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Explosive remnants of war

Unexploded ordnance and post-conflict communities



landmine action
THE CAMPAIGN AGAINST LANDMINES

Acknowledgements

The Co-operative Bank funded the research and production of this report. Their support is greatly appreciated. Practical assistance was provided by the HALO Trust in Kosovo and Eritrea and by MAG in Cambodia. Assistance with gathering case study materials was also provided by Norwegian People's Aid, UNMACC Kosovo, UNMACC Eritrea, The Cambodian Red Cross and Geospatial Level One Survey Cambodia. Richard Moyes was formerly the Project Coordination Manager at Mines Advisory Group (MAG).

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Published in March 2002 by Landmine Action, 89 Albert Embankment, London SE1 7TP, UK
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British Library Cataloguing in Publication Data. A catalogue record of this report is available from the British Library.
ISBN 0-9536717-3-9
Landmine Action is a company limited by guarantee. Registered in England and Wales no. 3895803.
Design and print by Calverts 020 7739 1474

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Foreword

For The Co-operative Bank, our decision to support the work of Landmine Action and, in particular, to fund the research and production of this report, was an important one and a natural progression from our previous involvement with the campaign against landmines. As a result of a clear mandate from our customers that we take a stance on important humanitarian issues, the bank, along with others, campaigned vigorously against the financing, production and use of landmines. The campaign was successful in achieving a treaty to ban anti-personnel mines, which 142 countries have now signed.

However, we continue to hold the view that the use of any weapon which indiscriminately harms innocent civilians should be questioned; particularly those weapons which remain a threat to families, their livelihoods and which prevent them returning home long after conflicts have ended. So our current campaign, supported by both customers and staff, calls for a freeze on the use of cluster bombs and for a new international law requiring the users of all explosive weapons, including cluster bombs, to be responsible for clearing any that still endanger lives after the fighting is over.

Unlike anti-personnel mines, designed to incapacitate rather than kill, accidents involving other explosive ordnance are more likely to kill those who set them off. For people living in post-conflict areas across the globe, this knowledge creates fear. A fear which can straitjacket communities and prevent them from ever returning to their land to live, farm, or play. It's this that the report explores: the very real humanitarian and social impacts of unexploded ordnance in Cambodia, Kosovo and Eritrea.

We're the first to accept that this is a micro rather than a macro perspective, but we believe that it's an important starting point in examining the impact of unexploded ordnance on people's lives. Similarly, it's no accident that the report is written in very human terms. In direct contrast to military assessments of cluster bombs and other explosive ordnance, which employ terms like 'collateral damage' to dismiss the 'unintentional loss of civilian life', this report's central concern is the perspective of people who live with the long-term consequences of the use of these weapons.

For me, personally, conversations with Landmine Action and mine clearance organisations, detailing the frightening legacy of unexploded ordnance, stayed with me and forced me to take action. I believe anyone who reads this report and the stories it contains, like that of Krouch Kin in Cambodia, will be affected in the same way.



Simon Williams
The Co-operative Bank
March 2002



Summary

“One child was killed and another injured near here. They were carrying sugar cane and one was also carrying some sort of UXO. One of them dropped the UXO and it exploded. My grandchildren heard the bang... they ran up to get the scrap metal but instead they found two children terribly injured. One was torn open all down his front with his intestines exposed – his body was torn apart. The other child was bleeding from lots of cuts all over his body and a big wound to his stomach. When my children came home they were shocked and shivering at what they had seen.”

Grandmother, Salao village, Cambodia 2001

Unexploded mortars, Eritrea

The disastrous humanitarian impact that landmines have had on civilian populations in the aftermath of war has been well publicised. But abandoned explosive ordnance and unexploded ordnance (UXO) also remain after almost every conflict. These too present a threat to civilian communities and hold back reconstruction but, unlike landmines, they are an accidental by-product of conflict. The impact they have generally results from technical failure, rather than deliberate design. They have either failed to operate (in the case of UXO) or have simply been left behind (in the case of abandoned explosive ordnance).

UXO has an enduring impact in many post-conflict communities. In recent years Cambodia, Kosovo and Eritrea have experienced levels of deaths and injuries from UXO equivalent to those caused by landmines.

But, unlike landmines, there is presently no provision in international humanitarian law addressing the problem of unexploded ordnance, nor any legal obligation for the users of explosive munitions to ensure that civilians come to no harm from the remnants of war.

This report examines the many different and complex relationships that individuals and communities develop with UXO in their environment.

UXO

‘Explosive remnants of war’ is a broad term that includes all types of explosive weapons, including anti-personnel and anti-tank landmines, unexploded ordnance and abandoned explosive ordnance. This report is concerned with unexploded ordnance (UXO), comprising explosive weapons, other than landmines, in many different conditions: artillery shells, grenades, mortars, rockets and air-dropped bombs as well as explosive submunitions (or bomblets) that form the contents of cluster bombs.

Most items of ordnance contain a large explosive charge, as well as a metal fragmentation casing that is designed to break up and injure people at a distance from the blast.

Items of UXO can be whole or partial. A whole item may have more potential for lethal damage but a small fuze, removed and abandoned, can be particularly sensitive and prone to detonation. UXO may be clearly visible on the surface, hidden in undergrowth, or buried beneath the ground.

Items of UXO are unpredictable: their likelihood of detonating may depend on whether or not the item has been fired, the extent of corrosion or degradation, and the specific arming and fuzing mechanisms of the device. Similar items may respond very differently to the same action – one may be moved without effect, whilst another may detonate. Some items may be moved repeatedly before detonating and others may not detonate at all.

There is little quantitative data available to show which types of munition are most problematic. This research found that the impact of UXO depends on the type of contamination and the social and economic circumstances of the affected communities, rather than munition type. However, greater problems are caused where there is a density of contamination, or where UXO is below the surface of the ground. For these reasons, in the case study areas researched for this report, cluster submunitions were especially problematic.

UXO accidents

UXO accidents generally result in the death or injury of one or more people. Unlike many anti-personnel mines, which are designed to incapacitate rather than kill, accidents involving other explosive ordnance are more likely to kill primary victims (those people who actually initiate the explosion).

Common UXO injuries include multiple traumatic amputations of limbs; burns; puncture wounds; lacerations from fragmentation; ruptured eardrums; and blindness from fragmentation or from the blast. At a greater distance from the blast, individuals are likely to suffer less concentrated puncture wounds from fragmentation. The range at which this can be lethal depends upon the particular weapon and can vary from tens to many hundreds of metres.

The demographic profile of UXO accidents generally differs from that of landmine accidents. The pattern of deaths and injuries resulting from accidental interaction with UXO is likely to be linked to the nature and location of economic activities that occupy different groups within the community.

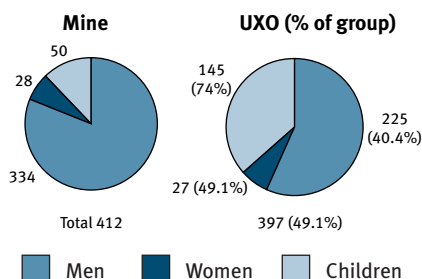
Accident statistics collected in Kosovo from June 1999 to May 2001 show that UXO caused a greater proportion of deaths than landmines. Nearly two-thirds of UXO casualties in Kosovo were children. In Cambodia, the number of children injured or killed by UXO (August 2000 to end July 2001) was three times the equivalent figure for landmines.

In Eritrea, since May 2000, UXO (including submunitions and fuzes) has accounted for 72 per cent of deaths and injuries where the type of device that caused the accident is known. In parts of Afghanistan, commonly cited as one of the most mine-affected countries in the world, 64 per cent of accidents were caused by UXO as opposed to landmines in 1997 and 1998.

Kosovo accident victims: people injured or killed by type

Device type	Injured	Killed (% of type)
Landmine	221	33 (12.9)
Cluster submunition	97	45 (31.7)
Other UXO	19	8 (29.6)
Unknown	44	3 (6.4)
Total	381	89 (18.9)

Cambodia accident victims: men, women & children by landmine or UXO



Reasons for UXO accidents

UXO can be on the surface or buried; surface UXO is visible and people can choose how they interact with it. Sub-surface UXO rarely detonates as a result of people walking over it; more often it detonates from intrusive impacts, such as ploughing, or is uncovered and interacted with as surface UXO.

Activities at the time of UXO accidents

A high proportion of UXO accidents occur when people are going about their daily economic activities. In some circumstances people deliberately interact with UXO that they find in their environment, moving it so that land can be used or to stop children from playing with it.

Bystanders

The potential for UXO to harm multiple victims over a wide area is illustrated by the significant proportion of UXO victims injured as a result of standing or passing near to explosions that other people initiated: 30 per cent in Kosovo compared with 18 per cent in the case of mines.

Cambodia, August 2000 to July 2001

Cambodia UXO and landmine accidents by activity at the time of accident (per cent)

Activity	Mine	UXO
Gathering resources	25	9
Tampering	7	66
Farming	33	16
Travelling	27	4
Military activity	7	3
Other	1	2

Kosovo, June 1999 to May 2001

Kosovo UXO and landmine accidents by activity at the time of accident (per cent)

Activity	Mine	UXO
Gathering resources	11	5
Tampering	2	12
Farming	2	4
Travelling	18	4
Playing	2	8
Passing/standing nearby	18	30
Demining	13	6
Tending animals	10	18
Military activity	6	3
Unknown and other	18	13

The impact of UXO accidents

The obvious immediate impact of UXO accidents is casualties, including child survivors who will spend the bulk of their lives coping with the legacy of an explosion. But there is a wider impact on whole communities.

Fear

The prospect of death and injury creates fear. The presence of UXO can stop people from using land that would otherwise provide them with a resource, or it can lead to land being used less productively. Fear of UXO presents a serious obstacle to those overcoming the psychological trauma of war and may be a significant barrier to the establishment of peace.

People do not necessarily fear walking on land where UXO may be buried, but they do fear striking sub-surface UXO when they are breaking the ground to farm or build houses. They also fear that their children will find surface-lying UXO and play with it recklessly. In Eritrea, for example, this led to people moving unexploded cluster munitions in an effort to protect children, despite the danger.

Economic impact

This research found the presence of UXO prevents people safely using land for agriculture and infrastructure, for example collecting wood, growing cash crops and rebuilding houses. Where people fear to use land because of the presence or suspected

presence of UXO, the economy of the family and the wider community is affected. The denial of agricultural land can leave a family poverty-stricken unless it has other skills to fall back on, particularly in predominantly subsistence communities.

Land denial from UXO is not always absolute and communities will endeavour to cope with the problem. This usually involves 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.

Reconstruction and development

The presence of UXO prevents the use and rehabilitation of infrastructure and community resources, including housing, water and irrigation systems, paths between villages, schools, clinics and markets. These commonly need UXO clearance to allow their use or construction to go ahead.

Unexploded ordnance can also have a severe effect on development, exacerbating poverty by impeding agriculture and the resumption of commercial activities. For example, this research found the reconstruction of a company in Kosovo has been halted by the presence of large quantities of UXO; and in Cambodia, UXO stopped villagers in subsistence communities growing food or opening up new land for farming.

The nature of land denial

The denial of one area of land can shift patterns of land use around the community. Suspect land, when it is not completely abandoned, may be used for different, less productive, purposes in an attempt to minimise risk. In addition, where other economic options are available, people are clearly less likely to feel forced to take the risk of using contaminated land.

This research identified the factors that erode people's confidence in working around contamination effectively, leading to a greater likelihood of more complete land or resource denial.

Ultimately, land denial not only affects economic productivity; it can also produce wholesale change in traditional social and economic practices. At its most extreme, whole communities may be abandoned.

Quantity and type of UXO

'Area contamination' occurs where large quantities of UXO are believed to occupy a particular area. Unlike small numbers of individual items, which are sometimes worked around or moved, area contamination must be eliminated if the land is to be put to any sort of productive use. Area contamination is likely where there is:

- prolonged fighting over relatively fixed positions
- cluster bomb strikes
- abandoned ordnance stores
- abandoned firing ranges.

