteriorated or been removed without authorisation.

The principal method to minimise the risk of such accidents is to ensure that mine action interventions are conducted according to the IMAS or relevant national standards. It is recommended that legislation states that duly accredited mine action personnel are not liable for accidents if they act professionally (ie in accordance with approved standards and Standing Operating Procedures (SOPs) and with due care).

Other possible options are to treat mine action under national law in similar ways to other dangerous activities conducted by organisations for the public benefit

(eg law enforcement agencies or fire services). Alternatively, legislation can limit liability or transfer responsibility to the government once land has been surveyed and marked according to SOPs, or has been certified as safe following clearance.

Irrespective of national legislative provisions, mine action operators are encouraged to retain liability insurance (wherever it is available) to protect against claims or lawsuits that may arise.

RESIDUAL CAPACITIES AND COMPLETION

The aim of all mine action programmes is to address the problems created by the real and perceived presence of mines, cluster munitions and ERW until they have no remaining impact on the population, and until obligations under international treaties have been satisfied.

It is anticipated that there will come a time when either there is no remaining problem, or when it has diminished to such an extent that there is no need for a programme with a large and complex institutional architecture. A number of responses may be appropriate.

Residual capacities

However rigorous, comprehensive and effective a mine action programme has been it is difficult to say, with absolute certainty, that every hazardous object has been dealt with in an affected country. This is particularly the case with ERW that may be present in remote areas or buried deep underground. Even when large scale clearance operations come to an end it is usually appropriate to retain some capacity to respond if and when hazardous objects are discovered.

Responsibility for doing so is normally left with military, police or civil defence units, although in some cases commercial contractors may be involved. The time-scale for maintaining a residual capacity can be lengthy – France and Belgium maintain capacities that are kept busy dealing with ERW from both the First and Second World Wars.

Changes in legislation may be necessary to reflect transfer of responsibility from an NMAA and MAC to elements of other Ministries or departments. The need to retain, update, secure and make available information about historical and on-going contamination remains of the utmost importance. Responsibility for handling information may be split between national archives or other similar repositories (for historical information), and residual capacity operational units (for new information).

Re-alignment

Organisations and structures developed within a mine action programme gain experience and learn lessons during the conduct of major operations. States may not wish to lose the expertise contained within elements such as the MAC. In some cases rather than wind them down a decision is taken to hand new responsibilities to the existing organisation.

Broader trends found within the global mine action sector (such as the focus on cluster munitions, stockpile destruction, small arms/light weapons and wider questions of armed violence) may be reflected within mine action programmes. Even when the landmine problem may be coming to an end, other issues may be gaining in profile and prominence.

Realignment of mine action programme elements can be an effective and efficient development. Once again, there may be a need for modification of some legislation to provide the necessary authority and legitimacy to engage in new and different activities.

Completion

In some cases, where conflict has been of limited duration and has resulted in limited contamination, it may be that a programme comes to a clear and natural end. Shut down of activities, institutions and the elements of the institutional architecture takes place with legislation either removed from the statute books, or allowed to lie unused.

Complete shutdown of a programme is likely to be carried out in conjunction with the maintenance of at least a small residual capacity, able to deal with the rare occasions when a hazardous item does come to light.



Mine clearance site visit (Democratic Republic of the Congo)

ENDNOTES

- 1 United Nations Committee on Contributions defines the assessed contributions as 'expenses of the Organization that shall be borne by the Members as apportioned by the General Assembly.' (Online). Available from: <http://www.un.org/en/ga/contributions/assessments.shtml>
- 2 Harpviken, K. B. and Roberts, R. (eds.) (2004) *Preparing the Ground for Peace: Mine Action in Support of Peacebuilding* (Online). Peace Research Institute of Oslo (PRIO) Available from: [http://file.prio.no/Publication_files/Prio/Harpviken%20and%20Roberts%20\(eds,%202004\)%20Preparing%20the%20Ground%20for%20Peace%20\(PRIO%20Report%202\).pdf](http://file.prio.no/Publication_files/Prio/Harpviken%20and%20Roberts%20(eds,%202004)%20Preparing%20the%20Ground%20for%20Peace%20(PRIO%20Report%202).pdf)
- 3 IMAS, 04.10, Definition 3.194. The National Mine Action Authority is defined as 'the government department(s), organisation(s) or institution(s) in each mine-affected country charged with the regulation, management and coordination of mine action.'
- 4 In certain situations and at certain times it may be necessary and appropriate for the UN, or some other recognised international body, to assume some or all of the responsibilities, and fulfil some or all the functions, of a national mine action authority. This occurred, for example, after a number of UN peace-keeping missions, including in Kosovo during the emergency and transition phases of mine action that followed the peace agreement between the North Atlantic Treaty Organisation (NATO) and the Federal Republic of Yugoslavia in June 1999.
- 5 In some countries, the word 'coordination' has been added to the title of the mine action centre to better reflect its activities. In Kosovo, for example, the UN coordinating body was called the Mine Action Coordination Centre (MACC).
- 6 Mansfield, I. (2002) Building National Mine Action Capacity: It Is No Myth, *The Journal of ERW and Mine Action*, 15.1.
- 7 Ibid



LAWS AND STANDARDS IN MINE ACTION

KEY MESSAGES

- The mine action sector has developed well-defined international legal instruments and a mature set of policy standards.
- The CCW, APMBC and CCM are of particular importance to mine action.
- Information management is central to questions of compliance with laws and standards.
- International Mine Action Standards (IMAS) and National Mine Action Standards (NMAS) provide a framework to improve safety, effectiveness and efficiency in the mine action sector.
- Future developments may address the use of explosives against civilians and toxic remnants of war (TRW).

INTRODUCTION

A number of international laws and standards pertain to mines, cluster munitions, explosive remnants of war (ERW) and ammunition stockpiles. The main international treaties linked to mine action are the:

- Convention on Certain Conventional Weapons (CCW) and its Protocols II, amended, and V;
- Anti-Personnel Mine Ban Convention (APMBC); and
- Convention on Cluster Munitions (CCM).

A number of international standards are also directly focused on mine action, such as the:

- International Mine Action Standards (IMAS); and
- International Ammunition Technical Guidelines (IATG).

Some other laws of relevance to mine action goals and implementation are broader in their focus or primary orientation, such as the Convention on the Rights of Persons with Disabilities (CRPD).

INTERNATIONAL LAW REGULATING OR BANNING CONVENTIONAL WEAPONS

Weapons are governed by two branches of law:

1. **Disarmament law** 'seeks to maintain military stability by limiting or eliminating the numbers or types of weapons that may be lawfully produced, stockpiled or transferred'.¹ Disarmament treaties focus on the regulation or elimination of certain weapons of war.
2. **International humanitarian law** (IHL), also known as the 'law of war' or international law of armed conflict, lays down rules intended to minimise suffering in armed conflict by regulating how hostilities are conducted so as to protect combatants from unnecessary suffering and civilians from the dangers arising from military operations.

The four 1949 Geneva Conventions and their two 1977 Additional Protocols are of central importance in this context as they set out the principal rules regulating the protection of the victims of war and the conduct of hostilities. A fundamental rule is found in Article 48 of the 1977 Additional Protocol I. It states that parties to the conflict shall at all times distinguish between the civilian population and combatants, and between civilian objects (ie schools, hospitals and residential areas) and military objectives.

Accordingly, parties shall direct their operations against military objectives only. The rule of distinction is supplemented by the rule against indiscriminate attacks (Article 51). This rule determines that such attacks are:

- 'those which are not directed at a specific military objective';
- 'those which employ a method or means of combat which cannot be directed at a specific military objective'; and
- 'those which employ a method or means of combat, the effects of which cannot be limited as required by this Protocol'.²

After the Cold War ended the law related to weapons in armed conflicts further developed with a particular humanitarian and developmental focus. The protection of civilians from indiscriminate or inhumane weapons was a driving force. The notion of human security is central to recent developments in this field, as opposed to disarmament treaties negotiated earlier, where protection of strategic national interest and international stability was a core motivation.³

It resulted in the adoption of treaties which can be labelled 'humanitarian disarmament'. In addition to establishing an absolute ban on the use, production, transfer and stockpiling of certain types of weapons these treaties require remedial measures such as clearance of mines and unexploded ordnance, as well as risk education and victim assistance provisions. They are also characterised by a cooperative approach between different actors (States, UN, NGOs) in their monitoring and implementation.⁴ The 1997 APMBC and the 2008 CCM are good examples of this new trend.

Convention on Certain Conventional Weapons (CCW)

The shift from 'traditional' to 'humanitarian' disarmament is not straightforward, as demonstrated by the CCW, which was adopted in 1980. While negotiating the CCW and its protocols, a number of High Contracting Parties⁵ emphasised the need for 'striking a balance between military and humanitarian considerations.'⁶

The CCW is a framework treaty, applicable to situations of armed conflict, which contains generic provisions and protocols relating to specific weapons and their use. It has been built upon the customary rules that regulate conduct of hostilities. These include rules of distinction, proportionality, precautions in attacks, and the prohibition of weapons that are of a nature to inflict gratuitous injury or suffering on combatants.

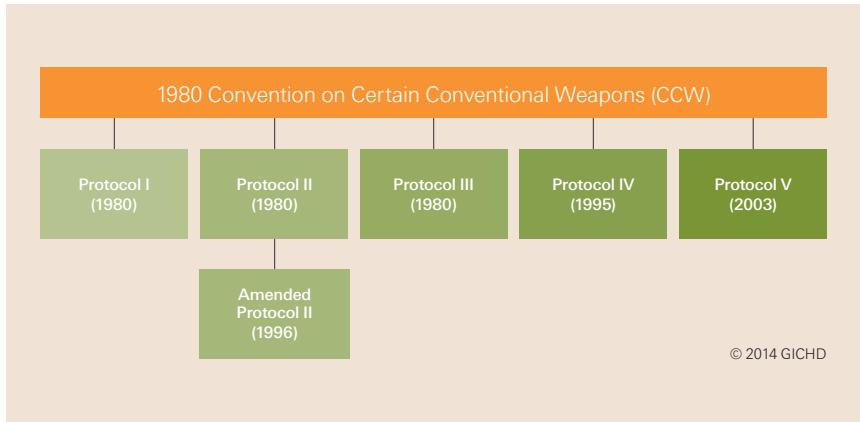
In 1980, states adopted the framework convention and its first three protocols:

1. Protocol I on Weapons with Fragments not Detectable by X-ray;
2. Protocol II on Landmines, Booby Traps, and other Devices; and
3. Protocol III on Incendiary Weapons.

Additional protocols can be added to the CCW to reflect new or emerging humanitarian concerns.⁷ Thus, in 1995, the High Contracting Parties added Protocol IV (on blinding laser weapons). In 1996, Protocol II was amended in an effort to strengthen its provisions. In 2001, the scope of the framework convention was extended to encompass internal as well as international armed conflicts. Two years later, Protocol V on Explosive Remnants of War was adopted.

FIGURE 3

THE CCW OVERVIEW CHART



CCW Amended Protocol II

CCW Protocol II, adopted in 1980, deals with landmines, booby-traps and ‘other devices’. It reflected the state of customary law at that time by limiting the use of these weapons and requiring that some general measures be taken to reduce the dangers to civilians, such as by giving warnings of attacks where feasible.

However, the rules of 1980 Protocol II were later shown to provide inadequate protection to civilians from the effects of anti-personnel mines in particular. In 1996, High Contracting Parties to the CCW adopted Amended Protocol II (AP II) in an effort to strengthen the rules on these devices.

Mines, booby-traps or other devices must not target civilians or civilian objects or be used indiscriminately. AP II prohibits the use of anti-personnel mines and anti-vehicle mines (mines other than anti-personnel mines, MOTAPM), which are designed to explode when mine detection equipment is passed over them.

Although there are certain exceptions, High Contracting Parties and other parties to an armed conflict who use such weapons must:

- remove them following the end of active hostilities;
- take all feasible precautions to protect civilians from their effects;
- give advance warning of any emplacement of these weapons that may affect civilians;

- maintain records concerning the locations of such weapons; and
- take measures to protect forces and peace-keeping missions of the UN, ICRC missions and other humanitarian missions against their effects.⁸

AP II also contains specific rules on anti-personnel mines:

- All anti-personnel mines must be detectable using commonly available metal detection equipment (Article 4). This means that at least eight grams of iron (or equivalent, in terms of detectability) must be incorporated in the mine (AP II Technical Annex).
- Manually-emplaced anti-personnel mines must be equipped with self-destruction and self-deactivation mechanisms, unless they are 'placed within a perimeter-marked area monitored by military personnel and protected by fencing or other means, to ensure the effective exclusion of civilians from the area...' (Article 5).
- Remotely-delivered anti-personnel mines must both self-destruct and self-deactivate to a very high standard as set out in the Technical Annex.
- Remotely-delivered anti-vehicle mines must, 'to the extent feasible', be equipped with an effective self-destruction or self-neutralisation mechanism and have a back-up self-deactivation feature (Article 6).
- Transfer of mines, the use of which is prohibited by AP II is unlawful. Transfer of any mine to an unauthorised non-state actor is prohibited.

Improvised Explosive Devices (IEDs), which are especially used by non-state armed groups, play an increasing role in many conflicts. An IED is 'a device placed or fabricated in an improvised manner incorporating explosive material, destructive, lethal, noxious, incendiary, pyrotechnic materials or chemicals designed to destroy, disfigure, distract or harass. They may incorporate military stores, but are normally devised from non-military components'⁹ AP II remains the sole legally-binding instrument which explicitly covers IEDs.

Amended Protocol II only provides minimal restrictions on the use of anti-vehicle mines (MOTAPM). Despite numerous attempts, no consensus has yet been reached on adopting stricter rules on these weapons. However, anti-vehicle mines are of great concern from a humanitarian perspective. In some countries, more injuries and deaths occur due to anti-vehicle mines than anti-personnel mines.

CCW Protocol V

As a result of growing awareness of the consequences of unexploded ordnance (UXO) and cluster munitions on civilians in conflicts such as the one over Kosovo,

the High Contracting Parties adopted Protocol V in 2003. Protocol V defines ERW as unexploded ordnance (UXO) and abandoned explosive ordnance (AXO).

UXO is 'explosive ordnance that has been primed, fuzed, armed, or otherwise prepared for use and used in an armed conflict... and should have exploded but failed to do so' (Article 2, paragraph 2). UXO includes hand grenades, mortar shells, explosive submunitions or bombs that have been used but which have not detonated as intended.

AXO means 'explosive ordnance that has not been used during an armed conflict, but that has been left behind or dumped by a party to an armed conflict, and which is no longer under control of the party that left it behind or dumped it...' (Article 2, paragraph 3).

Under Protocol V:

- The party in control of the affected territory is responsible for the clearance, removal or destruction of ERW (Article 3).
- 'All feasible precautions' to protect civilians from their risks and effects (Article 5) are called for.
- 'In cases where the user of explosive ordnance which has become ERW does not exercise control of the affected territory, that party is required, after the cessation of active hostilities, to provide where feasible, technical, financial, material or human resources assistance either bilaterally or through a mutually agreed third party' (Article 3).
- Each State Party 'in a position to do so' is required to provide assistance for the marking and clearance, removal or destruction of explosive remnants of war, and for risk education to civilian populations (under Article 8).

In the CCW and in particular in Protocol V, a number of obligations are qualified by phrases such as 'to the extent feasible'.¹⁰ One example is Article 3, in which it is stated that, 'after the cessation of active hostilities and as soon as feasible, each High Contracting Party and party to an armed conflict shall mark and clear, remove or destroy explosive remnants of war in affected territories under its control'. Although it was included in the Protocol in order to provide flexibility in the implementation of obligations given the uncertain circumstances that often surround the end of a conflict, such phrases could be subject to abuse as the relevant state or party may claim that action is not 'feasible'.

The CCW may also face the challenge of securing implementation by non-state armed groups.¹¹ As with most IHL, disarmament treaties and more general

international law, ensuring compliance amongst non-state armed groups is an ongoing challenge.

Anti-Personnel Mine Ban Convention (APMBC)

The APMBC was adopted on 18 September 1997 and entered into force on 1 March 1999. It has a clear humanitarian goal. Its preamble opens with a paragraph that highlights the extent of civilian suffering from landmines:

‘States Parties [are] determined to put an end to the suffering and casualties caused by anti-personnel mines, that kill or maim hundreds of people every week, mostly innocent and defenceless civilians and especially children, obstruct economic development and reconstruction, inhibit the repatriation of refugees and internally displaced persons, and have other severe consequences for years after emplacement.’¹²

The last paragraph of the preamble makes it clear that the Convention is based on international humanitarian law rules, recalling that the ‘right of parties to an armed conflict to choose methods or means of warfare is not unlimited, and on the principle that prohibits the employment in armed conflicts of weapons ... of a nature to cause superfluous injury or unnecessary suffering and on the principle that a distinction must be made between civilians and combatants’.

THE APMBC:

- Prohibits the development, production, use, transfer and stockpiling of antipersonnel mines.
- Requires the destruction of stockpiled antipersonnel mines within four years.
- Requires the clearance of emplaced anti-personnel mines within ten years.
- Requires support for assistance for victims.

The treaty seeks to eliminate the civilian harm caused by anti-personnel mines. To achieve this goal, the Convention adopted comprehensive prohibitions to prevent new use of AP mines as well as remedial measures to address the needs of those who have already suffered from these weapons.

The APMBC prohibits the use of anti-personnel mines ‘under any circumstances’ (Article 1). This includes peacetime and armed conflict and internal disturbances. Parties may not resort to the use of anti-personnel mines in attack or self-defence, even if threatened with imminent military defeat.

The Convention does not permit reservations to any of its provisions. A State must destroy all anti-personnel mine stockpiles it owns or possesses or which are under its jurisdiction or control within four years of joining the APMBC (Article 4).

Each State Party is obliged to clear all anti-personnel mines in mined areas under its jurisdiction within ten years (Article 5). An extension of this deadline can be requested by any State Party not in a position to meet its deadline. These extension requests have to be justified in writing and submitted to States Parties for approval.

Article 6 includes a provision on victim assistance, one of the reasons why the APMBC was considered a ground-breaking normative development, although it is not as detailed or explicit as the later Convention on Cluster Munitions.

To date, more than three-quarters of the world’s countries have ratified the APMBC, and many that have not, do abide by its main provisions, clearly establishing an international norm against anti-personnel mines. The APMBC was instrumental in promoting mine action operations on the ground and prompted an increase in international support in this sector.



APMBC signing ceremony (Ottawa, 1997)

Convention on Cluster Munitions (CCM)

The CCM was adopted in May 2008 and entered into force in August 2010. Its structure is similar to the APMBC, with provisions containing obligations on use, clearance, stockpile destruction, reporting, victim assistance and international cooperation. It is also based on international humanitarian law.

THE CCM:

- Prohibits the development, production, use, transfer and stockpiling of cluster munitions.
- Requires the destruction of stockpiled cluster munitions within eight years.
- Requires the clearance of cluster munition remnants (unexploded submunitions or abandoned cluster munitions) within ten years.
- Requires age and gender-sensitive assistance to victims – for those injured by explosive submunitions – as well as their families and affected communities.

The Convention opens by expressing concern that ‘civilian populations and individual civilians continue to bear the brunt of armed conflict’. The purpose of the treaty is then stated: ‘to put an end for all time to the suffering and casualties caused by cluster munitions at the time of their use, when they fail to function as intended or when they are abandoned’.

‘Cluster munition remnants kill or maim civilians, including women and children, obstruct economic and social development, including through the loss of livelihood, impede post-conflict rehabilitation and reconstruction, delay or prevent the return of refugees and internally displaced persons, can negatively impact on national and international peace-building and humanitarian assistance efforts, and have other severe consequences that can persist for many years after use.’

Although there are some parallels in the structure and approach of the CCM and the APMBC, these international legal regimes are at different stages of development. The CCM contains a number of provisions that go beyond those required under the APMBC:

- Article 5 has the most far-reaching provisions on assistance for victims ever included in a disarmament or humanitarian law treaty. Each State Party that has cluster munition victims on its territory or under its control must provide for their medical care and physical rehabilitation, psychological support, and social and economic inclusion. In addition, the State must assess domestic needs in these areas and develop plans and mobilise resources to meet them. The definition of victims under the convention is extremely broad, covering not only those who are killed or injured by cluster munitions, but also families and communities that have suffered socio-economic and other consequences.
- Article 9 requires States Parties ‘to take all appropriate legal, administrative and other measures to implement this Convention’ including the positive as well as the negative obligations of the CCM. (The APMBC only requires States Parties to implement national measures to ensure meeting their negative obligations under the Convention).¹³
- Article 21(1) and (2) requires each State Party to universalise the Convention, ‘to promote the norms it establishes and to make its best efforts to discourage states not party to this Convention from using cluster munitions’.

As of January 2014, 84 states have ratified the CCM. This is significant progress, but there is still a long way to go in achieving a more universal adoption of the treaty. Like the APMBC, substantial donor resources will be necessary in the coming decades to achieve CCM clearance and meet stockpile destruction deadlines in the poorest and most severely affected states.



CCM opening ceremony (Oslo, 2008)

Another challenge is the issue of States Parties providing assistance to states not party to the CCM in the context of military cooperation and operations (sometimes referred to as 'military interoperability'). There are signs that CCM states differ in their interpretation of the obligations enshrined in CCM Article 21, which may continue to create tensions between States Parties.¹⁴

Future developments

Well-defined international legal instruments and a mature set of policy standards have been developed in the context of mine action. The APMBC and CCM inspire the international community to move forward in new areas such as the use of explosive weapons and toxic remnants of war (TRW).

Use of explosive weapons in populated areas

The use of explosive weapons in populated areas harms civilians directly (both at the time of use and afterwards – because of failed or abandoned munitions) and indirectly, through damaged infrastructure (such as water supplies and sanitation).

Explosive weapons kill, injure and damage with blast and fragmentation around the point of detonation. These weapons include mortar bombs, artillery shells, aircraft bombs, rocket and missile warheads, submunitions and improvised explosive devices (IEDs). There is increasing evidence of elevated levels of civilian harm, suggesting that more comprehensive and effective responses are needed to ensure civilian protection and to require changes in the behaviour of users of explosive weapons.¹⁵

In 2011, several NGOs concerned about the use of explosive weapons in populated areas formed the International Network on Explosive Weapons (INEW).¹⁶ INEW calls for States and other actors to:

- Acknowledge that the use of explosive weapons in populated areas tends to cause severe harm to individuals and communities and furthers suffering by damaging vital infrastructure.
- Strive to avoid such harm and suffering in any situation, review and strengthen national policies and practices on use of explosive weapons and gather and make available relevant data.
- Work for full realisation of the rights of victims and survivors.
- Develop stronger international standards, including certain prohibitions and restrictions on the use of explosive weapons in populated areas.

As with anti-personnel mines, cluster munitions and other ERW, the UN, ICRC, and civil society through INEW are working to raise awareness to influence governments to change their rules of engagement and to think more about the consequences before using certain types of explosive weapons in order to prevent or at least minimise civilian harm.

Toxic remnants of war (TRW)

Certain military materials and practices can cause environmental damage with potential to affect civilian health and interfere with post-conflict recovery.

While the impact of explosive remnants of war is comparatively well documented and increasingly well managed, less attention has been given to toxic materials released during military activities. TRW are defined as: 'Any toxic or radiological substance resulting from military activities that forms a hazard to humans and ecosystems'.¹⁷

The TRW project is reviewing gaps in states' obligations to:

- Reduce the humanitarian and environmental harm of toxic materials of military origin.
- Examine parallel systems of protection based on environmental and human rights law and peacetime regulatory frameworks.¹⁸

INTERNATIONAL STANDARDS

Coherent global guidelines have been developed to document good practice in the area of international standards and to aid their translation into national standards. Foremost among these are the International Mine Action Standards (IMAS).¹⁹

IMAS

The International Organisation for Standardisation (ISO) and the IMAS define a standard as an agreement containing technical and other information to ensure that processes and services are fit for their purpose.

The IMAS provide guidance, establish principles and, in some cases, define international requirements and specifications. They are designed to improve safety, efficiency and quality in mine action, and to promote a common and consistent approach to the conduct of mine action operations. IMAS are intended to be

the main guide for the development of National Mine Action Standards (NMAS), standard operating procedures (SOPs) and training material in mine action.

The standards provide general information on existing regulations and treaties affecting mine action, particularly those referring to basic human rights, clearance requirements, hazard marking and general safety issues. They draw on the APMBC, CCM and CCW Protocols and assist national mine action authorities in the development of their own national standards.

Five guiding principles shape the IMAS:

1. IMAS are guidelines for national standards within national programmes.
2. Standards should protect those most at risk.
3. Emphasis is on developing national capacity to develop, maintain and apply appropriate standards for mine action.
4. Standards should be consistent with other international norms and standards.
5. Standards should be compliant with international conventions and treaties.

The IMAS were begun during the 1990s through a consultative process with representatives of the broader mine action community including UN agencies, donors, national mine action authorities (NMAA), ISO, militaries, commercial companies and individual experts. These groups continue to come together in the context of the IMAS Review Board, chaired by the UN Mine Action Service (UNMAS) and with secretariat functions provided by the GICHD.

The Review Board:

- guides the development of draft IMAS;
- debates and discusses issues and is responsible for approving draft IMAS; and
- produces technical notes, which provide principles, advice and information relevant to specific IMAS or technical subjects.²⁰

This process is overseen by the IMAS Steering Group. Resulting standards are ultimately endorsed by the UN Inter-Agency Coordination Group – Mine Action (IACG-MA).

IMAS are not legally binding obligations on governments in the way that treaties, such as the APMBC, CCM or CCW Protocols, are for their States Parties. Mine action

takes place in a range of different contexts, all of which have a bearing on how standards are best implemented (eg, during and immediately after armed conflict, during humanitarian emergencies, or even long after conflict in routine civil protection and property development activities).

Treaties lay out legal obligations of States Parties, while IMAS are living documents that evolve and are amended as appropriate. Nevertheless, the IMAS are the main source for the development of national standards, which are legally binding in many countries.

It usually takes time for a NMAA to develop national standards so IMAS are often used in the meantime. In addition, the UN incorporates IMAS into all of its mine action contracts and grants and it encourages militaries to conduct clearance in accordance with IMAS when they are engaged in humanitarian demining. As a result the IMAS have become fundamental to the mine action sector, helping to ensure that work is completed safely and efficiently.

The IMAS framework provides a comprehensive set of standards arranged into fourteen thematic series. They are written to be consistent with other international standards, and to comply with international regulations, conventions and treaties. In addition to the various weapons-related treaties, conventions and protocols, these include International Labour Organization standards for safety in the workplace and ISO guidelines and standards on risk management and the application of quality systems.

FIGURE 4

IMAS FRAMEWORK (AS AT FEBRUARY 2014)

GUIDE FOR THE APPLICATION OF IMAS

01.10 Guide for the application of IMAS

ESTABLISHMENT OF MINE ACTION PROGRAMMES

02.10 Guide for the establishment of a mine action programme

EQUIPMENT TESTING & EVALUATION

03.10 Guide to procurement of mine action equipment

03.20 Procurement process

03.30 Guide to the research of mine action technology

03.40 Test and evaluation of mine action equipment

GLOSSARY OF TERMS AND DEFINITIONS

04.10 Glossary of mine action terms, definitions and abbreviations

INFORMATION MANAGEMENT

05.10 Information management

MANAGEMENT OF TRAINING

06.10 Management of training

MANAGEMENT, ACCREDITATION AND MONITORING

07.10 Guide for the management of demining operations

07.11 Land release

07.20 Guide for the development and management of mine action contracts

07.30 Accreditation of demining organization

07.40 Monitoring of demining organizations

07.42 Monitoring of stockpile destruction

SURVEY

08.10 Non-technical survey

08.20 Technical survey

08.30 Post-clearance documentation

08.40 Marking of hazards

MINE AND ERW CLEARANCE

09.10 Clearance requirements

09.11 Battle area clearance

09.12 EOD clearance of ammunition

09.20 Guidelines for post clearance sampling

09.30 Explosive ordnance disposal – EOD

09.40 Guide for the use of mine detecting dogs

09.41 Operational procedures for MDDs

09.42 Operational testing of MDDs and handlers

09.43 Remote explosive scent tracing – REST

09.44 Guide to occupational health and general dog care

09.50 Mechanical demining

MINE ACTION SAFETY AND OCCUPATIONAL HEALTH – S&OH

10.10 S&OH general principles

10.20 Demining worksite safety

10.30 Personal protective equipment – PPE

10.40 Medical support to demining operations

10.50 Storage, transportation and handling of explosives

10.60 Reporting & investigation of demining incidents

10.70 Safety & occupational health – protection of the environment

MINE/ERW STOCKPILE DESTRUCTION

- 11.10 Guide for stockpile destruction
- 11.20 Open burning and open detonation (OBOD) operations
- 11.30 National planning guidelines for stockpile destruction

MINE AND ERW RISK EDUCATION

- 12.10 Mine/ERW risk education

EVALUATION OF MINE ACTION PROGRAMMES

- 14.10 Guide for the evaluation of mine action intervention

Other international standards

Since the initial development of the IMAS, international standards have emerged in areas adjoining to and overlapping with mine action. These standards may apply to mine action operators, depending on the specific contexts in which they work and the kinds of activities they undertake.

