Mine Action

and the Implementation of

CCW Protocol V on

Explosive Remnants of War

GICHD | CIDHG

The Geneva International Centre for Humanitarian Demining (GICHD) works for the elimination of anti-personnel mines and for the reduction of the humanitarian impact of other landmines and explosive remnants of war.

To this end, the GICHD, in partnership with others, provides operational assistance, creates and disseminates knowledge, improves quality management and standards, and supports instruments of international law, all aimed at increasing the performance and professionalism of mine action.

Mine Action and the Implementation of CCW Protocol V on Explosive Remnants of War, First Edition, Geneva, July 2008.
ISBN 2-940369-08-9

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MINE ACTION AND THE IMPLEMENTATION OF CCW PROTOCOL V ON EXPLOSIVE REMNANTS OF WAR

JULY 2008

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FOREWORD

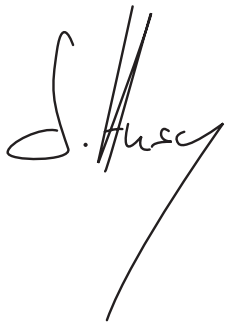
Explosive remnants of war – consisting of abandoned explosive ordnance and unexploded ordnance as a result of armed conflicts – pose significant threats to the survival and development of civilian populations. All too frequently they kill and injure the most vulnerable members of society and impede the reconstruction of a war-torn country or region. In response, States adopted a landmark agreement in 2003 – Protocol V on Explosive Remnants of War to the UN Convention on Certain Conventional Weapons – which provides an international legal basis for reducing the risks from these explosive devices for the first time.

The Protocol's entry into force on 12 November 2006 provided a welcome opportunity for further strengthening international efforts to tackle the consequences of ERW. But the mobilisation of political will in adopting a treaty must be swiftly followed by effective action by all concerned with implementing it. *Mine Action and the Implementation of CCW Protocol V on Explosive Remnants of War* provides practical information to those engaged in Mine Action – activities which aim to reduce the social, economic and environmental impact of mines and ERW.

The publication is intended particularly for States and their armed forces, but also for international and non-governmental organisations involved in explosive ordnance disposal, risk education or assistance to the victims. This first edition, which takes into account decisions reached at the First Meeting of States Parties to Protocol V in November 2007, reflects the legal obligations laid down by Protocol V on ERW and the non-legally-binding technical annex. Written in a straightforward style, it is intended simply to give guidance in a complex area of endeavour, based on best practice and lessons from the last 15 years of mine action. We hope that it will prove a useful resource to everyone concerned with the consequences of explosive remnants of war.

We would like to thank the Netherlands for its generous support of this initiative.

Ambassador Stephan Husy
Director
Geneva International Centre for Humanitarian Demining



CHAPTER 1

THE THREAT FROM EXPLOSIVE REMNANTS OF WAR

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This chapter reviews the definition of explosive remnants of war (ERW) as set out in Protocol V and provides an overview of the munition types that can become ERW. It also looks in brief at the prevalence of ERW around the world and their impact during and following armed conflicts.

According to the current UN definition, contained in the International Mine Action Standards (IMAS), Mine Action refers to 'activities which aim to reduce the social, economic and environmental impact of mines and ERW.' According to the definition, mine action comprises five complementary group of activities: mine risk education; demining, i.e. mine and ERW survey, mapping, marking and clearance; victim assistance, including rehabilitation and reintegration; stockpile destruction; and advocacy against the use of anti-personnel mines.[1]

THE DEFINITION OF ERW

Explosive remnants of war exist in many shapes and sizes, from small fuze detonators to large free-fall bombs or missiles, weighing up to hundreds of kilograms.[2] According to Protocol V, the term 'explosive remnants of war' (ERW) refers to unexploded ordnance and abandoned explosive ordnance, linked to an armed conflict. Unexploded ordnance (UXO) refers to munitions (bombs, shells, mortars, grenades and the like, whether delivered from the air, the ground or, if the munitions end up on land, the sea)[3] that have been used but which have failed to detonate as intended, usually on impact with the ground or other hard surface.[4]

Abandoned explosive ordnance (AXO) refers to munitions that have been left behind by a party to an armed conflict, whether deliberately or because they have been dumped or forgotten. AXO may be individual items on the battlefield, such as a hand-grenade, larger weapons caches or ammunition depots. It does not matter whether or not the munitions have been fuzed or armed, they are still considered AXO if they have not been used.

ARTICLE 2 | Definitions

1. Explosive ordnance means conventional munitions containing explosives, with the exception of mines, booby traps and other devices as defined in Protocol II of this Convention as amended on 3 May 1996.

2. Unexploded ordnance means explosive ordnance that has been primed, fused, armed, or otherwise prepared for use and used in an armed conflict. It may have been fired, dropped, launched or projected and should have exploded but failed to do so.

3. Abandoned explosive ordnance means explosive ordnance that has not been used during an armed conflict, 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. Abandoned explosive ordnance may or may not have been primed, fused, armed or otherwise prepared for use.

4. Explosive remnants of war means unexploded ordnance and abandoned explosive ordnance.

5. Existing explosive remnants of war means unexploded ordnance and abandoned explosive ordnance that existed prior to the entry into force of this Protocol for the High Contracting Party on whose territory it exists.

Strictly speaking, the Protocol does not cover UXO or AXO as a result of military exercises or which is abandoned during civil unrest, as opposed to a situation of international or internal armed conflict. This happened in Albania in 1997, for example, when internal disturbances led to the looting of ammunition storage areas and the explosion of some of the munitions they contained. In addition, the legal definition in the Protocol explicitly excludes mines, booby-traps or other devices as they are covered by other instruments of international law.

THE PREVALENCE OF ERW

As is the case with landmines, it is impossible to make an accurate estimate of the number of ERW globally. What can be said with some confidence is that the total number of ERW around the world far exceeds the total number of landmines. ERW continue to be uncovered in significant quantities from the battlefields of Europe more than 50 years, and in some cases more than 80 years, after the munitions were originally fired. In Belarus, for instance, EOD teams are sometimes encountering munitions left over from the early 19th century Napoleonic Wars!

THE THREAT FROM EXPLOSIVE REMNANTS OF WAR

A global survey of ERW in 2002–2003 concluded that no fewer than 82 countries and 10 territories in most regions of the world were affected.[5] This figure excludes a number of countries with only a residual ERW problem, usually as a result of the 1914–18 and 1939–45 wars. Some of the most heavily affected areas are Afghanistan, Angola, Bosnia and Herzegovina, Cambodia, Iraq, Laos, the Russian Federation (Chechnya) and the border areas of Eritrea and Ethiopia.[6]

THE IMPACT OF ERW

The primary impact of ERW among the civilian population is humanitarian. Indeed, the first introductory (preambular) paragraph to Protocol V explicitly recognises the *"serious post-conflict humanitarian problems caused by explosive remnants of war"*. In Poland alone, between 1944 and 1989, UXO is said to have claimed the lives of 4,094 people, leaving another 8,774 injured.[7] The explosion of a single item of explosive ordnance is far more likely to inflict multiple casualties than is the case with anti-personnel blast mines.

People often unintentionally disturb ERW with deadly consequences. As they are devices that have failed to function as intended, individual items of UXO are unpredictable in terms of whether they will explode on human contact. Over time, the condition of an ERW item becomes even more unpredictable because physical degradation from humidity, temperature change and many other variables occur. The individual munition is not designed to withstand these circumstances. Degradation may occur at differing rates for the same munition depending on whether it is in jungle, desert, tundra or snow.[8]

Children are at particular risk from ERW, usually far more than from anti-personnel mines. They may be killed or injured while collecting or playing with ordnance they encounter in their daily lives. In the Lao People's Democratic Republic, ERW are believed to have claimed some 11,000 victims between 1973 and 1997, more than 30 per cent of whom were children.[9]

Risk-taking with ERW may also be intentional, especially among poorer members of the population. In some subsistence economies, civilians in affected areas routinely gather items of ordnance for their value as scrap metal or the explosives they contain. In South-east Asia, for example, booming economies in the region have led to an increased demand for metal, which has greatly heightened the level of risk-taking and the consequent number of casualties in several countries. For indigent families collecting UXO

is a relatively lucrative enterprise. Simple metal detectors can be purchased for as little as US$20 to look for UXO located below the surface. Elsewhere, abandoned stocks of munitions that are not locked and guarded can be very attractive to those involved in such UXO-gathering.

Particular dangers arise from the use of cluster munitions. Powerful and sensitive submunition blinds (submunitions that have been deployed but which have not exploded, also called "duds") have killed significant numbers of civilians, particularly children, in countries such as Afghanistan, Iraq, Lebanon, the Russian Federation, and Serbia. The specific threat from cluster munitions is discussed in the GICHD's *Guide to Cluster Munitions*.[10]

However, as Landmine Action has pointed out, a community affected by ERW is not just one that has experienced incidents resulting in death or injury. It is also one in which the known or suspected presence of ERW interferes with activities necessary for the social and economic health of the community, such as access to water, housing or other infrastructure, including schools, hospitals and roads.[11]

The economy of the family and the wider community is affected when people fear to use land because of the presence or suspected presence of UXO. The denial of agricultural land can leave families poverty-stricken unless they have other skills to fall back on, particularly in predominantly subsistence communities. And even with other skills, these people are likely to become highly vulnerable, as others in a poor community will not normally have the resources to pay them for their services. It is, though, rare that the presence of UXO on fertile land renders it completely unusable and communities will usually endeavour to reclaim the land. This can involve moving items of ordnance out of the way to a place that is not being used, or leaving items where they are found and working around them.[12]

ENDNOTES

[1] IMAS 04.10, Second Edition, 1 January 2003, Incorporating Amendments number(s) 1 & 2, Definition 3.147.

[2] Landmine Action, Explosive Remnants of War, A Global Survey, London, 2003, p. 8.

[3] See Article 1, paragraph 2, Protocol V. The provision stipulates that the land territory of a State Party includes its internal waters.

[4] Failure rates may be as low as 1 or 2 per cent, or as high as 30 or 40 per cent. This depends on a range of factors, such as the age of the weapon, design factors, storage conditions, the method of use and environmental conditions.

[5] Landmine Action, Explosive Remnants of War, A Global Survey, op. cit., p. 10.

[6] ibid.

[7] "Polish Experience with Remnants of War", Polish Engineering Forces, paper presented to the Group of Governmental Experts on ERW, Geneva, December 2002, cited by International Committee of the Red Cross, Explosive Remnants of War: the lethal legacy of modern armed conflict, Second Edition, Geneva, June 2004, p. 6.

[8] Landmine Action, Explosive Remnants of War, A Global Survey, op. cit., pp. 8, 9.

[9] ibid.

[10] The Guide to Cluster Munitions is available online on the Centre's website (www.gichd.org).

[11] Landmine Action, Explosive Remnants of War, A Global Survey, op. cit., p. 8.

[12] Landmine Action, Explosive Remnants of War: unexploded ordnance and post-conflict communities, London, March 2002, p. 23.

CHAPTER 2

CLEARANCE, REMOVAL OR DESTRUCTION OF ERW

CLEARANCE, REMOVAL OR DESTRUCTION OF ERW

This chapter considers the safe clearance and disposal of explosive remnants of war in accordance with the International Mine Action Standards (IMAS). The clearance of all munitions is a challenging and dangerous task but is urgently required if casualties are to be minimised. The chapter also looks at the role of general and technical survey in identifying the areas contaminated by ERW for clearance. The information generated by such surveys will be critical in determining clearance priorities, as well as the appropriate methodologies to be used in specific tasks.

INTRODUCTION

Protocol V requires States Parties (formally called High Contracting Parties in the Convention on Certain Conventional Weapons) to clear ERW in territory it controls after the end of active hostilities. In areas it does not control, States Parties must provide technical, material or financial assistance to facilitate the removal of ERW for which they are 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 clearance of explosive ordnance is generally termed explosive ordnance disposal (EOD). EOD is defined under the IMAS as the *"detection, identification, evaluation, render safe, recovery and disposal of explosive ordnance"*.[1] The majority of ERW found during clearance are small items of ordnance such as submunitions, grenades and mortar ammunition. Larger items such as artillery ammunition, guided missiles, air-dropped bombs and cluster munitions are also found. The wide variety of size and complexity of ERW requires special attention to be given to the management of EOD operations.

ARTICLE 3 | PARAGRAPHS 1 & 2

Clearance, removal or destruction of explosive remnants of war

1. Each High Contracting Party and party to an armed conflict shall bear the responsibilities set out in this Article with respect to all explosive remnants of war in territory under its control. In cases where a user of explosive ordnance which has become explosive remnants of war, does not exercise control of the territory, the user shall, after the cessation of active hostilities, provide where feasible, inter alia technical, financial, material or human resources assistance, bilaterally or through a mutually agreed third party, including inter alia through the United Nations system or other relevant organizations, to facilitate the marking and clearance, removal or destruction of such explosive remnants of war.

2. 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. (...)