Sub-surface UXO

For people wishing to work the land, sub-surface UXO presents a risk of unwitting and violent contact. The force with which someone may strike a UXO when they are digging could well exceed the force they would exert if they were interacting with it deliberately. People may be willing to walk on the ground but they may not be happy to plough, clear vegetation or dig for construction in case they strike UXO. This clearly affects the extent to which land can be put to productive use, whether for agriculture, housing or infrastructure. People can develop strategies to cope with surface UXO by interacting with it on their own terms, but this sort of choice may not be available where significant sub-surface contamination is suspected.

The nature of the contaminated environment

Sub-surface UXO is more likely to be found in soft ground. Soft ground also makes items less likely to detonate and therefore increases the proportion that remains unexploded.

Obstacles such as vegetation that need to be cleared before land can be used may also intensify UXO contamination and exacerbate land denial. The remains of damaged property may have a similar effect; debris may also contain significant amounts of metal which can make detector-led searching for UXO very difficult.

Both vegetation and debris reduce peoples' sense of control over their environment and make them less willing to use areas of land or to interact with UXO.

Dense vegetation, like soft ground, also means that items of ordnance are more likely to remain unexploded.

Social and economic factors affecting risk-taking with UXO

The social forces that affect the way in which individuals and communities relate to UXO in their environment are complex and vary from culture to culture. Some people avoid using land through fear, while others interact with UXO in an intrusive way. What is clear from this research is that decisions to take risks with UXO are not only a balance between economics and fear, but are also conditioned by important social factors, including a sense of social responsibility.

Poverty

Among many poor communities, UXO and other military debris have value as a resource. UXO can provide access to cash within communities where this is rare. For those on the very margins of society, UXO can be the mainstay of their economic survival. This leads people to undertake high-risk activities that are a major cause of UXO accidents in many countries.

UXO provides a resource in two main ways: for the saleable value of the scrap metal and for the utility of the explosives. Metal can provide a source of cash, giving access to other products for subsistence communities living in the aftermath of conflict. Similarly, explosives can be sold or used for fishing and quarrying, which can produce cash income to supplement a family's subsistence activities.

Both practices may require very intrusive interaction with items of UXO. The most valuable scrap metal is usually copper, found in many types of ordnance. Fishing with explosives, or directly with ordnance, often involves dismantling and then re-fuzing the ordnance.

Gender

The data in this report show that men consistently comprise the great majority of UXO victims. Death and injury from accidental contact with UXO may be based on typical divisions of labour within communities – either in the type or location of work – and the likelihood of previous military experience.

Children

Children make up a significantly greater proportion of UXO victims than landmine victims and are more likely than adults to pick up items of UXO that they find without knowing what these items are. In many rural communities children are responsible for herding animals, a job which can take them over large areas of their local environment, and into unsupervised contact with UXO.

The size and shape of munitions may make them attractive to children. In Lao PDR and Cambodia, spherical bomblets of the US cluster bombs resemble balls that children might play with. The bright colours of certain munitions have been noted as interesting to children. Recently, there has been strong criticism of the use of BLU97 cluster submunitions, dropped on Afghanistan by the US Air Force. This sensitive and powerful submunition was found to be particularly problematic in Kosovo, with high failure rates; the bright yellow colour and small drogue parachutes of the submunitions made them especially interesting for children.

Cluster munitions

In recent years cluster bombs and their submunitions have come under increased scrutiny for having apparently higher failure rates than 'unitary' (single warhead) munitions. This, coupled with the large numbers in which individual submunitions can be used, causes serious UXO contamination.

Communities in all three countries studied for this report – Cambodia, Kosovo and Eritrea – have suffered from contamination by unexploded cluster submunitions. In one displaced persons camp in Eritrea, this research identified large amounts of unexploded BL755 cluster submunitions, manufactured in the UK by Hunting Engineering.

The use of cluster bombs is capable of producing both a high density of contamination and sub-surface contamination. Submunitions therefore consistently produce the more problematic forms of UXO contamination.

Recommendations

New international humanitarian law to minimise the legacy of future conflicts is urgently required. States Parties to the Convention on Conventional Weapons should move with the urgency this problem deserves to negotiate a new protocol on explosive remnants of war. But there must be a recognition that the only truly effective way to protect civilian populations is by eradicating UXO, both in the immediate aftermath of conflict and longer term.

The key elements of a new protocol should therefore include:

1. The users of explosive munitions, including cluster submunitions, should be responsible for the clearance of unexploded ordnance, or for providing financial assistance sufficient to ensure its clearance, without delay, after active hostilities have ceased. Where necessary this should be implemented by appropriate humanitarian mine action NGOs under the auspices of the UN, and in every case to recognised International Mine Action Standards (IMAS). Agreements to terminate hostilities, peace negotiations and other relevant military technical agreements should include provisions allocating responsibility, standards and procedures for signing off land as cleared.
2. Technical information to facilitate clearance should be provided to the UN and clearance organisations immediately after use. This should include accurate data on types of ordnance used, geographical locations and render safe procedures.
3. The users of weapons likely to have a long-term impact should provide appropriate information and warnings, such as awareness education, to civilians both during and after conflict.
4. Given the particular problems caused by cluster submunitions, specific measures are also necessary to require military commanders and responsible politicians to minimise the density and size of post-conflict cluster munition contamination by considering the environment within which potential targets are located. The International Committee of the Red Cross have proposed a prohibition on the use of cluster munitions in or near concentrations of civilians.
5. The users of explosive ordnance should consider their responsibility towards the survivors of UXO accidents. As with landmines, people who have been injured or disabled by other explosive remnants of war will require at least some of the following: emergency first aid, medical care including surgery, physical aids or prosthetics, psychiatric support, and assistance for long-term social and economic rehabilitation.

Glossary

Bombie	A colloquial term used in Cambodia to refer to bomblets.	Lon Nol	Prime minister of Cambodia, who led the Cambodian government from 1970 to 1975.
Bomblet	An explosive submunition. Refers to the explosive contents of cluster bombs in this report.	MAG	Mines Advisory Group, a UK-based non-governmental organisation specialising in humanitarian mine action.
BL755	Cluster bomb manufactured in the UK by Insys (formerly Hunting Engineering Ltd); each bomb contains 147 submunitions.	Mine action	A sector of international aid addressing landmine and UXO contamination through mine/UXO clearance, awareness education and accident survivor assistance.
BLU97	Combined Effects Munition: cluster submunition manufactured in the US by Olin Ordnance (formerly Aerojet) and Alliant Techsystems Inc.	NGO	Non-governmental organisation.
Cluster munition	A weapon that consists of a number of submunitions held within a larger single container. Before striking a target the container is designed to open, releasing the submunitions to spread over an area on the ground. Cluster munitions are usually dropped from aircraft or fired from rocket systems. All of the cluster strikes in this report were the result of aerial bombing.	NPA	Norwegian People's Aid, a non-governmental organisation that conducts landmine clearance and explosive ordnance disposal projects as well as undertaking other relief and development work.
CMAC	Cambodian Mine Action Centre.	Submunition	An individual munition that is delivered as one of a number within a larger container. Refers to the explosive contents of cluster bombs in this report.
EOD	Explosive Ordnance Disposal, the process of systematically destroying UXO in accordance with established procedures.	UCK	Ushtria Clirimtare e Kosovës, Albanian acronym for the Kosovo Liberation Army or KLA.
ERW	Explosive Remnants of War.	UNICEF	United Nations Children's Fund.
The HALO Trust	UK-based non-governmental organisation specialising in landmine clearance and explosive ordnance disposal.	UNMACC	United Nations Mine Action Co-ordination Centre.
ICRC	International Committee of the Red Cross.	UXO	The term UXO is used in this report to refer to unexploded ordnance in the strict military sense, abandoned explosive ordnance, and also unexploded bombs. UXO is never used here to denote landmines (anti-personnel or anti-tank) or improvised explosive devices. Where it is necessary to draw a distinction between the different categories of item grouped together under the label UXO, this will be made clear in the text.
KPC	Kosovo Protection Corps, an unarmed civil defence body made up of former KLA soldiers who will have responsibility for landmine clearance and explosive ordnance disposal on the withdrawal of the UNMACC Kosovo.	VJ	Vojska Jugoslovenska (armed forces of the Federal Republic of Yugoslavia).



Introduction

1

*'Each year large numbers of civilians are killed and injured by contact with unexploded munitions which no longer serve a military purpose. The presence of unexploded ordnance drains scarce medical resources in war-torn societies, prevents the delivery of food and medical supplies to vulnerable populations and hinders reconstruction and development. The clearance of explosive remnants of war diverts international assistance from other goals and can require decades to complete.'*¹

Abandoned artillery shells, Bosnia

The disastrous humanitarian impact that landmines have had on civilian populations in the aftermath of conflict has been well publicised. But abandoned explosive ordnance and unexploded ordnance (UXO) also remain after almost every conflict. These too present a threat to civilian communities and hold back reconstruction but, unlike landmines, they are an accidental by-product of conflict. The impact they have generally results from technical failure, rather than deliberate design. They have either failed to operate (in the case of UXO) or have simply been left behind (in the case of abandoned explosive ordnance).

The international focus on landmines has tended to dominate the way in which UXO is viewed as a problem. This has often been seen as a secondary or marginal issue, presenting similar but less acute problems. However, UXO does have an enduring impact in many post-conflict communities: in recent years Cambodia, Kosovo and Eritrea have experienced levels of deaths and injuries equivalent to those caused by landmines.

This report examines the many different and complex relationships that individuals and communities develop with UXO in their environment. For example, contamination can lead to less productive land use, yet individual items of UXO may themselves be a source of income; contact with UXO may be used to demonstrate personal skill and bravery, yet these individual triumphs do not negate the persistent fear engendered in a community.

Explosive remnants of war

The December 2001 Review Conference of the UN Conventional Weapons Convention agreed a programme of work which will consider developing and extending international legislation to minimise the impact of explosive remnants of war on post-conflict civilian communities.

‘Explosive remnants of war’ is a broad term that includes all types of explosive weapons, including anti-personnel and anti-tank landmines, unexploded ordnance and abandoned explosive ordnance. UXO refers to a wide range of explosive weapons in many different conditions: artillery shells, grenades, mortars, rockets and air-dropped bombs as well as explosive submunitions (or bomblets) that form the contents of cluster munitions, either air-dropped or delivered from land-based systems.²

Items of UXO can be whole or partial. A whole item may have more potential for lethal damage but a small fuze, removed and abandoned, can be particularly sensitive and prone to detonation. If individual items have been left without being fired, they may be in pristine condition and capable of being handled and used. Exposure to the elements may make the fuzing mechanism and the explosives deteriorate and become more unstable. UXO may be clearly visible on the surface, hidden in undergrowth, or buried beneath the ground. It comes in diverse forms and presents diverse risks which makes UXO very unpredictable.

When people interfere with UXO, either accidentally or deliberately, it may explode and cause death or serious injury. This can instil fear and affect the way in which communities interact with their environment. Sometimes it may be handled safely – or apparently safely. For poor people and communities, it may

therefore represent a resource, either for its value as scrap metal or for a number of practical applications. This value and usefulness, combined with its diverse and unpredictable nature, are central to the complexity of the problems caused by unexploded ordnance.

There is little quantitative data available to show which types of munition are most problematic. This research found that the impact of UXO depends on the type of contamination and the social and economic circumstances of the affected communities, rather than munition type. However, greater problems are caused where there is a density of contamination, or where UXO is below the surface of the ground. For these reasons, in the case study areas researched for this report, cluster submunitions were especially problematic.

Scale of the problem

Initial efforts by the United Nations to quantify the international scale of landmine contamination proved to be problematic. The number of landmines was extrapolated from scant evidence. This drew attention to the issue but also threatened to undermine donor and public confidence that meaningful work could be done in response.