International Ammunition Technical Guidelines (IATG)²¹

In 2008, the need for proper management of surplus ammunition stockpiles became clear. This included:

- Categorisation and accounting systems (essential for ensuring safe handling and storage and for identifying surpluses).
- Physical security systems and surveillance and testing procedures to assess the stability and reliability of ammunition.

The International Ammunition Technical Guidelines (IATG) were prepared by a technical review panel consisting of experts from UN member states, with the support of international organisations and NGOs. The guidelines were completed in late 2011.

The UN reviews the IATG regularly to reflect developing ammunition stockpile management norms and practices, and to incorporate amendments. The IATG deal mainly at the logistic level and cover technical requirements for safe, effective and efficient storage, processing, transport and disposal of ammunition.

International Small Arms Control Standards (ISACS)

Small arms and light weapons (SALW) contribute to armed violence in conflict, post-conflict and other fragile settings. Uncontrolled proliferation, illicit trade and misuse of small arms and light weapons are common.

In July 2008, the UN's inter-agency Coordinating Action on Small Arms (CASA) launched an initiative to develop ISACS along the lines of the IMAS.²² The ISACS were launched in August 2012 to provide clear, practical and comprehensive guidance to practitioners and policy-makers on fundamental aspects of small arms and light weapons control. The ISACS resemble the IMAS in that they have a framework divided into a series of thematic modules including stockpile management, marking, record keeping and destruction of weapons.²³

NATIONAL LEGISLATION AND NATIONAL MINE ACTION STANDARDS (NMAS)

In order to coordinate mine action/ERW activities, a mine-affected state normally establishes a national mine action authority (NMAA) and a mine action centre (MAC). The NMAA coordinates the national mine action programme and promulgates relevant policies, national mine action standards (NMAS) and regulations (and in some cases standard operating procedures).

The MAC coordinates mine action activities on the ground. It carries out the policies of the NMAA and coordinates the day-to-day work of organisations conducting mine action operations.²⁴

In order for the NMAA and the MAC to be credible and to have legal authority to fulfil their responsibilities, legal instruments are normally used to establish them as formal government entities with official responsibilities.

Mine-affected states use different kinds of legal instruments to create a NMAA and/or a MAC and to regulate mine action activities. These include laws passed by parliament, decrees, orders or similar legal instruments issued by the President or Prime Minister. Experience and studies show that it is advisable for states to adopt national legislation to coordinate and regulate mine action.²⁵

National legislation

National legislation typically identifies the roles and responsibilities of the NMAA and MAC. It also indicates which government ministry, department or member

of the executive will oversee the NMAA's various activities, as well as identifying the ministries and/or officials who are to be members of the NMAA – normally officials from the Ministries of Agriculture, Defence, Education, Foreign Affairs, Health, Infrastructure etc.²⁶

Mine action legislation should be designed to address the country's specific mine/ERW problem. It identifies the components of mine action that will take place within the country, such as:

- survey, mapping and marking of mined/ERW-contaminated areas;
- clearance;
- mine/ERW risk education;
- responsibility for quality management;
- stockpile destruction (for states that are a party to the APMBC); and
- victim assistance.²⁷

Legislation is used to authorise the MAC to draft national standards, administrative directives and regulations for approval by the NMAA, and to ensure that once approved, they are applicable to all mine/ERW activities in the country.

In order to ensure that mine/ERW operations are carried out safely and in accordance with national priorities, mine action legislation generally gives clear authority to the MAC to accredit all mine action operators in the country and to monitor their activities on an ongoing basis. It is also through legislation that the MAC is required to use IMAS as a basis for developing NMAS.²⁸ For states that are party to the CCW, APMBC or CCM, mine action legislation is often used as a means to implement the requirements of these treaties.

Further detail on the development of national legislation within the mine action programme life cycle can be found in Chapter 2.

National Mine Action Standards (NMAS)

NMAS are developed to customise IMAS to fit the environment and context of a particular country. They are intended to:

- improve safety and efficiency;
- provide common agreed levels of performance;
- improve coordination;

- ensure national capacity building;
- ensure confidence in mine action; and
- assist states in meeting their treaty obligations.

While drafting the NMAS it is important that the NMAA and the MAC fully understand the mine/ERW problem in the country, engage all stakeholders in the process and respect the principles represented by IMAS.

The NMAS should include norms and policies already in place and any requirements of the NMAA and demining operators in the country.²⁹ They address functional components of mine action (MRE, Survey, Clearance, Stockpiles, Victim Assistance) as well as mine action activities (accreditation, surveying, marking, reporting, clearing, BAC, EOD, handover, monitoring, inspection of mine dogs, machines, medical support etc.)

In most cases, the NMAA delegates responsibility to the MAC to draft the NMAS, while retaining responsibility for their formal approval.

NMAS and liability

NMAS provide an important opportunity to address questions of liability.

In the case of public land, prior to survey and clearance, the national government normally bears responsibility for the hazardous area and any accidents or incidents that occur. During survey and clearance the responsibility usually falls on the organisation carrying out the mine action operations.

It is important that the NMAA and MAC develop policies that detail liability aspects, including the shift in liability from the demining operator to the government or local community when specific criteria have been fulfilled. This necessitates clear standards and procedures for the handover process, and careful documentation throughout demining operations.

Standards should also be in place for the safekeeping of documentation to support future investigations, in the event of any accident or incident, or should any other evidence of unacceptable residual risk be discovered.³⁰

Legal status of NMAS

An important aspect of NMAS is their legal status. Although many states have developed their own NMAS based on IMAS, the legality and overall mandate of

these national standards is sometimes called into question owing to the manner in which they were promulgated and the clarity of the underlying legislation.

In most cases NMAS are recognised and used by elements of the mine action programme, but in a few cases NMAS are used only by the MAC and are neither known of, nor implemented by, other organisations (even including other government departments with responsibility for some aspects of mine action).

National programmes that include a wide variety of organisations and activities, especially those where there is a lot of directly contracted commercial activity in support of civil engineering, minerals and resources industries, are particularly susceptible to such uncertainty. Standards are developed to help sustain confidence in the quality of work. Different actors, apparently working to different standards, make it harder to maintain confidence across all activities. Legislation plays an important part in establishing the credibility, applicability and enforceability of NMAS.

RELEVANCE OF INTERNATIONAL LAW AND STANDARDS TO THE PILLARS OF MINE ACTION

Laws and standards affect the work that is undertaken within each of the pillars of mine action. In particular:

- Land release (including survey and clearance)
- Stockpile destruction
- Victim assistance
- Mine risk education
- Information management in support of the different pillars

Land release (survey and clearance)

Land release 'describes the process of applying all reasonable effort to identify, define, and remove all presence and suspicion of mines/ERW through non-technical survey, technical survey and/or clearance. The criteria for 'all reasonable effort' shall be defined by the NMAA'.³¹

The legal requirements affecting mines, UXO, cluster munitions and ERW are found in the CCW's Protocols II, II amended, and V, the APMB and the CCM.

CCW Amended Protocol II

The first legal requirement to clear, remove and destroy mines, booby-traps and other similar devices is found in Amended Protocol II to the CCW signed in May 1996. Article 10 requires states to clear, remove and destroy all mines, booby-traps, and other devices at the end of hostilities in areas under their control. When these devices were laid by other parties, these parties shall provide information on their use so as to protect civilians from the effects of minefields, mined areas, booby traps and other devices. (See Article 9, CCW amended Protocol II).

CCW Protocol V

Protocol V, Article 3(1) requires States Parties³² to clear ERW from the territories it controls once active hostilities have ended. In areas it does not control a State Party must provide technical, material or financial assistance to facilitate the removal of ERW for which it is responsible.

This obligation applies to ERW that have existed since the entry into force of this Protocol. Assistance may be provided directly to the party in control of the affected territory or through a third party such as the UN, international agencies or non-governmental organisations.

The principal concern of Protocol V is the systematic and controlled clearance of ERW from former combat areas. This is termed battle area clearance (BAC)³³ – it normally involves either surface (visual) clearance or sub-surface clearance.

During clearance, States Parties and parties to an armed conflict are required to take international standards, including the IMAS,³⁴ into account.

APMBC

Under the APMBC, each State Party is obliged to clear all anti-personnel mines in mined areas under its jurisdiction or control as soon as possible, but not later than 10 years after it becomes Party to the APMBC.³⁵ A mined area is defined as any area that is dangerous because of the presence or suspected presence of mines.

Each State Party is also obliged to ‘make every effort to identify all areas under its jurisdiction or control in which anti-personnel mines are known or suspected to be emplaced’ and perimeter-mark, monitor and protect civilians from them. A clearance extension period of up to 10 years is allowed subject to approval by other states parties.

Although there has been considerable progress in land release since the treaty came into effect, the extent of the problem and the lack of knowledge of all known minefields may not have been sufficiently clear when the treaty was negotiated. One of the biggest challenges, in trying to meet treaty requirements on clearing contaminated areas, is the overestimation by certain states of their actual mine problem. The Ninth Meeting of the States Parties to the APMBC held in 2008 specifically stated that ‘for many States Parties reporting mined areas under their jurisdiction or control, imprecise identification and significant overestimation of the size of mined areas had led to inappropriate allocations of time and resources.’³⁶

The result of this has been that States Parties have cleared areas that did not contain anti-personnel mines or other ERW and that did not require clearance. Three main actions can be undertaken to help mitigate this problem – land can be released through:

- Non-technical means
- Technical survey
- Physical clearance.

These methods can cancel or reclassify an area previously recorded as a mined area when there is sufficient confidence that the area does not present a risk from mines or other ERW.

CCM

States Parties are required to clear within 10 years all cluster munition remnants in their territory, ie cluster munitions and explosive submunitions abandoned or left after a strike.³⁷

Highlighting a certain responsibility for the users of these weapons, Article 4(4) ‘strongly encourage(s)’ a State Party that has used cluster munitions in another State Party’s territory to provide assistance with clearance, even if they were used before the Convention entered into force.

Because assistance comes in a variety of forms, including ‘technical, financial, material or human resources’, any user state should be able to provide some assistance. A user state that chooses to assist with clearance must provide information on the types, numbers, and locations of cluster munitions used. Such information can greatly facilitate and speed up clearance.³⁸

In Article 4(3) of the CCM, there is specific reference to States Parties using international standards including IMAS to carry out clearance of explosive cluster munitions.

There are several IMAS which deal with the land release process (IMAS 07.11), non-technical survey (IMAS 08.10), technical survey (IMAS 08.20) and clearance (IMAS 09.10). There is also a technical note which deals with the clearance of cluster munitions.

Liability issues

An important issue associated with land release efforts is the residual risk that exists following survey and clearance operations. It is always possible that one or more mines or ERW may remain after the handover of a released area. These mines or ERW may be missed during clearance or buried more deeply than the employed clearance methods were able to detect. Another possibility is that the area may have been incorrectly released by non-technical or technical survey when it was still contaminated. This last possibility underlines the importance of the NMAA having adequate national standards, including for land release. The issue then arises as to who bears the legal responsibility for any damage and/or injury caused.³⁹

Liability in mine action has become increasingly important because of the formalisation of land release methods and procedures. In certain cases the question of liability in mine action has delayed states in addressing mined areas, and from meeting their international legal obligations. The IMAS cannot stipulate universally applicable conditions for liability for the consequences of explosive hazards discovered in areas released. These conditions have to be adapted to fit the conditions of each country, and be aligned with its existing legal rules, standards and laws.⁴⁰

Land rights

Land rights in conflict and post-conflict contexts are an increasing area of concern in land release. Conflict often causes significant changes to a country's land tenure regime and administration, threatening land rights even after the conflict has ended.

Often, women, internally displaced people (IDPs), returning refugees, migrants and farm labourers are especially vulnerable. The reasons for this include:

- unclear land titling procedures;
- deliberately or accidentally destroyed land records;
- inadequate state capacity to respond to a mass return of IDPs and refugees;
- a lack of, or ineffective, programmes to inform people about land rights;

- an increased demand for arable land;
- the complex, time-consuming and expensive nature of the private registration of land tenure; and
- gender inequalities in land rights.

Secure land rights are a critical issue when it comes to humanitarian response, sustainable peace-building and longer-term economic recovery, particularly in countries where a significant proportion of the population relies on agriculture as its main source of livelihood.

The situation can be even more complex in mine-affected countries, as mine/ERW contamination may cause land to be inaccessible for decades.

Some of the steps they can take to address land rights issues include:

- technical assessment of land issues;
- training of field staff; and
- a review of the national standards and SOPs.

To limit land tensions related to mine action operations mine action organisations can coordinate with humanitarian and development organisations that deal with conflict-affected populations, and national and international organisations dealing with land issues.

Stockpile destruction and ammunition safety management

The legal obligations of states to destroy their stockpiles of anti-personnel mines and cluster munitions are outlined in the APMBC and the CCM. The CCW Protocol V addresses munitions management in its technical annex and the IMAS and the IATG deal with various aspects of stockpile destruction, safe storage and the transportation of explosives.

CCW Protocol V

Protocol V does not require the destruction of stockpiles; although it does provide recommendations on how best to manage ERW stockpiles.⁴¹

States are encouraged to apply best practice with respect to storage, transport, field storage and handling of explosive ordnance in order to ensure its long-term reliability. Advice is also given on the proper training of personnel involved in the

handling, transporting and use of explosive ordnance and in the future production of these materials.⁴²

APMBC

The APMBC⁴³ requires states to destroy all stockpiles of anti-personnel mines that they own or which are in their possession or under their jurisdiction or control 'as soon as possible but not later than four years' after the state adheres to the APMBC. This deadline is not extendable.

Under Article 3, States Parties may retain and transfer 'the minimum number absolutely necessary' of anti-personnel mines for the specific purposes of 'the development of and training in mine detection, mine clearance or mine destruction techniques.' This is intended to promote the APMBC's humanitarian objectives, and does not represent a loophole, provided the provisions of Article 3 are applied in good faith.

States Parties are required to report on the conversion or decommissioning of their anti-personnel mine production facilities.

CCM

The CCM also requires stockpile destruction as soon as possible but not later than eight years after entry into force for the state party.

In spite of the difficulty of destroying cluster munitions, there has been substantial progress as of January 2014, with the destruction of 68 per cent of cluster munitions and 60 per cent of explosive submunitions declared as stockpiled by States Parties.⁴⁴ Similar to the APMBC, States Parties can retain a limited of cluster munitions for purposes of training in and development of detection, clearance, destruction techniques and counter-measures. (Article 3).

IMAS

Series 11 of the IMAS covers stockpile destruction. IMAS 11.10 to 11.30, include a guide for stockpile destruction, open burning and open detonation operations and national planning guidelines for stockpile destruction. IMAS 7.42 deals with the monitoring of stockpile destruction and IMAS 10.50 with the storage, transportation and handling of explosives.

IATG

The IATG also address ammunition safety and disposal:

- IATG 4.10 on Explosive Facilities (storage) (field and temporary conditions);
- IATG 5.10 through 5.60 on Explosives Facilities (storage) (infrastructure and equipment);
- IATG 6.10 through 6.70 on Explosive Facilities (storage) (operations);
- IATG 7.10 on Safety and Risk Reduction;
- IATG 8.10 on Transport of Ammunition; and
- IATG 10.10 on Ammunition Demilitarization and Destruction.

Risk education

Mine risk education (MRE) refers to educational activities that aim to reduce the risk of injury from mines and unexploded ordnance by raising awareness and promoting behavioural change through public-information campaigns, education, training and liaison with communities.

Both the APMBC and the CCM oblige all States Parties to contribute to efforts to minimise the suffering of civilians. According to Article 6 of the APMBC on International Cooperation and Assistance, each State Party must support mine awareness programmes, which reduce the risk to civilians by teaching them about the dangers of landmines. The CCM, Article 4 provides that states shall 'conduct risk reduction education to ensure awareness among civilians living in or around cluster munitions contaminated areas of the risks posed by such remnants.' CCW Amended Protocol II (Art. 9) and Protocol V (Art 5) also require precautionary measures to be taken.

IMAS have a standard for mine/ERW risk education.⁴⁵ In addition, UNICEF has developed international guidelines for landmine and unexploded ordnance awareness education, focusing on issues which are central to mine/UXO and ERW awareness. The guidelines cover four main areas:

- Feasibility studies
- Needs assessments
- Programme planning
- Monitoring and evaluation.

The guidelines emphasise how MRE should be treated as an integral part of overall mine action planning and implementation, not as a stand-alone activity.⁴⁶

Victim assistance

There are four legal documents that provide states with legal obligations to provide assistance to persons with disabilities.

APMBC

The APMBC (Art. 6) – ‘States in a position to do so shall provide assistance for the care and rehabilitation, and social and economic reintegration, of mine victims and for mine awareness programmes.’

CCW Protocol V

The CCW Protocol V (Article 8) – ‘Parties in a position to do so shall provide assistance for the care and rehabilitation and social and economic reintegration of victims of explosive remnants of war.’

Protocol V also has a plan of action on victim assistance which closely follows the CCM. It is not legally binding in itself but is an important reference as it outlines specific action on victim assistance.

CCM

The CCM has a separate Article (Art. 5) addressing victim assistance which stipulates that States must provide ‘age- and gender-sensitive assistance, including medical care, rehabilitation and psychological support, as well as provide for their social and economic inclusion.’ States are obliged to assess the needs of cluster munition victims and develop, implement and enforce any necessary national laws and policies.

Convention on the Rights of Persons with Disabilities (CRPD)

The CRPD provides an important basis for the pursuit of the victim assistance aims of the APMBC, CCM and CCW, with the parties to each of these treaties having recognised the importance of a rights-based approach to ‘victim assistance.’ The purpose of the Convention is clearly stated in Article 1, ‘to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity.’⁴⁷

The CRPD does not identify new rights, but provides guidance on how to ensure that persons with disabilities can exercise their existing rights without discrimination. This includes the rights of survivors of mines and ERW. In Article 4 of the Convention, states are obliged to implement legislation that guarantees the rights enumerated in the Convention and to abolish all legislation and regulations that discriminate against persons with disabilities.

The Convention also provides for states to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and promote respect for their inherent dignity. States are required to ensure that persons with disabilities have full and fair access to:

- education at all levels;
- healthcare and rehabilitation;
- vocational training;
- public facilities;
- employment opportunities and entrepreneurship; and
- a range of other social and economic rights.

The Convention also provides in Article 11 that 'States Parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters.'

REPORTING AND INFORMATION MANAGEMENT

Information management is an integral part of all activities in mine action, cluster munitions and ERW.

Efficient and accurate information management ensures that national authorities, mine action managers and other stakeholders have access to optimal information when making decisions.

Without accurate information for land release, stockpile destruction, victim assistance and mine risk education, it is difficult to carry out the activities required under the various treaties and conventions, and states are unable to accurately report on the progress being made.

CCW Amended Protocol II and Protocol V

CCW Amended Protocol II under Article 13(4) says that States Parties are required to submit annual reports covering:

- mine clearance and rehabilitation programmes;
- steps taken to meet the technical requirements of the Protocol;
- legislation related to the Protocol; and
- measures taken on international technical information exchange or on international cooperation on mine clearance.

In the CCW Protocol V, there are specific obligations on the recording, retaining and transmission of information. Article 4 requires States Parties and parties to an armed conflict 'to the maximum extent possible and as far as practicable, record and retain information on the use of explosive ordnance or abandonment of explosive ordnance.'

These obligations are supplemented by a non-legally-binding technical annex. It establishes that a state should record the following information as accurately as possible for explosive ordnance that may have become a UXO:

- the location of areas targeted using explosive ordnance;
- the approximate number of explosive ordnance used in the areas targeted;
- the type and nature of explosive ordnance used in areas targeted; and
- the general location of known and probable UXO.

In addition, when a state has been obliged to abandon explosive ordnance in the course of operations, it should endeavour to leave AXO in a safe and secure manner and record:

- the location of the AXO; and
- the approximate number and types of AXO at each specific site.

The implementation of Article 4 and the reporting on it has been disappointing by some States. To help clarify what is required, the ICRC has released a report of an expert meeting held in 2012 on Article 4 implementation.⁴⁸

APMBC and CCM

Both the APMBC and CCM include reporting requirements under Article 7 – Transparency Measures.

The information required includes:

- the amounts and types of mines and cluster munitions in their stockpiles; and
- the location of mined areas along with the types of mines.

In addition, States Parties are required to report on:

- status of programmes for the destruction of stockpiles;
- types of mines and cluster munitions destroyed from stockpiles;
- measures taken to notify the population about the hazards of mines and cluster munitions; and
- any other issues, on a voluntary basis, such as funding and gender considerations.

The CCM also requires that States Parties report on the national implementation of the Convention's obligations. These reports are to be updated and submitted to the Secretary General annually. In addition, the CCM includes a data collection requirement with regard to victim assistance. Under the CCM States Parties are required to make every effort to collect reliable relevant data with respect to cluster munition victims.

IMAS

The IMAS on Information Management (IMAS 5.10) emphasises the need to integrate all aspects of mine action so that all initiatives are integrated, interactive and mutually supportive. It is also important for MACs to collect information on:

- mine action;
- cluster munitions and ERW;
- mine/UXO and cluster munition awareness education; and
- victim assistance.

IMAS 07.11 Land Release establishes minimum data collection requirements during survey and clearance operations. It states that, in addition to recording the boundaries of suspected hazardous areas (SHAs) and confirmed hazardous areas (CHAs), organisations should record:

- what was found, where and when; and
- what was done, where and when.

The standard also states that when hazard items are discovered mine action organisations should record:

- type of munition (as specifically as possible);
- location of the item (in absolute terms and in relation to other associated items);
- depth at which it was discovered; and
- condition of the item.

Information management challenges

There are several major challenges to information management which affect objective and accurate reporting required under the CCW, APMBC and CCM:

1. The APMBC requires reporting on the number of mines and minefields and area cleared. It is difficult to find good baseline data on contamination and progress made in clearance.
2. There are cases of double counting when different clearance techniques are used. For instance, the same area can be covered by a manual demining contractor and by mine detection dogs. If both operators report the same number of square metres of clearance, there is a good chance that confusing information will be entered into the database.
3. Other questions about what data to collect, and how to report it, are associated with the CCM which requires States Parties to 'collect reliable relevant data with respect to cluster munition victims'. The CCM includes 'family members' in its definition of victims, raising questions about who to count. In many countries there are extended families beyond the traditional nuclear family, leading to uncertainty and a lack of standardisation in the way victims are counted.

Compliance with information management and reporting requirements of the applicable treaties requires careful consideration of what data is required, how it should be defined and how it should be collected and reported. Mine action relies upon information management in every aspect of its work. Managing the quality and consistency of data and information is difficult, but important.

CONCLUSION

Mine action takes place within a context of well-defined international legal instruments and a mature set of policy standards. It is interlinked with other fields of activity oriented toward improving human security.

It is worth noting that certain actors in the mine action field view 'mine action' as too restrictive a term. The ICRC, for example, now characterises mine and explosive ordnance work as dealing with 'weapons contamination' as part of its wider mandate to protect civilians from the effects of armed conflict.⁴⁹

The APMBC and CCM provide legal models showing how the international community can move forward in new areas such as the uncontrolled proliferation and misuse of small arms and light weapons, the use of explosive weapons and toxic remnants of war.

While treaties lay out legal obligations, international standards continue evolving to disseminate best practice on how to satisfy these obligations efficiently and effectively.

The international community has learned from mine action the importance of systematically recording and collating evidence of human harm resulting from different types of weapons. Analysing the data lays the foundation for new policies by states and other actors.

The legal framework around humanitarian disarmament has changed significantly over the past 30 years. There has been a move from pure disarmament, for purposes of protecting the security of states to a humanitarian approach of banning individual weapons and requiring remedial measures to prevent and mitigate suffering caused to civilians by these weapons.

International evidence has accumulated on explosive hazards and other forms of armed violence over this period, and new understandings – reflected in both international legal rules and new standards – have emerged.

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PART II — MINE ACTION IN PRACTICE

MANAGEMENT OF MINE ACTION PROGRAMMES

KEY MESSAGES

- Quality management (QM) in mine action is a means to ensure and enhance the efficiency of organisations.
- Results-based management (RBM) emphasises the importance of methods tailored to objectives pursued in the non-profit sector.
- Information management (IM) provides managers with the evidence needed to make informed decisions, in addition to enabling quality and results-based management systems.
- Mainstreaming gender and diversity considerations in management, ensuring a thorough analysis is conducted to inform the strategy, planning and implementation of a mine action programme brings significant benefits.

SUMMARY

In business, management is often referred to as the factor that enables thousands of people with different skills and knowledge to achieve a common goal. Good management makes people's strengths effective and compensates for their weaknesses. It fosters continual capacity development and innovation at the individual, work unit, organisational and community levels. Senior managers should have their eyes set on long-term goals and the strategy to get there.

Quality management systems (QMS) include tools and methods to focus an organisation on the quality of its deliverables, and the extent to which its 'customers' are satisfied. The client and beneficiary are not always the same in the mine action sector and, as a result, the concept of customer can be complex. Results-based management (RBM) emphasises the importance of methods tailored to the type of objectives pursued in the non-profit sector, and ensures that an organisation contributes to the achievement of desired results (outcomes and impacts), not just the delivery of outputs.

Information management (IM) provides managers with the evidence they need to make informed decisions:

- It enables quality and results-based management systems.
- It informs management about progress, describes performance targets, details how much has been done and how much is left to do, shows

whether outcomes are being achieved and helps create a greater likelihood of positive impact.

- It highlights success as well as areas of concern in terms of productivity, effectiveness and efficiency.

Information management drives continual improvement processes, through better understanding of the characteristics of mine action problems and the performance of people, resources and systems as they respond to those problems.

QM, RBM and IM all require resources, effort and commitment, but they provide the structure, principles and processes that allow organisations to define and achieve their aims, and to do so efficiently. They encourage transparency and accountability, while inhibiting inefficiency and corruption.

Mine action can affect the different genders and diversity within populations in different ways. Gender and diversity considerations need to be mainstreamed in management, with thorough analysis to inform strategies, plans and the implementation of mine action programmes; doing so helps ensure that the right priorities are identified and that the gender and diversity profile of the programme's staff is optimal for effective delivery.

STRATEGIC MANAGEMENT

Institutional architecture and capacity development

What is institutional architecture?

Institutional architecture refers to how a national mine action programme:

- is structured (ie how the different mine action actors relate to one another); and
- relates to other 'arenas', which typically include:
 - ▶ Government arena
 - ▶ International arena
 - ▶ Local communities arena
 - ▶ Market arena.

In both cases the behaviour of mine action actors and actors in other arenas is shaped by institutions (laws, standards, regulations, norms) that establish 'the rules

of the game’ and hence the incentives (rewards and penalties, plus enforcement mechanisms) facing each actor.

Figure 5 depicts some of the key features considered when analysing options for the architecture of a national mine action programme. Some are reasonably straightforward, others more complex. Careful thought is needed in terms of how best to establish linkages between mine action and other arenas.

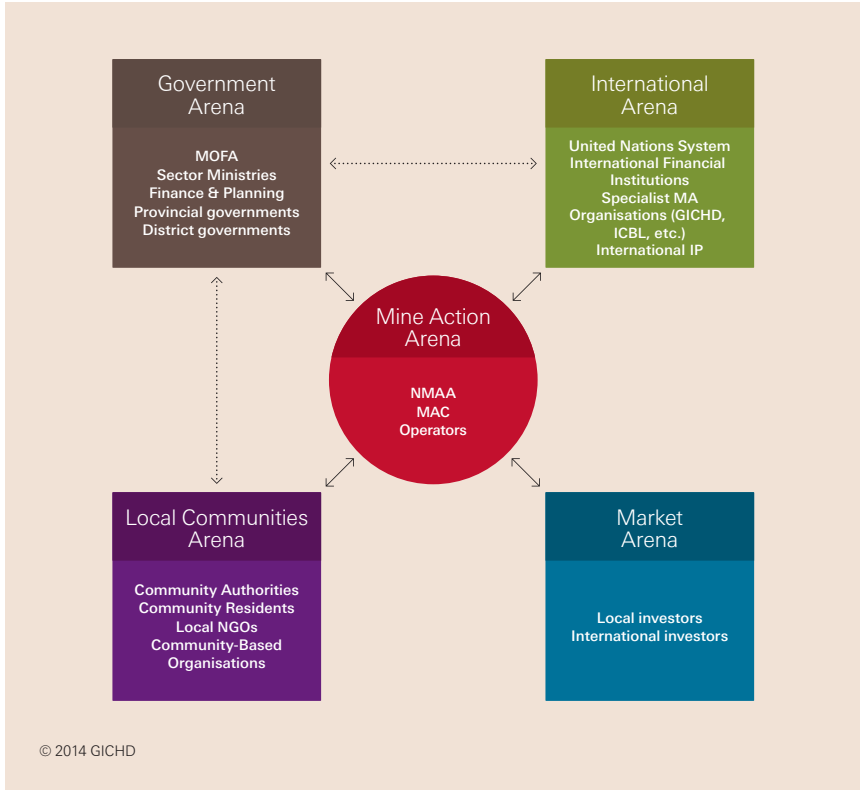
Mine action programmes are typically first established as a country emerges from conflict. This is a dynamic time during which there are rapid changes in the political, economic, socio-cultural, and demographic dimensions and, often, the size and focus of international engagement.