BATTLE AREA CLEARANCE METHODOLOGY

The systematic and controlled clearance of ERW from former combat areas where mines are not present – the principal concern of Protocol V – is termed battle area clearance (BAC).[2] A BAC task will normally be either surface (visual) clearance or sub-surface clearance. In conducting clearance activities States Parties and parties to an armed conflict are required under Protocol V to take into account international standards, including the International Mine Action Standards (IMAS).[3] All the IMAS are available for download free of charge from the IMAS website at: www.mineactionstandards.org. In addition, a CD-ROM of all the IMAS can be ordered free of charge from the GICHD.[4]

Visual | surface clearance

Surface clearance is often suitable for emergency responses after conflict as it represents a quick and effective means to remove the immediate hazard to the civilian population in an area, namely the visible threat. This approach will be particularly appropriate in urban areas or on rocky hard ground where items of UXO are lying on or above the surface. Surface clearance will normally include both the ground and the area above it; for example, UXO, particularly submunition blinds, can be found in trees, fencing or caught in urban constructions.

The disadvantage of surface clearance is that the local population tend to believe that the area is then safe, and may resume work there. The task may then be given a very low priority for further clearance, or even deleted from the clearance schedule altogether. For example, in Kosovo, many surface

clearance tasks have left hazardous areas – in some cases for many years – with inadequate or ambiguous official records and no local markings. Where rapid surface clearance is conducted, it is crucial that:

- the extent and limitations of the clearance are recorded;
- the local population are made aware of the residual hazards;
- follow-on (sub-surface) operations, if required, must be planned as soon as possible.

In all instances where visual searches have been conducted, it is essential that accurate recording and reporting of the task is conducted for follow-up tasking if necessary.

Sub-surface clearance

If survey advice indicates that it is needed, battle areas may need to be cleared using a sub-surface instrument search.[5] It is much slower than a visual surface sweep, but provides a far more comprehensive solution. The choice of methodology is influenced by:

- Casualties;
- Ground use | urban, rural (grazing or agricultural);
- Terrain | access to the area, the type of terrain – hilly, rocky, soft, etc.;
- Impact on population | the population within the suspected hazard area or in the surrounding areas;
- Weather | at the time of the attacks and of the clearance task;
- Type of hazard | especially important for the decision whether to conduct only surface clearance;
- Data on use | access to information on the number and type of munitions used; and
- Clearance history | very important, but dependent on the recording and reporting of any clearance activities already conducted.

BAC is usually quicker than mine clearance. It does not need detectors with the sensitivity of those used in mine clearance because it is seeking to locate items with a significant metallic content, typically far higher than is found in most landmines. A variety of 'ERW detectors' (for examples, see Figure 1) and wide area detectors (see Figure 2), used manually or mounted on a vehicle, are available on the market.[6] Many of the ERW detectors in use today employ the fluxgate magnetometer principle, originally developed during World War II for use from low-flying aircraft as a submarine detection device.

Figure 1 | Examples of ERW detectors

Figure 2 | Examples of a large loop detector

Qualifications of clearance operators

As a general principle, clearance operators should deal only with those items and situations for which they have been trained and authorised; all other cases should be referred to the next highest level of expertise. Clearance operations can be carried out at many levels, from the destruction of grenades and submunitions up to the neutralisation of large bombs and missiles. Qualifications should be appropriate to the munitions most likely to be found. As a guide, the IMAS suggests the following:

A Level 1 (EOD) qualification enables a clearance operator to locate, expose and destroy under supervision *in situ* mines that the operator has been specifically trained on.

A Level 2 (EOD) qualification enables a clearance operator to undertake the destruction *in situ* of single small items of UXO such as submunitions, grenades and mortar ammunition up to 84 millimetres in calibre. These categories of munition normally represent the majority of UXO found on a battlefield.

A Level 3 (EOD) qualification is for a clearance operator who has had specific training in disposal by detonation of larger UXO, such as rocket and tank gun ammunition, and artillery ammunition up to 240 millimetres in calibre. Under the supervision and direction of a qualified supervisor, a Level 3 (EOD) operator should be qualified to render safe (see below) items of UXO for safe removal from the demining worksite, and to undertake their final destruction.

A Level 4 (EOD) qualification is for the small number of qualified specialist staff who have been trained to destroy the remaining EOD hazards with specialist EOD techniques. These include the bulk disposal of rendered-safe UXO and other recovered ammunition. Such specialist skills include the render safe of liquid propellant systems, disposal of depleted uranium munitions and the clearance of conventional munitions with improvised firing systems.

ARTICLE 3 | PARAGRAPH 3

Clearance, removal or destruction of explosive remnants of war

3. After the cessation of active hostilities and as soon as feasible, each High Contracting Party and party to an armed conflict shall take the following measures in affected territories under its control, to reduce the risks posed by explosive remnants of war:
   (a) survey and assess the threat posed by explosive remnants of war;
   (b) assess and prioritize needs and practicability in terms of marking and clearance, removal or destruction;
   (c) mark and clear, remove or destroy explosive remnants of war;
   (d) take steps to mobilize resources to carry out these activities.

4. In conducting the above activities High Contracting Parties and parties to an armed conflict shall take into account international standards, including the International Mine Action Standards.

Render Safe Procedures

The IMAS recommend that UXO normally be destroyed by detonation *in situ*. If it is not possible or suitable to destroy UXO *in situ*, for reasons of safety or for local environmental considerations (such as the proximity of buildings or facilities), clearance operators must render the munition safe by neutralisation and/or disarming, before moving it to a suitable location for disposal.

Standing operating procedures (SOPs) must be prepared by the relevant authority or operator for the effective and safe destruction of UXO. This includes UXO destroyed *in situ*, and UXO or recovered ammunition items destroyed individually or in bulk. Special attention is to be given to ensuring that blast and fragmentation effects resulting from the destruction of UXO are safely contained. Bulk destruction sites must therefore be located sufficiently far away from populated areas so as to represent no risk to the civilian population.

Render Safe Procedure (RSP) are technical instructions for the destruction or neutralisation of unexploded munitions. They are usually contained in technical manuals and are intended for use by trained EOD operators using specialised equipment.

WARNING

Render Safe Procedure must **only** be carried out by appropriately qualified EOD technicians who are familiar with **all** aspects of the munition and fuze mechanism design. This description of different techniques should not, therefore, be considered as operational guidelines.

There are four different methods of Render Safe Procedure (RSP) for items of UXO:

- Destruction by detonation *in situ*;
- Destruction by deflagration (e.g. rapid burning of contents);
- Alternate methods to separate the fuze mechanism from the main charge; and
- Manual neutralisation of the fuze.

These are discussed briefly in turn.

Destruction by detonation *in situ* means placing a high explosive "donor" charge beside the munition without moving or touching it, which then causes the item of UXO to explode. Where clearance activities have to be conducted in or around populated areas or in areas of intense livelihood value, this may not be a popular decision among the local population. Sandbags (or some other protective structure capable of containing the fragmentation) should be placed around the device. Multiple items may be disposed of by using electric cable or detonating cord to link charges.

Destruction by deflagration is the rapid burning of the UXO's explosive content without detonating it. This method is also conducted *in situ*. A purpose-designed shaped charge, (often referred to as a point focal charge), may be used to induce 'deflagration' of the main filling. It is generally safer than detonation as the charge can be deployed at a distance from the target (at least 80 millimetres), but it requires more training, tends to be more expensive and takes longer to set up. Deflagration may also leave live fragments of explosive and hazardous components, such as detonators, in the area.

Alternate techniques, such as the use of small linear cutting charges or explosively fired projectiles, are designed to separate the fuze mechanism from the main charge of the munition. Once separated, the fuze well cavity of the munition should be inspected to ensure that no hazardous components of the fuze remain. If the fuze well cavity is clear then the munition can be moved and disposed of in a suitable location. It may even be possible to move the fuze, provided that all component parts can be positively identified and the EOD technician is certain that the initiation mechanism has been totally disrupted.

Manual disarmament of an item of UXO by neutralisation of the fuzing mechanism is rarely advisable, especially in the case of submunition blinds, but might be considered by EOD personnel for simple explosive ordnance in good condition. It should not be conducted for any submunition with electric or piezo-electrical fuze components. In particular, it should be considered only where a serious and immediate threat to human life exists.

ASSESSMENT AND SURVEY

Before clearing ERW it is necessary to identify their locations. Even where information on the number and type of munitions used and/or abandoned and the targets of attacks is disclosed in accordance with the Protocol and its technical annex, the actual areas of ERW contamination may differ, sometimes significantly. For this reason, assessment and survey of suspected areas is a standard approach. Guidance on best practice is set out in two of the IMAS.[7] The first step is typically to conduct a 'general' survey of contamination. The primary aim is to identify the location of suspected hazard areas across the country or region and the type of contamination they contain.

General and impact surveys of ERW contamination

It may be worth considering an 'impact' survey in order to obtain a much better picture of how contamination is affecting the lives and well-being of the civilian population. This is particularly relevant where there is widespread ERW contamination in a country or region that cannot be dealt with swiftly.

One well-known survey is the Landmine Impact Survey (LIS). A complete LIS, which typically takes one year or more to complete, aims to provide a detailed and reliable report of the impact of mine and ERW-contaminated areas on local communities.

Preliminary opinion collection, which normally takes place over several weeks in-country, helps to narrow down the areas and communities to be surveyed. Visits to local communities narrow (or expand) the list further. The community survey process uses specially trained teams to gather demographic, contamination, social and economic data in every community thought to be affected.

A priority listing classifies communities as having heavy, medium, low or nil mine or ERW impact. This listing uses a scoring system adopted in-country using national input to take account of local conditions. Sampling is then conducted for false negatives and additional community surveys conducted as necessary. The results of the survey are typically entered into the Information Management System for Mine Action (IMSMA) database for the country. IMSMA is described in Chapter 3.

A criticism of some impact surveys is that they can generate a high number of 'false positives' – reports of areas as hazardous when in fact they contain no explosive contaminants at all. Moreover, where they seek to calculate the size of suspected hazard areas (SHAs) purely on the basis of local opinion, this can result in greatly exaggerated estimates of contamination. These can waste precious resources and also hinder resource mobilisation efforts, as the scale and extent of the problem is perceived by donors to be too great to be effectively addressed. This means further survey is needed to confirm or discredit SHAs and to confirm the precise outer limits of the contamination area.

Technical survey and area reduction

General or impact surveys typically identify many SHAs in a country or region. However, such surveys do not physically confirm that within these SHAs there are in reality contaminated areas, nor do they verify or mark and map the precise outer limits of ERW contamination within them. For this reason, a technical survey has to be carried out. Such a survey will confirm or discredit the presence of ERW in an suspected hazard areas, and identify the perimeters of the ERW-contaminated area or location.

The output of a technical survey may also include perimeter marking to reduce the risk of unintentional entry into the hazardous area (see Chapter 4), normally as part of a comprehensive risk education programme. If clearance does not immediately follow a technical survey, then survey markers are left securely in place, enabling the hazardous area to be located accurately and safely at a later date.

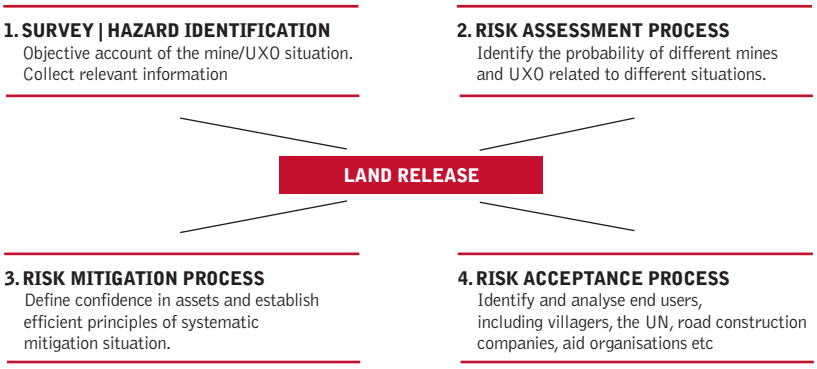
The gap between the technological capacity for clearance and the requirement to release land for use by the community is still huge and there is as yet no technological solution available for this. Technical survey and associated area reduction techniques are part of the processes that enable sparse and expensive clearance resources to be focused more effectively.

The methodologies available to the mine action and ERW community to help with this process vary but retain the principle of targeting those areas or populations most at risk. At the strategic level, thorough data analysis leading

to a more targeted approach for resources can be one option.[8] At the field level, a methodological approach to the use of tools and processes can provide field operators with guidance on alternate methodologies for land release other than purely physically clearing the ground. This is often referred to as risk management.

Although still relatively new in the mine action sector, risk management principles are rapidly becoming more widely accepted. It is likely that in the near future, risk management principles and methodologies will be applied in the majority of mine action programmes. For a simplified example of a risk management model used in the Lao People's Democratic Republic (Lao PDR), one of the world's most UXO-contaminated countries, see Figure 3.