There is little realistic data regarding the quantity of UXO scattered throughout the post-conflict regions of the world and what data there is does not fully reflect the problem. Nor does the number of UXO accidents provide a straightforward picture of their impact which, like that of landmines, has social and economic implications for communities who must live with it. Models of cost-benefit analysis are now being developed to produce increasingly sophisticated representations of how landmine and UXO contamination affect communities (and how effective is the response of ‘mine action’ programmes).

UXO remains in the wake of any conflict where explosive ordnance has been used, and any serious efforts to address the problem of contamination must apply to both international and internal conflicts. The scale of contamination depends broadly upon the quantities and types of ordnance used and whatever efforts have been undertaken to address the problem.

In terms of death and injury, Cambodia and Kosovo have both had UXO problems of a similar scale to

landmine contamination in recent years.³ In Eritrea, since May 2000, UXO (including submunitions and fuzes) has accounted for 72 per cent of deaths and injuries where the type of device that caused the accident is known.⁴ In parts of Afghanistan, commonly cited as one of the most mine-affected countries in the world, Handicap International [1998] suggested that 64 per cent of accidents were caused by UXO as opposed to landmines in the 17 months previous to their report.

Landmine contamination constricts land use. This economic cost has often been seen as the most pernicious feature of mines, setting it ahead of many other problems faced by post-conflict communities as a barrier to development projects and the resumption of normal life. This report seeks to show how UXO contamination is also bound up with family and community economies. UXO does not always stand as an outright barrier to land use (although there are factors that make this more likely). But it is always a source of persistent fear, as a problem to be worked around if possible and as a resource, which is deeply indicative of the poverty of those who exploit it.

Addressing UXO contamination worldwide

There are two instruments of international humanitarian law that seek to address the problems caused by landmine contamination. The Ottawa Convention, which prohibits the use, stockpiling, production and transfer of anti-personnel mines, requires each State Party to the Convention

‘...to destroy all anti-personnel mines in mined areas under its jurisdiction or control, as soon as possible but not later than ten years after the entry into force of this Convention for that State Party.’⁵

In addition, Article 10 of Amended Protocol II to the Convention on Conventional Weapons, places obligations on the users of all types of landmine after fighting is over. These include clearance or assistance with their clearance:

‘1. Without delay after the cessation of active hostilities, all minefields, mined areas, mines, booby-traps and other devices shall be cleared, removed, destroyed or maintained...

- 2. High contracting Parties and parties to a conflict bear such responsibility with respect to minefields, mined areas, mines, booby-traps and other devices in areas under their control.*
- 3. With respect to minefields, mined areas, mines, booby-traps and other devices laid by a party in areas over which it no longer exercises control, such party shall provide to the party in control of the area pursuant to paragraph 2 of this Article, to the extent permitted by such party, technical and material assistance necessary to fulfil such responsibility.*
- 4. At all times necessary, the parties shall endeavour to reach agreement, both among themselves and, where appropriate, with other States and with international organisations, on the provision of technical and material assistance, including, in appropriate circumstances, the undertaking of joint operations necessary to fulfil such responsibilities.’⁶*

But there is presently no similar provision in international humanitarian law addressing the problem of unexploded ordnance, nor any legal obligation for the users of explosive munitions to ensure that civilians come to no harm from the remnants of war.

Internationally, the practical work of locating and destroying UXO is generally carried out under the same institutional frameworks as those which address landmine contamination. The United Nations’ Mine Action Coordination Centres plan and co-ordinate projects to address UXO contamination hand-in-hand with landmine clearance projects. British humanitarian agencies specialising in landmine clearance, such as the HALO Trust and Mines Advisory Group (MAG), have consistently conducted explosive ordnance disposal (EOD) as part of their broader programmes. In countries where this has a more severe humanitarian impact than landmines, they focus specifically on UXO. Similarly, UNICEF and other agencies concerned with awareness education include both UXO and landmines in their work.

A persistent problem

As the experience of many European countries in the wake of World Wars I and II has clearly shown, UXO contamination at some level will endure even after extensive clearance operations. The threat that UXO presents in the immediate wake of conflict remains in

many countries beyond the initial phase of emergency assistance. In Lao PDR (where a substantial and effective national UXO clearance programme has been running since the mid-1990s) huge levels of UXO contamination are still being addressed nearly 30 years post-conflict. Ensuring a sustainable local capacity to respond to this ongoing threat is clearly an imperative for many developing countries.

Some people must live with the threat of UXO contamination for a significant period. Their relationship with this will be conditioned by many of the factors highlighted in this report: by their knowledge of the threat and by their age and sex. The relationship will change over time as local ideas and attitudes change. Perhaps most importantly, it will change in relation to economic circumstances. UXO contamination in a community presents a sliding scale along which people must position themselves according to their needs and their fears.

This report

This report seeks to present a more detailed analysis of how UXO affects post-conflict communities. It uses local case studies to illustrate how the humanitarian and developmental impact of UXO is conditioned by social and economic circumstances and by the nature of the contamination itself. It also draws upon case studies, data and analysis from secondary sources.

The case studies for this report were drawn from first-hand discussions with UXO affected communities in Kosovo, Cambodia and Eritrea from July to September 2001.

Interviewees' statements have been compiled into a narrative form. The wording is drawn directly from the translation provided by the different interpreters in the field, with the exception of certain technical language. Here, more accurate or consistent terms have been used to avoid confusion for the reader: for example, 'submunition' or 'bomblet' instead of 'bomb'. The case studies provide evidence to support a conceptual framework regarding community relationships with UXO that is itself drawn from these studies, from discussion with people working in the mine action sector, and secondary literature.

- 1 Chairman's Summary, Workshop on "Explosive Remnants of War", The Hague, 29-30 March 2001: CCW/CONF.II/PC.2/WP.1; GE.01-61072
- 2 For additional detailed examinations of cluster bombs and their post conflict impacts see McGrath (2000) and King (2000).
- 3 'Similar scale' refers only to numbers of people killed and injured, not to broader social and economic impact. In Cambodia, it is also important to note that the proportion of deaths and injuries from UXO as opposed to mines has increased from 29 per cent in the CMVIS Biannual Report for 1998-1999 [MIDP, 2000] to 49 per cent for the period covered by the statistics in this report. In Kosovo, UXO (including submunitions) has comprised approximately 40 per cent of accidents where the category of device was known, since June 1999.
- 4 In the data currently available from the UNMACC Eritrea, some 48 deaths and injuries can be attributed to a particular category of weapon, whilst 67 remain unknown.
- 5 Article 5, Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction (commonly known as the Ottawa Treaty).
- 6 Article 10, The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects.



UXO accidents and impact

2

This section examines

- *The direct and indirect impact of UXO accidents on individuals, families and communities*
- *Differences between landmine and UXO accidents*
- *Reasons for UXO accidents*
- *The impact of UXO accidents on different sections of the population: statistics from Kosovo and Cambodia*
- *Economic impact of UXO*

*A young Cambodian boy injured by a fuze while fishing, pictured one hour after the accident. He suffered penetrating fragment wounds to his face and one eye, and to the right hand, with partial amputation of fingers.
Photo: Trauma Care Foundation Norway.*

UXO accidents generally result in the death or injury of one or more people. Unlike many anti-personnel mines, which are designed to incapacitate rather than kill, accidents involving other explosive ordnance are more likely to kill primary victims (those people who actually initiate the explosion).

Most items of ordnance contain a large explosive charge, as well as a metal fragmentation casing that is designed to break up and injure people at a distance from the blast.⁷ Ordnance may also have other mechanisms such as an armour-piercing shaped charge and elements designed to produce a pyrotechnic effect, setting fire to surrounding materials. When a whole item of UXO functions, it utilises its killing and injuring mechanisms. Occasionally accidents occur with part of the UXO, particularly fuzes. The resulting injuries may be less severe but still debilitating. Fuzes from munitions may be small and particularly sensitive – and are not always identified in awareness education. Accidents with fuzes can often result in the loss of fingers (or the hands of children) and smaller fragmentation injuries.

Common UXO injuries include multiple traumatic amputations of limbs; burns; puncture wounds; lacerations from fragmentation; ruptured eardrums; and blindness from fragmentation or from the blast. At a greater distance from the blast, individuals are likely to suffer less concentrated puncture wounds from fragmentation. The range at which this can be lethal depends upon the particular weapon and can vary from tens to many hundreds of metres.

UXO victims

The demographic profile of UXO accidents generally differs from that of landmine accidents. The pattern of deaths and injuries resulting from accidental interaction with UXO is likely to be linked to the nature and location of economic activities that occupy different groups within the community. Most strikingly, the profile of deaths and injuries resulting from deliberate interaction illustrates some consistent social attitudes relating to these practices (see Section 5 of this report).

In Kosovo and Cambodia, men are by far the most common victims of both UXO and landmine accidents. This should also be seen in the light of the Cambodian population, where women outnumber men according to the Mine Incident Database Project [MIDP 2000, p. 11]. The majority of children killed and injured in accidents is also male.⁹

The direct impact of UXO accidents

UXO accidents frequently leave child survivors who will spend the bulk of their lives coping with the legacy of their accidents. A survey of landmine/UXO accident survivors in Kosovo [VVAf 2000] notes that:

'Basic demographic data [from the survey] show that mine/UXO survivors are predominantly young (77 per cent are 35 and under); thus, their rehabilitation and reintegration must be looked upon as a long-term issue.'

Because children are more likely to be UXO victims than landmine victims, there is a significant likelihood that UXO accident survivors will have long-term needs. Such accidents therefore have implications for medical and

KOSOVO: UXO AND LANDMINE ACCIDENTS

Accident statistics collected in Kosovo from June 1999 to May 2001 show that UXO caused a greater proportion of deaths than landmines. Despite accounting for a significantly smaller percentage of the overall number of victims, UXO (primarily NATO-dropped cluster submunitions) had killed more people than landmines: UXO as a whole (including cluster submunitions) accounted for nearly 40 per cent of victims where the type of device was known, with the remaining 60 per cent caused by landmines.

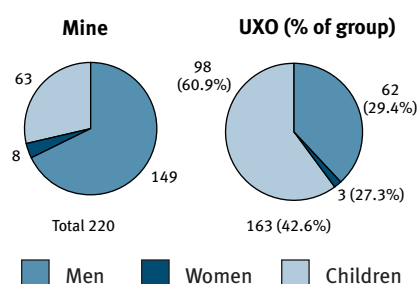
The number of victims killed and injured by different munitions types breaks down as follows:

Kosovo accident victims: people injured or killed by type⁸

Device type	Injured	Killed (% of type)
Landmine	221	33 (12.9)
Cluster submunition	97	45 (31.7)
Other UXO	19	8 (29.6)
Unknown	44	3 (6.4)
Total	381	89 (18.9)

Analysed by age and sex, the statistics show that 57 per cent of deaths and injuries were caused by landmines and 43 per cent by UXO where the age, sex and weapon category for the victim are all known. Children are proportionately much more likely to fall victim to UXO rather than mines, and in Kosovo comprise the majority of UXO casualties. Women make up a very small proportion of those injured by either category of weapons.

Kosovo accident victims: men, women & children by mine or UXO (where age, sex and weapon category are known)



SURVIVOR CASE STUDY

Krouch Kin, Cambodia

Krouch Kin (55) is a widow in the small village of Ous Sbay to the south of Kompong Thom.

“It was in 1998 that my husband and I were working on a dyke between our rice fields – using hoes to try to build up the banks. We were clearing land for sowing seeds when I started to feel dizzy. I came home and that was when I heard the explosion.

“I ran out and found that my husband, Kom Son, was dead already – we did not take him to hospital because it was clear that he was dead. I think he must have hit it with the hoe. I was 52 and my husband must have been 57; we had been together for such a long time. We had 8 children and now the oldest is 38.