Understanding the drivers of change during this period is critical. Three are of particular importance for mine action:

- Progress in the peace process itself is critical for all activities, including mine action.
- Linkages between formal government structures and local communities. Conflict often severs the links between the government and communities in parts of the country and it takes time to re-establish them once peace emerges. Until linkages are restored the government lacks information, capacity and, in some cases, trust with many conflict-affected communities. These are required to understand local needs, establish priorities, and deliver public services, including for mine action. Mine action actors working in conflict-affected areas (typically, local or international NGOs, or the UN) have an important role in community-level needs assessments, prioritisation and service delivery. This NGO/UN niche diminishes over time as the normal apparatus of government is re-established in affected communities.
- The overall relationship between the government and the international community. As peace emerges and during the immediate post-conflict period, capacity and financial constraints mean the government must focus on a few issues of overarching importance, leaving the international community to play a major role in addressing other matters, which typically include mine action. Normally this is a temporary situation and ‘ownership’ is reasserted by the government as post-conflict emergencies are resolved and the government’s capacities grow.

FIGURE 5

THE ARCHITECTURE OF MINE ACTION: ACTORS, ARENAS AND LINKAGES



Support for capacity development

One of the key concerns regarding mine action is the development of local capacities. International actors do not develop local capacities: local people and organisations develop local capacities, and international actors support their efforts. Understanding the dynamic environment, and drivers of change that shape the environment, is important to ensure that the mine action architecture meets the special requirements of the immediate post-conflict period, but also adapts as the context evolves.

Such understanding is also critical in planning support for capacity development. International actors often play a leading role in determining the technical and operations management skills that are required, and in providing the training, designing the procedures, and helping to get a programme up and running.

Capacities also have to emerge to coordinate the national programme and to establish effective working relationships with other arenas. For this the mine action programme must adapt to the broader institutional arrangements in the country including:

- the legal framework given by the constitution and other legislation;
- the division of responsibilities across ministries and levels of government;
- national planning and budgeting systems;
- the role of security institutions (military; police; civil protection); and
- civil society.

International mine action personnel rarely have much expertise in these areas. National actors are more likely to understand these issues. Progress in developing 'higher level' capacities depends on the leadership of local managers and experts. Accordingly, international advisors try to avoid writing capacity development plans for high-level capacities. Instead, they seek to encourage national mine action officials to formulate the country's own capacity development plan for mine action and to indicate their priorities for international support.

Priority-setting¹

Priorities are set to ensure scarce resources are assigned to the most urgent and important matters. Priorities should be set to deliver the most value possible, given the resources available.² It is widely accepted that the value of a mine action programme stems from how well it promotes the following four objectives:³

1. Saving lives and limbs
2. Economic growth
3. Poverty reduction
4. Compliance with international treaties and norms.

Effective promotion of all four objectives requires good information on the location and nature of mine/ERW. The first three also require socio-economic information: the existing demographic and economic patterns, national and local development plans, seasonal migration routes of pastoralists, and other country-specific aspects. The location of contamination determines which areas will eventually need to be cleared, but socio-economic data determines which contaminated areas need to be cleared first (and often to what depth).

Many mine action operators have significant experience in setting sound priorities for the resources directly available to them. Similarly, the United Nations Mine Action Service (UNMAS) has extensive experience in prioritisation to support peace-keeping or stabilisation programmes. From a national perspective a mine action programme will never deliver value-for-money if each agency sets its own priorities in isolation. This is so, no matter how good the prioritisation mechanisms of the individual agencies are.

Coordination among individual agencies can help to some extent, but eventually a systematic approach is required – a national prioritisation system to support a national mine action programme. Such a programme-wide system is required to ensure appropriate allocation of available resources between different parts of the country, organisations, mine action ‘pillars’, and between current operations and investments in future capacities.

National authorities, in consultation with international donors, must also ensure that total resources are allocated appropriately in terms of the relative weight accorded to:

- saving lives and limbs;
- supporting development investments (eg infrastructure projects); and
- promoting poverty reduction (eg clearance of areas for returning refugees and other landless households).

National authorities, in dialogue with international donors, are well placed to ensure the bulk of resources flow to where they are most needed. However, an office in the capital city rarely has the kind of detailed information needed to determine which specific tasks should be implemented first.⁴ Decisions concerning task priorities are normally best decentralised to reflect local needs and preferences.

Aid effectiveness and mine action

The need for national authorities, in consultation with international donors, to ensure that total resources available to mine action are allocated appropriately on a programme-wide basis raises the issue of aid effectiveness. The Paris Declaration of 2005,⁵ agreed by international donors and recipient countries, laid down the following principles of aid effectiveness:

- Ownership: developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption.
- Alignment: donor countries align behind these objectives and use local systems.

- Harmonisation: donor countries coordinate, simplify procedures and share information to avoid duplication.
- Results: developing countries and donors shift focus to development results and results get measured.
- Mutual accountability.

Since then, high-level meetings have taken place in Accra (2008) and Busan (2011) to advance the aid effectiveness agenda. A number of governments in mine-affected countries have established their own national mechanisms to promote aid effectiveness. Mine action features explicitly in a number of cases.

At their core these efforts are designed to move from a situation in which each donor sets its own strategy for a country, or for mine action, to one where recipient countries (governments, but also parliaments and civil society) are more firmly in the driver's seat. For mine action, this implies that the government takes the lead formulating a single national strategy (replacing multiple donor strategies) and coordinating all parties to implement the agreed strategy. Coordination entails setting priorities and working with donors on a joint monitoring and evaluation system to track progress, with effort applied at both national and programme levels.

Transition and national ownership

The international community follows the principle that ultimate responsibility for landmines and ERW rests with the State under whose jurisdiction the contamination exists. This principle has long been recognised and accepted, including in international law. Affected states and the international community have worked to:

- promote national ownership;
- use approaches that can be sustained;
- establish competency and capacity; and
- adhere to international standards and good practices.

Transition approaches differ and results have been mixed. There is also limited guidance on how to plan and implement the transition of UN-managed mine action programmes to full national ownership.

WHAT IS NATIONAL OWNERSHIP?

In 2005, the Paris Declaration established 'country ownership' as a key principle of aid effectiveness whereby 'partner countries exercise effective leadership over their development policies and strategies and co-ordinate development actions'. The measure of ownership was to be (i) the government's 'operational development strategy' coupled by (ii) donor alignment on this strategy. Subsequent international meetings have broadened the concept of ownership to recognise the roles of other development actors such as civil society organisations, parliaments and local governments.

Ownership is not a simple concept or one that is easy to measure. It is best thought of as a set of rights and responsibilities, including:

- the right to determine whether an initiative is required and to request assistance for it;
- the responsibility to make a tangible commitment;
- the right to exercise some control over the resources available and the benefits created; and
- the responsibility, together with donors, to determine whether an initiative has been successful and should be continued.⁶

Accordingly, some countries may exhibit high ownership in one dimension, but little in another.

QUALITY MANAGEMENT AND RESULTS-BASED MANAGEMENT SYSTEMS

Introduction

The main goal of Quality Management (QM) in Mine Action Programmes has been to provide confidence to the beneficiaries, the operator and the NMAA that clearance and quality requirements have been met and that released land is indeed safe to use.⁷

'Quality' means 'the degree to which a set of inherent characteristics fulfils requirements'. A guiding principle of quality management is its focus on satisfaction of the 'customer'.

When modern mine action first started the focus of quality management was primarily on land that had been subject to full clearance. The direction today is more comprehensive. It encompasses all parts and activities of mine action organisations to ensure that key principles of quality management, such as evidence-based decision making, continual improvement and customer focus, are enshrined in every aspect of the work.

In the not-for-profit domain it is often necessary to differentiate between clients and beneficiaries, both of which can be seen as customers. An output from a mine action activity can be hard to tie to a broader outcome, such as a change in the number of casualties. The results-based management (RBM) approach provides a tool to help overcome this challenge.

Mine action standards

IMAS 07.30 outlines that QM in MA consists of accreditation, monitoring and post-clearance inspection, highlighting that not all elements will always be necessary to achieve confidence. Requirements are defined in other IMAS chapters: 09.10 for clearance of land, 09.11 for battle area clearance, 09.20 for post-clearance inspections and sampling, 07.11 for land release, 08.10 for non-technical survey and 08.20 for technical survey.

IMAS originally treated 'cleared' land as different from 'released' land, but the standard now is that all released land should have the same characteristics: there should be a very high level of confidence that no hazardous objects are left in the ground when it is handed-over, within depth and item specifications. The challenge is how to achieve a similar level of confidence regardless of whether land has been released through non-technical survey (NTS), technical survey (TS) or clearance.

Traditional approach to QM in mine action

Traditionally definitions and descriptions of quality management in mine action focused on one output (cleared land) and limited application to a small number of core tools (accreditation, monitoring and post-clearance inspection).

Interpretation of terminology was equally restricted. Quality Assurance (QA) was used interchangeably with the term 'monitoring' and was taken to refer to field

inspection visits. Quality Control (QC) was applied specifically to the inspection of cleared land prior to its handover.

Today, clearer definitions of terminology and broader application of principles forms the basis for development of QMS in many countries, organisations, and institutions.

QA has a formal definition of ‘the part of quality management that focuses on providing confidence that quality requirements will be fulfilled’, but is more easily understood as meaning ‘pro-actively building quality and success into an organisation’.

The term monitoring is often used to mean a continuing process of observation and opinion-forming about an organisation and its activities. In the development sector it has a more specific meaning. In that context it refers to a continuing function that uses the systematic collection of data on specified indicators to provide management and other stakeholders of an on-going project, programme or policy with indications of the extent of progress and achievement of intended outputs and results, and in the use of allocated funds.⁸ This is much more to do with the systematic tracking of key performance indicators (KPIs) than the narrow application of field inspection visits.

QC is formally defined as ‘the part of quality management focussing on confidence that requirements are fulfilled’, but is easier to understand as ‘checking that what you got is what you wanted’. It can certainly be applied to the inspection of land. It can also be used throughout an organisation’s processes wherever it is appropriate to check that products (such as trainees completing a training course, reports, or a purchased piece of equipment) meet requirements.

Improved understanding of terminology and application of principles is of direct benefit to all mine action activities. It also ensures consistency with the way such terms are applied and understood in other sectors and industries.

The main tools that have been used to gain confidence have also developed over time. In their traditional forms they consist of:

- Accreditation of operating organisations/implementing partners.
Accreditation is normally performed by a national or UN-run MAC and ensures that organisations have, and apply, Standard Operating Procedures (SOPs) that satisfy the requirements of NMAS.⁹
- Monitoring through inspection visits by, or on behalf of, the MAC (often referred to as QA).

- Post-clearance inspection of cleared land, combined with definitions of non-conformities, such as missed items (usually referred to as QC).

Limitations of the traditional QM approach

Traditional understanding and practice had a number of limitations:

1. It treated 'safe cleared land' as the only product of mine action, whereas there can be a number of other 'products' both in terms of released land (cancelled and reduced) and in terms of other processes integral to mine action (training, capacity development, mine risk education, stockpile destruction, priority-setting etc.).
2. The narrow focus on field monitoring inspections and post-clearance inspections, as constituting QA and QC, ignored the importance of broader application of quality assurance and control principles throughout an organisation's processes and procedures.
3. It did not address either 'quality-at-entry' (ie project/programme design) or quality at the outcome level (ie do the outputs flow to the target beneficiaries and are they used in the expected way).
4. It might not be integrated with the country's overall system for standards.

Comprehensive approach to QM

To address some of these limitations, trends in the industry are to:

1. Increase emphasis on the application of comprehensive QA methods within an organisation (pro-actively building in quality and success), over the historical reliance on post-clearance QC inspection.
2. Make more use of the ISO 9001 QM standard and of business excellence models.
3. Revise IMAS 09.20 (Post-clearance inspection) and IMAS 07.40 (Monitoring of demining organisations) to make them adhere to broader QM approaches, and to ensure that other IMAS, as they come up for review and revision, exhibit relevant QM principles.
4. Adopt the ISO 9001 QM principles:
 - ▶ Customer focus
 - ▶ Involvement of people

- ▶ Leadership
- ▶ System approach
- ▶ Process approach
- ▶ Continual improvement
- ▶ Factual approach to decision making
- ▶ Mutually beneficial supplier relationships.

The adoption of improved QMS and principles has important implications for improved effectiveness, efficiency and confidence within mine action. It can still be limited in that it addresses processes and activities up to the point where a product is delivered. Questions of whether an affected population benefits as a result of the products delivered by mine action operations fall outside the scope of normal industrial quality management systems. Management of the results of mine action work requires additional tools and techniques.

Results-based management

Results-Based Management (RBM) is a performance management system used when supplying public services, including through official development assistance (such as mine action). When selling to the private sector, people and organisations purchase goods and services to meet their own requirements, so the customer is both the 'client' and the 'beneficiary'. However, in providing public services, the client and beneficiary are often not the same.

In mine action programmes, it is not always clear who the customer is. Is it the client (ie who pays, often a donor), the citizens (ie intended beneficiaries), or the recipient government (ie those responsible for the resolution of the landmine problem)?

In providing public services, and particularly when these are financed by official development aid, defining customer satisfaction is often difficult. RBM provides an extra set of concepts and tools to implement QM when there are different categories of customers to satisfy.

QM typically focuses on the quality of the products or services delivered by an organisation (its outputs). RBM widens the scope of the management process to include the changes (the outcomes) that result from the delivery of outputs. It helps address questions on whether a programme or project is making a difference, rather than simply delivering services or products.

A key component of RBM is performance measurement – the process of objectively measuring how well an agency is meeting its stated goals or objectives. It typically involves:

- articulating and agreeing objectives;
- selecting indicators and setting targets;
- monitoring performance (collecting data on results); and
- analysing and reporting those results in relation to the targets.

Performance measurement is concerned specifically with the production or supply of performance data. Performance management is the broad management strategy aimed at achieving important changes in the way government agencies operate, with improving performance (achieving better results) as the central purpose. In an effective performance management system, achieving results and continual improvement based on performance measurement is central to the management process.¹⁰

There is a clear connection between QM and RBM. Performance measurement is concerned with measuring both implementation progress and results achieved. Implementation measurement addresses whether or not project inputs and activities are in compliance with designed budgets, workplans, and schedules. Results measurement considers whether planned results are actually achieved.

Results are usually measured at three levels – immediate outputs, intermediate outcomes and long-term impacts. This helps build agreement around objectives and commitment to the performance measurement process.¹¹

INFORMATION MANAGEMENT

Role of Information Management in mine action

Information management (IM) is fundamental to all mine action activities. Indeed it can be argued that land release is entirely an information management process, other than at the point of physical removal or destruction of devices when they are discovered. Everything else revolves around the collection of information, through non-technical and technical means, and its analysis to support decisions about which land is safe and which requires further investigation/action before it can be released.

From this perspective a mine detector is simply a tool for information collection about land to support a decision as to whether it contains hazard items or whether

it can be declared clear. Other aspects of mine action (survey, risk education, victim assistance) all rely upon the availability of reliable information that provides a picture of problems that need solving, and of progress towards their solution.

IM aims to supply decision makers throughout the mine action organisation with reliable, valid information on which to base their decisions. It is directly linked to the concept of evidence-based decision making – one of the fundamental principles of QM.

IM comprises the process of continually specifying information requirements, and the collection, analysis and timely provision of required information to all mine action stakeholders. That information contributes to understanding of and decision-making about:

- the nature, characteristics and distribution of contamination;
- performance of organisations and programmes in responding to contamination;
- implications of contamination for affected populations, organisations and governments;
- the needs, requirements and preferences of affected populations;
- prioritisation of action and allocation of resources; and
- progress towards compliance with treaty obligations.

Understanding what information is for and who needs it, how they will analyse it and what they intend to do with it, is essential to the success of any IM system. Different users may need the same data for different purposes. That in turn may influence the accuracy, frequency and format in which data is collected and reported. IM is not the sole responsibility of an IM department. Responsibility lies with those who will use it (and who must specify their requirements), those who collect it (and who must comply with requirements), and those who store it, secure it, analyse it and disseminate it.

Ineffective IM can force decision-making in ignorance based on intuition rather than evidence. Lack of information discourages decision-makers from taking efficient decisions, steering them towards unnecessarily cautious positions. Ignorance, a lack of comprehensive information and the inability to measure performance impedes transparency and opens the door to corruption and inefficiency.

It is common to see IM as an isolated task of the IT department – limited to archiving; it is a mistake to do so. IM is a basic function of any decision-maker

and manager at every level in an organisation, and especially so in mine action. All those who come into contact with information have a role to play.

Stakeholders are encouraged to use the data in databases and to look for errors. Providing feedback to database administrators allows them to correct those errors and, in the IM cycle, plan how to prevent future errors. If data is not used, or if feedback is not provided, errors go uncorrected and stakeholders become less interested in using the data or in contributing to data collection – a vicious circle.

All data is collected for a purpose. If it does not satisfy that purpose then the system fails. Combining operational, quality and information management as facets of a single activity is increasingly recognised within mine action programmes. The future will see an increasing emphasis on a common understanding of the interconnectedness of these functions and the need for mine action managers to understand, and apply, principles of all three (operational, quality and information management) throughout their work.

Information Management System for Mine Action (IMSMA)

The GICHD started developing IMSMA in the late 1990s with the goal of providing the mine action community with one comprehensive IM package. IMSMA is now in use in over 65 countries. It is arguably the most successful information management achievement, not only in mine action, but also in the wider humanitarian and sustainable development context.

IMSMA was always intended as a tool that is user friendly and flexible. It should support and encourage the capacity development of its users, providing them with an easy start, followed by the adoption of increasingly powerful decision-support tools. The GICHD provides certifications for Administrators of IMSMA at three levels of complexity. The majority of mine action programmes will not need administrators with more than a foundation certification, which requires two weeks of training. The administrators are then capable of setting up and customising the system, as well as training all the users across their organisation.

The system is installed and in use on about 2,000 computers, a figure that is still growing rapidly. The core IMSMA is part of an ecosystem of software solutions provided by the GICHD to cover the needs of the mine action community. This includes tools external to IMSMA such as:

- the online Mine Action INTelligence tool (MINT);
- the Collaborative ORDnance data repository (CORD); and
- add-ons to other software such as the mine action toolbars for Esri ArcGIS.

IMSMA allows for data exports, and live connections to the data, using a wide range of analytical tools including Excel. Giving users a regular export of IMSMA data into an analysis tool of their choosing minimizes their need to develop duplicate databases and helps maintain the quality of the IMSMA data.

Important system developments which support demining operations include GICHD's Tool for Management of Demining Operations, GIS Geo Portal, and Mine Action Intelligence Tool. The former two will serve to quickly identify and address the reasons for operational downtime. The latter is designed to conduct a sophisticated computer analysis to improve efficiency in a mine action programme.

There is nothing wrong with using tools other than IMSMA, indeed most programmes are likely to require other software tools to help address wider aspects of project management, but for IMSMA to work it needs to be used, questioned and analysed by stakeholders to prevent its data quality from deteriorating. Setting up parallel databases and spread sheets containing mine action information introduces risks of incoherent statistics and poor quality of information. It is not generally recommended. Combined with the functionality of MINT, IMSMA will provide most features offered by Microsoft Excel, but on a centralised platform that eases standardisation and dissemination of statistics.



IM workshop (Azerbaijan, 2013)

GENDER AND DIVERSITY

Introduction

If mine action programmes are to be inclusive, efficient, effective and benefit all affected groups they need to mainstream gender and diversity into planning, implementation, budget, monitoring and evaluation. QM in mine action revolves around the central principle of satisfying customer requirements. The ‘customers’ of mine action comprise different genders and diverse groups.

Quality of mine action cannot be assured unless the different needs of those different groups are understood and reflected within every aspect of the mine action programme. This is both in relation to those people who work within the programme, and for those who benefit from, or come into contact with, the programme.

Gender and Diversity Terminology

Diversity refers to differences in values, attitudes, cultural perspectives, beliefs, ethnic background, sexual orientation, ability or disability, skills, knowledge, age and life experiences. These differences need to be recognised, understood and valued if an organisation is to ensure that all groups of people are able to benefit equally from mine action and that it does not add to discrimination experienced by already marginalised groups.

Gender is defined as ‘culturally and socially constructed differences between males and females that determine their roles and responsibilities in society and vary from place to place and time to time’.¹² The concept was introduced in the 1950s to distinguish between biological sex and the social construct of attributes and opportunities associated with being male or female.¹³

IMAS 04.10 contains key terminology related to gender:

- Gender Analysis – the study of the differences in male and female roles as well as their different access to and control over resources. It is a tool for improving understanding of how differences between men and women influence their opportunities and problems and can identify challenges to participation in development.
- Gender Equality – the equal rights, responsibilities and opportunities of men and women. It implies that the interests, priorities and needs of both are taken into consideration equally.

- Gender Mainstreaming – the process of assessing different implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making the concerns and experiences of both women and men an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally and inequality is not perpetuated.
- Gender-sensitive – takes into consideration the different impact landmines have on women, girls, boys and men. The ultimate aim of gender-sensitive mine action is to conduct mine action in such a way that respects and is based on gender equality.

Whilst not addressed in IMAS, another important term is Gender Based Violence (GBV), which refers to ‘any harm that is perpetrated against a person’s will and is the result of gendered power inequities that exploit distinctions between males and females, among males, and among females; that has a negative impact on the physical or psychological health, development, and identity of the person. Although not exclusive to women and girls, GBV principally affects them across all cultures. Violence may be physical, sexual, psychological, economic, or sociocultural.’¹⁴

Even though fighting GBV is beyond the mandate of mine action, it is nevertheless important that organisations are able to identify cases of GBV and have a system in place on how to deal with it internally and externally.



Mixed team (NPA Zimbabwe)

Why Gender and Diversity in Mine Action?

Mine action does not happen in a vacuum. It takes place in a context where there are differences and inequalities between women and men in terms of assigned responsibilities, activities undertaken, access to and control over resources, as well as decision-making opportunities. Consequently, mine action programmes do not automatically benefit women and men from different backgrounds equally. They need to make efforts to ensure that they neither sustain nor exacerbate existing inequalities between different affected groups and individuals.

Gender and diversity influence:

- exposure to landmines and ERW;
- the risk of becoming a victim;
- ability to access medical and psychological services;
- long term reintegration;
- mine risk education and awareness (MRE); and
- the likelihood of getting employed in mine action.

As a result of their gender specific roles and responsibilities, women, girls, boys and men from different backgrounds are affected differently by landmines and ERW and need to be assisted in different ways. Gender-distinct mobility patterns often mean that different age and sex groups hold different information about contamination and may have different priorities for survey and clearance. In some countries division of labour can be identified according to other protracted features, such as ethnicity, age or disability.

The inclusion of all stakeholders in consultations and surveys leads to more complete information on the nature and extent of the problem and a more accurate understanding of all the different priorities and needs in the affected communities. This contributes to enhanced security and sustainable and inclusive development for affected women, girls, boys and men from all backgrounds.

In other areas of mine action, such as victim assistance and MRE, services need to be tailored to reach the specific target groups. For example, men might be harder to reach during daytime; or they might be reluctant to seek psychological help after being maimed by a mine/ERW. Women in some contexts might not be able to go to public meetings or to speak to male surveyors. Children might need more interactive and dynamic forms of MRE; or if they lose a limb in a mine/ERW accident, they will need to change their prosthesis more often than adults.

In some countries there may be differences in levels of access to activities for people from certain ethnic backgrounds. Stigmatisation and discrimination may create a barrier for others (based on disability or sexual orientation for instance) in terms of accessing services.



Community meeting (Lao)

Mainstreaming Gender and Diversity in mine action programmes

A gender and diversity analysis is essential to identify, and develop an understanding of, the differences between women, girls, boys and men in terms of risky behaviour:

- who is affected and how;
 - access to resources, opportunities, decision-making, services;
 - specific needs/priorities;
 - obstacles for participation;
 - impact of mine action activities; and
 - potential effects on gender equality.
- Gender and diversity are cross-cutting issues that can be mainstreamed at all levels of a mine action programme.

- Planning: mainstream gender and diversity in the national mine action strategy, national mine action standards (NMAS), work-plans and SOPs; collect, analyse and use quantitative and qualitative information disaggregated by sex, age and other relevant dimensions to inform the design of mine action programmes.
- Priority-setting: consult actively with both female and male representatives from all different affected groups; develop gender-sensitive indicators as part of the weighting-system to reflect the priorities of females and males from different backgrounds.
- Non-technical survey: use mixed sex teams from diverse backgrounds to facilitate the collection of information from women, girls, boys and men; in areas where direct contact with women and girls or marginalised groups is not possible, adapt the methodology accordingly.
- Technical survey and clearance: offer equal access to employment opportunities to qualified men and women from diverse backgrounds; offer appropriate facilities for male and female staff, including those with disabilities; have a code of conduct in place and clear mechanisms to deal with breaches of the code.
- Handover procedures: make sure that male and female beneficiaries are accurately informed about the land that is safe to use.
- Pre and post-clearance impact assessment: ensure that affected females and males are consulted and verify if they benefit equally.
- Community Liaison and Risk Education: use mixed teams from diverse backgrounds Design and deliver sessions in an age, gender and diversity-sensitive way
- Victim Assistance: train and hire male and female professionals to provide services; make sure that there are no barriers for any group/individual to access the services; offer assistance to direct and indirect victims.
- Information Management: make sure that forms are designed to collect data disaggregated by sex, age and other relevant dimensions; develop gender and diversity-sensitive indicators to monitor and evaluate outputs and outcomes.
- Quality Management: mainstream gender and diversity in the relevant NMAS, SOPs, quality assurance forms and accreditation processes.

Normative Framework and Key References

A number of guidelines, UN documents and resolutions, reports and action plans stress the importance of including gender and diversity perspectives and considerations in mine action programmes:

REFERENCE TO GENDER AND MINE ACTION	
Beijing platform (1995)	<p>'Women living in poverty, particularly rural women, also suffer because of the use of arms that are particularly injurious or have indiscriminate effects...'</p> <p>Actions to be taken by governments include: recognizing that women and children are particularly affected by the indiscriminate use of anti-personnel land-mines.</p>
United Nations Security Council Resolution (UNSCR) 1325 on Women, Peace and Security (2000) ¹⁵	<p>Emphasises '[...] the need for all parties to ensure that mine clearance and mine awareness programmes take into account the special needs of women and girls'. UNSCR 1325 represents a legal reference to stakeholders' obligations to ensure that mine action addresses the special needs of women and girls.</p>
UN Millennium Development Goal 3: 'Promote gender equality and empower women' ¹⁶	<p>Mine action organisations should contribute to ensure gender equality and to actively empower women in their activities.</p>
APMBC Cartagena Action Plan (2010-2014) ¹⁷	<p>Mentions gender explicitly in nine action points and other instances in relation to MRE, victim assistance and the importance to collect and analyse all data in an age and sex-disaggregated way.</p>

<p>Convention on Cluster Munitions (2008)¹⁸</p>	<p>Makes reference to gender on a number of occasions, in particular in relation to the importance of ensuring victim assistance (VA) is age and gender-sensitive.</p>
<p>CCM Vientiane Action Plan (2010-2015)¹⁹</p>	<p>Presents a number of concrete action points, explicitly mentioning the importance of gender, especially in relation to the importance of collecting and analysing all data in an age and sex-disaggregated way, to ensure gender-sensitive consultation and participation, and to ensure any risk reduction activities are designed and implemented, taking into consideration age and gender specific issues. All States Parties are responsible for the effective implementation of the action points of both the Cartagena Action Plan and the Vientiane Action Plan.</p>
<p>Convention on the Rights of People with Disabilities (2006)²⁰</p>	<p>This UN treaty identifies the rights of persons with disabilities as well as the obligations on States Parties to the Convention to promote, protect and ensure those rights. In this convention persons with disabilities are no longer viewed as passive receivers of charity in need of social protection, but are active members of society with rights.</p>
<p>UN Gender Guidelines (2010)²¹</p>	<p>These guidelines have been developed primarily to help UN mine action field-based personnel and headquarters' staff to mainstream gender considerations and to strive for gender balance in the planning, implementation and evaluation of UN mine action programmes.</p>
<p>Gender and Landmines: from Concept to Practice (2008)²²</p>	<p>This report by the Gender and Mine Action Programme (GMAP) studies the significance of gender in the impact and the effectiveness of mine action. It provides the reader with an overview, together with concrete examples from 5 different countries (Colombia, Lebanon, Mozambique, Sri Lanka, Sudan), on how gender can be mainstreamed in mine action.</p>

<p>Strategy of the United Nations on Mine Action (2013-2018)²³</p>	<p>Promotes gender mainstreaming and contains specific indicators on gender, for instance on the provision of age and gender victim assistance services and on the collection of sex and age-disaggregated data.</p>
<p>Gender and Mine Action Programme (GMAP)²⁴</p>	<p>GMAP runs an international programme to raise awareness of the importance of taking into consideration the different needs, priorities, capabilities and knowledge of women, girls, boys and men affected by landmines and ERW. The programme encourages and supports the mine action sector to mainstream gender in policies, programming and operations, complementing similar efforts by the UN and other actors. It is the main source of information on all aspects of gender and mine action and the only programme focusing exclusively on this issue.</p>

MINE ACTION AND THE ENVIRONMENT

By its very nature mine action involves interaction with the environment directly (through physical activities such as clearance or demolition) and indirectly (through the effect it has on land newly released to users).