Figure 3 | A simplified risk management model for Lao PDR



Priority-setting

The primary concern in clearing ERW is to reduce casualties – the humanitarian imperative. Indeed, Protocol V requires that areas affected by ERW which are assessed as posing a *"serious humanitarian risk"* must be accorded *"priority status"* for clearance, removal or destruction.[9] This is the reason for initially conducting surface battle area clearance only.

But when the initial emergency is over, it will also be important to have a good understanding of local livelihoods, especially in the rural areas. This will affect the level of priority allocated to different types of land. For example, priority may be given to land currently used for the movement of population, cultivation and grazing. In addition, an analysis of the crop cycle in affected rural areas can also provide further data for the prioritisation process.

The involvement of the community in the decision-making process about task prioritisation is key to effective planning. One way to gain this involvement is through the establishment of a community liaison officer. The early involvement of a community liaison officer with each affected community helps to secure its full support for the clearance efforts. All agencies or national authorities should therefore consider including a community liaison component in their planning.

ENDNOTES

1 IMAS 04.10, Definition 3.87, available at: www.mineactionstandards.org.

2 See ibid., Definition 3.18. A new IMAS on BAC was issued in 2007: IMAS 09.11: Battle Area Clearance.

3 See Article 3, paragraph 4, Protocol V.

4 See www.gichd.org/gichd-publications/order-form.

5 See IMAS 09.11: "Battle Area Clearance (BAC)", Draft First Edition, 1 September 2007, Section 5, available at: www. mineactionstandards.org.

6 For details of a range of detectors available, see GICHD, Metal Detectors and PPE Catalogue 2007, Geneva, 2007.

7 IMAS 08.10 General Mine Action Assessment, and IMAS 08.20 Technical Survey.

8 See, for an example of such a methodology, GICHD, Lao PDR Risk Management and Mitigation Model, Geneva, 2007.

9 See Article 3, paragraph 2, Protocol V.

CHAPTER 3

ERW INFORMATION MANAGEMENT AND PLANNING

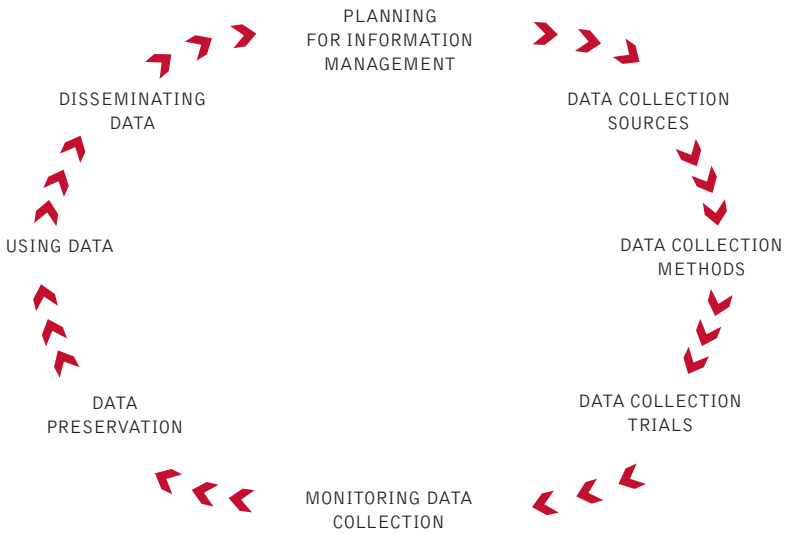
ERW INFORMATION MANAGEMENT AND PLANNING

This chapter addresses information needs in support of the clearance of ERW, as well as the appropriate storage, analysis and use of related data. Effective information management is one of the key elements required for success in addressing the threat from ERW. The chapter begins by reviewing the "cycle" of information management, including the data that should be recorded and then looks at activities needed to turn that data into information, notably exchange, storage, analysis and use.

THE INFORMATION MANAGEMENT CYCLE

The first step in the information management process is the recording and/or collection of the necessary data (or receipt from others, particularly the users of explosive ordnance). Under Protocol V, the users of ordnance in an armed conflict are required (though only to the maximum extent possible and as far as practicable), record, manage and have the internal structures in place to transmit the relevant data. Once it has been collected or received, turning data into information requires that it be stored, analysed, shared and, above all, used. Figure 4 illustrates the information management life cycle.

Figure 4 | The Information Management Cycle



To be successful, this cycle requires a systematic approach to data and data quality. Failure at any stage to understand the overriding need for data quality – especially when it is being collected, stored or analysed – can jeopardise the reliability of the data and its usability. Information management systems too often fail to work properly because the people engaged in the process lack the necessary training, discipline and understanding of the critical importance of data accuracy.

ARTICLE 4

Recording, retaining and transmission of information

1. High Contracting Parties and parties to an armed conflict shall 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, to facilitate the rapid marking and clearance, removal or destruction of explosive remnants of war, risk education and the provision of relevant information to the party in control of the territory and to civilian populations in that territory.

2. High Contracting Parties and parties to an armed conflict which have used or abandoned explosive ordnance which may have become explosive remnants of war shall, without delay after the cessation of active hostilities and as far as practicable, subject to these parties' legitimate security interests, make available such information to the party or parties in control of the affected area, bilaterally or through a mutually agreed third party including inter alia the United Nations or, upon request, to other relevant organizations which the party providing the information is satisfied are or will be undertaking risk education and the marking and clearance, removal or destruction of explosive remnants of war in the affected area.

3. In recording, retaining and transmitting such information, the High Contracting Parties should have regard to Part 1 of the Technical Annex.

DATA RECORDING NEEDS

Clearance operations are greatly facilitated by the provision of data from the user (or abandoner) of ERW on the types and quantities of munitions used and the areas targeted. Protocol V calls for the recording, retaining and transmission of information to the maximum extent possible, although it is also subject to further caveats. Difficulties in the release of relevant data are discussed briefly below, but a prerequisite for data exchange is that it must first be recorded in a format that enables its subsequent sharing with other relevant parties.

Protocol V's non-legally-binding Technical Annex sets out in more detail some of the data that should be recorded in order to facilitate future clearance efforts. Regarding explosive ordnance that is used in an armed conflict a State should try to record:

- the location of areas targeted using explosive ordnance;
- the approximate number of munitions used in those areas;
- the type and nature of munitions used in areas, including technical information relevant to clearance; and
- the general location of known and probable ERW.[1]

Among technical information relevant to clearance, the appropriate Render Safe Procedures for specific items of ordnance would be of particular use.

Where a State has been obliged to abandon munitions in the course of operations, it should try to leave the weapons safe and secure, and record information on their location – the approximate amount at each specific site and the types abandoned at each specific site.

There is no internationally agreed format for recording the relevant data. It is important that it is both clear and accurate with, if possible, Global Positioning System (GPS) coordinates of point targets. While munitions may not have landed at these coordinates, this will be a useful starting point for a survey of contaminated areas. Similarly, the information recorded by a State related to its use of munitions should be stored in a manner which permits retrieval and subsequent release to the relevant recipient.

RELEASE OF DATA

The release or exchange of data on the use of munitions has been a contentious issue in several armed conflicts over the past decade. However, a qualified obligation to share relevant data without delay after the cessation of active hostilities, subject to a caveat on the legitimate security interests of the user, is a critical element in the Protocol.[2]

The information should be released to the party (or parties) in control of the affected territory and others engaged in clearance of the affected areas or in the provision of risk education. If the State that has used munitions does not wish to provide the relevant data directly to the party in control of the affected areas, it can use mechanisms established internationally or locally for the release of information. These include the UN Mine Action Service, and other expert agencies.

ERW INFORMATION MANAGEMENT AND PLANNING

According to the Technical Annex, information should be released *"as soon as possible, taking into account such matters as any ongoing military and humanitarian operations in the affected areas, the availability and reliability of information and relevant security issues."*

ARTICLE 6

Provisions for the protection of humanitarian missions and organizations from the effects of explosive remnants of war

1. Each High Contracting Party and party to an armed conflict shall:

   (a) Protect, as far as feasible, from the effects of explosive remnants of war, humanitarian missions and organizations that are or will be operating in the area under the control of the High Contracting Party or party to an armed conflict and with that party's consent.

   (b) Upon request by such a humanitarian mission or organization, provide, as far as feasible, information on the location of all explosive remnants of war that it is aware of in territory where the requesting humanitarian mission or organization will operate or is operating.

2. The provisions of this Article are without prejudice to existing International Humanitarian Law or other international instruments as applicable or decisions by the Security Council of the United Nations which provide for a higher level of protection.

There is also an obligation in Article 6 to protect humanitarian missions and organisations from the effects of ERW. This includes an obligation to provide, upon their request as far as feasible, information on the location of all ERW.

STORAGE OF DATA

When the party that intends to conduct clearance of contaminated areas has the necessary data, it must store it safely. It is critical that all the available data is regularly entered into a single master database, open to all interested parties. This database should contain all of the data relevant to munitions collected at all levels for the entire area being serviced. The creation and regular update and dissemination of this single master data-set greatly improves the chances of all those engaged in addressing the threat from ERW working from a common picture of both the hazards they face and the progress being made to address it.

Information Management System for Mine Action

The Geneva International Centre for Humanitarian Demining has supported the development and deployment of the Information Management System for Mine Action (IMSMA). The system is currently in use in more than 50 clearance programmes around the world.[3] According to the Technical Annex of the Protocol, a State should, where feasible, make use of mechanisms established internationally or locally for the release of information, such as through the IMSMA.[4]

Based on requirements submitted by users in the field, the system has been continuously revised and upgraded since its initial release in 1999 and it has become the *de facto* standard in mine action information management. It was field tested in Kosovo, where the threat from ERW, particularly cluster munitions, was prevalent, and has demonstrated its capacity from the outset to enable the storage and manipulation of the requisite data.

The latest version of the IMSMA software has undergone a complete redesign. The new system combines a full-featured Geographic Information System (GIS) with a powerful relational database to produce an easy-to-use and maintain information management tool. The most noticeable innovation is the inclusion of a map-driven navigation system that significantly improves both data entry and retrieval operations.

Distribution of the system is managed by the GICHD. It is provided free of charge to affected countries and to the governments of countries actively involved in peacekeeping and mine action support operations.

Practically, IMSMA can be used to:

- Plan, manage, report and map ERW clearance activities;
- Plan, manage, report and map risk education activities;

- Record, report on, and map information on the assistance needs of ERW and other victims; and
- Record, report on, and map relevant socio-economic information.

A general Hazard Data Collection Form for ERW is already in use, which includes the ability to record more than 5,000 other types of explosive ordnance.

An alternative to the IMSMA is EOD Frontline (see Box 1), which is said by one expert to be easier to use and quicker to train people on.[5]

Box 1 | EOD Frontline*

EOD Frontline is an explosive ordnance disposal (EOD) risk management software application. It is designed to assist EOD Operators with the management of EOD incidents, by providing accurate real time information. It can be used to assist the operational tasking of both military and civil emergency agencies. It was developed by Bruhn Newton, a UK company.

EOD Frontline provides the ability to record danger areas (ERW and mines) and surveys of regions. The system contains a database of danger area details, making a list of danger areas available to the operator for creating, editing, and drawing or deleting danger areas. The system can record data on items found in the danger area.

EOD Frontline is currently in operational use with defence agencies, armed forces and forensic units in several countries and international organisations. It has been used operationally in areas, such as Afghanistan, Bosnia and Herzegovina, Denmark, Iraq, Kosovo and the United Kingdom.

* Source: www.bnl-cbrn.co.uk/Downloads/EOD-CBRN/EODF.pdf.

DATA ENTRY AND ANALYSIS

Errors inevitably creep into any information management system at the data entry point. Monitoring of data entry and the resultant database to minimise those errors is necessary. Target data for munitions may – rightly – be entered on the database, but then subsequent survey activities may identify the actual strike data at different coordinates. This can result in duplication of suspected hazard areas and lead to inefficient use of clearance assets. A regular cross-check of target data against actual strike areas can save valuable time and money.

Similarly, the data entry phase also provides a valuable opportunity to check the accuracy of the data that has been provided. There may be mistakes in recording or duplication of suspected hazard areas as a result of one or more surveys conducted. For example, where a survey of several impacted communities has identified a number of ERW-contaminated areas close to one another, it is worth trying to verify whether it is actually one single strike zone affecting the different community members. This can help save time and resources.

In November 2007, the First Meeting of the States Parties decided to establish a database on Protocol V consisting of specific information submitted through initial national reports and annual or immediate updates of the national reports.[6]

Under Article 8, paragraph 5 of the Protocol States Parties undertake to provide information to the relevant databases on mine action established within the UN system, especially information concerning various means and technologies for clearance of ERW, lists of experts, expert agencies or national points of contact on clearance of ERW and, on a voluntary basis, technical information on relevant types of explosive ordnance.

ENDNOTES

[1] It is also important to identify and record the level of tolerable risk in the event of major contamination as this will help to guide clearance plans. What is deemed tolerable should be led by the affected communities themselves. See, for example, GICHD, A Guide to Mine Action and Explosive Remnants of War, 2007, p. 85.

[2] See Article 4, Protocol V.