Krouch Kin

“I rely on my son to do the cultivation instead of my husband. We have quite a few fields here but I have only found these bomblets in one of them. We still use the field but do not dig

around the banks. I have found a few others along these banks since the accident. It is my 20 year old son who helps me with this but it can be hard to get him to work in the rice fields.”

social services as well as the direct physical, social and economic impacts on individuals and their families. In many post-conflict communities, people may be reliant for such services on the NGO sector or from projects funded through international development assistance. The problems for UXO survivors depend greatly upon the nature of their injuries, the quality of the primary care received and the support structures available to them.

The impact of the death of a family member is extremely hard to quantify. The primary victims of UXO accidents are most often men, leaving widows who must continue to raise and provide for their families alone, perhaps needing to fall back upon the institutions of the family or the broader community for support.

Fear

The prospect of death and injury creates fear. The presence of UXO can stop people from using land that would otherwise provide them with a resource, or it can lead to land being used less productively. This has economic consequences, as examined below and in the next section of this report. However, it is important to recognise fear itself as a persistent effect of UXO

contamination. People fear for themselves and, this research shows, they fear for their children.

Fear exists both as a persistent background condition and as a more direct force in immediate decision-making. It is part of the balance of risk-taking judgements that UXO contamination often demands. Fear comes from knowledge of the threat, of the potential for unexpected accidents when digging the ground or the capacity of an item to explode if it is not handled correctly. Fear within a community may increase as the threat of UXO is reaffirmed through specific incidents, but may subside over time into the array of challenges that many post-conflict communities must tackle every day. Fears about a UXO-contaminated environment may have to be suppressed, in order to complete essential tasks.

In the case studies below, fear is demonstrated in the decisions that people make about interaction with their environment rather than as a persistent aspect of individual and community psychology. It is clear, however, that fear of UXO (and landmines) does present a serious obstacle to those overcoming the psychological trauma of war and may be a significant barrier to the establishment of peace.

SURVIVOR CASE STUDY

Chhay Chhom, Cambodia

In 1993, 13-year old Chhay Chhom shook an unusual item that he had found whilst grazing his family's cattle. The resulting explosion tore off his right forearm and punctured his body with numerous metal fragments. The fragments and blast to his face have left him completely blind.

A friend was some 10 metres away when the explosion occurred. He was not injured but in shock at the sound of the blast. Seeing Chhom's injuries he ran away, unable to help or even to think of getting help. Chhom's mother heard the explosion but only found out later that her son had been injured. Her husband was the first to run out and discover what had happened.

"I was terribly frightened to see my son injured like that. I was not even fully dressed but I just picked him up and carried him towards Kompong Thom town where there is a hospital [3 km away]. Blood was covering his body and mine because he was bleeding so much. I could see that he was going to lose his hand."

Chhom was in hospital for three months. The remains of his right hand and forearm were surgically amputated and he had fragments of metal removed from his body. The hospital in Kompong Thom could do nothing for his eyesight.

Because he was blinded, Chhom stopped going to school. He stays at home but cannot walk far from the house. His parents have rice fields and cattle but with his injuries Chhay Chhom 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."



Chhay Chhom

It is not certain what the item was that Chhom had found. His family suggests either a rifle grenade or a cluster bomblet (known locally as a 'bombie'). The former seems more likely, given that Chhom is still alive; a bomblet is likely to have a higher explosive charge. He says he had no idea that what he found was dangerous. His mother says that some time after the accident a doctor came but said it was too late to do anything about his loss of sight. She has also been told that for US\$300 they could pay for an operation in Phnom Penh that might be able to give him some sense of light and dark which could make some difference to his standard of living. However, there are five other children as well as Chhom (the

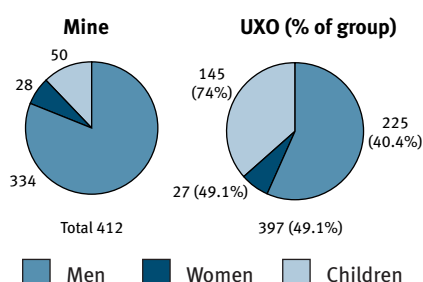
oldest), and the family economy is based on subsistence rice farming plus the sale of a few pigs and chickens to raise cash. They cannot save the money required and the difference such an operation might make to Chhom's quality of life would not change his complete dependence upon his parents and siblings. His parents state that this is already hard for them.

Chhom is now 20 but his adult life promises little more than continued dependency and social isolation. As a result of this accident, he has fallen out of the education system, lost his ability to work and his friends.¹⁰ He has little prospect of marriage or of founding a family of his own that will be able to care for him into his old age.

CAMBODIA: UXO AND LANDMINE ACCIDENTS

In Cambodia [August 2000 to end July 2001], 51 per cent of deaths and injuries were caused by landmines and 49 per cent by UXO. More children (under 18) fall victim to UXO than to mines – nearly three times as many. Women are least affected directly by both.

Cambodia accident victims: men, women & children by landmine or UXO



Reasons for UXO accidents

On a superficial level, landmines and UXO present the same basic problems – a potential to cause death and injury to civilians and, following from this, a capacity to create fear within the community which may result in social and economic resources not being used. However, there are critical differences between community relationships with landmines and with unexploded ordnance and these are important in understanding UXO contamination.

UXO is diverse and the ways in which individuals interact with it are also diverse. UXO can be on the surface or buried; surface UXO is visible and people can choose how they interact with it. This is rarely the case with mines. Sub-surface UXO rarely detonates as a result of people walking over it; more often it detonates from intrusive impacts, such as ploughing, or is uncovered and interacted with as surface UXO.

Items of UXO are unpredictable: their likelihood of detonating may depend on whether or not the item has been fired, the extent of corrosion or degradation, and the specific arming and fuzing mechanisms of the device. Similar items may respond very differently to the same action – one may be moved without effect, whilst another may detonate. Some items may be moved repeatedly before detonating and others may not detonate at all.

In general, UXO does not inspire the same level of fear as landmines. Landmines in the ground are armed and ready to function as designed whilst UXO has at some point failed. People are less afraid of things that they can see than things that they cannot. The fact that much UXO can be seen means that people have some control over the way in which they live with it. They can choose to avoid it or they can interact with it. However, as the case studies in this report show, the control that people have over their interaction with ordnance quickly becomes affected by other social and economic factors.

Landmine accidents are primarily caused by unwitting contact: people tread on a mine not knowing that it is there. It is worth noting that the landmine victim may have been aware that there were landmines in the area – a proportion of accidents do result from people entering land that they know to be mined in order to gather resources of some kind.¹¹ However, the actual contact with the landmine is rarely deliberate.¹²

People are afraid of accidental interaction with UXO, either by themselves or by others. They do not fear walking on land where UXO may be buried, but they do fear striking sub-surface UXO when they are breaking the ground to farm or build houses. They also fear that their children will find surface-lying UXO and play with it recklessly. Such fears are justified, as these are common causes of accidents in most environments contaminated with UXO. This affects the way people react to their environment: they may avoid ploughing or cutting up vegetation for fear of sub-surface UXO. Where contamination is thought to be very dense, people may fear to build fires or to be near people burning vegetation. It is common for them to move visible items so that they can use the land as intended, or hide them from children who they feel will not handle the ordnance carefully. People are often driven to make deliberate contact with UXO through a sense of social responsibility (see Eritrea case study, Section 6).

UXO accidents often result from deliberate contact and interaction. Whilst fear may provoke them to move items so that they may plough safely, or to protect children, UXO also carries its own value as a resource. Ignorance apart, people interact knowingly with UXO out of fear and poverty. To a lesser extent (though still worthy of note), people occasionally interact with UXO to demonstrate that they dare to and that they can.

In summary, accidents with UXO occur through one or a combination of the following:

- accidental contact
- deliberate contact without a realistic understanding of the danger
- deliberate contact through fear of more dangerous contact – to use land safely and to protect children
- deliberate contact out of poverty or economic need – clearing land, salvaging scrap metal or using explosives.¹³

Activities at the time of UXO accidents

Statistical data below from Cambodia and Kosovo illustrate the social and economic factors underpinning these contacts, showing the different activities that people were undertaking when they came into contact with UXO. There are also important differences in the way in which the statistics are compiled by the authorities in different countries.

Cambodia, August 2000 to July 2001

Cambodia UXO and landmine accidents by activity at the time of accident (per cent)¹⁴

Activity	Mine	UXO
Gathering resources	25	9
Tampering	7	66
Farming	33	16
Travelling	27	4
Military activity	7	3
Other	1	2

Note: 'Gathering resources' includes 'Fishing', 'Collecting food', 'Collecting wood' and 'Clearing new land'. 'Other' combines 'other' from the original data with 'playing (not with UXO/mine)' and 'exploded nearby'; the latter two categories each amount to less than two per cent of people injured or killed in the original data for both mines and ordnance.

In Cambodia the statistics for UXO and mine incidents show that a strikingly significant proportion of UXO accidents results from 'tampering'. This category represents deliberate contact with UXO but it also presents a challenge of interpretation. A Cambodian Mine Incident Database Project [MIDP, 2000] report states that:

'Tampering incidents involved, almost exclusively, unexploded ordnance, while incidents involving mines were more often associated with livelihood activities.'

A clear-cut distinction between 'tampering' and 'livelihood' activities is not borne out by much of the case study material in this report, where many tampering activities can be seen to be economically driven. This may be supported by another trend indicated by the MIDP report:

'In 1998, and 1999, both mine and UXO incidents varied with the season: wet season and dry season. More casualties were reported during the dry season as rural Cambodians travel more to seek alternative sources of income to rice farming. Fewer casualties were reported during the rice planting and harvesting seasons, when populations are less mobile.'

Although travel further afield may bring people into contact with UXO, it may also be the case that UXO is exploited seasonally as an alternative source of income. 'Tampering' is itself a loaded term, suggesting improper interference. This runs the risk of promoting a judgmental view of UXO victims that ignores the complex decisions that people make and the social or economic imperatives that underpin their actions.

Handicap International [2001] studied villagers working to clear mines and UXO 'in a relatively technical and comprehensive way, often drawing upon existing military knowledge'.¹⁵ Although these people might be categorised as interacting with UXO through poverty and fear of uncontrolled contact, reporting that *'villagers tend to clear individual plots of land for farming, housing, and on pathways to access common property resources such as forest land or water sources'*, Handicap International make a distinction between these practices and those of villagers 'who simply move mines out of the way when they see them'.¹⁶ The report draws conclusions for mine awareness education:

'The assumption that village deminers are foolhardy, irresponsible people tends to be a common viewpoint underlying the approach of mine awareness education for high-risk groups. Messages that derive from such a viewpoint are perhaps misinformed and do little to gain the respect of village deminers.'

Similar assumptions are to some extent embodied in the blanket category of 'tampering' (also used in the statistics from Kosovo). This is not a useful definition, because it covers the full range of interactions from ignorance of the item to complex reworking of UXO in an

effort to make it into a tool, say, for fishing. The practical difficulties of determining the motivation behind an individual's contact with UXO are considerable; quantitative data alone rarely gives a full picture.

Another difficulty with the dataset for Cambodia, acknowledged by the Mine Incident Database Project, is that bystanders at the site of mine and UXO accidents are included in the same category as the person who initiates the accident. Many of the victims are likely to have been injured by explosions initiated by other people (the proportion of bystanders amongst UXO victims in Kosovo is 30 per cent). Therefore it is possible that groups of people injured whilst watching 'tampering' activities are inflating this category at the expense of a realistic representation of the dangerous social lure of UXO contact by others.

Discounting tampering, 85 per cent of the remainder of activities relate directly to those that underpin the rural economy: farming, travelling and gathering resources. A significant proportion of accidents that are categorised as tampering will also have happened at the time that economic activities were being carried out.

Kosovo, June 1999 to May 2001

Kosovo UXO and landmine accidents by activity at the time of accident (per cent)

Activity	Mine	UXO
Gathering resources	11	5
Tampering	2	12
Farming	2	4
Travelling	18	4
Playing	2	8
Passing/standing nearby	18	30
Demining	13	6
Tending animals	10	18
Military activity	6	3
Unknown and other	18	13

Note: Gathering resources' in this table includes 'Collecting food, wood, water' and 'Hunting' from the original data. It is important to note that the activity 'demining' includes both people working for demining agencies under the UN programme and people demining informally.