Humanitarian actors are increasingly recognising that environmental impacts caused by disasters and conflicts as well as by relief operations threaten people and communities. Humanitarian actors therefore need to consider the possible negative impacts of their relief and recovery operations to ensure they do no harm²⁵ with regards to longer term vulnerability and livelihoods. Mine action organisations are no exception. Some aspects of mine action work have always been subject to environmental assessment – most obviously the effects of using mechanical flails and tillers on potentially vulnerable land. Others have not attracted so much attention, such as the impacts of explosive detonations on soil and air, or of temporary field camps on their immediate environment.

IMAS 10.70 Safety and Occupational Health – Protection of the Environment provides general guidance to mine action operators about the identification and assessment of potential environmental impacts associated with their work.²⁶

More recent developments have been associated with aspects of stockpile destruction and the application of other recognised international standards (such as ISO 14001) to mine action operations.

There has been some fear in the past within the mine action sector that the adoption of formal environmental management systems would prevent some important activities, such as the in-situ destruction of landmines and ERW. There is little evidence to suggest that such fears are justified, but there is clear enthusiasm on the part of many donors and governments for the application of normal environmental management principles within mine action. Considering the impact of operations on the environment can contribute to faster socio-economic recovery within mine/ERW-affected communities. For example, minimising soil contamination and degradation can enable communities to restart small-scale farming, contributing to more secure and sustainable livelihoods in the longer-term.¹¹

ENDNOTES

- 1 GICHD (November 2011) *Priority-setting in Mine Action*, Issue Briefs (Online). (Available from: www.gichd.org/publications/year/2011/priority-setting-in-mine-action-issue-briefs-en); GICHD (2009) *Priority-setting for ERW Clearance Programmes*, Discussion Paper 6, Meeting of Experts of the States Parties to CCW Protocol V (Online). Available from: [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/F8BC9C3275BDC263C125759F00604A8A/\\$file/DP+6+Clearance+Priorities.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/F8BC9C3275BDC263C125759F00604A8A/$file/DP+6+Clearance+Priorities.pdf) (accessed: 20 June 2013).
- 2 Another way of stating that mine action programmes should attempt to maximise value-for-money is that they should aim at maximising the ratio of benefits to costs.
- 3 The four objectives are valid for all mine action programmes through all stages of the mine action Programme Life Cycle (see Chapter 2, Figure 1). Mine action programmes may have additional objectives in specific countries at specific times: for example, mine action organisations may be asked to hire former combatants to support a disarmament, demobilisation and reintegration (DDR) programme.
- 4 In its *Issue Briefs* on priority-setting the GICHD refers to the resource allocation decisions as 'big-P Prioritisation' and decisions concerning task priorities as 'small-p prioritisation' to reinforce the fact that all these decisions should be viewed as part of an inter-connected system.
- 5 OECD, Paris Declaration (2005) and Accra Agenda for Action (2008) (Online). Available from: <http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm> (accessed: 20 June 2013).
- 6 Ostrom, E. et al (2001) Aid, Incentives, and Sustainability. *Sida Studies in Evaluation 02/01* (online). Available from: <http://www.sida.se/evaluation> (accessed: 20 June 2013).

- 7 Mine Action Standards. *International Mine Action Standards* (online). Available from: www.mineactionstandards.org (accessed: 20 June 2013).
- 8 Mine Action Standards. *IMAS 04.10 Glossary of mine action terms, definitions and abbreviation* (online). Available from: <http://www.mineactionstandards.org/> and OECD/DAC Glossary (online). Available from: <http://stats.oecd.org/glossary/index.htm> (Accessed 20 June 2013).
- 9 IMAS 07.30 provides details on accreditation, including organisational and operational accreditation, application, desk assessment and on-site assessment, modifications to the accreditation as well as suspension and termination
- 10 DAC (2001) *Results based management in the development co-operation agencies: A review of experience* (online). Available from: <http://www.oecd.org/dac/evaluation/dcdndep/31950681.pdf> (accessed: 20 June 2013).
- 11 Ibid.
- 12 Gender and Mine Action Programme (online). Available from: <http://www.gmap.ch/> (accessed: 15 July 2013).
- 13 Sexologist John Money introduced the terminological distinction between biological sex and gender as a role in 1955. Before his work, it was uncommon to use the word 'gender' to refer to anything but grammatical categories. Money's meaning of the word did not become widespread until the 1970s, when feminist theory embraced the distinction. Today, the distinction is strictly followed in some contexts, but in many contexts, even in some areas of social sciences, the meaning of gender has expanded to include 'sex' or even to replace the latter word.
- 14 Reproductive Health Response in Crises (RHRC) Consortium, *Gender-based Violence Initiative* (online). Available from: http://www.igwg.org/igwg_media/techupdate1/GBVpressrelease2page1.pdf (accessed: 15 July 2013).
- 15 United Nations Security Council (2000), Resolution (UNSCR) 1325 on Women, Peace and Security, (online). Available from: <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N00/720/18/PDF/N0072018.pdf?OpenElement> (accessed: 15 July 2013).
- 16 UN (2010) *The Millennium Development Goals Report* (online). Available from: <http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf#page=22> (accessed: 15 July 2013).
- 17 APMBC (2009) Cartagena Action Plan 2010-2014: Ending the Suffering Caused by Antipersonnel Mines, the Second Review Conference of the APMBC (online). Available from: <http://www.cartagenasummit.org/fileadmin/pdf/review-conference-2nd/2RC-ActionPlanFINAL-UNOFFICIAL-11Dec2009.pdf> (accessed: 15 July 2013).
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- 19 CCM. *Vientiane Action Plan 2010 – 2014*, adopted on 12 November 2010 (online). Available from: <http://www.clusterconvention.org/files/2011/01/VIENTIANE-ACTION-PLAN-Final2.pdf> (accessed: 15 July 2013).

- 20 United Nations, *Convention on the Rights of Persons with Disabilities*, adopted 13 December 2006, entry into force 3 May 2008, in accordance with Article 45(1) (online). Available from: <http://www.ohchr.org/EN/HRBodies/CRPD/Pages/ConventionRightsPersonsWithDisabilities.aspx> (accessed: 15 July 2013).
- 21 UN (March 2010) *Gender Guidelines for Mine Action Programmes* (online). Available from: http://www.gmap.ch/fileadmin/UN_gender_guidelines/UN_Gender_Guidelines_for_Mine_Action.pdf (accessed: 15 July 2013).
- 22 GMAP, Swiss Campaign to Ban Landmines (2008) *Gender and Landmines – from Concept to Practice* (online). Available from: http://www.gmap.ch/fileadmin/Gender_and_Landmines_from_Concept_to_Practice/SCBL_-_Gender___Landmines_2008_rev_Sep09.pdf (accessed: 15 July 2013).
- 23 UN, Strategy of the United Nations on Mine Action (2013-2018) (online). Available from: http://www.gmap.ch/fileadmin/National_and_Donor_Mine_Action_Strategies/UN_mine_action_strategy_2013-2018.pdf (accessed: 15 July 2013).
- 24 Gender and Mine Action Programme (online). Available from: <http://www.gmap.ch/> (accessed: 15 July 2013).
- 25 The Do No Harm framework is based on the belief that humanitarian actors should take steps to ensure that they do not make a situation worse through the assistance that they provide.
- 26 Specific mitigation measures are listed in: GICHD (2009) *A Handbook of Mechanical demining (pp. 127-137)* (online). Available from: <http://www.gichd.org/lima/reports-publications/detail/publications/a-handbook-of-mechanical-demining/> (accessed: 15 December 2013).
- 27 Delrue T & Sexton R (2009) Mainstreaming the environment into humanitarian action. *Humanitarian Aid on the Move*, Newsletter no. 4 (online). Available from: http://www.urd.org/IMG/pdf/Groupe_URD_HEM_4_Uk.pdf (accessed: 15 December 2013).



LAND RELEASE

KEY MESSAGES

- Land Release is a process that includes non-technical survey (NTS), technical survey (TS) and clearance activities; it is at the heart of addressing the real and perceived threat of landmines, cluster munitions and other explosive remnant of war (ERW).
- Efficient land release is achieved by promoting less expensive survey above more expensive clearance activities and avoiding default clearance of entire suspected hazardous areas (SHAs) or confirmed hazardous areas (CHAs), where feasible.
- Greatest advances in land release efficiency are made through improved NTS techniques using suitably qualified staff.
- Survey and clearance of areas contaminated with submunitions can be undertaken much faster than areas suspected of containing mines.
- Residual contamination from mines/ERW will remain a long term management issue in many countries that have suffered intensive conflict.
- Manual deminers provide the most confident clearance method but are slow and often the most expensive.
- Animal detection systems (ADS) can be used in areas where mines with low metal content are anticipated because they detect odours from explosives rather than rely on detecting the metal in mines.
- Mechanical systems can be highly cost-effective components in a demining programme.
- Demining is generally arranged through contracting and competitive grants whose terms and frame have considerable implications on operational efficiency.

INTRODUCTION

The removal and destruction of landmines and ERW is a relatively straightforward activity once their location has been identified. The main challenge in mine action operations lies in defining their precise locations, and, when the boundaries of contamination remain unclear, on deciding where to start and stop clearance.

The term 'overclearance' has been used by some to describe excessive operations in mine action, when land that does not require clearance is cleared (and funds wasted) during the process of removing the real and perceived threats posed by landmines or ERW.

Such operations result in a low yield of ordnance in relation to the area searched. In some cases large tracts of land have been cleared without finding any evidence of landmines or ERW. While sometimes clearing extensive areas without any clear identifiable threat remains a necessity (in response to emergency or developmental imperatives), there are many cases where significant improvements in targeting operational assets can be made.

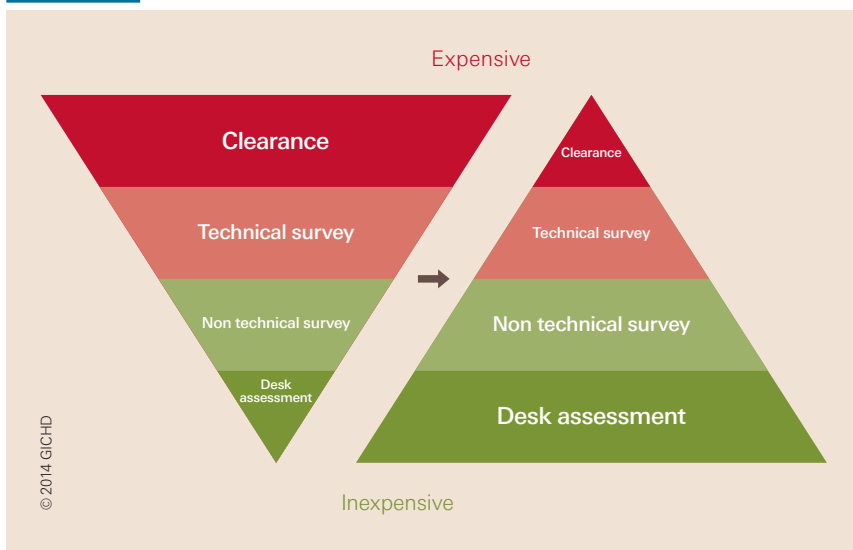
Land release is the process that brings together non-technical and technical activity, in conjunction with information management. This allows effective, efficient and reliable decision-making about which land requires attention, which does not, and how best to deploy precious, expensive technical assets.

By definition, the land release process encapsulates survey approaches as well as clearance activities. Land can be released through survey and through clearance. However, the impetus behind the land release agenda is to provide a clearer balance in favour of less expensive and quicker survey activities, as opposed to more expensive and slower clearance procedures.

Land release promotes a system of escalating survey activities, and only resorts to full clearance as a last option. Each effort in the land release process seeks to define more accurately where contamination is to be found (and where it isn't) so that clearance activity takes place only where it is needed.

FIGURE 6

EVOLUTION OF THE LAND RELEASE PYRAMID



Efficient land release is achieved by thorough information gathering techniques, with analysis of historical data, non-technical survey data, information from other operations at similar sites, good evidence-based planning for the deployment of technical survey and clearance assets, and appropriate adjustments to plans when operations are underway.

The extent to which survey activities, particularly technical approaches, can limit the need for extensive clearance depends to a large extent on the nature of the expected contamination and the availability of information about it.

Efficient land release typically depends on two related factors:

1. How easy or difficult it is to define the extent of contamination.
2. How good mine action agencies are at achieving that definition.

The first factor depends to a great extent on the nature of the contamination, whether it exhibits regular or irregular features and the availability of records. The second factor depends on the competence of its people, the processes and procedures it uses, and the extent to which it makes good use of information management systems.

NATURE OF CONTAMINATION

The extent, characteristics and distribution of mine and ERW contamination varies widely between countries, regions and individual sites. This depends on the history of the conflict, the types of weaponry used and a range of environmental influences.

Mine laying strategies

Landmines have been widely used to destroy, delay, disrupt and channel enemy forces. Mine laying strategies and the distribution of mines vary greatly, depending on the context of the conflict, the tactical aims of the warring parties, and the availability of mines. The way mines are distributed, and the extent to which they can be readily detected using electronic or other means, is directly relevant to the efficiency with which the land release process can be applied.

It should be easier to target technical activity and minimise land release costs if mine laying has been more regular and predictable. The more irregular, widely dispersed and unrecorded mine laying is affects how difficult it is to identify which land is safe and which is not, and the more time and cost are likely to be associated

with land release activities. It is important for implementing organisations to understand the context of mine laying and the history of conflict in the area in order to conduct efficient survey and clearance of minefields.

Most mines are laid by hand but there are also technical systems allowing mines to be laid mechanically and to be scattered by artillery or from the air by plane or helicopter. Conventional minefields laid by trained military forces are normally patterned, mapped and marked on the ground. Such minefields are typically laid to protect static installations such as military bases, borders, towns and strategic positions such as bridges, electricity pylons and dams.

In many cases minefield records, if originally available, are later lost or destroyed. Even when records are no longer available patterned minefields offer good opportunities for the efficient application of technical survey techniques and for confident decision-making about when technical work should stop.



Marked minefield (Israel and Jordan border)

A lack of records is more common in situations where mines have been laid in haste, when the mines may also have been laid in an irregular and hard-to-predict manner. In some cases mines may have been recovered by the unit that laid them, in others such recovery may have been prevented by the presence of opposition forces. During conflicts front lines often shift back and forth, resulting in successive, overlapping layers of mines, adding to the difficulties of definition and predication.

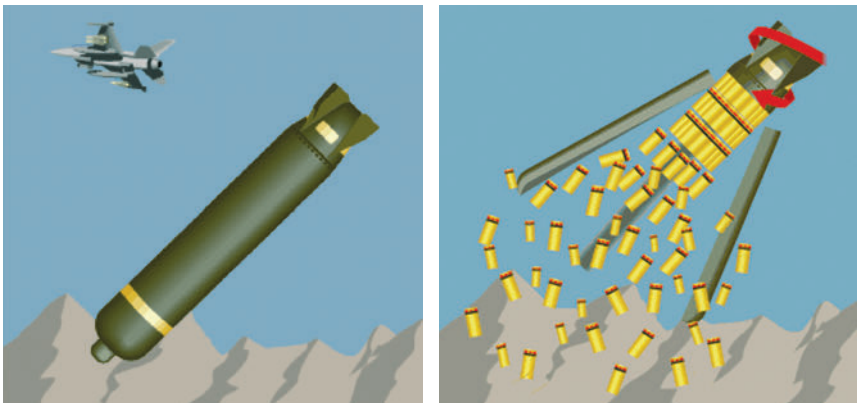
The situation becomes even harder to understand when minefields are laid in a deliberately sporadic fashion, to disrupt the activities of the opposition and the population at large. This tactic is used most commonly during guerrilla warfare when insurgent groups operate with limited access to mines.

As time passes even the most predictable minefields can become harder to understand. Human and animal accidents, and the burning of vegetation, may lead to the detonation of some mines leaving gaps in patterns, making it difficult to take confident decisions about when all mines have been cleared and it is appropriate to stop work.

Both erosion and flooding can lead to mines moving, becoming more deeply buried or being brought closer to the surface. Patterns can be disrupted by undocumented clearance activity that covers only parts of the mined area, or clearance activity that missed mines, and does not conform to national and international standards. Efficient land release decision-making is made harder by any factors that make it more difficult to define where mines are and where they are not. This tends to lead towards additional technical work.

Cluster Munitions Remnants

Cluster munitions are distinct from other munitions. When they are fired, launched or dropped, the explosive submunitions are dispersed, creating a strike pattern or 'footprint' on the ground. It is normal to find unexploded submunitions within the area of the footprint because of their high failure rate.¹



Cluster munition dispersing submunitions

By recognising the shape of a footprint, and identifying its centre and outer edges, it is often possible to determine where technical activity is necessary, and where it is not. Predictability always helps efficient land release decision-making, and where cluster munitions strikes are relatively recent there are likely to be opportunities to apply efficient processes. As time goes on, though, the situation may become less clear.

Environmental effects (flooding, erosion, landslides and the encroachment of vegetation) make it harder to see indicators of the presence of submunitions and to detect those that are present. Members of the local population may move items, creating apparent evidence of contamination in areas that weren't originally subject to attack.

In areas where mines are not present a different survey and clearance methodology can be adopted when addressing submunitions contamination. The significantly higher metal content in submunitions makes them easier to detect. While areas suspected of mine contamination cannot be entered, areas containing submunitions alone can be entered, investigated and cleared of vegetation before clearance allowing faster and more efficient operations.

Other Explosive Remnants of War

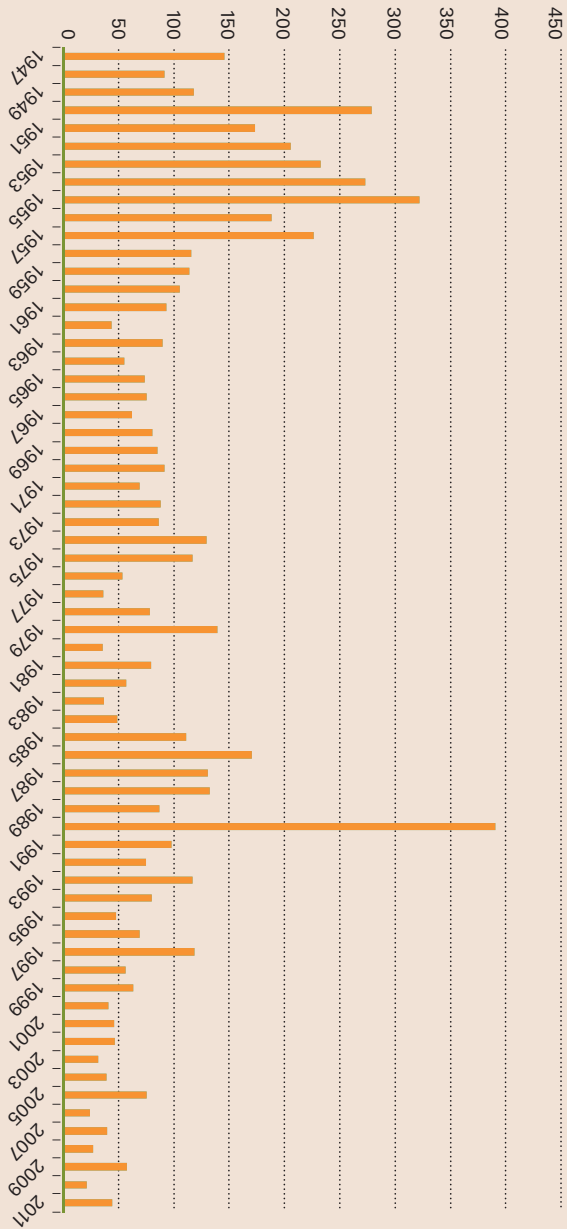
Landmines and cluster munitions, however, attract particular attention as a result of their ban under international conventions. Other types of ERW are often more prevalent in post-conflict settings – mortars, artillery shells and air-delivered bombs that failed to detonate as intended. These generally do not create a predictable pattern after being fired or delivered although they may be concentrated in certain areas.

Lao PDR and Vietnam are examples of nations affected predominantly by UXO with a broad range of ERW (including considerable submunition contamination), but without widespread mine contamination. Such UXO also have an impact on public safety and on socio-economic development often contributing to a complicated 3-dimensional spread of contamination.

These problems typically require management over many years and decades. Mines and submunitions contribute to surface and shallow surface contamination, but the greater kinetic energy of mortars, artillery shells and particularly high altitude bombs results in many deeply buried items, often several metres deep. In Vietnam and Lao PDR bombs are frequently found at depths between one and five meters with some heavy ordnance being recorded at depths of 10 to 20 meters.²

FIGURE 7

ANNUAL TONNAGE (KG) OF UXO DISPOSED OF IN BERLIN 1947-2011



Source: Record of finds and responses by EOD unit of west-Berlin (later Berlin) police 'PTU'

Similarly, during World War II, many parts of Western Europe suffered intense bombardment from the air and ground, leaving huge quantities of unexploded ordnance in cities, the countryside, rivers, lakes and seas.³ Much can be learnt that is relevant for other countries with more recent conflicts, such as those in South East Asia.

Combinations of contamination

A combination of regular minefields mixed with widespread low density and irregular mine distribution spread over a large geographic area can be found. Furthermore, additional ERW contamination including submunitions can be superimposed onto the mine hazardous areas. Where aerial bombardment has also contributed deep buried UXO the operational environment and nature of the contamination can be highly complex.

Combinations of contamination types require combinations of land release responses, and rely even more upon high standards of data collection, analysis and use. Technical survey in areas suspected of containing cluster bombs or general ERW can proceed much more quickly than when there is a risk of the presence of landmines.

Mines become the dominant risk factor, imposing slow but safe area investigation and clearance techniques if they are suspected. To avoid slowing down all other ERW-related activities, it is common to address the landmine hazard first, before applying speedier UXO search techniques to the ground afterwards.

LAND RELEASE PROCESS AND REPORTING

Land release describes the process of:

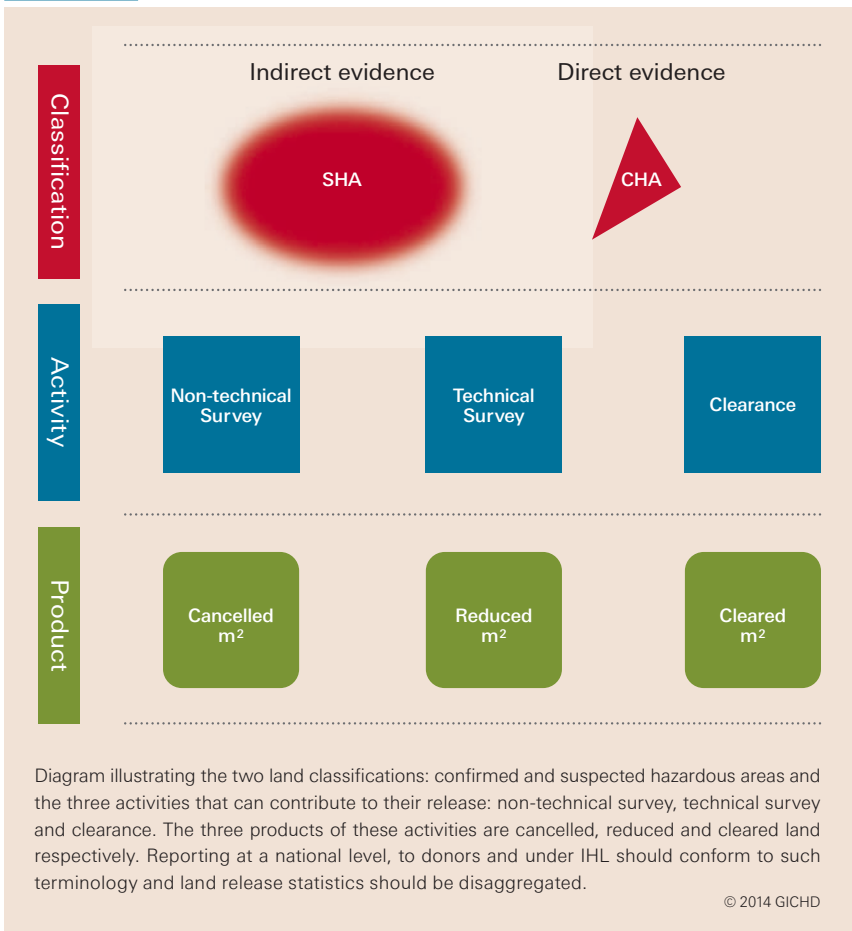
- applying all reasonable effort towards the identification of hazardous areas;
- cancellation of land through non-technical survey;
- reduction of land through technical survey; and
- clearance of land from actual mine/ERW contamination.

All reasonable effort

Generally, 'all reasonable effort' is considered to have been applied when:

- It can be shown with justifiable confidence that mines/ERW are either not present in an area or, if they were found to be present, have all been destroyed or removed from that area.
- The commitment of additional resources is considered to be unreasonable in relation to the results expected.⁴

FIGURE 8 ELEMENTS OF THE LAND RELEASE PROCESS



The application of all reasonable effort applies to all stages in the land release process. It does not only mean making physical efforts to investigate ground, but includes appropriate use of data collection, analysis and information management to support and justify decision-making.

Defining hazardous areas

Land release involves defining where mines and ERW are believed to be, and then applying additional effort (technical and non-technical) to improve that definition until there is confidence that hazards are either not present, or have all been cleared. At the end of the process all released land should satisfy the basic requirement that it contains no hazards (to depth and size definitions) and is safe to use.

The area may be classified as either a suspected hazardous area (SHA) or a confirmed hazardous area (CHA) respectively. This depends on whether evidence of hazards is 'indirect' (eg unused agricultural land, verbal reports from the local population or former combatants) or 'direct' (eg accidents, reliable mine/ERW records, observation of mines in place, warning signs, etc.).

If the NTS finds that there is insufficient evidence of contamination in some or all of an existing SHA, land is released and considered to be 'cancelled'. If TS finds insufficient evidence of contamination, land is released and considered to be 'reduced'.

When NTS takes place in a new area and finds no evidence of the presence of mines or other ERW the area is not recorded as 'cancelled'. Cancellation and reduction are only applied to areas that were previously categorised as suspected or confirmed hazardous areas (SHAs or CHAs).

IMAS 07.11 Land Release makes clear that, irrespective of the results of any survey or clearance operation, mine action operators should always record:

- what was done, where and when; and
- what was found, where and when.

Land release is a process of continual risk assessment, involving management of operations, people, information and quality. The ultimate goal is to free communities, districts and national territories from the effects of mine/ERW contamination.

SURVEY ACTIVITIES

The purpose of survey activities is to collect evidence to support efficient and reliable decision-making about where hazards are present and where they are not, to understand impacts upon populations and to support associated prioritisation and planning processes. All survey methods and techniques need to be appropriate to local circumstances and conditions, the nature of the contamination and the purposes for which data/information will be used. A combination of non-technical and technical means is generally used within the land release process.