[3] See www.gichd.org/operational-assistance-research/information-management/imsma/overview/.

[4] See Technical Annex to Protocol V, Article 1(c)(iii).

[5] Email from Adrian Wilkinson, Head, SEESAC, Belgrade, 17 July 2007.

[6] See Procedural Report of the First Conference, UN doc. CCW/P.V/CONF/2007/PC/3, 22 June 2007.

This chapter proposes how to reduce the risk to civilians through marking and fencing of areas affected by ERW. Where clearance of AXO and UXO is incomplete or not immediately feasible, other measures can help to reduce the risk to the civilian population. These are, notably, through the marking and – where appropriate – fencing of contaminated areas, and the provision of warnings and risk education.

INTRODUCTION

According to Article 5 of Protocol V, States Parties and parties to an armed conflict must take *"all feasible precautions"* in territory under their control that is affected by ERW to protect civilians and civilian objects from the threat.[1] These precautions may include warnings, risk education to the civilian population, marking, fencing and monitoring of territory affected by explosive remnants of war, as set out in the Technical Annex. This chapter reviews good practice in these activities.

Increasing attention is being paid to the role of marking and fencing of areas contaminated with ERW as a medium - to long-term risk reduction technique in mine action. This has proved necessary because of the high cost and slow pace of clearance of explosive ordnance – thus forcing mine action programmes to consider other ways of reducing the risk of death or injury to the civilian population.

As noted in the IMAS,[2] mine and other explosive ordnance hazards are marked to provide a clear and unambiguous warning of danger to the local population. Marking of contaminated areas tends to be carried out either immediately prior to clearance (often called "temporary marking") or in situations where formal clearance is unlikely to occur for a considerable time, often measured in years (sometimes rather misleadingly referred to as "permanent marking"). Fencing of contaminated areas, where it is possible to do so, involves installing a physical barrier to reduce the risk of unintentional entry into hazardous areas.

The Protocol's Technical Annex Part 2 provides limited guidance on the marking and fencing of explosive remnants of war. The guidance is general in nature, recommending that recognised warning signs should be used, which should be visible, legible, durable, and resistant to environmental effects.

The signs should also clearly identify which side of the marked boundary is considered to be hazardous and which side is considered to be safe. Finally, an appropriate structure should be put in place to monitor and maintain *"permanent and temporary marking systems"*, which should be *"integrated"* with national and local risk education programmes.

TECHNICAL ANNEX | PART 2

Warnings, risk education, marking, fencing and monitoring

(h) When possible, at any time during the course of a conflict and thereafter, where explosive remnants of war exist the parties to a conflict should, at the earliest possible time and to the maximum extent possible, ensure that areas containing explosive remnants of war are marked, fenced and monitored so as to ensure the effective exclusion of civilians, in accordance with the following provisions.

(i) Warning signs based on methods of marking recognised by the affected community should be utilised in the marking of suspected hazardous areas. Signs and other hazardous area boundary markers should as far as possible be visible, legible, durable and resistant to environmental effects and should clearly identify which side of the marked boundary is considered to be within the explosive remnants of war affected area and which side is considered to be safe.

(j) An appropriate structure should be put in place with responsibility for the monitoring and maintenance of permanent and temporary marking systems, integrated with national and local risk education programmes.

The IMAS provides more detailed guidance on appropriate marking and fencing of contaminated areas (see Box 2).

MARKING OF AREAS CONTAMINATED WITH ERW

Based on legal obligations under the Protocol and the IMAS, as well as research by the GICHD, this section suggests a ten-step approach to maximise the contribution of medium- to long-term marking of ERW-contaminated areas to casualty reduction.

Step 1 Make marking part of an overall strategy

Step 2 Concentrate on marking areas where returnees are expected

Step 3 Combine marking with risk education

Step 4 Involve the local community in marking efforts

Step 5 Make sure the markings can be seen

Step 6 Use durable markings of minimal value

Step 7 Record the location of markings

Step 8 Maintain the markings

Step 9 Monitor the status of the markings and any casualties

Step 10 Remove the markings when they are no longer needed

Box 2 | Summary of IMAS requirements for marking and fencing battle areas*

The design of permanent UXO hazard marking systems shall include a combination of markers, signs and physical barriers that clearly identify the boundary of the hazard area.

Hazard marking symbols shall be clearly visible. Markers and signs shall clearly identify which side of the marked boundary is considered to be within the hazard area and which side is considered to be safe. The warning sign should be clearly displayed facing outwards from the suspected hazardous area.

The words on the warning sign should represent the predominant hazard (mines or UXO) and the symbol should indicate "danger" in a form which will be recognised nationally and locally.

Hazard signs and markers should be clearly visible in daylight at a distance of 30 metres, and from adjacent signs and markers. If markers are masked by vegetation or terrain, the use of a physical barrier should be considered.

The design of UXO hazard marking systems should take account of local materials freely available in the contaminated region and the period for which the marking system will be in place. It is generally accepted that materials used in marking systems should have little, if any, value or practical use for purposes other than UXO hazard area marking. If material of any value is used, then it is likely to be removed. Hazard signs and markers should not be constructed of munition casings, materials that may have contained explosives, or discarded weapon systems.

* IMAS 08.40: Marking mine and UXO hazards, Second Edition (incorporating amendment number 1), 1 January 2003

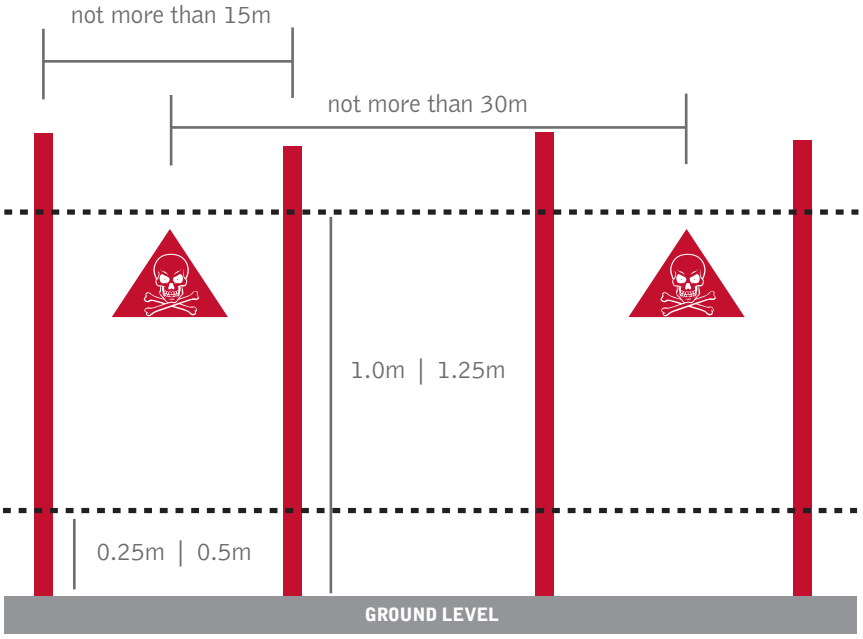
Marking can and does save lives. It should be remembered, however, that evidence exists that marking will not be successful in reducing risk-taking if the local population is impoverished. In Afghanistan, for example, poverty sometimes causes people to ignore the danger and knowingly enter contaminated areas in search of food, vegetables, firewood, or to graze their animals. In a single village in Kabul province, more than 30 casualties have been recorded in one nearby contaminated area. After interviews with several of the survivors, it was found that the contaminated area had a lot of fruit trees. Despite warning signs, young villagers ignored the risk and entered the area to collect walnuts, cherries, apricots, or to cut trees and collect wood.

Fencing of areas contaminated with ERW

There is a widespread belief among operators that fencing can make an important additional contribution to casualty reduction, assuming it is not removed. In Croatia, for example, there have been no incidents within fenced areas. In Kosovo, permanent fencing is erected in areas where it is not possible to conduct UXO clearance operations in the immediate future due, for example, to poor access to the site, heavy snow or flooding.

Fencing is generally not an effective means to reduce the risk of *intentional* entry into a dangerous area. It is also expensive. There is broad agreement that while marking of affected areas, where it is feasible, can prove worthwhile, the decision to erect fencing should be much more selective. Fencing can be usefully erected around military installations or heavily UXO-contaminated sites close to heavily populated areas. It is recommended that such fenced areas be guarded. Physical barriers may include walls, fences or other obstructions that prevent the unintentional entry into a mine or UXO hazard area. The IMAS recommend that fences be erected with two strands of wire or similar material attached to uprights at 25cm to 50cm and 1m to 1.25m above the ground. Figure 5 illustrates these recommendations.

Figure 5 | IMAS recommendations for a physical barrier fence[3]



ENDNOTES

[1] Feasible precautions are defined as those precautions "which are practicable or practicably possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations". See Article 5, paragraph 1, Protocol V.

[2] IMAS 08.40: Marking mine and UXO hazards, Second Edition (incorporating amendment number 1), 1 January 2003.

[3] See A Guide to Marking and Fencing in Mine Action Programmes, GICHD, Geneva, June 2008.

This chapter looks at how to reduce the risk to civilians from explosive remnants of war through warnings and risk education.[1] Warnings and risk education can also help minimise civilian casualties before and during clearance operations. ERW, especially submunition blinds, can represent a specific and significant threat to civilians, particularly to children. Indeed, statistics have shown that children are generally at far greater risk from ERW than they are from landmines. Although the relevant discipline is usually called mine risk education, its basic principles and methodologies are equally applicable to explosive remnants of war.

INTRODUCTION

Warnings are defined in the Technical Annex, rather than the body of Protocol V as *"the punctual provision of cautionary information to the civilian population, intended to minimise risks caused by explosive remnants of war in affected territories."* In contrast, risk education is defined in the Annex indirectly, by reference to how it should be conducted: *"Risk education to the civilian population should consist of risk education programmes to facilitate information exchange between affected communities, government authorities and humanitarian organisations so that affected communities are informed about the threat from explosive remnants of war. Risk education programmes are usually a long term activity."*

Warnings are primarily intended to raise urgent awareness about the threat from explosive ordnance, whereas risk education is seen as a longer-term process designed to instil safer behaviour in target populations. Warnings will often be conducted while armed conflict is still ongoing (immediately following an attack, for instance). When the conflict is over (or security allows), more in-depth and sustained communication activities, especially through dialogue with affected communities, will characterise risk education. The aim should be to support people's capacities to reduce risk, rather than simply educating people about risk and hazard.

BEST PRACTICE IN WARNINGS AND RISK EDUCATION

The non-legally binding Technical Annex to Protocol V outlines a number of "best practice elements" of warnings and risk education. These are discussed below. UNICEF, together with the GICHD, has issued a set of best practice guidebooks on the IMAS on mine risk education. They are available for download free of charge from the IMAS website at: www.mineactionstandards.org/guides.htm.

Follow national and international standards

"All programmes of warnings and risk education should, where possible, take into account prevailing national and international standards, including the International Mine Action Standards." [2]

Only a small number of affected countries have so far adopted national standards based on the IMAS, although the number is growing. Where national standards exist, these should of course be followed.

Standards for mine risk education (MRE) have been approved as IMAS. In total, seven standards deal with MRE, namely:

- IMAS 07.11 Guide for the management of MRE;
- IMAS 07.31 Accreditation of MRE organisations and operations;
- IMAS 07.41 Monitoring of MRE programmes and projects;
- IMAS 08.50 Data collection and needs assessment for MRE;
- IMAS 12.10 Planning for MRE programmes and projects;
- IMAS 12.20 Implementation of MRE programmes and projects; and
- IMAS 14.20 Evaluation of MRE programmes and projects.

MRE has three components: public information dissemination, education and training, and community liaison. They are complementary and mutually reinforcing. Descriptions of the three components are given below.

Public information dissemination

Public information dissemination as part of MRE refers primarily to public information activities, which seek to reduce the risk of injury from mines and ERW by raising awareness of the risk to individuals and communities, and by promoting behavioural change. It is primarily a one-way form of communication transmitted through mass media. This may provide relevant information and advice in a cost-effective and timely manner. In an emergency post-conflict situation, due to time constraints and lack of accurate data, public information dissemination is often the most practical means of communicating safety information to reduce risk.

Education and training

Education and training is a two-way process. It involves the imparting and acquiring of knowledge, attitude and practice through teaching and learning. Education and training activities may be conducted in formal and non-formal environments. This can include teacher-to-child education in schools, parent-to-children and children-to-parent education in the home, child-to-child education, peer-to-peer education in work and recreational environments, landmine safety training for humanitarian aid workers and the incorporation of landmine safety messages in regular occupational health and safety practices.[3]

Community liaison

Community liaison[4] refers to the system and processes used to exchange information on the presence of ERW and their potential risk between national authorities, mine action organisations and communities. Thus, it is a two-way process. Communities can report on the location of affected areas and their own priorities for clearance. In turn, they can be informed when a demining activity is planned, the nature and duration of the task, and the exact locations of marked or cleared areas. Community liaison can also support efforts to provide assistance to survivors and to identify stockpiles of AXO for destruction.