The potential for UXO to harm multiple victims over a wide area is illustrated by the proportion of UXO victims in Kosovo injured as a result of standing or passing near to explosions that other people initiated: 30 per cent compared with 18 per cent in the case of mines. The

statistic also illustrates the social element of people's interest in UXO and their capacity to combine contact with social expression (see Section 5).

Like landmines, UXO presents a threat to people undertaking everyday economic activities. If passive victims are discounted, 43 per cent of the remaining accidents can be directly attributed to activities that underpin the rural economy – farming, travel, tending animals and gathering food, wood and water. The same analysis produces a figure of 50 per cent for people involved in landmine accidents.

Economic impact of UXO

Where people fear to use land because of the presence or suspected presence of UXO, the economy of the family and the wider community is affected. The denial of agricultural land can leave a family poverty-stricken unless it has other skills to fall back on, particularly in predominantly subsistence communities. Even if they do have other skills, these people are likely to become highly vulnerable, as expenditure on their services (unless these are essential) is likely to be curtailed if there is a decline in the economic fortunes of the community as a whole.

Land denial from UXO is not always absolute and communities will endeavour to cope with the problem. This usually involves 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. However, certain factors make these coping strategies less effective and land denial more likely to be absolute, as illustrated in the case studies below.

In addition, the presence of UXO can hamper reconstruction and use of existing infrastructure. In a recent report, UXO LAO [2001] described the impact of unexploded cluster submunitions on a school:

'It is hard to imagine such an important school being built on land that contains live explosive ordnance, but due to the high concentration of bombing in Sam Neua during the 'Secret War', uncontaminated land is hard to find. By the time UXO LAO had finished clearance work at the school in May 2000, 386 bombs and over 90 other pieces of ordnance had been disposed of in the school grounds.'

CASE STUDY

Stha Pou village, Cambodia

Stha Pou village is some 6 km to the west of Tbeng Meanchey, the provincial capital of Preah Vihear Province, Cambodia. It has a population of just over 1,000 but is growing, as people who cannot afford land in Tbeng Meanchey town are moving out to set up homes. Many of the people are young married couples. Because there are no established land rights over the jungle land people do not have to pay but can just select an area and start building a home and clearing a plot to farm.

Survey information reveals that more than 11 per cent of families lack housing land and some 46 per cent lack agricultural land.¹⁷ The same survey suggests that the impact of UXO contamination on the availability of housing and agricultural land is a significant cause of concern to the local community.

In the early 1970s the area was attacked in a number of cluster bomb strikes by the United States, apparently targeting a bridge on the western side of the village. In the last two years, two people have been killed by bomblets in the village.

Koy Peang lived on this land in the 1980s: “I was afraid that children would pick up the bombs and play with them. I had six children of my own living with me. I collected together the bombs that I found and burned them. Children see this kind of thing and it is like a ball so they use it as a toy. I collected between 20 and 30 bombs.

“When I was burning them I was afraid that there could be an accident – metal from these bombs explodes out when they go off so you have to be careful that people are not nearby. I informed my neighbours what I was doing and told them not to come close and to keep their children away when I was burning this stuff. Also, I dug a hole so that the blast and



Stha Pou village

metal would go straight up and not out sideways.”

Chhinh Ley and her husband had wanted to clear the dense vegetation on land at the back of their house in order to make a rice field. Her brother in law was helping to dig the land when he found a bombie. Now she keeps her child from going on to the land behind the house and will not work here herself until the bomblet has been moved away.

In the house next to Chhinh Ley's, Hin Han has placed three bomblets in a termite mound at the end of his garden. He found them in his rice field behind the garden and put them here because he hopes that a demining agency will destroy the termite mound at the same time as they destroy the bomblets.

“Sometimes UXO like these can be broken by people but they don't explode and sometimes they explode just because the temperature changes. I have lived here since 1979 and have found a lot of these bomblets. To begin with you could just see them lying everywhere. I am not afraid to move them because I have done it many times before – at first I was afraid but you learn that it is OK. When people just touch it or hold it, it will not kill you but if you hit it hard it will kill you, like if you hit it when chopping vegetation. But, as I said, sometimes I have seen them broken in half by people without

exploding. And I have heard them exploding when nobody is there – because of the heat in the dry season.

“I used to use explosives from UXO for fishing but stopped after some agencies did education work about this. People around here have also sold metal from UXO for scrap and other people use the big cases from the cluster bombs as trays to grow vegetables and herbs in.”¹⁸

“There are a lot of new people moving to the village and we have told them about the dangers here. There are other items of UXO around as well as the bomblets, and some mines that were laid during the Vietnamese occupation – around the old military headquarters and the district office.”

People believe that the situation around the village is getting better with more and more items found and destroyed, but they recognise that people moving into the village and clearing new land are going to encounter more bombs. Whilst items that they find can be moved to a safe place out of the way the real fear is of items under the ground.

“I am not afraid of moving bombs but I am afraid when I am digging the ground.”

Although ongoing agriculture is not so badly affected, opening up new land for housing and farming causes people the greatest concern.

‘The clearance work has allowed the school to move forward with projects that had been on hold for nearly twenty years.’

The same report shows that development projects (such as irrigation canals and paths between villages) and community infrastructure (such as schools, clinics, markets and temples) have also needed UXO clearance to allow construction to go ahead.

Unexploded ordnance can also have a severe effect on commercial ventures and infrastructure. Unemployment in Kosovo is one of the biggest hurdles to stabilising the population and re-establishing some level of self-

sufficiency. In the example on page 26, the reconstruction and running of a commercial venture in Kosovo has been halted by the presence of large quantities of UXO.

CASE STUDY

Phum Pring village, Cambodia

Phum Pring village is 6 km to the southeast of Kompong Speu town. Villagers in Phum Pring have reported to surveyors that their primary concern is a lack of land for agriculture and housing. This is largely due to the UXO that litters parts of the land around their community. Scrap metal dealers have collected ordnance from around the village in the past and many people report moving items off their land so as to make it safe to farm.

If cleared, the contaminated areas near to the village would be used for rice farming, housing and plantations. Plans to build five houses have not been followed through due to the presence of ordnance. Thu Sophan (51) cannot use much of his land for the same reason:

“There are unexploded rockets in the bamboo, and other types of ordnance such as mortars and grenades. There were many accidents with children here in the past when they were cutting bamboo shoots. A lot more UXO was buried in the soil than you could see on the surface. I was very worried for my children and we banned them from going to this area of my farmland. There has not been any clearance



Thu Sophan

work done here and the only mine awareness has been in the school. But there were a lot of ammunition stores around here and a lot of fighting. Unexploded weapons are left over and also some weapons have just been abandoned.

“I have lived here all my life. I live here now with my wife and five children. We were in the refugee camps for a time in the past but after that we came back here because it is our home. I have been stopped from growing things because I am afraid of the UXO. Some areas of land are completely covered – I just have a small plot near the house that I can use. I make money by repairing bicycle tyres and fixing bicycles. Also we sell some cakes,

cigarettes, sweets and white wine medicine. I would grow rice if it were not for the UXO.

“At first I tried to clear the land but I just found so many items that I had to leave it. They were on the surface and underneath. When I was doing this I would move items into piles and burn them. Other people have land nearby which is also contaminated and they are using it, but they are taking a risk. My land has dense vegetation on it and clearing this needs a lot of cutting and digging up roots if I am going to farm it. I am afraid that this is too dangerous because I might hit something by accident. For now we can live with the money that we get from fixing tyres and selling things.”

CASE STUDY

Grebnik cherry orchard, Kosovo

Grebnik Hill lies in an area of higher ground between Pristina and the plains of western Kosovo. The view from this position down on to the western plain gave it a clear strategic value for the Serbian forces. Paramilitaries and VJ troops based on the hill used a cherry orchard and associated warehouse and offices in establishing their positions. Kosova Albanian women from Peja were kept in the warehouse – their names crayoned on the walls are only now being painted over.

NATO bombed the Serb positions with BLU97 cluster submunitions. Evidence of five cluster bomb containers has been found during clearance of the ordnance that remains around the site.

The orchard was part of a state-run enterprise producing a cherry-juice drink through a processing plant in Gjakova. This plant was also bombed during the war so demand for the orchard's produce has been removed.

The former manager of the site returned to find unexploded BLU97s



Clearance work in dense vegetation, Grebnik cherry orchard



Grebnik cherry orchard, Kosovo

still lying amongst the trees and reported it to the UNMACC as a dangerous area. The manager had some 25 staff hoping to return to work on the site – but with ordnance contamination and an uncertain market, he was not able to re-employ them. During May and June 2000, teams from the HALO Trust cleared the ordnance lying on the surface. During this period, 22 individual BLU97 submunitions were found and destroyed. With areas of dense vegetation around the site yet to be cleared, mine awareness staff from the HALO Trust also warned people from local villages not to collect wood from around here.

Once surface clearance had been undertaken, the orchard manager decided on a new direction for the enterprise. The orchard would grow camomile and herbs for the Farmakos company in Prizren. This company had survived the war and, amongst other things, marketed herbal teas for sale in the region and abroad. The former employees of the site began pulling up the trees so that the area could be replanted with the new crop. In pulling up the trees people were at a real risk from unexploded submunitions that remained below the surface.

Before the war the land between the cherry tree rows was regularly ploughed, and the bombing campaign coincided with a period of very wet weather in Kosovo. These factors will have increased the likelihood of unexploded munitions burying themselves beneath the surface. Having begun sub-surface clearance of the site, the HALO Trust found a further 91 BLU97s. An area which saw a particularly high incidence of surface-lying munitions remains to be cleared and the site supervisor expects to find significantly more sub-surface items before this task is completed.

With 202 individual munitions in each of five cluster bombs, this site appears to have had some 1,010 submunitions dropped on it. If this is correct, the 113 unexploded bomblets found so far suggest a failure rate already in excess of 11 per cent and technicians working on the site expect this to rise.

Some two years after the war, this commercial enterprise and former source of employment has still not returned to any sort of productive use. The planned redirection of the site has been left on hold until the clearance is completed.

- 7 Amongst anti-personnel mines, fragmentation mines cause injuries most similar to those of many forms of UXO.
- 8 Data from UNMACC Kosovo.
- 9 Of 185 children (under 18) killed and injured during the period of the statistics for Kosovo (including those for whom the type of weapon was not known) only fifteen were female.
- 10 The VVAF survey of landmine/UXO accident survivors in Kosovo [VVAF 2000] notes: 'The findings regarding education for children are generally more positive than expected. Only six of the 147 children interviewed are not in school due to medical problems or transportation difficulties. [...] Numerous other children among the families surveyed cannot attend school because their parents do not have the financial means to send them.' It at least suggests that accident survivors in this region are not greatly losing out on access to education as a direct result of their injuries.
- 11 Figures from Kosovo show that for non-demining agency people killed and injured by landmines in known dangerous areas (21 per cent of the total for landmines) approximately 24 per cent knew about the danger, 50 per cent did not know and for 26 per cent there is no data. Although this is sufficient for the point we make above, it is notable that this figure is very low (only 5 per cent of the total landmine victims).
- 12 Deliberate contact with landmines does happen, particularly by people salvaging scrap metal. However, in these cases (where the mine would no longer be buried under the ground) contact is more akin to interaction with UXO.
- 13 It is easy to create an unfair moral boundary between economic need to satisfy subsistence requirements and economic aspiration. This report considers it poverty if, to meet their own conception of economic need, people are undertaking risks that the international community seeks to stigmatise.
- 14 Data from the Cambodia Mine/UXO Victim Information System (CMVIS) for the year ending July 2001. CMVIS is run by the Cambodian Red Cross and Handicap International Belgium. The Mine Incident Database Project (MIDP) was a predecessor to this system and produced a bi-annual report for 1998-99 referred to here as MIDP 2000. To aid clarity, the categories presented are collated from a wider range used by CMVIS.
- 15 Although the Handicap International Report is focussed on landmine clearance, it makes clear that 21 per cent of village deminers clear only UXO and 20 per cent clear both mines and UXO.
- 16 The term 'spontaneous demining' does not adequately describe the practice in question (which is more akin to 'moving mines when they see them'). 'Informal demining' might better capture the historical tension that such activities have enjoyed with the formal sector of national and international agencies, and would ascribe a capacity for deliberation to its practitioners which 'spontaneous' rather unfairly denies them.
- 17 GeoSpatial International Inc., Cambodia National Level One Survey Project with funding from Canadian International Development Agency (CIDA).
- 18 These large metal cluster bomb cases are not UXO but the empty shell which house the submunitions when the weapon is dropped. In Lao PDR, particularly, in areas that were heavily bombed, these cases are widely used instead of wooden stilts for houses and rice-stores and also for growing vegetables.