NTS is usually the first step for both capturing new data on SHA & CHA and for releasing areas, or parts of areas, already held within databases (cancellation). NTS activities can be broadly grouped into two types:

1. Community-focused surveys
 - Impact Surveys, including the Landmine Impact Survey (LIS); and
2. Hazard-focused surveys
 - sometimes referred to as emergency surveys, General Surveys, Level 1 surveys but all grouped under the terminology of Non-technical Surveys according to IMAS.

TS, involving the deployment of technical assets into suspected areas, is used to gain direct information about the nature, extent and characteristics of contamination and the areas within which it is found.

Landmine Impact Surveys (LIS)

18 countries have conducted a national survey of the socio-economic impact of mines and ERW on communities using the LIS methodology. They followed a common set of protocols, a systematic approach to a national survey and standardised reporting and data entry into IMSMA.

The survey used three parameters – type of contamination (mines or UXO), land use, and number of victims – to generate an impact score for each surveyed community. This allowed communities to be ranked on the basis of their score and provided a framework to target resources during strategic planning and priority-setting processes.

Somewhat unfairly, the LIS methodology which focuses on measuring impact of mines/ERW on communities, rather than the specific location of mined areas,

has received some poor reaction for paying less attention to the accuracy of SHA boundaries. Misunderstandings led to some databases being populated with exaggerated sizes of hazardous areas.

A review by GICHD of LIS surveys in three countries demonstrated that the size of a SHA (in LIS terms an impact area, rather than a suspected hazardous area) created on the basis of LIS data can be reduced on average by approximately 90 per cent, if subjected to a further NTS.⁵ This statistic perhaps tells more about the extent of perceived impact around an area actually contaminated with mines, rather than necessarily indicating a poor quality of SHA definition during LIS. Lessons learned while addressing some of the misconceptions associated with the use of LIS data helped development of today's land release methodologies.

Non-technical Survey

Non-technical survey (NTS) is the starting point for identifying, accessing, collecting, reporting and using information to define where mines/ERW are to be found, as well as where they are not, and to identify SHAs and CHAs where further investigation and/or clearance need to take place.

NTS methodology makes use of desk assessments, analysis of historical records, interviews with various informants, assessment of what was found during survey and clearance operations at other sites, and physical visits to field locations, typically without using technical equipment and without entering hazardous areas.

NTS field teams attempt to map known and suspected hazardous areas as accurately as possible. Additional information such as land use, land ownership and impact of reported hazardous areas including any victim data may also be collected.

While NTS is usually the starting point for operations, it can continue in parallel with TS and/or clearance activities throughout the land release process. New informants or information may emerge at any point providing additional evidence to adjust boundaries and further limit the extent of technical survey or clearance activities.

In spite of the highly varied nature of mine/ERW contamination, and the challenges faced when attempting to record the perimeters of suspect areas, the greatest advances in land release efficiency are achieved through more focused and enhanced NTS approaches. Too often the starting points for clearance tasks have been inappropriate and based on inaccurate or weak information that has not been scrutinised or strengthened before technical survey and/or clearance starts.



NTS teams gathering information on hazardous areas (Angola)

Technical Survey

Technical survey (TS) techniques involve a physical intervention, using survey or clearance assets into a hazardous area to:

- Confirm the presence, or absence, of mines/ERW and identify the type of hazards present.
- Better define the boundaries of a SHA/CHA that require clearance.
- Collect information to support land release decision-making.

Technical surveys can be broadly characterised into two main types:

1. Targeted investigations: specific areas or points within a hazardous area are preferentially targeted. These may be 'high risk areas' where accidents have occurred or where the presence of mines or UXO is considered most likely.
2. Systematic investigations: breaching or cut lanes are spread uniformly across an area, often 'boxed' with intervening areas left unprocessed. In some cases systematic investigations may expand to cover 100 percent of a suspected area.

Technical survey assets do not have to meet all the criteria of a clearance asset. What they must do is:

- Keep TS personnel safe.
- Provide a high probability (near certainty) that the presence of expected hazard items will be indicated by the equipment and methodology in use.

In practice it can be difficult to isolate TS as a separate activity within a linear/ sequential process (ie, after NTS and before clearance). Activities are more frequently interlinked and may be carried out simultaneously. TS can occur:

- Before clearance to help delineate the SHA/CHA.
- During/in conjunction with clearance to inform decisions about the efficient conduct of a clearance task.
- After clearance, when investigation of a buffer zone around a cleared area may raise confidence that no mines/ERW have been left behind.



A Systematic Technical Survey (TS) using a flail. An 8 km long suspected hazardous area (SHA) was reported. Mechanical exploratory lanes were cleared every 25 m. No follow-up by another asset was required if no visual or audible detonations occurred during the mechanical operation. The ground between the lanes was left untouched. Nothing was found during operations and the entire area was released without any further action.

CLEARANCE

The most familiar and visible part of mine action is the clearance of mines and ERW. It is also the most expensive of the five pillars. Clearance refers to an intrusive information-gathering and threat removal process that fully defines a hazardous area whilst removing explosive hazards.

The aim of clearance is to create safe land by locating and then destroying all mines and other explosive hazards within a defined area to a specified depth. This requires management systems and clearance procedures that are appropriate and effective, safe and efficient. Besides conducting the clearance, demining organisations are expected to update nearby communities on the extent of any remaining threat and the progress of the operation. Community liaison is an important part of the demining process and an effective means of building confidence amongst key stakeholders, especially users of released land.

The term demining toolkit is frequently used in mine action, typically composed of three elements: manual clearance, animal detection systems and mechanical systems. The use of machines and animals has become common in demining operations, although the majority of landmines and ERW continue to be cleared manually.

The decision to select a particular combination of techniques in a country setting is influenced by the extent and type of threat which the munitions pose, as well as other important factors such as financing and security, infrastructure and terrain, and national laws.

Manual clearance

Manual mine clearance methods have not changed significantly since World War II. Techniques continue to rely on a deminer working along a marked lane using a metal detector, prodder, rake or an excavation kit until a suspicious object is encountered. Although these methods often mean relatively slow progress, they are widespread and popular in mine action programmes, in recognition of the very high levels of confidence associated with the land they release. Some organisations involved in manual clearance choose not to use alternative methods and assets.

Manual deminers are used to create and clear lanes and grid systems, performing targeted and systematic investigations as well as area clearance. Deminers are usually placed at a defined safety distance from each other, continuing clearance drills until discovering a suspicious object. The deminer then carefully excavates

around the object and, if it appears to be a mine or an item of explosive ordnance, it is either blown up in situ or defused and moved for destruction at the end of day.

It is uncomplicated to train teams of manual deminers and surveyors. In countries where labour costs are low, manual deminers can be cost-effective. They are well suited to clearing minefields for which laying records and maps are available, and where mines have been laid in rows or other identifiable patterns. Thick vegetation, rubble, debris, and urban areas are all factors that slow down manual clearance, prompting consideration of alternative means. Conversely, manual deminers can assist mechanical ground processing and clearance systems greatly in places with obstacles restricting machine access, and are used for community liaison tasks.

Metal detectors

In the 1960s the increasing use of plastics in mine manufacture decreased metal content sharply. In most modern anti-personnel mines, metal components are reduced to a few grams and include, at most, the firing pin, spring, and primer casing. To address the minimal metal content, modern detectors are sensitive and, compared to the cumbersome tools of the 1940s, they have become lighter, more durable, reliable and easy to use.

Unfortunately, as sensitivity has increased so has the susceptibility of metal detectors to signal false alarms from small metal fragments, and metallic compounds found in certain soils, such as laterite. Despite these limitations, metal detectors remain the most common means of detection and continue to undergo improvements in design.

Most modern detectors are built on the magnetic induction principle, able to compensate and filter out signals from unwanted metallic compounds in the soil. Some of them also feature ground penetrating radar (GPR). Despite enhancements in software and sensor technology, they are required to be durable and simple to use, easy to repair and recharge, with little need for maintenance.



NPA female deminer (Jordan)

Prodding

The prodder remains a common tool used to confirm the exact location of a buried mine. It is cheap, simple and effective and is used to feel the mine gently from its side as it lies in the ground. This is achieved by piercing the ground surface at a maximum angle of 30 degrees, to avoid disturbing the top of the mine, which is, in most types, the location of the triggering mechanism.

Prodders are made of many materials, from expensive plastics to steel, aluminium and iron. The disadvantages of prodding include the increased cost of more sophisticated designs, the close proximity of the deminer's head and hands to the investigated mine and the effort required to use it in rocky terrain. Prodders are not used when there is a possibility of encountering mines with an anti-disturbance fuse, or that have rotated in their position.

Rakes

Rakes are used for excavation and mine detection in sandy beaches, deserts and other soft terrains without significant root systems, thick undergrowth or stones. The operating principle is either to approach the mine from the side as with a prodder, or to scoop and pull the mine from beneath: the former aims to pinpoint the exact location of the mine for follow-on excavation; the latter to lift the mine to the surface in one pull.

The rake offers the advantages of an increased distance between the deminer and the mine, faster clearance progress, low cost and the potential for local manufacture. In terrains littered with metal fragments, the raking method is considered significantly more efficient than the use of metal detectors. In sandy or otherwise suitable soft terrains, some demining operators have replaced metal detectors entirely with rakes.

The downside of the raking method is the rough approach to a mine, and the potential for unwanted explosions. The deminer is well protected and stands at rake shaft distance away from the seat of an explosion, so s/he is likely to avoid serious injury, but the blast, sound and catapulting earth fragments may still cause some injury. When applied with care, however, the rake remains a useful tool for mine clearance.

Excavation

Full excavation can deliver the highest level of confidence of all the manual clearance methods, but it is the most time-consuming. Removing all soil to

a specified depth is easy to supervise on site, but the technique is generally limited to:

- Areas on steep hill slopes or other places where it is difficult to move safely.
- Certain urban areas.
- Hard soil combined with high metal contamination.
- Areas with very low metal content mines that are unsuitable for mechanical or animal detection systems.

Progress and efficiency

Daily progress varies greatly depending on the method and technology used as well as the operating terrain, type of soil and current weather. Daily clearance output for one deminer has been observed between five and 150 m². Manual clearance is most effective and efficient when integrated with other detection and clearance methods.



Full excavation method by a steep hill (Afghanistan)

While manual clearance procedures for individual deminers are regularly reviewed and assessed to identify opportunities to improve speed, safety and confidence, most observed inefficiency is found at team and operations management level. Lack of resource-sensitive planning and supervision, wrong priority-settings, too little attention to important study of time and motion, as well as weather, terrain and logistics variables, can all be significant.

The factor most influencing efficiency is that of confidence in taking land release decisions, either as a result of lack of relevant information, or because management structures do not authorise and equip managers at the right level of take decisions. As manual demining is labour intense and expensive, more emphasis is now placed on maximising outreach and accuracy of surveys preceding clearance, increasingly enabling decisions to deploy deminers only in areas that are actually contaminated.

Animal detection systems

The animal most commonly used for mine detection is the dog, owing to its proven ability to work with and be trained by humans. Rats are also used. They are trained to detect odours from specific vapours associated with the explosive or other components of mines and munitions. This is referred to as an animal detector system (ADS).

Dogs have been used for tracking for centuries and in demining since World War II. The animal indicates the presence of a mine to its handler, who then passes responsibility for investigation of the indication to a deminer.

Animals, like any other survey and demining asset, have some limitations, but experience shows that with good training, practice and planning, many of the weather and environmental limitations can be overcome.

Explosive detection animals can detect mines with a low metal content, deep buried AT mines and mines buried in areas with a high metal contamination



Free running mine detection dog and handler wearing mine boots (Sarajevo)

where the use of metal detectors would be difficult. ADS can be faster and more cost-effective than manual demining detector methods. Daily progress has been recorded from 300 m² to 2,000 m², depending on environmental conditions, the type of task and the operational concept in use. ADS are at their best when indicating individual mines or minefield boundaries, rather than trying to work within dense concentrations of mines.

Other recommended tasks include rapid sampling of areas already cleared by manual and mechanical demining, areas inaccessible for machines and approach routes to hazardous areas, as well as clearance of cluster munitions strikes and battle areas. Animals can be used with advantage in technical survey roles.

Animals, in particular dogs, have also been used in Remote Explosive Scent Tracing (REST). REST involves collecting dust or air samples in filters from mine-suspected areas and roads. The filters are then taken to a controlled environment where they are presented to specially trained animals for scent analysis. Samples are presented to several animals in succession. If none of them indicates the presence of mine or ERW scent, the area from which the sample was taken is no longer classified as hazardous.

REST has mostly been used for road verification, and has been applied for more than a decade in countries such as Afghanistan, Angola, Mozambique and Sudan. The majority of road verification work done around the world has used REST.

The main challenge with REST lies in the difficulty of quality assessing samples, ensuring that no cross-contamination has affected the filters during transport from the sampling area to the analysis area.

ADS cannot replace deminers, but is a powerful tool when used in combination with manual and mechanical systems, and can significantly increase productivity of a demining programme.

Mechanical systems

A variety of mechanical systems to detonate or destroy mines are manufactured to detonate or destroy mines. They can be highly cost-effective components in a demining programme, accelerating the progress of other assets, through removing vegetation and tripwires and breaking up soil. They can perform important functions in technical survey and, in some cases, can be used as a primary clearance method. The most common types of machines used in demining operations are equipped with flails, tillers and rollers.

Successful use of larger mechanical systems may impose demands on existing road and bridge infrastructure. All systems require the ready availability of spare parts and the tools and skills necessary to use them. The need for trailers and trucks to transport heavy mechanical equipment and the logistical support burden required to keep systems operating and serviced, often influences decisions about whether to use machines.

Anti-tank mines and large explosive munitions may damage or even destroy all but the heaviest and best protected demining machines. During preliminary surveys it is essential to identify the types of ordnance likely to be encountered to inform decisions about the use of machines.

Interest increased in the possibility of employing machines for humanitarian purposes as the modern mine action sector developed. Tremendous improvements have been made from the first mechanical system in 1942. Early machines were often cumbersome, unreliable and under-powered, and the achieved clearance results fell well below expectations (and the demands of modern humanitarian programmes).

Today a multitude of demining machines is available, equipped with reliable power trains, remote controls, navigation and positioning systems, and comprehensive service and support packages. Some machines are mass produced while others have been made in limited numbers or are one-off prototypes. In some cases agricultural and construction vehicles have been converted and armoured for mine clearance, offering savings for investment in terms of the availability and low cost for spare parts.

Mechanical systems conduct technical surveys, determine the boundaries of suspect hazardous areas, and play an important role in the overall land release process. Confidence in their use for clearance, under the right circumstances, has increased, as it has in their role as a risk reduction tool complementing the two mainstays of clearance methodology: manual deminers and mine detection dogs.

In 2004, the GICHD published a study of mechanical mine clearance equipment, examining factors influencing their efficiency, productivity and cost-effectiveness. The study concluded that in suitable conditions (threat type, soil and topography) machines can be used as a primary clearance system.

A decade later, confidence has increased and some mine action programmes use machines as a primary clearance system. The land release IMAS (07.11) emphasises the need to collect performance data during ongoing practical operations using machines, to build up a body of data on the basis of which

decisions can be taken about when and where it is appropriate to use machines in a primary clearance role.

Machines used in demining can be divided into those designed to:

- Detonate hazards
- Prepare the ground
- Detect hazards.

Some are designed to fulfil more than one of these purposes.

Many machines make use of human operators and are designed to protect their occupants and equipment from detonation effects. Others use remote-control systems to keep operators well away from the hazard.

Purpose-built systems include flails, tillers, vegetation cutting machines, sifters and other machines. Adapted systems can be fitted to front loaders and excavators, often armoured to enable clearance of explosive hazards either from within the hazardous area or from outside its boundary, reaching in.

Some mechanical systems serve simultaneous purposes. For instance, if a ground engaging tool is used as a flail during demining operations it may destroy mines, remove vegetation and loosen soil. If its prime mover is also fitted with a magnet it can remove metal debris and collect information on mine and ERW contamination.



Mechanical crusher and sifter at work

Ground preparation machines can be used to increase the productivity and safety of mine clearance operations for other clearance assets. They may prepare areas for further clearance operations by cutting minor vegetation down to ground level and by destroying tripwires, or breaking ice and crust in cold conditions.

Suitable ground preparation machines may be used in the technical survey role to confirm whether a suspected area contains mines (usually by relying on the fact that any mines encountered will be detonated).

While there are numerous purpose-built machines and tools available for mechanical clearance, these are rarely able to defeat all mine types and are very unlikely to detonate all ERW. A systems approach is required, where machines with a combination of tools, a combination of machines with different tools, or manual demining and/or ADS procedures are applied at different stages of the demining operation.

One important factor when considering whether to deploy machines into an area is their impact on information and the extent to which decisions on when to stop technical work can be taken. In some cases, more cautious use of machines may be appropriate to preserve patterns of contamination. Balance between the use of a machine as a technical survey tool and as a clearance asset depends not just on the level of confidence associated with its clearance capabilities, but also on its ability to preserve and deliver, or disrupt and degrade, information.

Other demining technologies

Two notable new technologies are ground penetrating radar (GPR) and the detection of explosive vapours.

GPR consists of a transmitter that sends a pulse of energy (or a continuous wave at a certain range of frequencies) into the ground, matched with a receiver taking in the radar signals reflected from buried features or objects. The radar energy passes through the ground and is reflected back at different speeds depending on the material through which it passes.

GPR is particularly useful when built in to complement a traditional metal detector, enabling detection of plastic cased mines which contain little or no metal. Although the technology continues to be developed, GPR variations have been successfully used to improve productivity of deminers in minefields with high metal contamination, reducing the time wasted in excavation of false positive metal signals.

In explosive vapour detection two mainstream methodologies are currently under development – chemical sensors and insects. The method showing the greatest application and practicability is that of gas chromatography. Most gas chromatographs are more suited for laboratory than field use as they are large, delicate and require reliable supplies of electricity and gases. The system can be built into a mobile laboratory, which can then be transported into the field where vapour samples are brought for analysis, as with the remote explosive scent tracing (REST) described earlier.

Experiments in detection of explosive vapours have also been carried out with insects such as flies and bees. The insects can be bred to have excellent detection capability and sensitivity. However, ensuring that they can be made to return from the first task, to be used repeatedly in the field, is something which has not yet been established.

Other new technologies include expected improvements to protective equipment, on-going research in the use of handheld magnets, introduction of unmanned aerial vehicles (UAV) for surveys, and fitting magnets onto existing mechanical systems to reduce the amount of metal left behind them, speeding up manual clearance or verification procedures following their use.

Battle area clearance

Battle area clearance (BAC) is the systematic and controlled clearance of ERW from hazardous areas in a former combat zone where the threat is known to not contain mines. Most ERW found during demining are small items such as submunitions, grenades and mortar ammunition which have been fired but have not exploded. These are often cleared by deminers. Unexploded ordnance refers to larger items such as artillery ammunition, guided missiles and air-dropped bombs. The complexity of UXO requires that special attention be given to the management of BAC and EOD.

BAC involves a surface search of a specified area by a team visually inspecting the ground for evidence of a hazard. It can also make use of procedures similar to those used in mine clearance locating items on and below the surface, in marked lanes. If both mines and ERW are present in the same area, the situation is first treated as a mine hazard, before addressing the ERW hazard using BAC techniques after the mine threat has been removed.

There are hundreds of types of UXO and fuzing mechanisms. Becoming an EOD technician requires years of practice. Once an EOD technician encounters an item

of UXO s/he identifies it and its fuze system, possible booby traps, and then decides whether it is safe to handle. UXO is normally destroyed in situ. If that is not possible for safety reasons, or for environmental or infrastructure considerations, render safe procedures (RSPs) are applied to neutralise⁶ or disarm⁷ the item prior to moving it to another location for final disposal.

Underwater EOD operations

A number of States are affected by old naval mines, dumped ammunition and other ERW in harbours, territorial waters or inland waterways and lakes. A request has been proposed to develop an international standard and guide to best practices in underwater EOD operations. This process is now ongoing and once completed, it should contribute to the safety, quality and cost effectiveness of underwater surveys and clearance.

In addition to the humanitarian dimension, underwater munitions present a security risk and may be an impediment to development of infrastructure and economic growth. With exposure to water for prolonged periods, ammunition and ERW degrade and may become unstable. In time they release toxic substances, presenting a hazard to local livelihoods and infrastructure. Ammunition lying at shallow depths may also end up being used in Improvised Explosive Devices (IEDs).

As standards⁸ and guidelines⁹ already exist for military and commercial diving involving EOD, the forthcoming international underwater EOD standard will be



Underwater EOD operations

a normative reference and a central repository of guidelines for underwater EOD operations. There is potential to improve the effectiveness and cost-efficiency of the sector by mainstreaming mine action concepts and lessons learnt into underwater EOD operations.

LEGAL ASPECTS OF LAND RELEASE

Handover

The legal aspect of land release that is most familiar to operators and MACs arises when survey or clearance work is complete and land is ready to be handed over to its owners and/or users. A handover or completion certificate is usually used to bring as much clarity as possible to this important transaction. The certificate normally includes:

- Location, name and any other identifying details of the site.
- Details of the organisation that has carried out the land release work.
- A general description of what work has been done (survey, clearance, BAC etc.) and whether land has been released through cancellation, reduction, clearance or a combination.
- A statement explaining the condition of the land (including any depth or device type limitations associated with the task definition) and setting out any limits to the assurances provided by the land release operator.
- Name and dated signature of the authorised representative of the land release operator.
- A statement of what external QA and QC functions have been applied at the site, with an explanation of any assurances provided by the external QA/QC agency.
- Name and dated signature of the authorised representative of the quality assurance/control agency.
- Name and dated signature of the individual authorised to accept the released land on behalf of the government or other land owner.

Clear handover procedures and documentation are critical to confident and efficient release of land, and often play an important role in the contractual process associated with payment for work. Handover is an important threshold in the transfer of responsibility (and liability) for land between operator and owner and is often referenced in paperwork relating to an operator's insurance.

Contracting

Globally the main legal mechanism for carrying out demining is through contracting. A contract is normally a time-limited agreement between a contracting agency and a contractor for provision of certain services and/or equipment. There are three main parties whose interests are fundamental to any contract:

1. The contracting agency
2. The contractor
3. The stakeholders.

Contractors are typically non-governmental organisations (NGO), commercial companies, national mine action bodies and/or military units. The most popular methods of engaging such actors are through grants (usually non-competitive) and contracts following competitive tendering processes.

Contracting agencies include national mine action authorities (NMAA) or national mine action centres (NMAC), UN agencies, donors and civil engineering companies. Stakeholders include all those individuals and organisations that have an interest in the performance of the contract, and the work defined within it.

In one common contracting model the contracting agency awards a contract for specific clearance assets and then tasks the contractor with exact areas for clearance. The contractor has no scope or incentive to change the areas presented for clearance and is only compensated for the capacity provided and the exact area cleared. This method of contracting may be effective when the characteristics of mined areas are understood, confirmed (CHA) and have already been clearly defined.

However, in many instances areas are not confirmed to contain mines and/or ERW and they may be only loosely described and roughly delineated as suspected hazardous areas (SHA). In these cases internal management of the land release process and the contracting out of survey projects, often represents better value for money.

The land release process aims to release land from within SHAs and CHAs using the most efficient means. It is clear, however, that may be a real or perceived conflict of interest if a contractor makes most money from clearance work, but is expected to minimise the proportion of that type of work within a task area. In such situations, cost efficiency and confidence may be best achieved through contracting mechanisms that keep some of the land release decision-making functions within the contracting agency.

The mine action community continues to be challenged to appropriately address the concept of land release through non-technical means in mine action contracts. When contracts do seek to delegate more complex land release decision-making responsibilities to the contractor, basic principles and authorities should be included in the contract text.

The principles associated with defining roles and responsibilities of different parties, and ensuring that there are no conflicts of interest should be extended to demining that is to be conducted under other formal agreements such as Memoranda of Understanding. IMAS 07.20 provides guidance on mine action contracting.

The manner in which mine action contracting is carried out has an important role in ensuring that land release activities are necessary, effective and efficient.

Liability

Formalisation of land release methodologies (that deliver cancelled or reduced land that has not been subject to clearance to a specified depth) and the frequent contracting of demining capacities have increased interest in, and underline the importance of, liability and insurance in mine action.

The possibility of one or more mines or other ERW remaining after the handover of a cleared area is real. An item of ERW may be missed during clearance, or land may have been incorrectly released by survey when it was in fact contaminated. Subsequently, an injury or death may occur. As liability is usually linked to non-compliance with an agreed policy or procedure, the contracting agency and national authority should try to answer the question of legal responsibility for the damage and injury this missed ERW would, or did, cause.

It is generally accepted that a State is responsible for the safety of its citizens, and it is the government that should address the issue of reducing mine and ERW hazards on its territory and minimising related accidents.

During demining activities, this responsibility is often transferred to the organisation carrying out the operation. On completion of the work the government, or other landowner, should re-assume its responsibility for the released areas. It helps if the State has a standard for victim compensation, and a policy for dealing with residual risk (defined in the IMAS as *the risk remaining following the application of all reasonable efforts to discredit, remove, or destroy all mine or ERW hazards from a specified area to a specified depth*).

Individual occurrences are usually viewed on a case by case basis to see if there is evidence that the operator has been negligent. Among the global mine action community there is divergence in opinion regarding the party, or parties that should accept responsibility when an operator completes survey and clearance, and the area is to be handed over to the end user.

Not even IMAS-compliant full clearance, to a depth beyond the most conservative of the risk assessments, can offer absolute guarantees that an area is entirely free of explosive hazards. The IMAS does not attempt to stipulate universally applicable conditions for liability. Instead, they offer guidance based on experience and the available evidence. How is the quality of work being assessed? How is the residual risk understood and defined in the national legislation and standards for work? Is there a formal handover of land?

Questions of liability need to be considered, understood, resolved and agreed upon by the government, contracting agencies, contractors and stakeholders in affected communities, ideally before work starts. All stages in the process of land release should be documented, including decisions that were taken and what they were based upon. Information should be safely stored for future reference.

Insurance

Demining is carried out in a labour intensive and potentially hazardous environment, in which insurance is fundamental to addressing risks to people and material. Insurance is defined as the equitable transfer of the risk of a loss from one entity to another in exchange for payment of a premium. It should provide a measure of protection against negative consequences of an accident or other undesired human or material loss.

Importantly, insurance should not be perceived as providing mere protection, but also resilience for a client; enabling quick resetting of an operation or a person to a state close to that prevailing immediately prior to the loss. The cover available for demining personnel normally includes accidental death, loss of limb, and other permanent disability-related conditions, with cover for medical emergency and evacuation assistance, expenses and repatriation costs.

Within a well-developed market, other insurance may also be available to address contractors' and employers' concerns over the availability of equipment, interruptions to projects, aspects relating to professional advice and the consequences of accidents or incidents following their work.¹⁰

ENDNOTES

- 1 Normally between 5-20 percent
- 2 BOMICEN/VVAF (2005), *Executive Summary, Unexploded Ordnance and Landmine Impact Assessment and Technical Survey Report, Phase 1* Hanoi, 14 October 2005, pp. 2–3
- 3 GICHD (to be released in 2014) *A study of policy and practice in relation to residual World War II Unexploded Ordnance in Germany and the UK*.
- 4 Mine Action Standards. IMAS 04.10 Glossary of mine action terms, definitions and abbreviation, Second Edition. (Amendment 6, May 2013) (online). Available from: <http://www.mineactionstandards.org/> (accessed 20 July 2013).
- 5 GICHD (April 2011) *A Guide to Land Release: technical methods* (online). Available from: <http://www.gichd.org/> (accessed: 20 July 2013).
- 6 IMAS 04.10 states: '*...The act of replacing safety devices such as pins or rods into an explosive item to prevent the fuze or igniter from functioning...*'
- 7 IMAS 04.10 states: '*...The act of making a mine or explosive ordnance safe by removing the fuze or igniter. The procedure normally removes one or more links from the firing chain...*'
- 8 eg NATO STANAG, NORSOK, IMCA
- 9 eg IMAS incl. TNMA, ISACS, OSCE BP, CWA EOD Competency Standards
- 10 GICHD (June 2011) *A Guide to Liability and Insurance in Mine Action* (online). Available from: <http://www.gichd.org/> (accessed: 20 July 2013).



STOCKPILE DESTRUCTION
AND AMMUNITION
SAFETY MANAGEMENT

KEY MESSAGES

- There is increasing concern about unplanned explosions of ammunition stockpiles that lead to civilian casualties and damage to property.
- Theft of ammunition from stockpiles makes material available for IEDs.
- Spontaneous ignition arising from chemical reactions in aging and deteriorating ammunition in stockpiles is the cause of many explosions.
- Prevention is better than cure – it is cheaper to destroy excess and dangerous stockpiles of ammunition now than to pay clear up costs and suffer the impact of unplanned explosive events.
- International efforts are now turning towards ensuring that ammunition is well managed and appropriately stored.
- Programmes of Physical Safety and Stockpile Management (PSSM) of both ammunition and weapons are attracting more attention.
- Programmes to assist nations in destroying excess and dangerous stock are being implemented worldwide.