Target efforts at those at risk

"Warnings and risk education should be provided to the affected civilian population which comprises civilians living in or around areas containing explosive remnants of war and civilians who transit such areas." [5]

Defining the at-risk groups for warnings is one of the starting points for effective intervention. The displaced, including refugees, as well as those already living in affected areas, often fall victim to ERW on or following their return. In order to be effective, risk education should be given before, if possible during, and following return or repatriation.

The return of refugees and/or internally displaced persons could be a planned activity or spontaneously decided by the population themselves. Experience has shown that population movements are one of the main triggering factors for an increase in incidents involving explosive ordnance. There are two key reasons for this. First, the areas that displaced populations evacuated are sometimes deserted until their return. If so, there will be a lack of knowledge about where and when the fighting took place, what weapons were used and whether there have been any earlier incidents involving ERW. Where areas are not entirely deserted, of course, there may be a reliable local source of knowledge for returnees.

Second, there is a naturally strong will to investigate the normal habitat. Even though returning populations may have been warned about possible dangers and advised to obtain local knowledge about the situation before approaching their own home, they often go directly home into their deserted houses and gardens to see what has happened while they were gone. This frequently results in tragic incidents in the very first days after return.

Time is of the essence

"Warnings should be given, as soon as possible, depending on the context and the information available. A risk education programme should replace a warnings programme as soon as possible. Warnings and risk education always should be provided to the affected communities at the earliest possible time." [6]

It is clear that speed is crucial in any warnings or other risk education initiative. Warnings should be considered a subset of risk education, not a completely separate discipline as is often believed. What distinguishes the two is that warnings are delivered by inherently one-way communication channels in an emergency, whereas risk education is (or should be) a more long-term and participatory process.

The name of the generic subject is "risk education" (usually called mine risk education, as it is under the IMAS, even when the ordnance in question is ERW and not mines). Risk education covers all initiatives based on information, education and training intended to instil safe behaviour and thereby reduce the risk to the civilian population from landmines, abandoned and unexploded ordnance.

Use available expertise

"Parties to a conflict should employ third parties such as international organisations and non-governmental organisations when they do not have the resources and skills to deliver efficient risk education. The best-placed entity to deliver warnings should be assessed on a case-by-case basis." [7]

Some of the issues to consider in decision-making on this include the community perception of the actors involved (e.g. are they considered an impartial body), their expertise in risk education and their logistical set-up. Of course, it may not necessarily be an either/or situation as far as military and civilian actors are concerned: the military, civil defence and humanitarian organisations may all be able to contribute to saving lives and limbs.

It is important to keep the issue of time in mind when deciding who should be involved. The national authorities (including military units, civil defence, and the like) have the resources and skills to deliver an effective programme in the long run. Humanitarian organisations can also be usefully involved at the outset of a warnings and risk education campaign, as their experience gained in other contexts may save valuable time and avoid the need to "reinvent the wheel".

Users of munitions should fund warnings and risk education

"Parties to a conflict should, if possible, provide additional resources for warnings and risk education. Such items might include: provision of logistical support, production of risk education materials, financial support and general cartographic information." [8]

It is implicit that in situations where the military is not best placed to deliver warnings or risk education directly, it can still support others in doing so. Caution must be applied, however. Although this part of the Technical Annex refers to the production of risk education materials, care must be taken not to just adapt materials taken from another context. Cultural and linguistic factors must be taken into account otherwise the time and effort taken may be wasted.

One of the best ways to support an international organisation to conduct the warnings is to ensure or facilitate access to public information sources without having to go through unnecessarily complicated administrative procedures and, if possible, at no cost. These methods could include access to broadcasting times on government media (TV and radio stations), public announcements in newspapers or delivery of warnings through the national postal service, and putting up public warning announcements in public institutions. In the long term this could also include the addition of warnings and risk education to the national educational curriculum by the Ministry of Education.

ENDNOTES

[1] This chapter is based on Protecting Civilians from Explosive Remnants of War, A Guide to Providing Warnings under CCW Protocol V, Landmine Action, London, 2004; and A Project Manager's Guide to Mine Risk Education, GICHD, forthcoming, 2008.

[2] Technical Annex, Article 2(c), Protocol V.

[3] Landmine Explosive Remnants of War Safety Handbook, UNMAS, October 2005

[4] Called community mine action liaison in the IMAS.

[5] Technical Annex, Article 2(d), Protocol V.

[6] Technical Annex, Article 2(e), Protocol V.

[7] Technical Annex, Article 2(f), Protocol V.

[8] Technical Annex, Article 2(g), Protocol V.

CHAPTER 6

ASSISTING THE SURVIVORS

When an item of ERW explodes, some people might be killed but others could survive the explosion and need urgent medical assistance. The survivors may have disabilities demanding long-term care and support. This chapter assesses the typical assistance needs of ERW survivors and summarises the major challenges in ensuring that those needs are met. The 2007 UN Convention on the Rights of Persons with Disabilities provides an overall framework for assistance efforts.

TYPICAL INJURIES FROM ERW

The extent of injuries suffered in an ERW blast – typically as a result of fragmentation – depends on the type of munition that has detonated, as well as the proximity to the explosion.[1] However, for the survivors, long-term injury and even disability is a likely outcome, although, statistically, they are less likely than anti-personnel mine victims to suffer traumatic amputation of one or more limbs. Instead, many survivors will be left with fragmentation injuries and burns, sometimes life-threatening. There may also be abdominal, chest and spinal injuries, blindness, deafness, and psychological trauma. Such injuries can be a challenge to the most competent surgeon, as these types of severe wounds are seldom seen in civilian practice.[2]

Although the physical wounds caused by ERW can be horrific, the psychological and social impact is also extremely significant. As the ICRC has pointed out,[3] victims often endure psychological trauma in addition to physical injury. Losing a limb, for example, is a particularly devastating experience, often accompanied by shame, loss of dignity and a drop in self-esteem. The surrounding community may contribute to this, by ostracising disabled people or discriminating against them.

SURVIVOR NEEDS

As the ICRC has pointed out, after leaving hospital, a survivor must rebuild his/her life. To do this, the survivor will first need to recover his/her mobility, and then reintegrate into society and the economy. Physical rehabilitation and socio-economic reintegration are closely linked needs. Enabling a person with disabilities to walk and move about is in itself a great achievement. But it is also an indispensable condition for the person's participation in family and community life, work and education.[4] Physiotherapy is a critical – and often neglected – contribution to this process. Unfortunately, suitably qualified physiotherapists are typically in short supply in areas affected by ERW.

Many survivors also require psychosocial support, in addition to the vocational training, financial assistance and encouragement often needed to help them become financially self-sufficient. Only the most fortunate receive this level of assistance, and many ERW survivors do not receive adequate medical treatment. In many affected areas, health care systems are either inadequate or non-existent. Box 3 illustrates some of the difficulties faced by a Cambodian ERW survivor.

Box 3 | Victim assistance challenges: the reality

In 1993, 13-year-old Chhay Chhom picked up and shook an unusual item that he had found while grazing his family's cattle. The resulting explosion tore off his right forearm and punctured his body with metal fragments. The fragments and blast to his face left him completely blind. It is believed that he picked up one of the many pieces of UXO still littering Cambodia.

After being carried by his father to the hospital in Kompong Thom, Chhom's right hand and forearm were surgically amputated and the fragments of metal removed from his body. Chhom remained in the hospital for three months, but they could do nothing to save his eyesight.

Because he was blinded, Chhom stopped going to school. Now in his 20's, he stays at home and cannot walk far from the house. His parents have rice paddies and cattle, but with his injuries he is unable to work or even to help his parents much at home. "I used to have a lot of friends, especially when I was at school. But now they do not contact me or come to visit. I have a lot of difficulties, especially walking. I am in darkness every day and never see any light."

* Taken from International Committee of the Red Cross, Explosive Remnants of War: The lethal legacy of modern armed conflict, Second Edition, Geneva, June 2004, p. 11.

SURVIVOR ASSISTANCE

Ensuring that assistance to the survivors of ERW is provided is the primary responsibility of the affected state, but consistent and long-term support by the international community is needed. This is foreseen by Article 8, paragraph 2 of the Protocol.

ARTICLE 8 | PARAGRAPH 2

Co-operation and assistance

Each High Contracting Party 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. Such assistance may be provided inter alia through the United Nations system, relevant international, regional or national organizations or institutions, the International Committee of the Red Cross, national Red Cross and Red Crescent societies and their International Federation, non-governmental organizations, or on a bilateral basis.

Key elements in a successful programme of assistance to survivors include the following:

- Programmes must involve data collection and information management to ensure that the level and types of needs are known and to target finite resources effectively;
- Assistance must take into consideration the immediate and ongoing medical needs of survivors, and also their physical, psychological and economic rehabilitation and reintegration needs;
- The assistance framework must enhance, where necessary, laws and public policies, including those related to human rights and the equalisation of opportunities for persons with disabilities – as well as the effective implementation of these legal and policy frameworks;
- Interventions must include strengthening the capacity of medical, rehabilitative and other services provided to survivors and other persons with disabilities, and must involve steps to ensure sustainability of this service provision; and
- Programmes must address constraints on the access to and provision of these services.

MAIN CHALLENGES FOR SURVIVOR ASSISTANCE

Accidents often happen in remote localities, far away from hospitals and with limited access to transportation. The victims or their families may not be able to pay for appropriate care, equipment and rehabilitation. Many never get help because they live in highly insecure environments. Travel may be restricted because the conflict is still going on, or because hospitals are in zones held by the adversary. To make matters worse, a lot of the affected areas may simply be too dangerous for humanitarian agencies to operate in.

Thus, as Handicap International has noted,[5] the main challenges for survivor assistance are the following:

Access to care. This includes physical access, economic accessibility, and access to information, all of which must be provided in a culturally appropriate manner.

Variety and effectiveness of assistance. All components of victim assistance should be considered interrelated and equally important. Referral systems need to be in place and reinforced.

Capacity and sustainability. This includes infrastructure and human resource capacity, reinforced by training and increased retention of staff. National and local services should gradually replace international ones, for which national states should seek increasingly diversified funding.

Rights implementation. Implementation of general and specific legislation addressing discrimination against people with disabilities should be reinforced.

Monitoring of progress. Due to the diverse nature of victim assistance and to the voluntary nature of reporting on it, progress for both victim assistance-specific and cross-cutting programmes beneficial to victims should be adequately mapped.

Prioritisation. Victim assistance should be given adequate priority in comparison to other issues, such as conflicts and HIV/AIDS.[6]

It is, though, important to ensure that all victims of weapons are treated equally and without discrimination in their needs for medical care, rehabilitation and reintegration into society. Accordingly, efforts must continue to ensure those victims not covered by a particular international treaty are not marginalised or forgotten. Survivor assistance should not be carried out in isolation, but, where appropriate, as part of initiatives for other people with disabilities. This remains a significant challenge. The 2007 UN Convention on the Rights of Persons with Disabilities, which entered into force in May 2008, provides an overall framework for assistance efforts.[7] As of May 2008 there were 26 States Parties to the Convention.[8]

ENDNOTES

1 The IMAS define a victim as "an individual who has suffered harm as a result of a mine or ERW accident." The definition further notes that "in the context of victim assistance, the term victim may include dependants of a casualty, hence having a broader meaning than survivor." See IMAS 04.10: Glossary of mine action terms, definitions and abbreviations, 3.271.

2 International Committee of the Red Cross, Explosive Remnants of War: the lethal legacy of modern armed conflict, Second Edition, Geneva, June 2004, p. 10.

3 ibid.

4 ICRC, Caring for Landmine Victims, Geneva, 2004, p. 8.

5 Handicap International, Circle of Impact: the Fatal Footprint of Cluster Munitions on People and Communities, Brussels, May 2007, p. 12.

6 ibid., pp. 12–13.

7 See, for example, "United Nations Enable", at: www.un.org/disabilities.

8 Bangladesh, Croatia, Cuba, Ecuador, Egypt, El Salvador, Gabon, Guinea, Honduras, Hungary, India, Jamaica, Jordan, Mali, Mexico, Namibia, Nicaragua, Panama, Peru, Philippines, Qatar, San Marino, Slovenia, South Africa, Spain and Tunisia.

CHAPTER 7

MINIMISING THE OCCURENCE OF ERW

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This chapter looks at measures to prevent munitions becoming ERW – the watchword is 'prevention is better than cure'. This entails measures regarding the production, storage, transport and testing of munitions and their disposal once their shelf life has expired.

INTRODUCTION

Under Article 9 of Protocol V, each State Party is *"encouraged to take generic preventive measures aimed at minimizing the occurrence of explosive remnants of war."* The non-legally-binding Technical Annex to the Protocol suggests ways in which this can be achieved.

ARTICLE 9

Generic preventive measures

1. Bearing in mind the different situations and capacities, each High Contracting Party is encouraged to take generic preventive measures aimed at minimizing the occurrence of explosive remnants of war, including, but not limited to, those referred to in part 3 of the Technical Annex.