3 UXO and land denial

This section examines

- *Factors that can exacerbate land denial from UXO*
- *Land abandonment made possible by alternative economic options*
- *Case studies illustrating the varied nature of land denial*

UXO was moved from these rice fields by villagers, and placed among bushes seen in the background, to enable some food to be grown and to protect children

A high proportion of UXO accidents occur when people are going about their daily economic activities. In some circumstances people interact with UXO that they find in their environment, moving it so that land can be used and children will not play with it.

In almost all the case studies researched for this report, land is completely abandoned only if other economic options are available. People who have no economic choice are forced to use contaminated land. Decisions about contact with UXO and land denial are balanced against individual risk and the family economy.

The case studies in this section show some of the factors that erode people's confidence in working around contamination effectively, leading to a greater likelihood of more complete land or resource denial.

Quantity and type of UXO

'Area contamination' occurs where large quantities of UXO are believed to occupy a particular area. Unlike

small numbers of individual items, which are sometimes worked around or moved, area contamination must be eliminated if the land is to be put to any sort of productive use. The point at which a number of individual items becomes classed as area contamination is not fixed, but certain factors are likely to cause it:

- prolonged fighting over relatively fixed positions
- cluster bomb strikes
- abandoned ordnance stores
- abandoned firing ranges.

In addition to the quantity or density of contamination, people's willingness to interact with ordnance may also be conditioned by their awareness of which specific weapons present a threat. Time and experience help communities to grade the risk; they learn to interact with different items of UXO in different ways. For example, unexploded cluster submunitions, have different degrees of sensitivity: the US-manufactured BLU97, with its second, all-ways acting fuze appears to be much more sensitive than the earlier US submunitions used in South East Asia. The detailed ways in which people in different circumstances evaluate specific types of weapon is beyond the scope of this report, but it is important to note that real and perceived distinctions do exist and inform people's attitudes to contamination.

Sub-surface UXO

For people wishing to work the land, sub-surface UXO presents a risk of unwitting and violent contact. The force with which someone may strike a UXO when they are digging could well exceed the force they would exert if they were interacting with it deliberately. People may be willing to walk on the ground but they may not be happy to plough, clear vegetation or dig for construction in case they strike UXO. This clearly affects the extent to which land can be put to productive use, whether for agriculture, housing or infrastructure. People can develop strategies to cope with surface UXO by interacting with it on their own terms, but this sort of choice may not be available where significant sub-surface contamination is suspected.

A range of factors may promote the presence of sub-surface UXO. A higher incidence will be found in soft ground. Soft ground also makes items less likely to detonate and therefore increases the proportion that remains unexploded. King [2000, p.39] notes with respect to submunitions that:

'Most explosive bomblets are designed to detonate on impact. In this context, 'impact' means extreme (near instantaneous) deceleration, which requires the target to offer substantial resistance to the bomblet's penetration.

Mortar shells: a major post-conflict ERW hazard

Not all items of ordnance present the same level of post-conflict threat and, although the uncertain and sensitive status of ordnance which has been fired and failed to explode is the most common hazard, unfired ordnance is part of the problem too. Mortar shells, whether UXO or unfired, are often the greatest threat after landmines – a consequence of the nature of the shell itself and deployment and use pattern of mortars in combat situations.

The mortar is primarily an infantry weapon that can achieve a light artillery effect from a man- or light vehicle-portable platform, a property that ensures the mortar's status as a weapon of choice at every level in infantry formations. Calibres vary

widely but portability of the mortar weapon, commonly a comparatively simple firing tube, is always a factor.

While the mortar is highly portable much of its military value lies in its ability to maintain a high rate of fire. This requires a ready supply of ammunition close to the point of fire; often to highly mobile units in front-line areas. Consequently, forward ammunition dumps maintain substantial mortar stocks and frontline units may be re-supplied by helicopter in quantities which cannot be transported in the event of retreat or fast redeployment. Although standing operational procedures would be to destroy stocks likely to be overrun by the enemy, the evidence of many battlefields around

the world indicates that this is commonly not achieved in practice. Added to this is the fact that failures are a common property of mortars, resulting in a high number of unexploded shells on virtually all former battlefields.

Mortar projectiles deteriorate quickly when exposed to the elements, especially in extremely high temperatures, and are particularly vulnerable to TNT extrusion, a highly sensitive state which makes accidental detonation very likely when handled inexpertly. Multiple deaths and injuries are a common occurrence, especially among civilians scavenging for scrap metal on former battlefields, among post-conflict communities. *Rae McGrath*

‘Soft ground and dense vegetation can cushion the fall enough to prevent an impact fuze from functioning. This is a common occurrence, in for example, the mud and jungles of South-East Asia, the soft peat of the Falklands, the sand desert of the Gulf, and farmland in the Balkans.’

In the case study of Grebnik cherry orchard (Section 2), 22 individual BLU97 bomblets were found during surface clearance of the whole site, and a further 91 had already been found during sub-surface clearance at a time when a significant part of the site still needed to be worked upon. Here, the proportion of sub-surface UXO will be more than 80 per cent. The figures available from the UNMACC in July 2001 showed a total of 1,407 (50.4 per cent of the total) BLU97s cleared from the surface of the ground and 1,389 (49.6 per cent) cleared from below the surface by clearance organisations working under UN

co-ordination in Kosovo. For BL755 submunitions, the figures for the same period are 632 (71.3 per cent) cleared from the surface and 255 (28.7 per cent) cleared from sub-surface.¹⁹ This suggests that whilst different munitions may generally have differing propensities to create sub-surface contamination, the circumstances of a specific site are also very significant. The high incidence of unexploded sub-surface munitions in the Grebnik site supports the point that soft ground is also a factor that promotes the failure of munitions.

The example above focuses on submunitions because this data is available in Kosovo. Other forms of ordnance can also present a sub-surface threat. Nevertheless, submunitions do consistently produce some level, often significant, of sub-surface contamination.

CASE STUDY

Chamkar Chu village, Cambodia

Choup Sovan has found many items of UXO whilst farming his fields around Chamkar Chu village to the southeast of Phnom Penh. He has moved most of them under bushes and into holes in an effort to stop children from finding and picking them up:

“Other families have found items and burned them but I think it is better to put them out of the way and then inform CMAC. People have been injured around here by unexploded rifle grenades particularly – I think they are very sensitive.

“Children sometimes play with these sorts of thing. That is why I have tried to bury or hide the ones that I have found. These bushes and trees remain around these fields because we are too scared to clear them. There are a lot of items in the bushes and you cannot see them – it would be very dangerous to try to cut through these.

“I buried 25 here because I was afraid of children playing with them.

I collected them from across this area and put them in a sack and buried them in a hole. I am an ex-soldier so I am not particularly afraid of explosive ordnance and UXO. But I still would not try to clear these bushes. In the 1980s some people were killed clearing bushes here; they probably hit something with a hoe or machete. If I could clear them I would use the land for growing rice though.

“People digging for potatoes have found many of the UXOs around here. Most of the UXOs that have been collected were buried and then uncovered so digging potatoes or building dams for rice fields is when you tend to find them.”

Around the village pagoda more UXO has been found. Whilst building a fence along the southern side of the pagoda a man discovered a large shell:

“The man who found it was building the fence for the pagoda. He broke a bit of it by accident when he was digging but it didn’t go off so he built a fire around it and it blew up. The site of the pagoda here used to be a Khmer Rouge base, so there was much fighting over this land.”



Rice fields, Chamkar Chu

This example shows how people may work around and interact with a large number of UXO items, and illustrates how people may discriminate between threats posed by UXO in different locations. Items have been moved out of the way or destroyed, so as to farm and protect children, while other items have been left and worked around because their location makes removal too dangerous.

The nature of the contaminated environment

Obstacles such as vegetation that need to be cleared before land can be used may also intensify UXO contamination and exacerbate land denial. The remains of damaged property may have a similar effect; debris may also contain significant amounts of metal which can make detector-led searching for UXO very difficult. This appears to be a consistent problem in Kosovo, where detector-based sub-surface clearance was not carried out next to the walls of buildings that contain metal in the concrete. In Orlat village, central Kosovo, one man was interviewed who had recently unearthed a BLU97 submunition whilst using a mechanical excavator to dig new foundations for a house. This land had been surface cleared but could not be sub-surface searched due to the presence of metal contamination in nearby walls:

“When I first arrived at my house there were lots of the yellow bomblets in the yard. I counted twenty myself. Two UCK troops carried these away, ten at a time, clutched to their chests.

“After this I was trying to clear the garden with a fork and was levering a beam that had fallen across the yard. As I tried to move it there was an explosion and a bomblet had exploded. I think that I still have metal fragments in my head because it hurts so much when the temperature changes.”

Both vegetation and debris reduce peoples' sense of control over their environment and make them less willing to use areas of land or to interact with UXO. Dense vegetation, like soft ground, also means that items of ordnance are more likely to remain unexploded. And so not only do sub-surface munitions and dense vegetation present two particularly problematic forms of contamination; they also promote density of contamination because the individual items of ordnance were less likely to explode.

Economic options and land abandonment

The availability of alternative economic options while UXO clearance is carried out helps determine the impact of UXO in the short term. One response by communities might be termed 'land abandonment', which emphasises the role of people themselves in deciding how to react to contamination. This can be linked to assistance provided

through other aid and development channels.

Kosovo, in addition to a landmine and UXO clearance programme of unprecedented scale and speed, also benefited from one of the largest overall aid operations ever. Warmington [2001] notes:

‘Unfortunately, mine awareness can only do so much before socio-economic factors or simple human nature override its effectiveness.²⁰ Compared to the situation faced by people living in other mine/UXO-contaminated countries, Kosovars were generally in a good position to heed the mine awareness advice given to them. This was directly related to the exceptionally high levels of assistance provided to them during the period of time during which they were most vulnerable to mine/UXO accidents.

‘[...] UNHCR reports that the efforts undertaken in Kosovo represent the largest per/capita international relief operation ever (South East Europe Information Notes: June 15, 2000. UNHCR).

‘Clearly this assistance significantly reduced the pressure that would otherwise have forced people to immediately engage in high-risk activities such as agriculture and wood collection but it did not solve the problem completely. Despite large scale and widespread provision of food and fuel, 24 per cent of accidents resulting from cluster bomblets occurred as a result of people tending animals; collecting wood, water or wild food; or engaging in agricultural activities.’

The possibility that the relief effort reduced the severity of the humanitarian and economic impact of UXO in Kosovo and elsewhere has important implications. It further emphasises the potential for partnership between the mine action sector and relief and development NGOs to present a broad package of assistance to communities, which would alleviate pressure on the contaminated environment whilst UXO and landmines are being cleared. This all-embracing approach has been advocated by Landmine Action, and has been evident in some projects that individual mine action NGOs have undertaken in partnership with development agencies.

However, national mine action programmes which are organised centrally have struggled to reconcile the close community liaison needed for integrating local operations and development activities, with the

centralised co-ordination which their bureaucratic function entails.²¹

Kosovo

Research in Kosovo for this report focused on three interlinked areas in western Kosovo. The first provides a description of high pastures, now completely abandoned. These lands are high on the mountainside towards the Albanian border and, before the war, provided the summer residence and pasture for the transhumance communities living in the valley below. Since the war these communities have been forced to abandon their traditional agricultural patterns.