BACKGROUND

Each State Party to the Anti-Personnel Mine Ban Convention (APMBC) is required to destroy all of its stockpiled anti-personnel mines¹, and those States Parties in a position to do so must assist others to fulfil this obligation.² The Convention on Cluster Munitions (CCM) also requires States Parties to destroy stockpiles of cluster munitions under their jurisdiction and control.³

Destruction of banned weapons under international treaties is just one element within the wider activity of stockpile destruction. This also encompasses elimination of other weapons and ammunition that are obsolete, dangerous or surplus to requirements.

The need to manage ammunition appropriately is clear. The international community has increased efforts to minimise the risks of unintended explosions of ammunition stockpiles, but they continue to occur, causing great loss of life. Thousands of people have been killed and injured by such explosions in recent years.

FIGURE 9

ANNUAL TOTAL OF EXPLOSIONS IN AMMUNITION STOCKPILES 1998-2012



STOCKPILE DESTRUCTION

Definition

IMAS states that the term ‘stockpile’ refers to a large accumulated stock of explosive ordnance.⁴

- Stockpile destruction is defined as ‘the physical destructive procedure towards a continual reduction of the national stockpile’.⁵
- A State or other entity holding stocks of weapons may wish to destroy explosive ordnance as part of a disarmament process, to implement a legal obligation, upon expiry of shelf life, or for reasons of safety.

The IMAS focus upon the destruction of anti-personnel mines, based on the requirements of the APMBC and, indirectly, of Amended Protocol II to the Convention on Certain Conventional Weapons. A wide variety of techniques exist for the destruction of other explosive ordnance stockpiles.

The Conventions do not define what constitutes ‘destruction’. The term has been interpreted by States Parties broadly to include a number of different approaches, among others, dismantling, crushing and recycling, as well as physical detonation.

Options for destruction

Physical destruction techniques range from relatively simple open burning (OB) and open detonation (OD) techniques, through contained detonation and crushing to highly sophisticated industrial processes. The costs of demilitarisation⁶ of anti-personnel landmines are generally reported to range from US\$ 2 to US\$ 4 each, depending on the type of mine, although some States have quoted higher figures. Figures as low as one Euro per bomblet (submunition) are quoted for the destruction of cluster munitions.⁷

Options for destruction (and the associated costs) depend to a great extent on the quantity of ammunition, its condition, storage history and quality of records. Small stockpiles of poorly stored ammunition, without a complete documented history, are unlikely to be acceptable for sophisticated industrial processing.



Preparing for open demolition (Rwanda)

Generally, OD is likely to be the cheapest method of destroying smaller stockpiles (up to one million anti-personnel landmines for instance). OD does require significant knowledge of explosives engineering and close supervision of personnel as the shockwave caused by a detonation in a badly prepared demolition pit may not destroy all the munitions but throw some out, requiring additional EOD work in a potentially more dangerous situation (there is a possibility that some throw-outs may be armed).

Industrial scale demilitarisation has many advantages, among them the option for mechanical disassembly, incineration in environmentally-controlled systems and the ability to operate 24 hours a day, 365 days a year. Its major disadvantage is the high capital set-up costs of design, project management, construction and commissioning, as well as the significant cost and time implications that can be associated with recovery from an unplanned explosion.

Operating costs are generally lower than OBOD (typically 50 US cents to US\$ 1) although high labour costs in developed countries account for a large percentage of the OBOD costs. Industrial demilitarisation was applied successfully in Albania where all anti-personnel landmines stocks were demilitarised in the same factory where some of them had originally been produced.⁸

Nevertheless, OBOD can be a cheaper option in some circumstances, depending on economies of scale. In the United States (US), for example, average OBOD costs (for all ammunition types) are US\$ 850 per tonne, whereas industrial demilitarisation is US\$ 1,180 per tonne.⁹ Salvage of metallic scrap or explosive waste can result in a potential income stream and some explosive fillings may be



Open detonation (Rwanda)

useful to the commercial explosives industry. Other metals (such as copper) may also be of interest to commercial markets.

In many countries, the development of purpose-built demilitarisation facilities, to enable States Parties to fulfil their obligation for stockpile destruction, will be well beyond available resources and not a practical option. Factors such as cost, location and safety may mean that OBOD is the only pragmatic and feasible option. This is not only true for items covered by the conventions, but for all ammunition which may be overstocked or stored after its useful life has ended, either because of its age or because the holders no longer possess the weapons required to use the ammunition.

Preparation for destruction: disassembly techniques

It may be necessary to disassemble or break down ammunition prior to the destruction process. This may be required to limit the amount of contained explosive that can be incinerated, the design of the item or the technical requirement for different components to have separate destruction methods.

Available technologies include:

- Manual disassembly
- Mechanical disassembly/breakdown
- Robotic disassembly
- Cryofracture
- Hydro-abrasive cutting
- Microwave explosive melt-out.

All of these methods require the movement of exposed bare explosive to the final destruction facility. The decision to opt for any particular technique is likely to be based on cost, safety and environmental considerations, as well as the type of munitions being destroyed.

Manual disassembly

This technique involves the use of human resources to take ammunition apart by manual actions using simple hand tools. It has the advantage of requiring limited capital investment, but is a labour-intensive process that results in relatively slow throughput rates. The method requires semi-skilled, well-disciplined staff able to concentrate for long periods.

Mechanical disassembly and breakdown

Mechanically-operated systems can be used to take ammunition apart. The different technologies available include pull apart, defuzing and separating the different explosive components. Breakdown techniques are used to expose the explosive fillings of ammunition before the destruction phase.

In contrast to manual disassembly, mechanical disassembly/breakdown has high production rates. It is an efficient system and has low staff requirements. It is also environmentally friendly and the technology is readily available. A major disadvantage is the high initial capital investment, although when dealing with larger national stocks, this option can offer significant economies of scale. Breakdown techniques also bring the risk of an explosion during processing.

Robotic disassembly

A fully-automated disassembly system has similar advantages and disadvantages to mechanical disassembly, but the initial capital costs are much greater. The system is only economically efficient for very large quantities of ammunition.

Cryofracture

Cryofracture breaks down an item of ammunition into pieces small enough to be processed through an incineration destruction method. It involves the use of liquid nitrogen to make the munition casing more brittle by cooling it to minus 130°C. The munition can then be shattered using simple mechanical shear or press techniques. A cryogenic wash out system is in the early stages of development. The principle is similar to cryogenic fracture, except that in this case the filling is attacked with liquid nitrogen in order to make its removal easier.

Cryofracture is an environmentally friendly technique with low staff requirements. It can be used for any type of munition, explosive or propellant and requires limited pre-preparation of the munition. There is no secondary waste stream, which reduces final disposal costs. In financial terms, relatively low capital investment is required for set up costs.

Hydro-abrasive cutting

Hydro-abrasive cutting (HAC) uses water and abrasives at pressures ranging from 240 to 1,000 bar to cut open ammunition. There are two distinct technologies, 'entrainment' and 'direct injection' (the preferred option for safety reasons).

HAC systems have limited staff requirements and a wide range of target munitions can be processed. The explosive safety of HAC systems is well proven and it is a cost-effective method in comparison to other pre-processing methods.

The major disadvantage is the requirement for initial high capital investment for infrastructure. The systems also produce contaminated wastewater, which requires a complex filtration system to clean it. In terms of post-process operations, the explosive content is 'grit sensitised' and requires careful handling during any further processing or destruction to avoid inadvertent detonation.

Microwave melt-out

This technology is under development in the US, using microwaves to heat up TNT-based explosive fillings. It is a rapid, clean technique but has the major disadvantage of lack of heating control which can lead to 'hot spots' forming and initiation of the filling. It is more energy efficient than steam melt-out systems and improves the value of recovered explosives. Work continues on its development, as it is not yet a feasible production technique.

Sea dumping and landfill

The deep sea dumping of ammunition and explosives has now been outlawed in response to environmental concerns. Putting these items into landfill sites is prohibited for the same reason. Both these methods are now recognised as being environmentally unacceptable.

Benefits of starting early

There are considerable cost benefits to be gained by the early initiation of stockpile destruction activities. Improved disposal techniques enable the recycling of most waste with potential income from the sale and use of rare metals and other component parts. When stockpiles are destroyed or reduced there are often considerable savings on the cost of storage and there is the increased peace of mind when the risk of unplanned explosions is reduced.

The relative cost of managing stores safely is minimal compared to the costs associated with human loss, property damage and clear up operations after an unplanned explosion.

Identification, recording and reporting

Destruction programme transparency is an important security and confidence-building measure. International organisations, national ambassadors, media and

NGOs are often invited to witness the destruction process and are given access to ammunition accounts for anti-personnel mines and cluster munitions so that they can verify those destroyed against declared stockpile levels.

ENVIRONMENTAL CONSIDERATIONS

Some concerns have been expressed about the environmental consequences of destroying certain kinds of ammunition by open detonation, both by states holding the stockpiles and by potential donors sensitive to national or international environmental legislation.

The PFM-1 remotely-deliverable, anti-personnel mine contains hydrogen chloride for instance, the open detonation of which may lead to unacceptable environmental pollution. A solution is to conduct contained detonation in a pollution control chamber, as this type of mine cannot be disassembled. Similar responses may be appropriate with other particular munitions.

Traditionally, military organisations are responsible for the destruction of ammunition using OBOD techniques, while civilian companies use industrial demilitarisation, although post-conflict work in Iraq and Afghanistan, as well as support to States Parties to the CCM provided by NGOs, has blurred this distinction.

The availability of competent manpower has a significant influence on the available options for destruction. Certain techniques result in the production of 'special' or 'hazardous' waste, which requires destruction or disposal in an environmentally benign manner. A specialist environmental disposal company usually does this.

In Europe, some nations have banned OBOD of all munitions unless there is no alternative and it can be justified on safety grounds. This has necessitated the construction of expensive demilitarisation facilities that rely on the disposal of a wide variety of ammunition types (not just those covered by the conventions) in large quantities to deliver the necessary economies of scale.

Research into the environmental impacts of OBOD is still on-going. Sound scientific evidence indicates that OBOD of certain ammunition types may not pose any greater threat to the environment than the alternatives (including the environmental implications of not carrying out disposal). OBOD remains a viable destruction option for stockpiles and may well be the most suitable option for regions with little or no industrialised demilitarisation capacities.

DETERMINING THE APPROPRIATE METHODOLOGY & TECHNOLOGY FOR STOCKPILE DESTRUCTION

The IMAS make clear that it is not possible to provide 'template solutions' for ammunition destruction. The selection, by a national authority, of the most suitable technique or technology depends primarily on the resources available, the physical condition and quantity of the stockpile, the national capacity and applicable environmental and explosives legislation.

Stability in storage and degradation or deterioration rates of explosive content influence the degree of urgency for disposal, the type of transport that can safely be used and the destruction methodology.

The IMAS note that, although anti-personnel mine stockpiles tend to be relatively small in terms of weight and net explosive content, they are typically large in quantity and the destruction of the stockpiles can be a complex logistic operation.¹⁰

STOCKPILE DESTRUCTION OF ANTI-PERSONNEL MINES

On 17 August 2000, the UN Inter-Agency Co-ordination Group on Mine Action agreed that stockpile destruction would be formally incorporated as the fifth core component of mine action. Accordingly the IMAS developed under UN auspices also deal with stockpile destruction. In addition, the stockpile destruction section of the UN's Electronic Mine Information Network (E-MINE) provides a consolidated reference point containing technical papers, policy guidelines, lessons learned and other relevant information on the destruction of stockpiles.

The UN has a general responsibility to encourage and support the effective management of stockpile destruction programmes. According to the UN Development Programme (UNDP), stockpile destruction should form part of each integrated mine action programme that UNDP supports. The GICHD also provides technical assistance for the destruction of stockpiles to States requesting it.

In terms of stockpile destruction, anti-personnel mines are no different to other types of munitions. They all contain fuzing systems and high explosives so the inherent dangers present during transport, storage, processing and destruction are generally the same. For this reason, the IMAS recommend that the stockpile destruction of anti-personnel mines should not be looked at in isolation.¹¹

An influential factor in determining the method of anti-personnel mine stockpile destruction is likely to be economy of scale. The greater the number of anti-

personnel mines requiring destruction, the larger the economy of scale and the wider range of available technology options. National authorities may wish to consider anti-personnel mine destruction on a regional basis, and/or to include other ammunition in the destruction plans, in order to achieve economies of scale.

STOCKPILE DESTRUCTION OF CLUSTER MUNITIONS

A range of techniques are recommended for the practical destruction of cluster munition stockpiles, ranging from open detonation to closed detonation or incineration, disassembly, cryofracture and 'harvesting' of explosives.

Open detonation

Open detonation techniques may be the only practical solution to destroy stockpiles of cluster munitions for certain countries. This is especially the case where the numbers to be destroyed are limited and where there is no suitable industrial base to develop alternative techniques.

Open detonation is not generally suitable for large-scale destruction of cluster munition stocks. Very careful positioning and calculation of donor charges is necessary to ensure the destruction of all submunitions and supplementary charges. Incomplete detonation of submunitions may result in 'throw-outs' (items which are 'thrown-out' of the demolition pit).

Closed detonation

Two techniques for closed detonation have been used successfully for cluster munitions destruction: detonation deep underground in worked-out mines in Norway; and destruction in closed detonation chambers.

Closed incineration

Complete cluster munitions cannot be incinerated but their explosive components can be once the munitions have been broken down. Pre-treatment may include the removal of fuzes from submunitions (after which the fuzes can be incinerated), the removal or deformation of the cones of shaped charges and, in the case of rocket-fired cluster munitions, breaking down the rocket motors into segments suitable for incineration.

Closed incineration requires highly specialised explosive waste incinerators with pollution control systems to prevent the emission of noxious gases.

Disassembly

Disassembly of cluster munitions is possible at two levels: extraction of submunitions from the main canister; and disassembly of the submunitions themselves.

The extraction of submunitions from the main canister may be useful in allowing recovery of material for recycling. It helps to reduce the risk of throw outs during open detonation disposal. Disassembly of submunitions may offer additional opportunities for the recovery of materials (such as copper from shaped charge warheads), and can increase the range of options for final disposal of energetic and inert components.

Disassembly of some Soviet and British cluster munitions, including submunitions, has been successfully implemented (with the support of international mine action NGOs) in several countries, with relatively small stockpiles, as part of their CCM compliance processes. This technique requires limited capital investment, but is a labour-intensive process which results in relatively slow throughput rates. The method requires semi-skilled, yet well-trained staff. Not all types of cluster munition are suitable for this technique.

Disassembly is not a complete solution to cluster munition destruction, because the explosive components require further treatment after disassembly. This may involve further use of other techniques such as closed incineration or cryofracture.

Cryofracture

This technique is widely used for the neutralisation of small submunitions such as the M42, M46 and M77 grenades disbursed by artillery cluster munitions. The grenade fuzes are cut off mechanically before the grenades are passed through a bath of liquid nitrogen to embrittle their structures. They are then crushed to expose the explosive filling and passed under a flame in an enclosed environment to ignite the explosives, which burn to extinction. The metal scrap is then separated into ferrous and non-ferrous elements.

Harvesting of components of cluster munitions

A cutting machine, located behind protective walls and embankments, is used for demilitarisation. The machine can cut ammunition safely, which allows explosives to be recycled and the metal casing to be turned into scrap. Shaped-charge artillery submunitions harvested by the process have been used for EOD operations, which may also have the advantage of providing donor charges for mine clearance.

CLUSTER MUNITIONS IDENTIFICATION TOOL

The GICHD's Cluster Munitions Identification (CM ID) Tool – a web-based system that enables the identification of cluster munitions – allows countries to easily assess whether or not they have weapons that are classified as cluster munitions prohibited by the CCM.

The CM ID Tool provides an easily accessible and searchable database using graphic navigation to identify cluster munitions based on weapon category. It shows types and combinations of explosive submunitions and cluster munitions, and helps identify remnants of bomblets and cluster munitions – such as nylon ribbons, parachutes, and metal fragments. It also provides a series of images of typical strike patterns of the most common cluster munition types.



[Navigation page, Cluster Munitions ID Tool](#)

Link to the CM ID tool: <http://cmid.gichd.org>

FUTURE INTERNATIONAL EFFORTS

Improving the safety of ammunition stockpiles worldwide requires a determined effort to educate stockpile owners to establish effective ammunition safety management regimes.

Preventive actions

The education of the local workforce to enable it to safeguard stocks effectively is of vital importance. Although immediate efforts are focused on making safe the stocks and facilities that already exist, local workforces are also taught how to prevent stockpiles from deteriorating once more.

The money spent on the prevention of a large scale ammunition storage explosion is many times less than the money spent on clearing up after an accident. The monetary costs involved after a large explosion, together with loss of life and destruction and replacement of buildings and equipment, are considerable.

Mobile destruction facilities

In many developing nations a cost effective way to destroy surplus stockpile ammunition, and ammunition which is potentially dangerous, is to use purpose-built mobile demilitarisation facilities. There are several on the market. This should be a better alternative to destroying all items by OBOD, with the associated safety, cost and environmental implications.

Logistics, recycling and cost recovery

Effective plans to enable all potential revenue streams to be tapped (such as from recovered materials) will enable more to be done. The recovery of items and substances that can be sold on is one of these sources of income. A successful recycling system for components can be established to ensure maximum returns.

AMMUNITION SAFETY MANAGEMENT (ASM)

ASM as part of the PSSM Process

Physical Security and Stockpile Management (PSSM) is the term coined by the US Defense Threat Reduction Agency (DTRA) to describe their programme to secure weapons and ammunition stockpiles throughout the world. The term Ammunition Safety Management (ASM) is applied to those elements of PSSM specifically concerning actions to improve the safety, security and storage conditions of ammunition stockpiles.

Incidents and causes

In 2008 alone explosions in Albania, Bulgaria, Iran, Iraq, Ukraine and Uzbekistan caused hundreds of casualties and scattered munitions over many square kilometres of previously safe land.¹² Figures produced by the Small Arms Survey suggest that an average of 2.5 ammunition storage explosions occur every month, and that the number of unplanned explosions is increasing.¹³

The problem is particularly significant in countries where basic rules of ammunition safety management are frequently not followed, in regard to both the condition of the ammunition and the circumstances of its storage.

The most common cause of unplanned explosions is fire arising from careless smoking, ignition of dry vegetation by the sun, general negligence and a range of other causes. Where undergrowth is allowed to grow out of control or where other flammable material is present the situation is made worse as fires spread quickly and out of control.

All ammunition is affected by fire but items over 20 years old are particularly susceptible, especially ammunition containing propellant. Aging propellant gradually uses up the stabiliser incorporated within it when it was manufactured, in some cases leading to auto-ignition of the nitrocellulose within the propellant. Propellant also ignites very easily if exposed to fire.

Definition of Ammunition Safety Management

Ammunition Safety Management includes the assessment of ammunition and facilities as well as the development of procedures and practices to ensure that they remain safe and secure, presenting no hazard to people, property or the environment.

Effective ASM is achieved by managing stocks of ammunition to ensure they are stored, transported and disposed of safely. It involves the management of munitions to ensure that they are rotated in storage and used in a timely manner, so that they never become unstable, and that storage facilities and equipment are safe and meet required standards. It ensures that potentially dangerous ammunition is segregated and disposed of before it becomes a hazard.

ASM also ensures that all actions taken in connection with ammunition comply with applicable regulations and are carried out by suitably qualified individuals. An important part of ASM is the management of the storage area to ensure that it is not in a condition where fires can start and spread easily.

Explosive risks

Two principal risks arise from the unsafe storage of ammunition: risk to the population and risk to the environment in the vicinity of ammunition storage areas (ASAs).

Ammunition in ASAs may also be vulnerable to theft by terrorists and other criminal groups. Civilians in developing countries may even target ASAs to steal munitions and so earn income from the sale of scrap metal or explosives. The inherent risks posed by the storage of ammunition and explosives can be significantly reduced by correct management of the ammunition and ASA.

Ammunition is designed to be as lethal as possible when used and as safe as possible in storage, but by its very nature it contains highly reactive compounds. The level of risk associated with it is primarily dependent on the condition of the ammunition, the competence of responsible personnel, the management systems in place and the storage infrastructure and surrounding environment.

Ensuring the safety of ammunition requires that it be properly manufactured, tested and inspected, assigned a shelf life and be stored with other appropriate items (in accordance with compatibility mixing rules).

Security concerns and risk of proliferation

Ammunition should be stored in a safe and secure facility. Theft of ammunition either for profit or for use by unauthorised persons is a significant problem, especially in areas with a high crime rate or where terrorist groups are active.

Measures to assist in securing ammunition include:

- Maintaining accounts and conducting stock checks, especially of attractive items such as detonators, grenades, complete weapon systems and bulk explosives.
- Making buildings and sites as secure as circumstances allow, controlling access and maintaining an effective guard force.

Environmental factors affecting ammunition

Ammunition is susceptible to extremes of temperature, rapid changes in temperature, physical impact/shock, high levels of electro-magnetic radiation, moisture and damage by vermin.



Ammunition storage (South Sudan)

To counter local environmental effects ammunition and explosives should be kept dry and well ventilated, as cool as possible and free from excessive or frequent changes in temperature, protected from direct sunlight and protected from excessive impact/vibration.

Some substances used in ammunition and explosives attract and hold moisture, which may result in the degradation of explosive performance. It may also cause them to become dangerous to handle if sensitive explosive crystals form between the fuze and main body of the munition.

Rain, dampness and humidity can cause significant damage to ammunition and explosives in a very short time. Every effort should be made to ensure dry conditions during both storage and transportation. Good ventilation of ammunition and explosive stores helps keep them cool and prevents condensation.

Mitigating methods

Problems relating to ammunition storage have a number of solutions. The most reliable and effective are to make stocks safer while simultaneously teaching owners of the ammunition how to manage it safely, efficiently and effectively. This can be done at the same time as ensuring that existing ammunition and explosives are stored and looked after in a manner appropriate to the facilities available to the host/partner nation.

A simple routine can be followed, requiring limited external expert intervention and low capital funding, while making use of locally available labour:

- Inspect ammunition to ensure it is safe to move; destroy any that is not.
- Move ammunition away from areas of habitation to an area with few or no inhabitants.
- Construct or adapt storage to the best standard practicable under local circumstances.
- Introduce an effective and reliable ammunition management regime to ensure that potentially dangerous ammunition is destroyed in a controlled manner and that remaining ammunition is stored in the best environment possible.
- Ensure all workers are trained in the management of ammunition.
- Adhering to a strict inspection routine, regularly rotate stock and dispose of ammunition before it can become dangerous.
- Ensure shelf lives, storage and usage history, local meteorological conditions, etc. are all taken into account when considering which items are potentially unsafe.
- Continue to improve facilities as resources (including time) become available.
- Aim to achieve internationally acceptable standards of ammunition management in accordance with recognized standards and procedures, such as those set out in International Ammunition Technical Guidelines (IATG).

AMMUNITION SAFETY MANAGEMENT TOOLSET

To make worldwide ammunition stocks safer there are many measures that need to be taken. Most of those connected with the safety of ammunition are to be found in the International Ammunition Technical Guidelines.¹⁴ IATG are most applicable under circumstances where funding, facilities and competence are already available to a high standard. They are expensive to implement from a lower baseline.

The GICHD ASM Toolset contains instructions and guides on how to move towards these standards at relatively little cost. The toolset contains advice on actions that can be taken to make significant improvements to safety while only incurring the cost of labour and transport; taking these measures is preferable to doing nothing.¹⁵

A major part of the safety of ammunition is its security. There are measures in the toolset that establish low cost protection, although these are only interim measures and will not deter a determined foe. The IATG gives details of what to aim for – there are also many other sources of detailed security information that can be consulted when improving longer term security of ammunition stocks.

In addition to the risk of explosions within stockpiles and holding areas/stores, there is the worry of explosive remnants of war (ERW) or routinely stored ammunition being taken by terrorist groups or insurgents for their own use.



Navigation screen for ASM Tool Step 1

It is important to gather together or destroy all discovered UXO and AXO – even if an item is incapable of being used in its intended role it may still be possible to use it in a different weapon or as a component of an IED. The toolset also covers actions necessary to address these requirements.

ENDNOTES

- 1 APMBC. *Article 4 of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction*, adopted 18 September 1997, entered into force 1 March 1999 (online). Available from: http://www.apminebanconvention.org/fileadmin/pdf/mbc/text_status/Ottawa_Convention_English.pdf (accessed: 20 June 2013).
- 2 Ibid, *Article 6 of the Convention*
- 3 CCM. *Convention on Cluster Munitions*, adopted on 30 May 2008, entered into force on 01 August 2010 (online). Available from: <http://clusterconvention.org/> (accessed: 20 July 2013).
- 4 Mine Action Standards. *IMAS 04.10 Glossary of mine action terms, definitions and abbreviations* (online). Available from: <http://www.mineactionstandards.org/> (accessed: 23 July 2013).
- 5 Ibid.
- 6 Ibid.: ‘...the act of removing or otherwise nullifying the military potential of a munition. Demilitarization is a necessary step for military items prior to their release into a non-military setting. The process that renders munitions unfit for their originally intended purpose...’
- 7 Mine Action Standards. *IMAS 11.10 Guide for the destruction of stockpiled anti-personnel mines* (online). Available from: <http://www.mineactionstandards.org/> (accessed: 23 July 2013).
- 8 Ibid.
- 9 Ibid.
- 10 Mine Action Standards. *IMAS 11.10 Guide for the destruction of stockpiled anti-personnel mines* (online). Available from: <http://www.mineactionstandards.org/> (accessed: 23 July 2013).
- 11 Ibid.
- 12 Lazarević, J. (2012) *Costs and Consequences Unplanned Explosions and Demilitarization in South-east Europe Special Report* (online). Switzerland , the Small Arms Survey. Available from: <http://www.smallarmssurvey.org/> (accessed: 23 July 2013).
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- 14 United Nations, UN Office for Disarmament Affairs. *International Ammunition Technical Guidelines* (online). Available from: <http://www.un.org./disarmament/convarms/Ammunition/IATG/> (accessed: 24 July 2013).
- 15 Rawson, J. (2013). *GICHD Ammunition Safety Management Toolset* (online). Available from: <http://www.gichd.org/operations/stockpile-destruction-and-eod/ammunition-safety-management/> (accessed: 24 July 2013).



RISK EDUCATION

KEY MESSAGES

- Mine/explosive remnants of war (ERW) risk education (MRE) and Community Liaison are integral to mine action planning, implementation, monitoring and evaluation.
- MRE seeks to encourage behavioural change and promote safe behaviour.
- Community Liaison/MRE teams can be seen as the 'eyes and ears' of mine action.
- IMAS categorises Community Liaison as a strategic principle of mine action.
- Gender analysis should be an integral part of MRE projects, ensuring that materials and methods are gender-sensitive and that all sex and age groups are reached and targeted in the most inclusive and effective manner.

WHAT IS MRE?

Definition

IMAS 12.10 defines mine/ERW MRE as '*activities that seek to reduce the risk of death and injury from mines and ERW (including unexploded sub-munitions), by raising awareness and promoting safe behaviour. These activities include information exchange with at-risk communities, communication of safety messages to target groups, and support for community risk management and participation in mine action.*'¹

IMAS 12.10 further highlights that the objective of MRE is to '*reduce the risk to a level where people can live safely, and to recreate an environment where economic and social development can occur free from constraints imposed by contamination.*'

It is important to note that though the discipline is called MRE, it seeks to prevent harm to civilians from all types of explosive devices including abandoned or unexploded ordnance and cluster munitions.

The main goals of MRE are to:

- Minimise deaths and injuries caused by mines/ERW
- Reduce the social and economic impacts of mines/ERW
- Support development

A number of mine action operators no longer use the term MRE to describe these activities. Acknowledging that, for example, armed violence more generally, and small arms and light weapons more specifically, constitute the main risks in many communities, several operators have replaced MRE with terms like Risk Reduction Education and Conventional Weapons Risk Awareness. While recognising these developments, this chapter uses the term MRE, as defined in IMAS 12.10.

Key components

Communicating safety messages

The principal aim of safety messages is to minimise mine/ERW-related injuries and deaths among at-risk communities through raising awareness and by promoting safe behaviour. MRE safety messages can be communicated in several ways, including interpersonal communication, mass media (TV, radio and newspapers), theatre, role plays, etc.