2. Each High Contracting Party may, on a voluntary basis, exchange information related to efforts to promote and establish best practices in respect of paragraph 1 of this Article.

MINIMISING UXO

States producing, procuring or stockpiling explosive ordnance should seek the greatest reliability of munitions through certified quality control measures and internationally recognised quality assurance standards. Realistic live-fire testing should be conducted to ensure ordnance meets the regulations of international law and that munitions function correctly. Testing under controlled or ideal conditions usually produces very different results to combat. A State should examine ways of improving explosive ordnance reliability that it intends to produce or procure.

The Technical Annex also notes that proper training of all personnel involved in the handling, transporting and use of explosive ordnance is an important factor in ensuring its reliable operations. States should therefore adopt and maintain suitable training programmes to ensure that personnel are properly trained to work with these munitions.

In addition, Article 36 of 1977 Additional Protocol I to the Geneva Conventions of 1942 stipulates that new weapons must be tested to ensure that they meet the requirements of international law. The International Committee of the Red Cross has produced a *Guide to the Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977*.[1] The Guide states that: *"The technical performance of the weapon under review is of particular relevance in determining whether its use may cause indiscriminate effects. The relevant factors would include:*

- *the accuracy and reliability of the targeting mechanism (including e.g. failure rates, sensitivity of unexploded ordnance, etc.);*
- *the area covered by the weapon;*
- *whether the weapons' foreseeable effects are capable of being limited to the target or of being controlled in time or space (including the degree to which a weapon will present a risk to the civilian population after its military purpose is served)."* [2]

MINIMISING AXO AND THE THREAT IT POSES

As conventional ammunition stockpiles become older, combined with inadequate storage conditions and limited danger areas, a significant threat can emerge during post-conflict operations. The effects of an explosion within an ammunition storage area are devastating, resulting in a requirement for major EOD operations. On numerous occasions, not only in post-conflict environments, explosions in ammunition storage areas have caused significant casualties, in both developing and developed countries. For example, a number of explosions in ammunition storage areas in Albania in 1997 caused 115 casualties, one in Nigeria in 2002 inflicted 1,500 or more casualties and another in Mozambique in 2007 caused 80 victims.[3]

The severity of the threat to human life from blast and fragmentation depends on the proximity of the local population to the potential explosion site. Unlike UXO, which normally affects one or more individuals, an undesired explosive event within an ammunition storage area may have an impact on the whole community; it will also result in the scattering of UXO over the surrounding areas, denying its use to the local community.

The risk of explosions in stockpiles should be minimised by using appropriate stockpile arrangements. In managing stockpiles, States should store unused munitions in secure facilities or appropriate containers that protect the explosive ordnance and its components in a controlled atmosphere.

Ammunition packaging is a crucial factor in maintaining the integrity of the ammunition. Accordingly, all ammunition should:

- have undergone storage and handling tests,
- be undamaged,
- be within its shelf life, and
- be correctly packaged in serviceable packaging.

The purpose of the ammunition storehouse is to continue and expand upon the protective cocoon formed by the ammunition packaging. An ammunition storehouse should provide the following:

- protection from weather conditions including electrical storms,
- physical security from intruders,
- fire protection, and
- protection from explosions in adjacent storehouses.

States should also apply appropriate explosive ordnance logging, tracking and testing procedures. This should include information on:

- the date of manufacture of each number, lot or batch of explosive ordnance,
- under what conditions it has been stored; and
- to what environmental factors it has been exposed.

There is also a further risk at unsecured ammunition sites (typically the case with abandoned explosive ordnance), which can be subject to theft of metal (i.e. brass and copper), of packing materials for fuel, and of explosives for use in fishing or hunting. This in turn leads to the ammunition being mishandled or damaged in such a way as to make it dangerous. Securing ammunition sites is therefore a priority during and immediately after armed conflict.

ENDNOTES

1 Available at: www.icrc.org/web/eng/siteeng0.nsf/html/p0902.

2 ICRC, Guide to the Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977, Geneva, 2007, Section 1.3.2.

3 GICHD, Explosive Remnants of War (ERW) - Undesired Explosive Events in Ammunition Storage Areas, Geneva, November 2002, p. 3.

CHAPTER 8

MECHANISMS AND CAPACITIES FOR INTERNATIONAL COOPERATION AND ASSISTANCE

MECHANISMS AND CAPACITIES FOR INTERNATIONAL COOPERATION AND ASSISTANCE

This chapter looks at ways that international cooperation and assistance can support the full implementation of the Protocol. It reviews first assistance with respect to existing ERW under the Protocol. It then considers the contribution of meetings of the States Parties to Protocol V, including the Sponsorship Programme. Finally it summarises the role of the United Nations, of the International Committee of the Red Cross, and of the GICHD. Although not listed here, many non-governmental organisations also play a critical role in addressing the threat from ERW.

COOPERATION AND ASSISTANCE

Article 8, paragraph 1 of Protocol V requires that States Parties *"in a position to do so"* provide assistance for the marking and clearance, removal or destruction of explosive remnants of war, and for risk education to civilian populations. This is an important obligation to promote the successful implementation of the Protocol. Assistance, which may be financial, technical or material in nature, among other forms of assistance, may be provided through the UN system, other relevant international, regional or national bodies, the ICRC, non-governmental organisations, or on a bilateral basis. In addition, States Parties in a position to do so are required to contribute to trust funds within the UN system, as well as other relevant trust funds, to facilitate the provision of assistance under the Protocol.[1]

ASSISTANCE WITH RESPECT TO EXISTING ERW

As mentioned above, the primary obligations under Protocol V only apply to ERW that has existed on the territory of a State since it became party to the Protocol. Article 7 of the Protocol, however, calls on States Parties, *"as necessary and feasible"*, also to support efforts to tackle ERW that existed before any given State became party to the Protocol. The same forms of assistance and the same mechanisms apply to existing ERW as for ERW that have occurred since the entry into force of the Protocol. In doing so, the Protocol requires that States Parties take into account its humanitarian objectives, as well as relevant international standards, including the IMAS.

CHAPTER 8

MECHANISMS AND CAPACITIES FOR INTERNATIONAL COOPERATION AND ASSISTANCE

ARTICLE 7

Assistance with respect to existing explosive remnants of war

1. Each High Contracting Party has the right to seek and receive assistance, where appropriate, from other High Contracting Parties, from states non-party and relevant international organizations and institutions in dealing with the problems posed by existing explosive remnants of war.

2. Each High Contracting Party in a position to do so shall provide assistance in dealing with the problems posed by existing explosive remnants of war, as necessary and feasible. In so doing, High Contracting Parties shall also take into account the humanitarian objectives of this Protocol, as well as international standards including the International Mine Action Standards.

MEETINGS OF THE STATES PARTIES

In accordance with Article 10, paragraph 1 of Protocol V, a letter co-signed by 22 States Parties was addressed to the Secretary-General, inviting him to convene a Preparatory meeting and a Conference for the purpose of consultations and cooperation on the operation of the Protocol. In accordance with the decision of the Third Review Conference of States Parties to the Convention on Certain Conventional Weapons, held in Geneva in November 2006, the first Meeting of the High Contracting Parties to Protocol V took place on 5 November 2007.

The States Parties to Protocol V took a number of decisions in support of the implementation of the Protocol:

- National reporting (see also Chapter 3, *Data entry and analysis*);
- Mechanisms for the exchange of information;
- ERW database (Request for assistance); and
- Informal meetings of experts.

MECHANISMS AND CAPACITIES FOR INTERNATIONAL COOPERATION AND ASSISTANCE

ARTICLE 10

Consultations of High Contracting Parties

1. The High Contracting Parties undertake to consult and co-operate with each other on all issues related to the operation of this Protocol. For this purpose, a Conference of High Contracting Parties shall be held as agreed to by a majority, but no less than eighteen High Contracting Parties.

2. The work of the conferences of High Contracting Parties shall include:

   (a) review of the status and operation of this Protocol;

   (b) consideration of matters pertaining to national implementation of this Protocol, including national reporting or updating on an annual basis.

   (c) preparation for review conferences.

NATIONAL REPORTING

The Conference decided to establish a database on Protocol V consisting of the initial national reports, their annual updates and/or summary cover pages. The Protocol V database will be maintained by the CCW Secretariat and, as a rule, will be accessible for all. Access to sensitive information may be restricted by the State concerned to the States Parties. States not party to the Protocol are encouraged to provide voluntary national reports.

The national reports and their annual updating will cover implementation of the following:

- Clearance, removal or destruction of ERW (Article 3);
- Recording, retaining and transmission of information (Article 4);
- Other precautions for the protection of the civilian population, individual civilians and civilian objects from the risks and effects of ERW (Article 5);
- Provisions for the protection of humanitarian missions and organisations from the effects of ERW (Article 6);
- Assistance with respect to existing ERW (Article 7);
- Cooperation and assistance (Article 8);
- Generic preventive measures (Article 9);
- Compliance (Article 11).

Initial national reports are required to be submitted 180 days after the entry into force of the Protocol for each State Party. For States for which the Protocol was already in force the deadline for submission of their initial

national reports was fixed at 31 May 2008. Annual updates and/or summary cover pages are to be submitted on or before 31 March of each year. The Conference also decided to approve standard reporting forms on each of the reporting topics and the summary cover page and to recommend them for use by the States Parties.

MECHANISMS FOR THE EXCHANGE OF INFORMATION

The Conference urged the users of (or parties abandoning) explosive ordnance to record and retain, if possible, all the information outlined in Part 1 of the Technical Annex of the Protocol. They are urged to transmit to the relevant recipient all the information that would be required to protect civilians and humanitarian workers from the risks posed by ERW, as set out in Articles 4 and 6 of the Protocol.

The Conference decided also to recommend that, in a case where another State has not been chosen, the United Nations would be the "mutually agreed third party" referred to in Article 4 (2) of Protocol V. The Conference further agreed to adopt on a trial basis the Article 4 generic electronic template for the purpose of effective recording and retaining of information pertinent to the implementation of Article 4 (and to its further adaptation at country level), subject to final approval by the Second Conference in 2008.

ERW DATABASE (Request for assistance)

The Conference decided to establish a separate database on ERW consisting of the requests for assistance and their annual updates. The ERW database will be maintained by the CCW Secretariat and be accessible for all. Access to sensitive information may be restricted by the State requesting assistance to the States Parties only. The Conference agreed that States not party to the Protocol may also submit requests for assistance with the understanding that assistance will only be provided to the States which have notified their consent to be bound by the Protocol.

The Conference also decided that the requests for assistance and their updates should contain the following information, if available:

I. UXO

- the general location of known and probable UXO;
- the types and approximate number of explosive ordnance in the targeted areas;
- any information available on the explosive ordnance including colour, size and shape and other relevant markings; and
- the method used for safe disposal of the explosive ordnance.

II. AXO

- the location of the AXO;
- the approximate number of AXO at each specific site;
- the types of AXO at each specific site;
- any information available on the AXO, including colour, size and shape;
- information on type and methods of packing for AXO;
- state of readiness;
- the location and nature of any booby-traps known to be present in the area of AXO.

III. Appraisal of needs; status of clearance; as appropriate the care, rehabilitation and social and economic reintegration of ERW victims; programmes for destruction of ERW, as well as measures taken to provide immediate and effective warning and risk education to population.

INFORMAL MEETINGS OF EXPERTS

The Conference agreed to establish a mechanism for consultation and cooperation consisting of informal meetings of experts, chaired by Coordinators, on issues such as:

- clearance
- cooperation and assistance;
- generic preventive measures;
- reporting;
- requests for assistance (with the aim of connecting needs with resources);
- universalisation; and
- victim assistance.

The meetings are generally intended to foster cooperation and assistance between those requesting assistance in dealing with the problems posed both by existing and future ERW and those in a position to provide assistance. The Conference decided that the 2008 informal meeting of experts would take place on 2 – 4 July 2008 in Geneva.

SPONSORSHIP PROGRAMME

The Third Review Conference of States Parties to the CCW in 2006 decided to establish a Sponsorship Programme to ensure widespread participation in the work of the Convention and its annexed Protocols, and to promote their universality.[2] This followed widespread concern that many countries have not been regularly participating in the CCW meetings in Geneva as a result of the financial burden.

The Sponsorship Programme under CCW is not limited to organizing and managing accommodation and travel expenses for official representatives of States Parties receiving financial support. It also supports the attendance of appropriate qualified experts with field experience, or of scholars, to prepare studies and/or presentations on certain topics of interest at relevant meetings or seminars. The Programme may also be used in the future to provide any other related form of assistance that might be deemed appropriate by the States Parties.

The Sponsorship Programme is financed only by voluntary contributions. An informal Steering Committee has been constituted to set operational modalities and ensures the guidance of the day-to-day implementation of the Programme. The administrative management of the Programme is conducted by the GICHD.

THE ROLE OF THE UNITED NATIONS

At total of 14 UN bodies are involved in mine action, which includes activities to tackle the threat from ERW. They share a vision for a world free of the threat of landmines and explosive remnants of war, where individuals and communities live in a safe environment conducive to development and where the needs of victims are met. Box 4 identifies a number of areas in which the UN Mine Action Team has envisaged its ongoing support for the Implementation of Protocol V. The specific roles and responsibilities of four of the key UN bodies are then described briefly below.