The first two case studies show that land denial in one area can cause a change of land use in other parts of the community, in some instances resulting in an acceptance of reduced productivity. For example, the contamination of summer pasture requires either smaller herds or a transfer of alternative land from arable to pasture. Furthermore, fear of sub-surface UXO itself encourages the substitution of arable land for pasture, an activity believed by villagers to be less likely to result in accidents. The use of suspect land to grow hay also shows how communities can seek to cope with a problem by shifting the patterns of agriculture.

The final case study looks at a small community on the verge of being abandoned. Continued contamination by submunitions and possibly landmines, coupled with the remoteness of the village and the extent of destruction here, have left an environment where people cannot safely support themselves. The inability to reconstruct infrastructure is a primary obstacle to the return of the displaced population.²²

- 19 Note that sub-surface clearance of UXO-contaminated land had only been started after an initial programme of surface clearance had been completed.
- 20 Whilst this is certainly true for awareness messages that seek to promote avoidance of UXO or suspect areas, it is worth noting that other awareness messages aimed at promoting safer forms of conduct may still be effective. These include: checking under sites where fires are to be built; tethering animals to existing obstacles rather than driving stakes into the ground; keeping away from land where vegetation is being burned off; using different digging techniques. This advice has been used in Lao and elsewhere and could still help to reduce the risk of accidental interaction with UXO.
- 21 Central co-ordination may be an important tool in building national-level responsibility for responses to UXO and landmine contamination, particularly if we see national governments as the appropriate co-ordinators of such work in the long term. Resolving this tension between the twin requirements of central co-ordination and local-level prioritisation is a key challenge for the mine action sector.
- 22 According to Mao Vanna, senior supervisor with the Geospatial Level 1 Survey Project in Cambodia, the wholesale abandonment of villages has occurred among tribal groups because of local beliefs and enabled by the less permanent physical structures of their villages. For some of the tribal groups living in the north of the country a single accident from mines or UXO whilst farming indicates that the location brings bad luck and the whole village moves as a result. The form of 'swidden' agriculture practised by these groups (and the relatively low population in tribal areas) allows greater flexibility of movement than is available to communities in other parts of the country.
- 23 Note that this is reported speech. During this research it was not possible to determine exactly what people had been told about the status of their land. At other sites, agencies reported difficulties in explaining the limitations of surface clearance and sub-surface clearance close to buildings, walls and other sources of permanent metal contamination.

CASE STUDY

The High Pastures, Kosovo

Climbing to some 1,500 metres in the densely wooded mountains of western Kosovo, the forest is scarred by cluster bomb strikes that have cut across the mountain tracks. Swathes of trees are cracked and bent with severed branches. NGOs are still working to clear the large VJ minefields that were laid in this steep and difficult terrain. Climbing to the tree line close to the Albanian border the country opens out into the high summer pastures that were used before the war by the villages in the valley below – Jasiqi and Bartusha.

In the trees near the pasture a small abandoned VJ camp has been decimated by two cluster bomb strikes. Abandoned ordnance is also lying close to hand: an 82 mm projectile, 60 mm hand-held rocket launcher and rockets, rifle grenades and the empty cases of M75 hand-grenades. The ground is covered with leaves and fallen branches from the trees, and the bright yellow tubes of unexploded BLU97 submunitions. Twelve live submunitions can be found within a 30 square metres area around the camp.

In the past, approximately half the population of Bartusha village would come up and live in the high pasture between May and September. The upland slopes provided abundant food for the cattle, healthy mountain air for the children, and blueberries that could be gathered and sold at a good price in the plains below. The recent conflict has left these high pastures and the wooded hillsides below them some of the most dangerous places in Kosovo. The minefields on the hillside have been very difficult to clear. Unexploded cluster submunitions lie scattered through the trees. For now, the contamination here has brought an end to the traditional annual cycle of



Unexploded BLU97 submunition, the High Pastures

agriculture and the social forms that accompanied this.

Bartusha village

Bartusha is a community of some 200 houses. Around the village UXO contamination (and most particularly the suspicion of further sub-surface contamination) is constricting the economic base of the community. The impact of this has partly been alleviated by the economic inputs of aid agencies.

Haxhi Laha is the 'headman' of Bartusha.

"When people first came back they could only stay around their houses – it is thanks to the work of NGOs that we have our land back. This whole area is pretty dangerous – it was a former front line."

However, closer to the village the threat of sub-surface cluster bomb submunitions is causing concern about the implementation of a valuable infrastructure project:

"There are a number of agencies with plans for Bartusha. One NGO is looking to bring running water to the village but there is one area of land which has not been sub-surface

cleared where the villagers need to dig a channel. Within the project, the NGO will provide materials and the village must provide the labour. There are about 400 men and women from this community still waiting to get jobs."

The loss of the high pasture land, where much of the village's livestock would traditionally spend the summer, would mean far greater pressure on land in the valley if it were not for a massive decline in the livestock resources of the community. As it is, these animals are supported by an expansion of hay production in the valley. Hay can be produced without digging or ploughing and is thus seen as less of a risk on land suspected of containing sub-surface munitions. It does, however, mean that arable cash crops (which formerly brought cash into the local economy and demanded market integration) have been abandoned in favour of pasture. People in the community are concerned that the current balance of economy and risk from UXO is reliant on external aid inputs that will soon be removed. When these are gone, people will have to renegotiate these risks.

CASE STUDY

The High Pastures, Kosovo (*cont*)

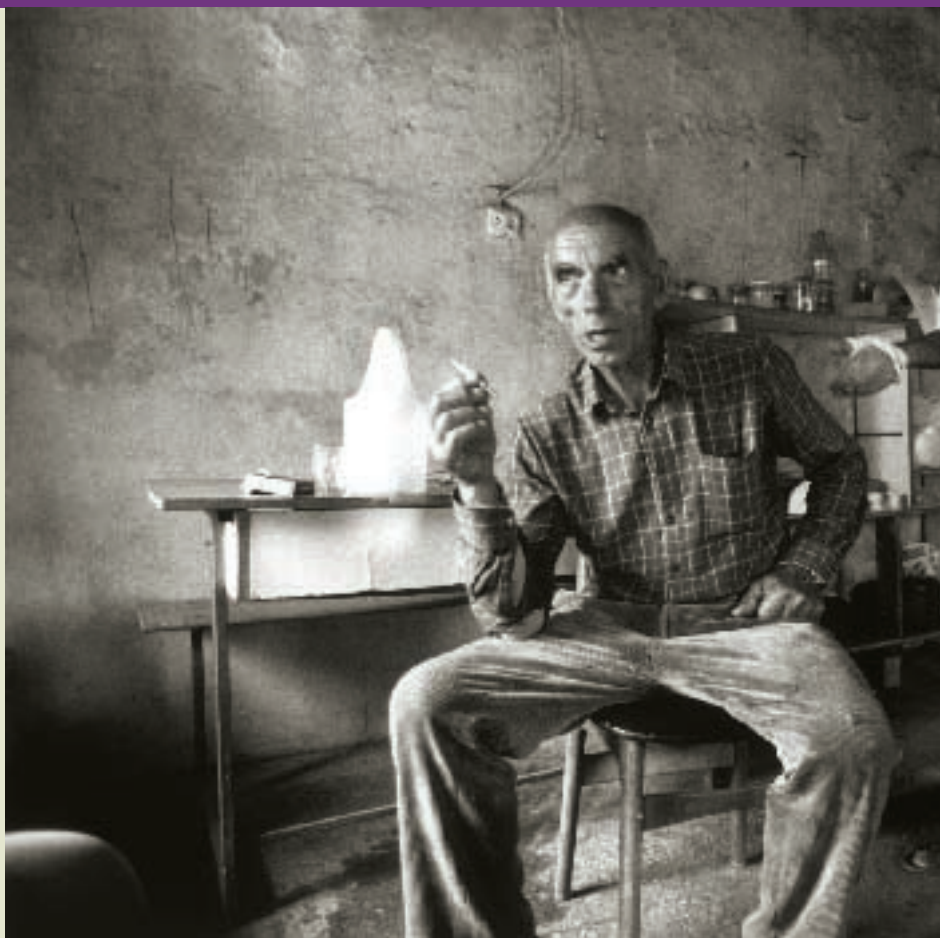
Substantial work has been done around the community. In particular, surface-lying ordnance has been destroyed by KFOR and by NGOs, but sub-surface contamination was still present around the community at the time this research was carried out (Norwegian People's Aid were clearing unexploded BL755 submunitions from fields on the eastern edge of the village). The main UXO problem remains the Koshare region, in the hills above the village. People cannot go back there because it is so dangerous.

"There were 23 families living in Koshare, and it was a good life with many cattle, crops and fruit – but mines and bombs have been the death of that community. Aid agencies will not settle people in [the nearby town of] Gjakova because they will only build houses where there is evidence that previous homes have been destroyed. Of course, they cannot build in Koshare."

Another man was among the first to leave Kosovo, and so did not get mine awareness in the refugee camps where the majority of the population were gathered later:

"When we first came back to this village we really knew nothing of the mines or cluster bombs. In the beginning, the young people especially would move items that they found and thought were dangerous. Then different agencies started doing awareness work and after this people started to behave more safely."

Haxhi emphasises that problems from ordnance contamination are bound up with the economic pressure that they are under and that this pressure can push them towards unsafe behaviour:



Isuf Jasiqi and Sadri Jasiqi

"These items in our land present an economic problem. Agencies have provided wood for us because we couldn't go into the forest. We live here surrounded by wood but we cannot collect it safely. My own land had cluster bombs on it."

People in the community are pleased that clearance is being done but consider 70 other plots of land to be suspect. They use this land to make hay but do not plough it for crops. Haxhi says that they are wary of digging on approximately 40 per cent of the working land of the community.

"All that we feel safe to do is hay making. Suspicion of this land is based on damage to nearby trees, bits of metal that have been found on the land and craters in some

places. We do not have pasture in the mountains and we are only slowly getting back our land down here. Landmines and cluster bombs here have left us with a problem of wood and pasture."

The land that is now being used for hay was previously used primarily for corn, maize and tobacco: the latter was widely produced for sale to a factory in Gjakova and then exported to the USA. Beans were grown for sale to a local cooperative. Although agriculture varied from family to family, maize and corn were generally produced not for sale but for domestic use.

The largest landowner in the community, Musa Rawa, had ten hectares of land on Koshare hill. This



Jasiqi Village

Jasiqi lies on the slopes of the mountains above the valley of Bartusha. From here the roads are tracks winding upwards towards the high summer pasture and the Albanian border. The village is by a stream on a wooded hillside looking east onto the plain of western Kosovo. All the people of the community bear the family name Jasiqi. They are scattered now; most of the former population are in refugee centres. The community is only persevering in this place through three people who refuse to leave despite the danger and dereliction around them.

Living amongst the collapsing and abandoned remains of the community in which he has spent his whole life, Isuf Jasiqi (63) tends the grave of his son who died fighting for the UCK. The monument stands across the road from a partly demolished compound in which Isuf, his wife, and another man Sadri are living.

“There used to be 33 houses in this village. We were told that our land was cleared but when we came back we found another yellow bomblet when we were digging a ditch.²³ No agency dared to bring materials here to rebuild the houses. We knew from the beginning that it was dangerous. Lots of bomblets were found by the local people when they came back and these were reported to KFOR. I have a plot of land here that I still cannot use.

“I am living up here with my wife because of my son’s grave and because I am an old man who has always lived here. If I went down to the valley or to the town to live it would be unbearable for me. I go down to Juniq village to buy food but it is difficult to get the money together because I am supporting other family members. I have a pension from Germany of 500DM per month and a son who is a policeman earning 300DM per month. This is the only

steady income for a family of 20 in total. Sometimes other family members come up to visit me or to bring me things that they have bought. But I cannot work the land here, there is no maize and only a little hay. There is no electricity because the power company cannot come here and work on this land.”