MRE at school (South Sudan)

Communication through public information channels may be the most practical means of communicating safety information in emergency/post-conflict situations. UNICEF's *Emergency MRE Handbook* is a useful reference for MRE in emergency contexts.²

Communication of safety messages in more stable contexts is commonly carried out as part of a more comprehensive risk-reduction strategy within a mine/ERW programme. Examples include integration of safety messages into school curricula and community based activities, including development of community voluntary networks. Peer-to-peer and child-to-child strategies are other ways in which safety messages are communicated.

Information management

The collection and analysis of information is a central aspect of MRE activities. A wide variety of information is commonly shared during MRE-related activities, including in relation to known and/or suspected mine/ERW hazards, victim and incident data (recording time, place and activity at the time of the accident/incident), blockages and impacts resulting from contamination, victim assistance, etc.

To ensure that the distinct and different needs and priorities of women, girls, boys and men are identified and acknowledged, it is critical to collect and analyse all data in a sex and age- disaggregated manner (SADD). Data analysis is an important aspect of the project management cycle. Findings from the analysis must inform future programming, so that plans and strategies can be modified and lessons learnt. Information management is also essential for monitoring and evaluation purposes.

Community liaison

The right of affected communities to receive accurate and timely information about mines/ERW risks is a fundamental principle underpinning MRE, but MRE incorporates much more. The discipline has changed from a narrow focus on awareness-raising to seeking to understand the realities facing affected communities, and the underlying reasons why women, girls, boys and men are involved in mine/ERW accidents, and why they sometimes knowingly expose themselves to danger.

A key aspect of MRE is to encourage behavioural change and promote safe behaviour. Active participation of affected women, girls, boys and men in this process is a precondition to accurately identifying their distinct exposures, needs and priorities. The focus is on information exchange – collecting the information

necessary to understand the situation facing impacted communities and then providing them with relevant information to reduce the risks they encounter.

Information exchange is a pre-requisite for mine action organisations to understand community priorities and how they are impacted by mine/ERW contamination. It is also important for ensuring that communities understand the organisations' plans and the purpose of the different activities that are implemented in communities. This process is commonly referred to as Community Liaison; it is closely interlinked with MRE.

IMAS 04.10 defines Community Liaison as '*Liaison with men and women in mine/ERW-affected communities to exchange information on the presence and impact of mines and ERW, create a reporting link with the mine action programme and develop risk reduction strategies. Community liaison aims to ensure that the different community needs and priorities are central to the planning, implementation and monitoring of mine action operations.*'¹³ Recognising its importance, IMAS categorises Community Liaison as a strategic principle of mine action.



Community Liaison team (South Sudan)

MRE in a convention context

Under the Anti-Personnel Mine Ban Convention (APMBC), States Parties in a position to do so shall provide assistance for mine awareness. Article 6 of the APMBC on International Cooperation and Assistance highlights that States Parties

may request assistance in the elaboration of a national demining programme to determine; *'mine awareness activities to reduce the incidence of mine-related injuries or deaths.'*⁴

The *Cartagena Action Plan 2010 – 2014: Ending the Suffering Caused by Anti-Personnel Mines* includes a number of action points that make reference to MRE. Action point 19 focuses specifically on mine risk reduction: *'Provide mine risk reduction and education programmes, as part of broader risk assessment and reduction activities targeting the most at-risk populations, which are age-appropriate and gender-sensitive, coherent with applicable national and international standards, tailored to the needs of mine-affected communities and integrated into on-going mine action activities, in particular data gathering, clearance and victim assistance as appropriate.'*⁵

The Convention on Cluster Munitions (CCM) adopts the term risk reduction education instead of MRE. Article 4 is titled *'Clearance and Destruction of Cluster Munitions Remnants and Risk Reduction Education.'* Article 4 states that in fulfilling their clearance obligations, States Parties shall take, as soon as possible, a series of measures, including: *'Conduct risk reduction education to ensure awareness among civilians living in or around cluster munition contaminated areas of the risks posed by such remnants.'*⁶

The *Vientiane Action Plan 2010 – 2014*, includes several action points that make reference to risk reduction education. Action point 17 focuses exclusively on risk reduction education: *'Develop and provide risk reduction education programmes that focus on preventing and providing alternatives to risk-taking behaviour and target the most at-risk populations. Risk reduction education programmes should be tailored to the needs of affected communities, gender-sensitive and age appropriate, consistent with national and international standards and integrated into clearance, survey and victim assistance activities. Risk reduction education activities should also be integrated, as appropriate, into schools, community-based programmes and public information campaigns. Large-scale awareness raising should be mainly used in immediate post-conflict situations.'*⁷

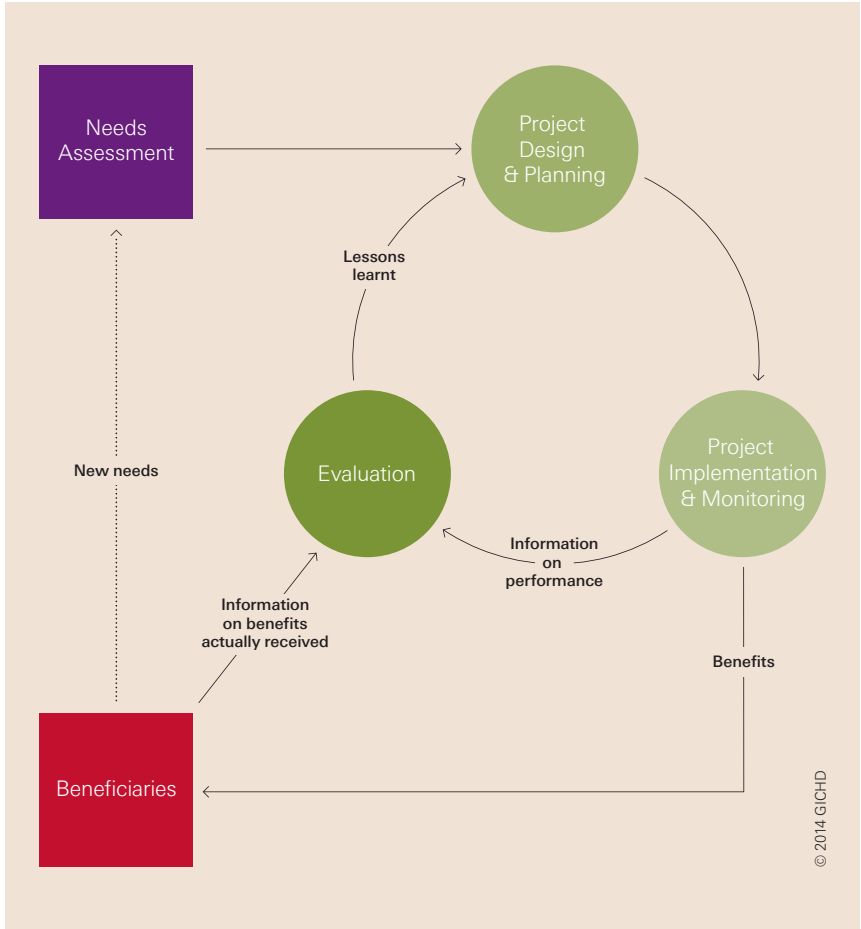
CCW Protocol V stipulates that High Contracting Parties *'shall take all feasible precautions in the territory under their control'* affected by ERW, including warnings and risk education to the civilian population.⁸

MRE Project Cycle Management

A MRE project, just like any other project should incorporate all stages of the project management cycle:

FIGURE 10

PROJECT CYCLE MANAGEMENT



Needs assessment

The first step of the project management cycle is to carry out a needs assessment, to identify and understand the capacities, needs, priorities and vulnerabilities of affected women, girls, boys and men. It is important that any needs assessment is transparent and implemented in a participatory manner and that the results are shared with the beneficiaries. Although a needs assessment is an important first step, it should not be seen as a one-off activity, but be implemented on a regular basis, and form part of on-going monitoring activities.

Knowledge, Attitude, Practice and Beliefs (KAPB) surveys can form an important part of a needs assessment. The purpose of KAPB surveys is to gather a wide range of information that will result in a more in-depth understanding of MRE-related issues.

Women, girls, boys and men are affected differently by mines/ERW, owing to their gender specific roles and responsibilities within their community. It is essential that needs assessments include all sex and age groups in affected communities, to ensure that the information collected accurately reflects reality. In some contexts it is necessary to deploy all-female teams in order to reach affected women.

It is also important to recognise diversity issues more generally, and ensure that individuals from different socio-economic backgrounds, persons with disabilities and female-headed households are included. 'Communities' consist of highly diverse groups of people. Deeply embedded power relations influence their structures and decision-making processes. Age, gender, tribe, social and economic status, and religion are a few of the important factors that influence power relations in communities.

Planning

The planning phase draws on findings from analysis of the needs assessment data. Projects should be planned and designed so that they respond to the needs of, and provide needed benefits to, the beneficiaries. Planning is a precondition to effective implementation and should be based on on-going assessment of the needs of the beneficiaries. A gender analysis of all data collected in the needs assessment should be conducted. The findings of this analysis inform the planning process, to ensure that the project is effective in responding to specific needs, priorities and vulnerabilities.

Planning in a MRE context typically takes place at several levels, with a number of different plans and strategies, including and MRE strategy, action plan, work plan and community plan.

Developing safety messages

Safety messages are at the heart of any MRE initiative. IMAS 12.10 recommends that a communication strategy should be developed, and that it should include:

- risk-taking behaviours to be addressed;
- target groups;

- safety messages;
- communication channels; and
- means of dissemination.

Messages should be tailored according to the specific exposure patterns, needs and priorities of target groups. The tailoring and design of messages should respond to findings in the needs assessment and the analysis of accident data. Messages, materials and any symbols must be gender and age-sensitive and culturally, linguistically and socially appropriate.

It is crucial to ensure that field-testing of safety messages and material is done with a sample group that is representative of the beneficiaries. Field-testing may (and often should) result in changes and adaptations to the safety messages and material.

Implementing activities

MRE is implemented in all stages of a mine action programme life cycle: conflict/emergency, stabilisation, reconstruction, assisted development and development. In an emergency setting, MRE generally focuses on raising awareness related to the danger of new risks from mines/ERW and emphasising safe behaviour.

In later stages of the life cycle, the emphasis shifts to collecting community information on the particular threats that women, girls boys and men are exposed to. Activities are then tailored on the basis of that information, responding to the identified behaviour patterns, exposure and needs.

MRE is mainly integrated into school curricula in countries that face a significant and protracted mine/ERW problem. This is an effective way of reaching school children. In several mine/ERW-affected countries many children do not have the opportunity to go to school. A child-to-child approach, where a child who is not attending school can be sensitised by his/her peers and/or siblings is implemented in a number of programmes.

Application of national ownership and sustainability principles, mean that it is important that capacity development plays a central role in all MRE projects. Capacity development takes place at several different levels and targets a multitude of actors, including national staff, beneficiaries, national organisations, the NMAA/MAC and relevant Government ministries.

Many operators have volunteer structures in place, whereby women and men from affected communities serve as MRE focal points in their communities. Volunteer networks have been praised on many occasions for strengthening community ownership and capacity to implement activities in a sustainable manner.

MRE further plays an important role in countries where all known hazardous areas have been cleared, to prevent accidents stemming from so-called residual mine/ERW contamination.⁹

Monitoring and evaluation

Monitoring should be an on-going activity throughout the MRE project cycle, whereby activities are monitored against the plans and strategies developed in the planning phase, ensuring that the project is on track and is delivering expected outputs. Activities are monitored to ensure that the project delivers the needed benefits, and that it accurately and effectively responds to the needs identified in the needs assessment.

Monitoring usually takes place both internally and externally. The NMAA/MAC is generally responsible for external quality assessments, whereby it conducts visits and accompanies MRE teams to the field to ensure that activities are of the required standard.¹⁰

KAPB surveys are frequently implemented in MRE projects. Findings from KAPB surveys assist in better design and targeting of MRE activities for the different sex and age groups. KAPB surveys also provide a useful baseline, against which subsequent data should be measured, to determine results. KAPB surveys often play a central role in pre- and post-impact assessment activities.

Monitoring generally focuses on the activities and output level (number of MRE sessions delivered, number of women, girls, boys and men targeted, type of delivery etc.) – and seeks to answer the question ‘are we doing the job right?’ Evaluations on the other hand tend to focus more on the performance, outcome and impact level – ‘are we doing the right job? Do we make a difference?’ Evaluations can be conducted at any stage of the project cycle, and not just at the end. IMAS 12.10 highlights four good reasons for conducting an evaluation of a MRE project:

- to improve performance;
- to enhance accountability;
- to improve communication among stakeholders; and
- to improve learning and empowerment.

The benefits of monitoring and evaluation are dependent on how organisations respond to the findings. If necessary, activities, plans, strategies, future projects should be adapted accordingly. The monitoring and evaluation feedback loop is the main driver for the continual improvement of a MRE project/programme.

Role of community liaison and MRE in broader mine action

While Community Liaison and MRE are central and integral parts of mine action, they also serve as an important support function to a number of other mine action activities. Community Liaison/MRE teams can be seen as the ‘eyes and ears’ of mine action. They are instrumental in sharing information and building trust between mine action organisations, affected communities and other stakeholders.

Gender-balanced teams facilitate access to all sex groups and enable organisations to carry out other activities in a more inclusive, participatory manner, resulting in more people-centred, effective and sustainable results. ‘Community Liaison/MRE teams’ support includes, but is not limited to:



MRE (Afghanistan)

Demining/Explosive Ordnance Disposal (EOD)/Battle Area Clearance (BAC)

Pre-clearance/survey:

- Identify and register suspected and/or known hazardous areas.
- Initiate consultations with women, girls, boys and men in affected communities.
- Conduct pre-clearance/survey impact assessments to identify needs and priorities.
- Facilitate task prioritisation.

During clearance/survey:

- Share information with communities on the survey/clearance plans and the importance of respecting and understanding marking and fencing.

Post-clearance/survey:

- Facilitate handover of released land.
- Inform women, girls, boys and men about areas that have been cleared and those that remain hazardous, including markings of cleared and un-cleared areas.
- Conduct post-clearance/survey impact assessments to determine if anticipated results were reached.
- share the impact assessment results with communities.

Stockpile destruction

- build trust between local communities, authorities, and mine action organisations.

Victim assistance

- Contribute to mine/ERW victim data collection or surveillance systems.
- Identify national and local capacities for victim assistance, and under what conditions assistance is available.
- Provide survivors with detailed information on the availability of assistance and how this assistance can be obtained.

- Liaise with physical rehabilitation centres to ensure assistance is provided.
- Encourage the employment of survivors and victims, if possible and where appropriate, as MRE facilitators.
- Deliver emergency MRE to communities affected by recent incidents as a component of a psychosocial support campaign.

Advocacy

- Raise the awareness of mine action locally and nationally, especially in contexts where demining and survey activities are not yet feasible for security/political reasons.
- Promote International Humanitarian Law.
- Advocate for, and raise awareness of, the rights of mine victims and persons with disabilities more broadly.

ENDNOTES

- 1 UN (April 2010) *IMAS 12.10 Mine/ERW Risk Education*, Second Edition (online). Available from: <http://www.mineactionstandards.org/> (accessed: 25 June 2013).
- 2 UNICEF (July 2008) *Emergency MRE Toolkit. Emergency MRE Handbook*, First Edition (online). Available from: http://www.unicef.org/protection/Emergency_MRE_Toolkit_-_Final_Handbook.pdf (accessed: 25 June 2013).
- 3 UN (January 2003) *IMAS 04.10 Glossary of mine action terms, definitions and abbreviations*, Second Edition (online). Available from: <http://www.mineactionstandards.org/> (accessed 25 June 2013).
- 4 APMBC. *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction*, adopted 18 September 1997, entered into force 1 March 1999 (online). Available from: http://www.apminebanconvention.org/fileadmin/pdf/mbc/text_status/Ottawa_Convention_English.pdf (accessed: 24 June 2013).
- 5 APMBC, Cartagena Summit (December 2009) *Cartagena Action Plan 2010 – 2014: Ending the Suffering Caused by Anti-Personnel Mines* (online). Available from: <http://www.cartagenasummit.org/fileadmin/pdf/review-conference-2nd/2RC-ActionPlanFINAL-UNOFFICIAL-11Dec2009.pdf> (accessed 25 June 2013).
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- 8 UNOG/Disarmament (28 November 2003) *CCW Protocol V on Explosive Remnants of War* (online). Available from: <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G03/653/61/PDF/G0365361.pdf?OpenElement> (accessed: 25 June 2013).
- 9 IMAS 04.10 defines 'residual risk', in the context of humanitarian demining as '*the risk remaining following the application of all reasonable efforts to remove and/or destroy all mine or ERW hazards from a specified area to a specified depth.*'
- 10 The MAC/NMAA is also responsible for accrediting MRE teams prior to the implementation of activities.



ASSISTING THE VICTIMS

KEY MESSAGES

- International humanitarian law includes definitions of victims.
- Victim assistance includes emergency and on-going medical care, rehabilitation, psychological support, economic empowerment, inclusive education and an effective legal and policy framework.
- Responsibility for victim assistance within an affected country normally rests with ministries of social affairs and health, or national human rights organs.
- Mine action organisations have a supporting role to play through data collection and dissemination, advocacy, and coordination.

INTRODUCTION

Assisting the victims and survivors of a particular weapon system, or victim assistance, is a relatively new concept. It was first seen in the legal text of the 1997 Anti-Personnel Mine Ban Convention (APMBC)¹, the first multilateral disarmament or arms control treaty in history to make provision for the victims of a particular weapon. Following the entry into force of the Convention, the concept evolved greatly. With victim assistance obligations having appeared more recently in Protocol V to the Convention on Certain Conventional Weapons (CCW) and in the Convention on Cluster Munitions (CCM), there is now a uniform approach to what victim assistance means.

The international community now understands in very broad terms who or what a victim might be. It is widely accepted that victim assistance involves a wide range of activities. In addition it has been made clear that, while mine clearance and victim assistance are both aspects of mine action, there are differences in terms of what is involved in achieving the end state of each. Unlike humanitarian demining, which emerged in the mid-1990s as a new discipline, complete with its own standards and other professional trappings, victim assistance is part of broader long-established domains, such as health care, disability and human rights. This has important implications for responsibilities for victim assistance.

WHO IS A VICTIM?

The States Parties to the APMBBC understand that landmine victims are ‘those who either individually or collectively have suffered physical or psychological injury, economic loss or substantial impairment of their fundamental rights through acts or omissions related to mine utilisation.’² This broad approach implies that while a victim may be a woman, girl, boy or man directly impacted by mines or other explosive remnants of war, a victim could also be an affected family member, family or community.

A similarly broad approach to victimisation has been accepted in the 2008 CCM, which defines ‘cluster munition victims’ as ‘all persons who have been killed or suffered physical or psychological injury, economic loss, social marginalisation or substantial impairment of the realisation of their rights caused by the use of cluster munitions’ including ‘those persons directly impacted by cluster munitions as well as their affected families and communities.’³

In their 2008 Plan of Action on Victim Assistance, the High Contracting Parties to Protocol V to the CCW have accepted that ‘explosive remnants of war may not only affect the persons directly impacted by them, but also their families and communities.’

A broad approach to what is considered a victim has drawn attention to the full breadth of victimisation caused by landmines and other explosive remnants of war. Nevertheless, the majority of attention has naturally focused on providing assistance to those individuals directly impacted by mines and other explosive remnants of war. These individuals have specific needs for emergency and on-going medical care, rehabilitation, psychological support, economic empowerment, inclusive education and a legal and policy framework to guarantee their rights to participate in the civil, political, economic, social and cultural spheres of their societies on a basis equal with others.

The ultimate goal of participation on a basis equal with others suggests that the more empowering term survivor should normally be used in relation to those individual women, girls, boys and men who have been injured and left living with a disability as a result of contact with a mine or other explosive remnant of war. However, the term victim continues to be used, in part to avoid ambiguity with legal obligations given that the term appears in legal texts. In addition, the international community has defined victim broadly to go beyond the individual.



Rehabilitation centre (Afghanistan)

WHAT IS VICTIM ASSISTANCE?

Those injured by a mine or other explosive remnant of war require a range of age- and gender-sensitive assistance, including emergency and on-going medical care, rehabilitation, psychological support, economic empowerment, inclusive education and an effective legal and policy framework. An incident with a mine or other explosive hazard can cause a range of injuries to an individual including the loss of limbs, abdominal, chest and spinal injuries, visual and hearing impairment, scars, and less visible psychological trauma. Victims often acquire a lifelong disability.

Injuries suffered by people from mines or other explosive remnants of war require prompt and appropriate medical attention. Emergency and continuing medical care includes first-aid, emergency evacuation, and medical care including surgery, blood transfusions, pain management and other health services. The provision of appropriate emergency and continuing medical care, or the lack of it, has a profound impact on the immediate and long-term recovery of victims and is one of the main factors affecting mortality rates. In reality many affected countries lack trained staff, medicines, blood supplies, equipment and infrastructure to adequately respond to traumatic injuries.

Survivors may also need rehabilitation including the provision of services in physical rehabilitation and physiotherapy and the supply, maintenance and training in the use of assistive devices such as prostheses, orthoses, walking aids and wheelchairs. Physical rehabilitation focuses on helping a person regain or improve the capacities of her or his body, with physical mobility as the primary goal.

Rehabilitation services should apply a multidisciplinary approach involving a team working together, including a medical doctor, a physiotherapist, a prosthetic/orthotic professional, an occupational therapist, a social worker and other relevant specialists. The team should have both male and female professionals, as in many countries it is not appropriate for women and girls to be attended by men and vice versa.

Although physical wounds caused by mines and other explosive remnants of war are often horrific, psychological and social impacts are also significant. Difficulties in relationships and daily functioning can be considerable and the survivor may face social stigmatisation, rejection and unemployment. These negative consequences affect survivors in different ways. Both boys and girls may drop out of school as a result of an accident and may find it difficult to get married later in life. Adults who are no longer able to generate income for their families often experience frustration and depression.

Women and men with disabilities may be abandoned by their families if they are considered unable to take care of housework and the family. Appropriate psychological and psychosocial support has the potential to make a significant difference in the lives of survivors, and the families of those killed or injured. Psychological and psychosocial support may be necessary in the immediate aftermath of the accident and at different times throughout their lifetime.

For some survivors and the families of those killed or injured, the main priority is not medical care or rehabilitation but finding opportunities to be productive members of their communities. Economic empowerment includes activities that improve the economic status of survivors and the families of those killed or injured through education, vocational training, access to micro-credit, income generation and employment opportunities, and the economic development of the community infrastructure.

Economic empowerment is essential to promote self-sufficiency, independence, enhanced self-esteem and a sense of dignity. This is a particular challenge in many countries where there is a lack of opportunity for economic participation for the population as a whole.

Survivors also need a legal and policy framework in place that will guarantee their rights with a view to ensuring opportunities in one's society on a basis equal with others. The 2008 Convention on the Rights of Persons with Disabilities (CRPD) provides significant guidance. As noted by the United Nations High Commissioner for Human Rights, Navanethem Pillay, 'when survivors of mines and other explosive devices acquire a disability they fall under the scope of the CRPD.'⁴

22 of the 50 articles of the CRPD are particularly relevant to assisting victims and survivors, including those on health, personal mobility, habilitation and rehabilitation, education, work and employment, social protection, independent living, participation in culture and sports, participation in political and public life, accessibility, awareness raising, statistics and data collection, non-discrimination and women and children with disabilities.

Parties to the APMBC, the CCM and Protocol V to the CCW have all noted the role of the CRPD in fulfilling each treaty's promise to victims of mines and other explosive remnants of war.⁵

In addition to emergency and on-going medical care, rehabilitation, psychological support, economic empowerment and an effective legal and policy framework, another important component of victim assistance is the set of efforts to understand the extent of the challenge. Without accurate and comprehensive data, such as that generated by an on-going injury surveillance system, it is not possible to fully understand the extent, location and quality of the challenges faced or to develop efficient, effective and timely responses.

Accurate sex and age-disaggregated data on landmine and other casualties, as well as data on the broader prevalence of disability and on injuries, are essential in order to use limited resources most effectively and to formulate and implement appropriate policies, plans and programmes.

PLACE OF VICTIM ASSISTANCE IN BROADER CONTEXTS

While victim assistance is referred to as an integral component of mine action, there are important contextual differences between humanitarian demining and activities related to assisting in the care and rehabilitation of landmine and other explosive remnants of war survivors. The problems associated with mine and other explosive remnants of war contamination are relatively distinct. Consequently, humanitarian demining has developed as a new and specialised discipline.

A responsive programme to clear mines or cluster munition remnants and to promote behavioural change through mine risk education is ultimately intended to finish, and in many instances already has. In contrast, the problems faced by survivors are similar to the challenges faced by other persons who have suffered injuries and who are living with disabilities. Many of the challenges they face will remain significant for the whole of their lives.

Survivors are individuals who are part of larger communities of persons with disabilities and of individuals requiring medical and rehabilitation services. Their needs – for medical care, rehabilitation, economic empowerment, etc. – do not warrant the development of new fields or disciplines. Rather, their needs call for ensuring that existing healthcare and social service systems, rehabilitation programmes, vocational training and employment initiatives and legislative and policy frameworks are adequate to meet the needs of all citizens – including landmine and other explosive remnants of war survivors.

As agreed by the States Parties to the APMBC, ‘victim assistance should be integrated into broader national policies, plans and legal frameworks related to human rights, disability, health, education, employment, development and poverty reduction.’⁶ It is also important that it should be integrated into broader programmes for conflict victims.

It is widely understood that the call to assist victims should not lead to victim assistance efforts being undertaken in such a manner as to exclude any person injured or disabled in another manner.

For instance, the States Parties to the APMBC reaffirmed in 2009 that they are ‘resolved not to discriminate against or among mine victims, or between mine survivors and other persons with disabilities, and to ensure that differences in treatment should only be based on medical, rehabilitative, psychological or socio-economic needs of victims.’⁷ The same reference with respect to cluster munitions victims can be found in Article 5 of the Convention on Cluster Munitions.

All actors should take great care to avoid developing responses to the victims of mine and other explosive remnants of war that run parallel to or are in isolation from broader efforts to meet the needs and guarantee the rights of those whom have been injured and/or who live with disabilities. Rather, assistance to victims and survivors should be viewed as a part of a country’s overall public health and social services systems. It is within these systems that efforts to fulfil the promise to survivors should be undertaken.



Prostheses (Sarajevo)

National injury surveillance mechanisms, if and when they exist, should incorporate data collection on individuals directly impacted by mines and other explosive remnants of war. Medical services should be accessible on an equal basis to the population as a whole, including to landmine survivors and others who require emergency or on-going treatment. Physical rehabilitation programmes should not discriminate on the basis of what caused the need for services but rather should be established in a sustainable manner to meet the needs of survivors and all others who may require such programmes.

Because most individuals who survive an incident with a mine or other explosive remnant of war acquire a disability, special attention should be given to the place of victim assistance in broader approaches to disability and disability rights. Steps taken to ensure that all women, girls, boys and men with disabilities may participate in the civil, political, economic, social and cultural spheres of their societies on a basis equal with others are, in fact, steps taken to ensure that the promise made to mine and other explosive remnants of war survivors through the various conventional weapons treaties is met. The Convention on the Rights of Persons with Disabilities provides the guidance to do so. Efforts should be made to integrate a response to survivors into broader efforts to implement this landmark human rights convention.

RESPONSIBILITIES FOR VICTIM ASSISTANCE

The well-being and the guarantee of the rights of a state's population are essentially matters within the domestic jurisdiction of each state. Meeting the needs, and guaranteeing the rights of, mine and other explosive remnants of war victims and survivors is the responsibility of each state in relation to individuals in areas under its jurisdiction or control. This is a particularly profound responsibility for the approximately 35 states which have indicated, or are presumed to be responsible for, significant numbers of victims and survivors.

Most such states are also in the process of clearing mines, cluster munition remnants and other explosive remnants of war and delivering mine risk education. Lead responsibility for victim assistance should not normally rest with those charged with these other matters. When it comes to humanitarian demining and mine risk education, it is clear that new kinds of state entities – national mine action authorities and centres – have been required to take lead responsibility.

Concerning victim assistance, it should also be clear that responsibility for what is required should be held by state entities that have existed for decades, such as ministries of social affairs and health, or national human rights organisations. Recognising where lead responsibility should lie, and reinforcing relevant state institutions to exercise responsibility, is the logical approach to ensure that the promise to victims and survivors is fulfilled in an efficient, sustainable and non-discriminatory manner.