Box 4 | The UN and the implementation of Protocol V*

In 2006, the UN Mine Action Service prepared a paper for the Group of Governmental Experts to the Convention on Certain Conventional Weapons on the role of the UN in supporting the implementation of Protocol V. It stated that the UN Mine Action Team is fully committed to the universalisation and effective implementation of Protocol V.

With respect to the clearance, removal and destruction of ERW, the UN noted that it support could range from the provision of technical advice, to the establishment of a coordination centre to oversee mine action operations. The UN Mine Action Team has developed considerable experience in coordinating the surveying, prioritising, marking and clearing of areas affected by ERW, as well in resource mobilisation, particularly through the Portfolio of Mine Action Projects.

The UN Mine Action Team regards provisions on recording, retaining and transmission of information as some of the most important contributions to mine action from Protocol V. The UN Team encourages the States Parties to the Protocol to make the fullest possible use of best practices contained in Part 1 of the Technical Annex on recording, retaining and transmitting their information on ammunition used or abandoned during conflicts to the UN or another third party.

The UN will continue to serve a coordinating and administrative role for the provision of assistance by States Parties to the Protocol V to ERW-affected countries and territories. Voluntary trust funds for this purpose are managed by UNMAS, UNDP and UNICEF.

The UN recognises that the primary responsibility for mine action lies with the government of the landmine/ERW-affected country.

* Adapted from CCW/GGE/XV/WG.1/WP.2, Geneva, 31 August 2006.

The UN Mine Action Service (UNMAS | www.mineaction.org) is a division of the Department of Peacekeeping Operations and is the focal point for mine action in the UN system. It is responsible for ensuring an effective, proactive and coordinated UN response to ERW through collaboration with other concerned UN bodies. In peacekeeping and emergency settings, UNMAS establishes and manages mine action coordination centres in mine- and ERW-affected countries, plans and manages operations, mobilizes resources and sets mine-action priorities in the countries and territories it serves.

The Office for Disarmament Affairs (ODA | disarmament2.un.org) advises and assists the UN Secretary-General in his work related to the Convention on Certain Conventional Weapons. ODA promotes universal participation in international legal frameworks related to ERW and assists countries in complying with their treaty obligations. ODA views mine action as a key disarmament activity.

The UN Development Programme (UNDP | www.undp.org) assists mine- and ERW-affected countries establish or strengthen national and local mine action programmes, through its country offices and the New York-based Mine Action Team of the Bureau for Crisis Prevention and Recovery. In certain circumstances UNDP, at the request of authorities in mine-affected countries, manages some or all of the elements of mine action programmes and may undertake specific mine action projects. UNDP includes mine action in the mainstream of its broader development programmes because mines and ERW are an obstacle to sustainable development.

The UN Children's Fund (UNICEF | www.unicef.org) was created to work with others to overcome the obstacles that violence, poverty, disease and discrimination place in a child's path. This includes children in mine- and ERW-affected countries worldwide. In collaboration with its many partners, UNICEF supports the development and implementation of mine risk education and survivor assistance projects.

THE ROLE OF THE INTERNATIONAL COMMITTEE OF THE RED CROSS

As part of its mandate to assist victims of armed conflict, the ICRC works to alleviate the suffering of mine and ERW victims and affected communities in war-affected countries. It focuses its efforts on providing curative care and prosthetic services to mine and ERW survivors. It provides specialised training in the management of war wounds, including sessions on how to treat mine and ERW injuries. It also conducts mine/UXO risk education programmes to help reduce the threat to those living in a mine/UXO-contaminated environment.

The ICRC played a key role in promoting the adoption of Protocol V and actively supports its universalisation and implementation, as set out in Box 5. In this context, ICRC regularly organises and participates in national and regional conferences to promote understanding of and adherence to this and other international humanitarian law instruments. For more information, the ICRC website can be found at www.icrc.org.

THE ROLE OF THE GICHD

Founded in 1998, on the initiative of the Government of Switzerland, the GICHD is an independent organisation supported by 18 governments. The Centre works for the elimination of anti-personnel mines and for the reduction of the humanitarian impact of other landmines and explosive remnants of war. It is active in research, provides operational assistance to ongoing clearance programmes in the field, and supports the implementation of Protocol V. Its expertise has already been called on by States Parties to the CCW, in particular at the meetings of the Group of Governmental Experts.

Box 5 | The call of the International Red Cross and Red Crescent Movement to ratify and implement the new rules on ERW *

The entire International Red Cross and Red Crescent Movement has called on all States to consider adherence to the Protocol on Explosive Remnants of War, and to the Convention on Certain Conventional Weapons and its four other protocols, if they are not already a party to these instruments. Explosive remnants of war constitute a serious and growing problem for countless people.

With the adoption of the Protocol and the Convention on the Prohibition of Antipersonnel Mines, the international community has created a comprehensive framework for addressing the threats caused by explosive weapons left on the battlefield. However, the goal of protecting civilians and affected communities will be reached only once these instruments have achieved universal acceptance and become normal practice for governments, armed forces and armed opposition groups.

The ICRC has prepared materials to help States in their consideration of the Protocol and, more generally, the Convention on Certain Conventional Weapons. These include the texts of these treaties, a kit with model instruments of ratification, and documents outlining the ERW problem and the Protocol for a non-specialist audience. These materials can be found on the ICRC website (www.icrc.org) or obtained from ICRC delegations and National Red Cross and Red Crescent Societies. Further information is also available from the ICRC Mines-Arms Unit in Geneva (weapons.gva@icrc.org).

* Taken from ICRC, Explosive Remnants of War: the lethal legacy of modern armed conflict, Second Edition, Geneva, June 2004.

MECHANISMS AND CAPACITIES FOR INTERNATIONAL COOPERATION AND ASSISTANCE

The GICHD supports the development of the IMAS standards and IMSMA database through specialist staff in Geneva. It has been reviewing the IMAS to ensure that all of the standards are compliant with the obligations and the terminology used in Protocol V and that they continue to support best practice in mine action operations, including clearance, stockpile destruction, survey and risk education. The Centre is also tasked with managing the Sponsorship Programme on behalf of the CCW. For more information, the GICHD website can be found at www.gichd.org.

ENDNOTES

[1] See Article 8, paragraph 3, Protocol V.

[2] See UN Office for Disarmament Affairs, "Sponsorship Programme", accessible through disarmament2.un.org.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AXO Abandoned Explosive Ordnance

BAC Battle Area Clearance

CBU Cluster Bomb Unit

CCW Convention on Certain Conventional Weapons

EOD Explosive Ordnance Disposal

ERW Explosive Remnants of War

GICHD Geneva International Centre for Humanitarian Demining

GIS Geographic Information System

GPS Global Positioning System

ICRC International Committee of the Red Cross

IMAS International Mine Action Standards

IMSMA Information Management System for Mine Action

LIS Landmine Impact Survey

MRE Mine Risk Education

NGO Non-Governmental Organisation

RSP Render Safe Procedure

SHA Suspected Hazard Area

UN United Nations

UNDP United Nations Development Programme

UNICEF United Nations Children's Fund

UNIDIR United Nations Institute for Disarmament Research

UNMAS United Nations Mine Action Service

UN ODA United Nations Office for Disarmament Affairs

UXO Unexploded Ordnance

ANNEX 1

TEXT OF CCW PROTOCOL V

The High Contracting Parties,

Recognising the serious post-conflict humanitarian problems caused by explosive remnants of war,

Conscious of the need to conclude a Protocol on post-conflict remedial measures of a generic nature in order to minimise the risks and effects of explosive remnants of war,

And willing to address generic preventive measures, through voluntary best practices specified in a Technical Annex for improving the reliability of munitions, and therefore minimising the occurrence of explosive remnants of war,

Have agreed as follows:

Article 1 | General provision and scope of application

1. In conformity with the Charter of the United Nations and of the rules of the international law of armed conflict applicable to them, High Contracting Parties agree to comply with the obligations specified in this Protocol, both individually and in co-operation with other High Contracting Parties, to minimise the risks and effects of explosive remnants of war in post-conflict situations.

2. This Protocol shall apply to explosive remnants of war on the land territory including internal waters of High Contracting Parties.

3. This Protocol shall apply to situations resulting from conflicts referred to in Article 1, paragraphs 1 to 6, of the Convention, as amended on 21 December 2001.

4. Articles 3, 4, 5 and 8 of this Protocol apply to explosive remnants of war other than existing explosive remnants of war as defined in Article 2, paragraph 5 of this Protocol.

Article 2 | Definitions

For the purpose of this Protocol,

1. Explosive ordnance means conventional munitions containing explosives, with the exception of mines, booby traps and other devices as defined in Protocol II of this Convention as amended on 3 May 1996.

2. Unexploded ordnance means explosive ordnance that has been primed, fused, armed, or otherwise prepared for use and used in an armed conflict. It may have been fired, dropped, launched or projected and should have exploded but failed to do so.

3. Abandoned explosive ordnance means explosive ordnance that has not been used during an armed conflict, 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. Abandoned explosive ordnance may or may not have been primed, fused, armed or otherwise prepared for use.

4. Explosive remnants of war means unexploded ordnance and abandoned explosive ordnance.

5. Existing explosive remnants of war means unexploded ordnance and abandoned explosive ordnance that existed prior to the entry into force of this Protocol for the High Contracting Party on whose territory it exists.

Article 3 | Clearance, removal or destruction of explosive remnants of war

1. Each High Contracting Party and party to an armed conflict shall bear the responsibilities set out in this Article with respect to all explosive remnants of war in territory under its control. In cases where a user of explosive ordnance which has become explosive remnants of war, does not exercise control of the territory, the user shall, after the cessation of active hostilities, provide where feasible, inter alia technical, financial, material or human resources assistance, bilaterally or through a mutually agreed third party, including inter alia through the United Nations system or other relevant organisations, to facilitate the marking and clearance, removal or destruction of such explosive remnants of war.

2. 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. Areas affected by explosive remnants of war which are assessed pursuant to paragraph 3 of this Article as posing a serious humanitarian risk shall be accorded priority status for clearance, removal or destruction.

3. After the cessation of active hostilities and as soon as feasible, each High Contracting Party and party to an armed conflict shall take the following measures in affected territories under its control, to reduce the risks posed by explosive remnants of war:

   (a) survey and assess the threat posed by explosive remnants of war;
   (b) assess and prioritise needs and practicability in terms of marking and clearance, removal or destruction;
   (c) mark and clear, remove or destroy explosive remnants of war;
   (d) take steps to mobilise resources to carry out these activities.

4. In conducting the above activities High Contracting Parties and parties to an armed conflict shall take into account international standards, including the International Mine Action Standards.

5. High Contracting Parties shall co-operate, where appropriate, both among themselves and with other states, relevant regional and international organisations and non-governmental organisations on the provision of inter alia technical, financial, material and human resources assistance including, in appropriate circumstances, the undertaking of joint operations necessary to fulfil the provisions of this Article.

Article 4 | Recording, retaining and transmission of information

1. High Contracting Parties and parties to an armed conflict shall 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, to facilitate the rapid marking and clearance, removal or destruction of explosive remnants of war, risk education and the provision of relevant information to the party in control of the territory and to civilian populations in that territory.

2. High Contracting Parties and parties to an armed conflict which have used or abandoned explosive ordnance which may have become explosive remnants of war shall, without delay after the cessation of active hostilities and as far as practicable, subject to these parties' legitimate security interests, make available such information to the party or parties in control of the affected area, bilaterally or through a mutually agreed third party including inter alia the United Nations or, upon request, to other relevant organisations which the party providing the information is satisfied are or will be undertaking risk education and the marking and clearance, removal or destruction of explosive remnants of war in the affected area.

3. In recording, retaining and transmitting such information, the High Contracting Parties should have regard to Part 1 of the Technical Annex.

Article 5 | Other precautions for the protection of the civilian population, individual civilians and civilian objects from the risks and effects of explosive remnants of war

1. High Contracting Parties and parties to an armed conflict shall take all feasible precautions in the territory under their control affected by explosive remnants of war to protect the civilian population, individual civilians and civilian objects from the risks and effects of explosive remnants of war. Feasible precautions are those precautions which are practicable or practicably possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations. These precautions may include warnings, risk education to the civilian population, marking, fencing and monitoring of territory affected by explosive remnants of war, as set out in Part 2 of the Technical Annex.

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Article 6 | Provisions for the protection of humanitarian missions and organisations from the effects of explosive remnants of war

1. Each High Contracting Party and party to an armed conflict shall:

   (a) Protect, as far as feasible, from the effects of explosive remnants of war, humanitarian missions and organisations that are or will be operating in the area under the control of the High Contracting Party or party to an armed conflict and with that party's consent.
   (b) Upon request by such a humanitarian mission or organisation, provide, as far as feasible, information on the location of all explosive remnants of war that it is aware of in territory where the requesting humanitarian mission or organisation will operate or is operating.

2. The provisions of this Article are without prejudice to existing International Humanitarian Law or other international instruments as applicable or decisions by the Security Council of the United Nations which provide for a higher level of protection.

Article 7 | Assistance with respect to existing explosive remnants of war

1. Each High Contracting Party has the right to seek and receive assistance, where appropriate, from other High Contracting Parties, from states non-party and relevant international organisations and institutions in dealing with the problems posed by existing explosive remnants of war.

2. Each High Contracting Party in a position to do so shall provide assistance in dealing with the problems posed by existing explosive remnants of war, as necessary and feasible. In so doing, High Contracting Parties shall also take into account the humanitarian objectives of this Protocol, as well as international standards including the International Mine Action Standards.

Article 8 | Co-operation and assistance

1. Each High Contracting Party in a position to do so shall provide assistance for the marking and clearance, removal or destruction of explosive remnants of war, and for risk education to civilian populations and related activities inter alia through the United Nations system, other relevant international, regional or national organisations or institutions, the International Committee of the Red Cross, national Red Cross and Red Crescent societies and their International Federation, non-governmental organisations, or on a bilateral basis.

2. Each High Contracting Party 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. Such assistance may be provided inter alia through the United Nations system, relevant international, regional or national organisations or institutions, the International Committee of the Red Cross, national Red Cross and Red Crescent societies and their International Federation, non-governmental organisations, or on a bilateral basis.

3. Each High Contracting Party in a position to do so shall contribute to trust funds within the United Nations system, as well as other relevant trust funds, to facilitate the provision of assistance under this Protocol.

4. Each High Contracting Party shall have the right to participate in the fullest possible exchange of equipment, material and scientific and technological information other than weapons related technology, necessary for the implementation of this Protocol. High Contracting Parties undertake to facilitate such exchanges in accordance with national legislation and shall not impose undue restrictions on the provision of clearance equipment and related technological information for humanitarian purposes.

5. Each High Contracting Party undertakes to provide information to the relevant databases on mine action established within the United Nations system, especially information concerning various means and technologies of clearance of explosive remnants of war, lists of experts, expert agencies or national points of contact on clearance of explosive remnants of war and, on a voluntary basis, technical information on relevant types of explosive ordnance.

6. High Contracting Parties may submit requests for assistance substantiated by relevant information to the United Nations, to other appropriate bodies or to other states. These requests may be submitted to the Secretary-General of the United Nations, who shall transmit them to all High Contracting Parties and to relevant international organisations and non-governmental organisations.

7. In the case of requests to the United Nations, the Secretary-General of the United Nations, within the resources available to the Secretary-General of the United Nations, may take appropriate steps to assess the situation and in co-operation with the requesting High Contracting Party and other High Contracting Parties with responsibility as set out in Article 3 above, recommend the appropriate provision of assistance. The Secretary-General may also report to High Contracting Parties on any such assessment as well as on the type and scope of assistance required, including possible contributions from the trust funds established within the United Nations system.

TEXT OF CCW PROTOCOL V

Article 9 | Generic preventive measures

1. Bearing in mind the different situations and capacities, each High Contracting Party is encouraged to take generic preventive measures aimed at minimising the occurrence of explosive remnants of war, including, but not limited to, those referred to in part 3 of the Technical Annex.

2. Each High Contracting Party may, on a voluntary basis, exchange information related to efforts to promote and establish best practices in respect of paragraph 1 of this Article.

Article 10 | Consultations of High Contracting Parties

1. The High Contracting Parties undertake to consult and co-operate with each other on all issues related to the operation of this Protocol. For this purpose, a Conference of High Contracting Parties shall be held as agreed to by a majority, but no less than eighteen High Contracting Parties.

2. The work of the conferences of High Contracting Parties shall include:

   (a) review of the status and operation of this Protocol;

   (b) consideration of matters pertaining to national implementation of this Protocol, including national reporting or updating on an annual basis.

   (c) preparation for review conferences.

3. The costs of the Conference of High Contracting Parties shall be borne by the High Contracting Parties and States not parties participating in the Conference, in accordance with the United Nations scale of assessment adjusted appropriately.

Article 11 | Compliance

1. Each High Contracting Party shall require that its armed forces and relevant agencies or departments issue appropriate instructions and operating procedures and that its personnel receive training consistent with the relevant provisions of this Protocol.

2. The High Contracting Parties undertake to consult each other and to co-operate with each other bilaterally, through the Secretary-General of the United Nations or through other appropriate international procedures, to resolve any problems that may arise with regard to the interpretation and application of the provisions of this Protocol.

Technical Annex

This Technical Annex contains suggested best practice for achieving the objectives contained in Articles 4, 5 and 9 of this Protocol. This Technical Annex will be implemented by High Contracting Parties on a voluntary basis.

1. Recording, storage and release of information for Unexploded Ordnance (UXO) and Abandoned Explosive Ordnance (AXO)

(a) Recording of information: Regarding explosive ordnance which may have become UXO a State should endeavour to record the following information as accurately as possible:

(i) the location of areas targeted using explosive ordnance;

(ii) the approximate number of explosive ordnance used in the areas under (i);

(iii) the type and nature of explosive ordnance used in areas under (i);

(iv) the general location of known and probable UXO;

Where 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 information on this ordnance as follows:

(v) the location of AXO;

(vi) the approximate amount of AXO at each specific site;

(vii) the types of AXO at each specific site.

(b) Storage of information: Where a State has recorded information in accordance with paragraph (a), it should be stored in such a manner as to allow for its retrieval and subsequent release in accordance with paragraph (c).

(c) Release of information: Information recorded and stored by a State in accordance with paragraphs (a) and (b) should, taking into account the security interests and other obligations of the State providing the information, be released in accordance with the following provisions:

(i) Content:
On UXO the released information should contain details on:
(1) the general location of known and probable UXO;
(2) the types and approximate number of explosive ordnance used in the targeted areas;

(3) the method of identifying the explosive ordnance including colour, size and shape and other relevant markings;
(4) the method for safe disposal of the explosive ordnance.

On AXO the released information should contain details on:
(5) the location of the AXO;
(6) the approximate number of AXO at each specific site;
(7) the types of AXO at each specific site;
(8) the method of identifying the AXO, including colour, size and shape;
(9) information on type and methods of packing for AXO;
(10) state of readiness;
(11) the location and nature of any booby traps known to be present in the area of AXO.

(ii) Recipient: The information should be released to the party or parties in control of the affected territory and to those persons or institutions that the releasing State is satisfied are, or will be, involved in UXO or AXO clearance in the affected area, in the education of the civilian population on the risks of UXO or AXO.

(iii) Mechanism: A State should, where feasible, make use of those mechanisms established internationally or locally for the release of information, such as through UNMAS, IMSMA, and other expert agencies, as considered appropriate by the releasing State.

(iv) Timing: The information should be released as soon as possible, taking into account such matters as any ongoing military and humanitarian operations in the affected areas, the availability and reliability of information and relevant security issues.

2. Warnings, risk education, marking, fencing and monitoring

Key terms

(a) Warnings are the punctual provision of cautionary information to the civilian population, intended to minimise risks caused by explosive remnants of war in affected territories.

(b) Risk education to the civilian population should consist of risk education programmes to facilitate information exchange between affected communities, government authorities and humanitarian organisations so that affected communities are informed about the threat from explosive remnants of war. Risk education programmes are usually a long term activity.

Best practice elements of warnings and risk education

(c) All programmes of warnings and risk education should, where possible, take into account prevailing national and international standards, including the International Mine Action Standards.

(d) Warnings and risk education should be provided to the affected civilian population which comprises civilians living in or around areas containing explosive remnants of war and civilians who transit such areas.

(e) Warnings should be given, as soon as possible, depending on the context and the information available. A risk education programme should replace a warnings programme as soon as possible. Warnings and risk education always should be provided to the affected communities at the earliest possible time.

(f) Parties to a conflict should employ third parties such as international organisations and non-governmental organisations when they do not have the resources and skills to deliver efficient risk education.

(g) Parties to a conflict should, if possible, provide additional resources for warnings and risk education. Such items might include: provision of logistical support, production of risk education materials, financial support and general cartographic information.

Marking, fencing, and monitoring of an explosive remnants of war affected area

(h) When possible, at any time during the course of a conflict and thereafter, where explosive remnants of war exist the parties to a conflict should, at the earliest possible time and to the maximum extent possible, ensure that areas containing explosive remnants of war are marked, fenced and monitored so as to ensure the effective exclusion of civilians, in accordance with the following provisions.

(i) Warning signs based on methods of marking recognised by the affected community should be utilised in the marking of suspected hazardous areas. Signs and other hazardous area boundary markers should as far as possible be visible, legible, durable and resistant to environmental effects and should clearly identify which side of the marked boundary is considered to be within the explosive remnants of war affected area and which side is considered to be safe.

(j) An appropriate structure should be put in place with responsibility for the monitoring and maintenance of permanent and temporary marking systems, integrated with national and local risk education programmes.

3. Generic preventive measures

States producing or procuring explosive ordnance should to the extent possible and as appropriate endeavour to ensure that the following measures are implemented and respected during the life-cycle of explosive ordnance.

(a) Munitions manufacturing management

(i) Production processes should be designed to achieve the greatest reliability of munitions.

(ii) Production processes should be subject to certified quality control measures.

(iii) During the production of explosive ordnance, certified quality assurance standards that are internationally recognised should be applied.

(iv) Acceptance testing should be conducted through live-fire testing over a range of conditions or through other validated procedures.

(v) High reliability standards should be required in the course of explosive ordnance transactions and transfers.

(b) Munitions management

In order to ensure the best possible long-term reliability of explosive ordnance, States are encouraged to apply best practice norms and operating procedures with respect to its storage, transport, field storage, and handling in accordance with the following guidance.

(i) Explosive ordnance, where necessary, should be stored in secure facilities or appropriate containers that protect the explosive ordnance and its components in a controlled atmosphere, if necessary.

(ii) A State should transport explosive ordnance to and from production facilities, storage facilities and the field in a manner that minimises damage to the explosive ordnance.

(iii) Appropriate containers and controlled environments, where necessary, should be used by a State when stockpiling and transporting explosive ordnance.

(iv) The risk of explosions in stockpiles should be minimised by the use of appropriate stockpile arrangements.

(v) States should apply appropriate explosive ordnance logging, tracking and testing procedures, which should include information on the date of manufacture of each number, lot or batch of explosive ordnance, and information on where the explosive ordnance has been, under what conditions it has been stored, and to what environmental factors it has been exposed.

(vi) Periodically, stockpiled explosive ordnance should undergo, where appropriate, live-firing testing to ensure that munitions function as desired.

(vii) Sub-assemblies of stockpiled explosive ordnance should, where appropriate, undergo laboratory testing to ensure that munitions function as desired.

(viii) Where necessary, appropriate action, including adjustment to the expected shelf-life of ordnance, should be taken as a result of information acquired by logging, tracking and testing procedures, in order to maintain the reliability of stockpiled explosive ordnance.

(c) Training

The proper training of all personnel involved in the handling, transporting and use of explosive ordnance is an important factor in seeking to ensure its reliable operation as intended. States should therefore adopt and maintain suitable training programmes to ensure that personnel are properly trained with regard to the munitions with which they will be required to deal.

(d) Transfer

A State planning to transfer explosive ordnance to another State that did not previously possess that type of explosive ordnance should endeavour to ensure that the receiving State has the capability to store, maintain and use that explosive ordnance correctly.

(e) Future production

A State should examine ways and means of improving the reliability of explosive ordnance that it intends to produce or procure, with a view to achieving the highest possible reliability.

ANNEX 2

STATES PARTIES TO PROTOCOL V *

A
Albania
Australia
Austria

B
Bosnia and Herzegovina
Bulgaria

C
Croatia
Czech Republic

D
Denmark

E
El Salvador
Estonia

F
Finland
France

G
Guatemala
Germany

H
Holy See
Hungary

I
India
Ireland

L
Liberia
Liechtenstein
Lithuania
Luxembourg

M
Madagascar
Malta
Moldova

N
The Netherlands
New Zealand
Nicaragua
Norway

P
Portugal

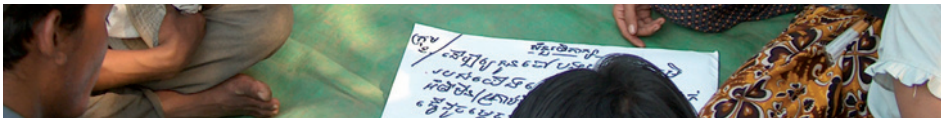
R
Republic of Korea
Romania

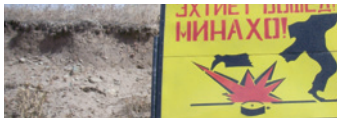
S
Sierra Leone
Slovakia
Slovenia
Spain
Sweden
Switzerland

T
Tajikistan
The former Yugoslav Republic of Macedonia
Tunisia

U
Ukraine
Uruguay

* **43 countries have ratified Protocol V as of 14 June 2008**





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