While national mine action structures are not the appropriate entities to take the lead in the care, rehabilitation and reintegration of a State's population, they do have a supporting role to play in assisting victims. The 2003 United Nations' policy on the scope of action of MACs in victim assistance, highlights that 'mine action centres are not designed to take the lead role in victim assistance, nor do they have the mandate, expertise or required resources,' but suggests that MACs/ NMAAs can contribute to assisting victims in areas such as data collection and dissemination, advocacy, and coordination. Mine action entities can assist in a number of ways:

1. Awareness can be raised within the machinery of government of the important promise States have made to mine and other explosive remnants of war survivors through accession to various different international instruments.
2. Sex and age-disaggregated data on mine casualties collected by a national mine action programme should be fed into broader national injury surveillance and disability information systems.

3. Mine action programmes can leverage international interest in assisting the victims of mines and other explosive remnants of war in order to call for advances that should benefit a broader community of those who have been injured and/or are living with disabilities. This could include supporting accession to and implementation of the CRPD.
4. International interest in the landmine cause could be used by mine action programmes as a basis for resource mobilisation to benefit not only landmine and other explosive remnants of war victims and survivors but also the broader community of women, girls, boys and men who live with disabilities.
5. Mine action programmes could promote sound coordination between landmine survivors and their representative organisations, those interested in assisting them, and those state entities with lead responsibility for health care, social services and disability.



Villagers (Cambodia)

While ultimate responsibility rests with individual states, in many instances institutions have limited capacity and national ownership requires strengthening. In such instances, international organisations and international and national NGOs play vital roles in delivering services and enhancing national capacity. In addition, many states with the responsibility to meet the needs, and guarantee the rights of significant numbers of victims and survivors, lack the financial means to do so.

The APMBC, the CCM and Protocol V to the CCW each calls upon its parties to provide technical, material and financial support for victim assistance. In addition, the Convention on the Rights of Persons with Disabilities states that its 'States Parties recognize the importance of international cooperation and its promotion, in support of national efforts for the realization of the purpose and objectives of the present Convention.'⁸

Since the entry into force of the APMBC, tens of millions of dollars in contributions specifically labelled as victim assistance have been generated. Undoubtedly the biggest form of support has come through development assistance contributions for health care which are not explicitly labelled as victim assistance. In recent years, annual development assistance flows to affected countries for matters such as basic health care, basic health infrastructure, health personnel, medical education and training, and medical services have been over ten times greater than funding specifically denominated as victim assistance.

The responsibilities of a ministry of social affairs or health, a national demining programme, a non-governmental organization and an international donor are different. However, all actors share the responsibility of ensuring the effective participation and inclusion of survivors and other persons with disabilities.

Survivors and other persons with disabilities have a unique perspective on their own situation and needs. They can and should be constructive partners in all victim assistance efforts and broader disability efforts. The principle of participation and inclusion is well understood in the context of the APMBC, the CCM and Protocol V to the CCW, with parties to each heeding the message of 'nothing about us without us.'⁹

Participation of persons with disabilities, including landmine and other explosive remnants of war survivors, in all aspects of planning, coordination, implementation, monitoring and evaluation of activities that affect their lives is essential.

ENDNOTES

- 1 APMBC. *Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction*, adopted 18 September 1997, entered into force 1 March 1999 (online). Available from: http://www.apminebanconvention.org/fileadmin/pdf/mbc/text_status/Ottawa_Convention_English.pdf (accessed: 24 June 2013).
- 2 APMBC (2004) *First Review Conference of the States Parties to the Anti-Personnel Mine Ban Convention, 'Final Report'*, APLC/CONF/2004/5, paragraph 64
- 3 CCM *Convention on Cluster Munitions*, adopted on 30 May 2008, entered into force on 1 August 2010, Article 2, paragraph 1.
- 4 APMBC (3 December 2012) *Statement by the United Nations High Commissioner for Human Rights, Navinder Pillay, to the Twelfth Meeting of the States Parties to the Anti-Personnel Mine Ban Convention*.
- 5 United Nations, *Convention on the Rights of Persons with Disabilities*, adopted 13 December 2006, entry into force 3 May 2008, in accordance with Article 45(1) (online). Available from: <http://www.ohchr.org/EN/HRBodies/CRPD/Pages/ConventionRightsPersonsWithDisabilities.aspx> (accessed: 25 June 2013).
- 6 APMBC, Cartagena Summit (December 2009) *Cartagena Action Plan 2010 – 2014: Ending the Suffering Caused by Anti-Personnel Mines*, paragraph 13.
- 7 APMBC, Cartagena Summit (December 2009) *Cartagena Action Plan 2010 – 2014: Ending the Suffering Caused by Anti-Personnel Mines*, paragraph 14.
- 8 *Convention on the Rights of Persons with Disabilities*, Article 32, paragraph 1.
- 9 APMBC. *Second Review Conference of the States Parties to the Anti-Personnel Mine Ban Convention, 'Final Report'*, paragraph 114.
CCM. *Convention on Cluster Munitions*, adopted on 30 May 2008, entered into force on 01 August 2010, Article 5, paragraph 2 (f).
United Nations, *Protocol V – Plan of Action on Victim Assistance*, entry into force 2006, Action 4 (f).



MINE ACTION, SECURITY
AND DEVELOPMENT

KEY MESSAGES

- Mine action priorities and resource allocation should reflect a country's broader social, political and economic context.
- Community liaison, priority-setting, handover, post-clearance assessment and outreach to wider humanitarian and development actors can be used to promote post-clearance land use and development.
- Using participatory, inclusive and gender-sensitive approaches adds value to mine action operations and contributes to development outcomes.
- Land release changes the value and status of land so mine action organisations need to adopt the humanitarian principle of 'do no harm' to prevent unintended negative consequences.
- Mine action organisations are well-placed to respond to wider security issues given their weapons and munitions experience and ability to work in unstable contexts, alongside security actors such as the police and military.

CHANGING CONTEXT, CHANGING PRIORITIES

Mine action refers to a range of activities that seek to reduce the risks associated with mines/explosive remnants of war (ERW). In contexts where mine/ERW contamination impedes post-conflict recovery, mine action can also facilitate socio-economic recovery and development. Mine action can be viewed within the broader context of development within a country, with the main priorities of a national mine action programme aligned with wider national and regional development priorities. Coordination and information-sharing mechanisms should be established between mine action authorities and organisations and wider humanitarian and development actors working within the government, non-governmental and private sector.¹

The broader social, political and economic context in a country has important implications for the focus of mine action. As the context evolves in mine/ERW-affected countries over time from conflict to stabilisation, reconstruction and longer-term development, so too should mine action priorities and the allocation of resources evolve.

- When a country is in conflict or emerging from conflict, mine action is driven by efforts to facilitate humanitarian assistance and the safe movement of refugees and internally displaced persons.
- As a country slowly begins to initiate reconstruction efforts, and national government capacity starts to develop, efforts focus on the establishment of a national mine action programme, and support for reconstruction projects.
- Once a mine/ERW-affected country moves into a more stable development context, mine action programmes focus on the transfer of responsibility to national authorities to manage residual contamination, with a corresponding reduction in international staff levels. National governments also focus on allocating greater national resources for mine action, and ensuring that mine action is reflected in development planning processes, strategies and budgets. States that are financially unable to meet their treaty obligations, but demonstrate commitment to those obligations, should be assisted by other States in a position to do so.

Such a linear process is rare in reality. For example, different areas within the same country may be at different phases and have different needs at the same time. The process doesn't always advance: some countries emerging from conflict may return to conflict.

As time progresses and a country stabilises, several general trends in mine action can usually be observed:

- The level of national ownership of the mine action programme increases.
- There is greater involvement of sector ministries/agencies (eg agriculture, rural development, infrastructure, mines/energy, etc.) and different levels of government in prioritising survey and clearance operations.
- During emergencies, the availability and the timeframe for collecting primary data is limited and priorities for clearance are fairly standard, eg clearance of infrastructure to enable access for humanitarian assistance, clearance of homes to facilitate return, etc. as the context stabilises, priority-setting requires a more nuanced understanding of the operational context. Information management requirements increase as mine action planners/managers require better quality data about the scope and nature of the mine/ERW contamination problem, in order to make more informed decisions. There is also more time to collect data, and the time invested in data collection is justified by larger-scale clearance.

- The capacity of the national mine action programme increases, in response to the acquisition of new assets, staff training and the introduction of better organisational management systems.
- Additional actors become involved in mine action, as illustrated in Figure 11.

FIGURE 11

**ACTORS INVOLVED IN A NATIONAL MINE ACTION PROGRAMME
ACCORDING TO COUNTRY CONTEXT**

Sector/Type of required programming	Key actors	Key challenges for mine action planning
Humanitarian	United Nations (UN) agencies, international NGOs, Red Cross	<ul style="list-style-type: none"> • Dealing with many agencies which may disagree on priorities and strategy in a chaotic, rapidly changing environment.
Security	Foreign and/or domestic militaries/police forces, NGOs	<ul style="list-style-type: none"> • Avoiding domination of dominating humanitarian and development needs by military priorities. • Security of staff if internal security not established. • Getting cooperation and data from militaries.
Reconstruction	World Bank and perhaps other agencies or multilateral trust funds; United Nations Development Programme. Major donors with showcase projects	<ul style="list-style-type: none"> • Large scale demining tasks under tight deadlines in support of major infrastructure projects. • Ensuring funds for demining are included in reconstruction projects.

<p>Development</p>	<p>Government, World Bank, NGOs, UN and perhaps other multilateral agencies.</p> <p>Main donors for sectors</p>	<ul style="list-style-type: none"> • Coordinating with many local and provincial governments on task priorities. • With committed government:² coordinating with ministries of finance and planning to ensure national government gives adequate priority to mine action. • With uncommitted government: coordination with donors when overall donor coordination mechanism is lacking.
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ENSURING MINE ACTION PROMOTES DEVELOPMENT

Humanitarian mine action was initially conceived as a humanitarian emergency response to prevent civilian deaths, particularly among returnee communities. The focus of mine action organisations was primarily on safely and efficiently removing the threat of mines and ERW to meet basic security needs of the civilian population and humanitarian workers. This remains a key priority for mine action.

In recent years, mine action organisations and their donors, have started to place an increasing emphasis on ensuring not only operational efficiency, but also developmental outcomes³, ie that mine action also results in improved physical safety and access to basic services, thereby promoting improved livelihoods for all stakeholders.⁴ This partly reflects the increased recognition that in some countries, mines and ERW:

- Threaten community safety.
- Block infrastructure required for economic activity and mobility.
- Limit access to health care, education and other basic social services.
- Prevent the safe use of assets vital to sustainable livelihoods (eg, water sources, irrigation channels and land used for agriculture).
- Deter investors' confidence in making public and private investments essential for economic development.
- There are several aspects of mine action that have clear implications for post-clearance land use and development.

Community liaison

Community liaison (CL) involves interacting with women, girls, boys and men in mine/ERW-affected communities in order to exchange information, about the presence and impact of mines and ERW, to develop solutions to remove blockages and hazards and improve community safety.⁵ Among other things, CL teams can obtain information from communities regarding specific assistance they may require following the handover of released land. For example, they can share information with relevant actors if communities require development assistance or if they are encountering land-related conflict.

Priority-setting

The main aim of priority-setting is to make sure that mine action delivers the most value for money. Given that a country's mine/ERW contamination problem cannot be resolved completely in one go, priority-setting involves (i) deciding what tasks should receive priority; (ii) ensuring adequate resources are allocated to the selected priorities.

Priority-setting in mine action⁶ has important developmental implications in that decisions are made about which land should be surveyed and/or cleared first. If post-clearance land use and development are priorities for mine/ERW-affected communities and governments, then this should be reflected as priority-setting criteria. Examples of specific development-related criteria that can be included in a country's priority-setting system include:

- Land will be used for community development/existence of a community development plan.
- Land ownership is clear.
- Target beneficiaries are clearly identified based on needs (eg high risk of mine/ERW accident, economic level, marginalised groups, etc.).
- A development agency (government, commercial, NGO, etc.) will assist beneficiaries in making productive use of released land.
- The potential for land-related conflict is low.

Handover procedures

IMAS 04.10 defines handover as 'the process by which the beneficiary (for example, the NMAA on behalf of the local community or land user) receives and accepts land which was previously suspected of containing an explosive hazard

but which has subsequently had this suspicion removed, or reduced to a tolerable level,⁷ either through non-technical survey, technical survey or clearance.'

Following clearance, land should be handed over as soon as possible for productive use. Handover ceremonies and information dissemination are important because affected communities may not always be aware of survey/clearance operations, when operations are complete, the perimeters of the surveyed/cleared land, and if the previously contaminated land is safe to use.

Delays in carrying out handover procedures can lead to delays in communities being informed about the safety of the released land, and consequential delays in their use of the land. Delays can also result in confusion about which areas within their communities remain unsafe, highlighting the importance of community liaison work during clearance.

In order to ensure the handover process is transparent and inclusive, ceremonies should involve a broad cross-section of the community, including women, men, boys and girls and specific vulnerable groups. Sharing information with community members about the exact area that was cleared, items found, and any outstanding dangerous and/or suspected areas and their exact location is critical. This can help to increase community confidence in the released land, and prevent attempts to 'grab' land from intended beneficiaries.⁸

Widely publicised handover ceremonies which involve a broad cross section of the community, including local land administration officers, can help to reduce the likelihood of released land being 'taken' by powerful community members or outsiders.

Post-clearance assessment

Post-clearance assessment refers to a form of survey⁹ that is implemented in communities close to released areas, usually six to 12 months after the handover of released land. The principal purpose of this survey is to collect community data on short to intermediate outcomes, to identify lessons learnt to inform future project design, and to share data with other stakeholders that may contribute to addressing longer term development needs of beneficiary communities.

In some cases post-clearance assessments and external evaluations may be implemented several years after land has been released. How the data from post-clearance assessments is used often depends on why it has been carried out and by whom. Post-clearance monitoring may be conducted by mine/ERW operators and national mine action centres/authorities to check if a job was done well and to

an agreed standard, whereas post-clearance assessment carried out for evaluation purposes, may be carried out by operators, as well as UN agencies and donors to check if the right job was done.

While operators may be more concerned with finding out whether the right SHA was prioritised, national mine action authorities and donors may be more concerned about whether land release is contributing to broader national priorities.¹⁰

Post-clearance assessments can be used to determine whether:

- The most appropriate areas were prioritised, tasked and released.
- Released land is being used by intended beneficiaries for intended purposes.
- Women and men are equally involved in decisions relating to the use of released land.
- Beneficiaries are experiencing any problems in making productive use of released land (eg, land grabbing, disputes over use/ownership, lack of development support).
- Land release has led to an improvement in the livelihoods of beneficiary communities.
- Coordination between mine action and development actors is adequate.
- There is sufficient accountability to communities, mine-affected states and donors in terms of reporting on development outcomes and the proper use of funds.

It should be noted that there is no 'standard' post-clearance assessment methodology, and the practice of conducting post-clearance assessment is not yet widespread in the mine action sector. There is increasing emphasis on outcomes by donors, and a move by some operators, UN agencies and national authorities to improve coordination and capacity in this regard.

Outreach to humanitarian and development actors

In order to ensure mine action contributes to wider socio-economic recovery and development, it is important for mine action organisations to share information and coordinate where feasible with other organisations (government, UN, NGO and the private sector) involved in the delivery of humanitarian and development assistance to mine/ERW-affected communities.

Similarly, mine action organisations working at field level benefit from coordination between government ministries, UN agencies and others as this helps to better



Sign of mined area (Cambodia)

inform their operations. Outreach activities could include:

- Finding out which humanitarian/development actors are working in contaminated areas and encouraging them to work in affected areas where communities require assistance.
- Providing regular updates on contamination, casualties and current/planned mine action activities that they can use for planning their assistance programmes.
- Sharing information on the location of damaged infrastructure and inaccessible assets (eg, agriculture, grazing land), communities requiring development assistance and vulnerable groups engaging in high-risk behaviour¹¹ (eg, foraging or farming on suspected hazard areas).
- Sharing information about available mine action services, including timeframes and processes for requesting mine action assistance.
- Consulting with relevant stakeholders on priority areas for survey/clearance.
- Participating in relevant coordination bodies at national and sub-national levels.
- Considering integrated mine action and development projects.

ADDED VALUE OF USING GENDER-SENSITIVE APPROACHES

Gender equality is a precondition for sustainable development and efforts to eradicate poverty. All development programmes, whether focused on mine action or other sectors, benefit from gender mainstreaming. Given that mine/ERW contamination affects women, men, boys and girls in different ways, there

are clear advantages in ensuring that mine action operations are carried out using participatory, inclusive and gender-sensitive approaches.¹²

As a result of their gender-specific mobility patterns, roles and responsibilities, women, girls, boys and men often hold different information on areas that are contaminated, or suspected of being contaminated, in their communities. Vital, life-saving information may be lost if not all groups in an affected community are consulted during information gathering activities.

Gender-specific mobility patterns also mean that women, men, boys and girls benefit in different ways from released land. For example, if women and girls are responsible for collecting water and firewood, and water points and forested areas are prioritised for land release, then they are less likely to encounter mine/ERW-related risks while carrying out these activities. Similarly, in countries where young boys are often responsible for herding animals, they are more likely to benefit from the prioritisation of grazing/pasture land.

In some contexts, women can be hard to reach when implementing surveys as a result of gender-based discrimination. This means that their priorities – and frequently the priorities of their children – may be excluded. Depending on the cultural context, it may be appropriate to consult women and men separately, as well as to hold separate meetings with other vulnerable groups (eg, people with disabilities, minority ethnic groups) to ensure that their needs are taken into account.

Collecting high quality sex and age-disaggregated data (SADD)¹³ enables mine action organisations to:

- Monitor community participation in data-gathering meetings and handover ceremonies, to ensure a full range of stakeholders are consulted.
- Clarify who has access to and control over resources, labour patterns, the distribution of benefits between and among women, girls, boys and men, and who is most at risk from mines/ERW.
- Identify and understand the different capabilities, responsibilities, needs and priorities of different groups.
- Mainstream gender throughout project phases (planning, design, implementation and monitoring and evaluation) by assessing the different implications for women, men, boys and girls of any planned actions, and taking steps to prevent gender inequality.
- Provide concrete evidence for the formulation of policies and measures and design of projects; if statistics do not reflect the relevant gender

issues, policies and measures might not be appropriately tailored and could perpetuate or worsen inequalities.

- Ensure that employment opportunities are accessible to all individuals within the community to promote equal access to income generation and to facilitate the consultation of women, girls, boys and men in a community.

LAND, CONFLICT AND MINE ACTION: IMPORTANCE OF A 'DO NO HARM' APPROACH

Landmines and other remnants of conflict typically block access to, and use of, agricultural land, public services (such as schools and clinics), markets and infrastructure, among other things. The intrinsic value of mine action cannot be disputed in that it removes these barriers, saves lives and limbs, and restores safe access to key assets, in particular land.

However, in conflict-affected contexts, where land and access to other natural resources are common drivers of conflict, releasing land, which was previously inaccessible, changes its status and value. Doing so can have unintentional negative consequences. Mine action operations can potentially:

- Undermine food security, if clearance methods or their timing negatively impacts topsoil or damages crops.
- Lead to competition and disputes over ownership and use of land.
- Increase the likelihood of land being 'grabbed' from the vulnerable by powerful elites or commercial interests.
- Create or exacerbate conflict if clearance is done in areas where land ownership or boundaries are disputed.
- Reinforce or exacerbate gender inequalities in accessing land if women's rights to land tenure and use are not recognised and respected.
- Put mine action staff and equipment at risk, if caught in the middle of a land-related dispute.
- Suffer delays to survey/clearance operations if operations need to be suspended as a result of a land-related dispute.

Mine action organisations need to ensure that they adopt the humanitarian principle of 'do no harm'¹⁴. This involves:

- Understanding the operational context – for example, finding out who has what rights to the land, how land is, and will be, used post-clearance.

- Assessing the potential positive and negative impact of land release on the context and conflict dynamics, including for the powerful and the poor, male and female.
- Taking practical steps to ensure that mine action contributes to positive outcomes as well as positive outputs.

Figure 12 outlines how to promote the ‘do no harm’ principle, with regards to specific aspects of mine action:¹⁵

FIGURE 12 MINE ACTION AND LAND RIGHTS – OBSTACLES AND REMEDIES	
OBSTACLES	REMEDIES
Use Non-technical Survey, CL and MRE to collect land-related data and assess the likelihood of land-related conflict during and post-land release	
Releasing land and making it accessible often changes its status and value, which can create or exacerbate land-related tensions which have negative unintended consequences for beneficiaries, mine action staff and operations.	Include questions in Non-technical Survey forms about land ownership and use, past and future potential for land-related conflict, and intended land use post-clearance. For example, South Sudan’s Hazard and Survey Report Form includes questions about land value and land disputes in the hazard/land area.
When setting task priorities, do not prioritise land that is subject to a dispute	
Proceeding to conduct survey or clearance in an area where there is evidence of a land dispute could put affected communities, mine action staff and equipment in danger.	If there is evidence of a land-related dispute, postpone the task until the dispute is resolved. Mine/ERW operators should not become mediators. Report the issue to local government and national mine action authorities, and to local NGOs or the UN as appropriate.

Ensure that clearance techniques minimise the risk of disturbing boundaries between land and property

In contexts where no documentation exists regarding land ownership, the physical markers between property boundaries and shared walls in buildings are crucial. If removed during clearance, they can result in disputes and even land grabbing.

On agricultural land, mechanical assets can be used up to boundaries, with manual asset teams or mine detection dogs used to clear the boundary itself. If mechanical assets are used on the boundary, string can be used to mark the boundary above the ground. In residential areas, mechanical excavation may be used inside the structure, while manual assets and dogs can be used on the walls.

Schedule clearance to avoid damage to crop harvests and prevent food insecurity

The removal of topsoil through clearance, if not well-timed, can affect crop harvests and undermine food safety.

If contaminated land is being farmed, consult local communities and time clearance operations so that they do not result in crop damage.

Put in place transparent, inclusive and timely handover procedures to strengthen community confidence in the land release process, ensure that released land is used by beneficiaries and to mitigate the risks of land-grabbing

Land release often leads to an increase in the value of land. In conflict-affected contexts, this can lead to land grabbing or conflict. Handover procedures which are not transparent and do not require wide information sharing within a community can further create opportunities for disputes and land grabbing.

Ensure that handover ceremonies are widely publicised and involve women and men. Ensure that information about what land is safe to use and what remains contaminated is shared widely. Be explicit that handover documentation does not constitute legal evidence of land ownership.

Conduct post-clearance assessment to determine if released land is being used as intended and to check if beneficiaries have encountered any land-related issues, such as disputes, land-grabbing, expropriation, etc. and any gendered dimensions of this

Without conducting post-clearance assessment, it is difficult to determine if: beneficiaries are using land as intended; whether they require assistance to use land productively, eg tools, training, inputs, etc.; and whether they are encountering any land-related issues.

Surveys conducted several months after land has been released and handed back to communities help to assess the effectiveness and efficiency of mine action planning, priority-setting and implementation processes, as well as to determine what impact land release has had on affected communities. Use post-clearance assessment to examine how land use has changed prior to and after land release. Have land values changed? Has any land been sold or grabbed? Have conflicts emerged? What value has the released land produced?

Ensure recruitment does not favour one group over another

Recruiting from specific ethnic, clan, religious, political and gender groups could create perceptions that mine action favours one group over another.

Ensure recruitment policy and procedures are gender and diversity-sensitive to avoid discrimination, based on gender, race, ethnicity, political and religious affiliation, at any stage of employment: recruitment, training, tasks, remuneration, promotion and redundancy.

USING MINE ACTION EXPERTISE TO IMPROVE SAFETY AND REDUCE VIOLENCE

Drawing on experience gained in a range of conflict-affected contexts, several mine action organisations are using their technical expertise and capacity to go beyond clearing mines and ERW, and are addressing wider threats to security posed, for example, by small arms and light weapons (SALW) and ammunition. This is largely in response to observed needs on the ground and direct requests for assistance made by national authorities in affected countries.

Mine action organisations are well-placed to respond to wider security issues given their weapons and munitions experience. They are able to work in unstable contexts, alongside security actors such as the police and military. Using experience from implementing mine action programmes, many operators have been able to establish good working relationships with authorities, which have helped to facilitate the establishment of programmes that address wider security challenges.¹⁶



SALW collection (MAG Burundi)

Examples of the range of programmes being undertaken include:

- SALW collection and destruction activities which may be part of wider Disarmament, Demobilisation and Reintegration (DDR) efforts in a country. Several organisations (NGOs, UN and multilateral agencies) are working with national police and militaries to develop national capacities to collect arms that have been turned in through DDR programmes or criminal operations, and safely destroy them using mobile equipment or through weapons destruction facilities.¹⁷ Some are also providing assistance in the development of SALW registries and armoury storage and management.
- Physical Security and Stockpile Management (PSSM) programmes which typically involve several components: developing national standards; strengthening ammunition management capacity; safe destruction of excess, degraded and unstable ammunition and surplus or damaged arms; and the construction or refurbishment of ammunition management stores and armouries.¹⁸
- SALW risk awareness education campaigns delivered through the media, schools and community institutions to promote awareness about the risks of SALW and risky behaviour.¹⁹ In some contexts, eg Somaliland, awareness-raising also includes delivering messages about how to store personal arms and ammunition safely.
- Community safety programmes that involve the development of community safety plans in association with conflict-affected communities in rural and urban contexts. The delivery of a range of activities identified as priorities by local communities and authorities and in national plans, such as: conflict management education, SALW risk awareness, dialogue meetings and enhanced cooperation with security providers, and capacity development of community and local government institutions.²⁰

In several mine/ERW-affected countries, mine action has also contributed to peace-building and DDR programmes through the provision of training and stable employment to demobilised ex-combatants. For example, lessons learned from Afghanistan indicate that by training former ex-combatants in mine action and providing them with alternate employment options, they are less likely to return to armed conflict.²¹

Mine action efforts to strengthen the capacity of the police and military in mine action, as well as ammunition safety management and SALW control, also contribute to wider efforts to reform the security sector in affected countries.

As mine action typically involves the military or police working alongside civilian actors such as UN/international agencies, NGOs and commercial operators, these programmes can help to restore trust in security providers as well as the state as a whole.

ENDNOTES

- 1 See also Figure 5, The Architecture of Mine Action: Actors, Arenas, and Linkages in Chapter 4, Management of mine action programmes.
- 2 Commitment in this context refers to the willingness of a government to assume national ownership of the mine action programme and actually deliver the required mine action services.
- 3 Outputs in this context refer to the products, capital goods and services which result from a mine action intervention, for example the number of square kilometres of land that is released. Outcomes refer to the likely or achieved short-term and medium-term effects of an intervention's outputs. Outcomes are related to the 'effectiveness' of an intervention.
- 4 GICHD (2010) *Linking Mine Action and Development. Guidelines for Policy and Programme Development* (Online). Available from: <http://www.gichd.org/> (accessed: 2013)
- 5 See Chapter 7, section on Community liaison 2.2.3 for a more in-depth examination of community liaison.
- 6 For a more in depth discussion of priority-setting, see the series of Issue Briefs produced by GICHD on Priority-setting in Mine Action.
- 7 A tolerable level of risk is defined in IMAS 01.10 as 'risk which is accepted in a given context based on the current values of society.'
- 8 Gender and Mine Action Programme (GMAP) and GICHD (2013) *Handover of released land: Common procedures and good practices* (Online). Available from: <http://www.gichd.org/> (accessed: 2013).
- 9 GICHD (2011). *Sourcebook on Socio-Economic Survey* (Online). Available from: <http://www.gichd.org/> (accessed: 2013)
- 10 For example, see the Landmines and Livelihoods Surveys undertaken in Afghanistan and Yemen, which were conducted by GICHD in association with the Afghan and Yemen national mine action centres.
- 11 Risk education can help to address high-risk behaviour, but in stable communities where certain groups engage in high-risk behaviours as a livelihood necessity, it is helpful to share this information with other NGOs that may be able to offer alternative livelihood strategies. During Risk Reduction Education (as opposed to MRE) safe alternative and risk mitigation behaviours that are appropriate for the context are explored.
- 12 See for example: UNMAS (2010) *UN Gender Guidelines for Mine Action Programmes*; and the Gender and Mine Action Programme (GMAP).

- 13 IMAS 5.10 on Information Management encourages data collection that is disaggregated based on sex and age.
- 14 The 'do no harm' framework was developed in the early 1990s by several international and local NGOs who were interested in looking at how the assistance given in conflict settings interacts with the conflicts. The 'do no harm' framework was developed to help NGOs providing assistance better understand the conflict environments where they work, and to deliver assistance in a way that ensures better outcomes. See Collaborative Learning Projects (2004). *The 'Do No Harm' Framework for Analyzing the Impact of Assistance on Conflict: A Handbook*.
- 15 For more detailed guidance, see GICHD and UN-HABITAT (2012): *Mine action and land rights. Frequently Asked Questions for Mine Action Organisations*.
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