Although much of the village is in ruins and the land around is still considered dangerous, Isuf has hopes that this community is not yet dead.

“I think it is very difficult but all the community would want to come back if the ground was safe.”

One other man, Sadri Jasiqi (62) is living in the village. His wife and the rest of his family are living in Gjakova – but he has stayed here since he returned from Albania. He occupies a single room in the same set of buildings as Isuf.

“When I came back there were lots of bomblets here. I searched my land and reported the bomblets I found to KFOR. They would come out and destroy them and when I went back to my land I would find more. I found seven of them and other people found many more. I didn’t touch them though, I just went around looking. If I found one I would mark the place. We had been informed about this when we were coming back from Albania, through posters that different agencies had made.

“My house was very badly damaged but it wasn’t burned so I decided to stay. I’m used to living in this village and couldn’t live in Gjakova. My father and grandfather are from here. The older people say that this community has existed for hundreds of years.”

Sadri collects wood for his stove from the destroyed houses of the community. It is too dangerous to collect wood from the forest.

land is totally unusable. On the 1.5 hectares he owns near to Bartusha village he is now primarily growing hay.

“I have four hectares of forest in Koshare but have been forced to buy wood for the last two years, or get it from NGOs.”

Another man says that he owns five hectares of land in the mountains but that it is too unsafe to use and he can see the yellow cluster submunitions.

Haxhi Laha says that they have been spared the full impact of mines and ordnance through the economic support of other NGOs. When this support is withdrawn, he is worried that the community’s relationship with the environment around it will have to change.



4 UXO as a resource

This section examines

- *Ways in which UXO functions as a resource for people in the poorest communities*

Landmine survivor in Cambodia using metal from UXO as a prosthetic limb. Photo: John Downing/Landmine Action

Among many poor communities, UXO and other military debris have value as a resource. UXO can provide access to cash within communities where this is rare. For those on the very margins of society, UXO can be the mainstay of their economic survival. This leads people to undertake high-risk activities that are a major cause of UXO accidents in many countries.

UXO provides a resource in two main ways: for the saleable value of the scrap metal and for the utility of the explosives. Metal can provide a source of cash, giving access to other products for subsistence communities living in the aftermath of conflict. Similarly, explosives can be sold or used for fishing and quarrying, which can produce cash income to supplement a family's subsistence activities.

Both practices may require very intrusive interaction with items of UXO. The most valuable scrap metal is usually copper, found in the fuzing mechanisms of many types of ordnance. Fishing with explosives, or directly with ordnance, often involves dismantling and then re-

fuzing the ordnance. These practices are most commonly undertaken by men, particularly those with previous military experience that provides them with some confidence that they know what they are doing. All these practices are driven by poverty and by people's resolve to use their skills and experience to create value from the resources that they find.

The tendency for people to collect UXO as a resource, with all the risks that this entails, is more likely to happen if people place a value on it as it stands. In the past, misguided relief projects have offered money to encourage items of ordnance to be handed in. On the other hand, landmine and ordnance clearance agencies have, for the most part, consistently rejected requests for compensation by people claiming ownership of items of UXO which are scheduled to be destroyed. It is clear from this research that reducing the risks that people take with unexploded ordnance must involve minimising its actual or perceived value within communities; but these efforts may be in vain if alternative economic options are not available. A value system which stigmatises the exploitation of UXO cannot be imposed upon people who have little else, by outsiders who have so much more.

Scrap metal

The extraction of ore and refining of metal is a laborious process, yet many post-conflict communities find themselves with free metal lying all around them. It is no surprise then that this quickly becomes perceived as a potential source of income. Scrap metal is often sold at the nearest market town or to travelling traders. Through these networks it comes into the possession of professional scrap dealers who can make significant money through its sale in bulk.

When there is little money to be made outside the framework of the subsistence economy, collecting and dismantling ordnance provides a cash supplement. If it brings in more than this, it is often because the people involved lack agricultural land or are in some way disenfranchised and have fallen back on these practices because they have no other resources. The dangers are well illustrated in the following report on northern Iraq [MAG 1998b, pp.15-16]:

Bapir Karda has been injured twice by mines whilst gathering scrap metal on the mountainside behind his home. He triggered a V69 anti-personnel mine that tore

CASE STUDY

Salao village, Cambodia

My Mom (58) lives in Salao village near to the airstrip on the edge of Kompong Cham town. She has four grandchildren in the village and bemoans their interest in unexploded ordnance:

"In the past we found UXO items here when we were digging the toilet. In the dry season especially we seemed to find them and would bury them in termite mounds. Now, the children seem to find most of these things when they are grazing our cattle. I am always very worried and afraid that the children will hit them or something, though CMAC have told them to report items that they find.

"There was a rumour amongst the children that they could get 1,000 riels [approx. US\$0.25] for handing in items of UXO but whenever they

came here CMAC had said very clearly don't touch UXO, report it. Mainly the children try to sell the scrap metal. Whenever they hear CMAC demolishing items, they [the children] go running up or hide nearby to try to be first to get the scrap to sell at the market. CMAC have to chase them away. Sometimes the children say that they are going for a walk but really they are looking for scrap metal. They sell it in Kompong Cham for about 100 riel [approx. US\$0.025] per kg and they keep the money to buy sweets and cakes when they are at school. Even tiny children are trying to do this. Sometimes traders come through buying scrap metal also, so they do not always have to go into town.

"But even though they are poor, none of the parents make their children do

this or even want them to. The children are just excited and want some small amounts of money which they wouldn't have otherwise.

"One child was killed and another injured near here. They were carrying sugar cane and one was also carrying some sort of UXO. One of them dropped the UXO and it exploded. When the children, my grandchildren, heard the bang they ran up to get the scrap metal but instead they found two children terribly injured. One was torn open all down his front with his intestines exposed – his body was torn apart. The other child was bleeding from lots of cuts all over his body and a big wound to his stomach. CMAC took the wounded children to hospital but one died very soon after. When my children came home they were shocked and shivering at what they had seen."

a hole in his stomach. Two of his friends died in this accident. Two years later he lost three fingers and an eye whilst taking apart a blast mine. Bapir's children have also collected unexploded ordnance. In 1995 his eldest son brought an 82 mm mortar back to the house and attempted to remove the aluminium from the fuze. The mortar detonated and the explosion killed four of Bapir's children and wounded two others. His daughter, Bafreen, and son, Asmal, still live with their father, bearing the scars of the accident that killed their brothers and sisters. Removing the saleable scrap metal from UXO is extremely dangerous in itself. Also, the activity of gathering UXO often leads people into mined areas.

Despite this devastation, Bapir remains dependent on the income from scrap metal. He has a small store of mortars under a corrugated iron sheet outside his house. Inside he has large artillery shells, live fuzed mortars and assorted scraps of ammunition.

Bapir and his family were relocated to Durband village during the Iran-Iraq war and their home village to the south was destroyed. They have no arable land and only part-ownership of 18 goats and two cows. The animals provide milk, yoghurt and cheese for two large families but they do not cover other subsistence needs and cannot be sold for cash:

"What else can I do? I have nothing. All I have is what I can gather from the mountains. Poverty has led to all this. It has killed my children. If MAG hadn't taken me to hospital I would have died on the mountainside after my first accident. And after all this I am still collecting these weapons because I can see no alternative."

Metal from UXO and other military debris can also be fashioned directly into implements. In Lao PDR, one of the most heavily bombed countries in the world, the vast quantities of military debris have transformed the basic structures of everyday life in the most severely affected parts of the country. The case of Mr Sotha, a blacksmith, [MAG 1999, pp6-7] illustrates practices found in many parts of Lao PDR:

Mr Sopha [Ban Soy village, Xieng Khouang Province, Lao PDR] relies on military debris for the implements that he fashions. His small workshop has bellows and anvils under the cover of a thatched roof supported by the empty casings of American cluster bombs.

"I have always worked this way as a blacksmith since the end of the war, so for 25 years now. I always use bits from bombs and shells that have exploded; I don't use live bombs or bombs which still have their fuzes because I am too afraid. Artillery shells are the best. The metal is harder and stronger and keeps a blade for longer. I just

Explosive Remnants of War: high-risk interface with the poorest communities

Conflict breeds poverty and, especially following prolonged war, subsistence communities, displaced people and refugees require hard cash to survive. One inevitable product of war is scrap metal and merchants soon establish cash-by-weight depots close to major conflict areas – often near international borders where the trader can benefit by selling into a healthier economy than would be available in the source country.

Despite the risks of battlefield scavenging, prices for common metals are extremely low as well as being labour and transport intensive. The most attractive prices are paid for aluminium and copper, and this is the temptation which kills and maims so many of the poorest among the survivors of conflict.

Aluminium is readily available through the salvage of ordnance fuzes, commonly from mortar shells. But fuzes are not easily removed, without purpose-designed tools; scrap scavengers, often young children, may resort to crude methods. A common removal technique employed is simply to use a heavy hand hammer to sheer the fuze from the projectile. It is perhaps sufficient to recognise that many of the fuzes are impact-initiated to understand the level of risk involved in such methods.

Another frighteningly common practice is the removal of copper driving bands from unexploded or unfired artillery and tank shells.

The bands cannot be removed by normal manual methods, but

desperation encourages innovative, if dangerous, techniques and many scavengers build large fires on which they lay the projectiles. The copper bands eventually expand and can be driven off the projectile with a hammer if the effects of extreme heat on explosives do not cause an explosion first.

Although scrap metal merchants in conflict areas learn to recognise many dangerous items they rarely become expert and it is not uncommon for EOD teams to discover live ordnance among normal scrap. Live aircraft bombs and grenades with thin wire to replace safety pins, for instance, have both been found on scrap heaps in residential areas.

Rae McGrath

use scrap metal that I find. Sometimes people bring metal to me. I buy cluster bomb casings to make shovels but knives and sickles are what I make the most of.”

The anvils on which the knives are fashioned are the bases of upturned artillery shells protruding from the ground.

“[...] This is only part-time work though. There are ten people in my family here and we farm rice paddy and keep poultry and cattle. The knife sales are important for raising extra money to buy clothes, food, goods for the house or more cattle.”

The blacksmith’s family lives in the house next to his forge. As well as providing a means of additional income, ordnance has a wide range of functions in the home. Cooking for the family relies heavily on reclaimed ordnance. Pico-bamboo soup simmers in a pot made from an artillery shell and it is stirred with an aluminium spoon that has been fashioned from an artillery cartridge. Pots are supported over the fire on a frame of recoilless-rifle rounds. Having been used by the family in these roles for some 22 years, it is not surprising that these are not thought of as items of military debris but merely as mundane household objects.

In the main living room of the house an American cluster bomb submunition has pride of place on the table. The BLU 3/B bomblet that has been converted into a paraffin lamp was given to the blacksmith’s wife, Granny Ohn, by a relative in Phonsavanh. The conversion of this type of bomblet into lamps has become quite common and reflects a local belief that the BLU 3/B is less dangerous to dismantle than other bomblets.

The familiarity of military debris to rural populations of Lao PDR provides a frightening indication of the scale of the conflict inflicted upon these areas. It is also a great barrier to reducing the number of UXO accidents.

The extensive relationship between the household economy and scrap metal from UXO and military debris is not only due to the sheer quantities of ordnance dropped on Lao, but also to the length of time these populations have been living with its legacy. With no other economic inputs apart from these resources, people will not only live with the problem but will try to put it to work for them.

Finding such utility in scrap metal and ordnance is not confined to South East Asia. One source reports that in

parts of Africa metal is especially valuable, making it hard for pastoralist and nomadic groups to resist picking it up:

“Hand grenades were pawned for traditionally brewed beer. When the soldiers were eventually paid (regular payment was not common) they would receive their weapons back. This was common in Yei, which was a ‘safe town’ and not experiencing immediate conflict; therefore the military personnel had ‘spare’ weapons on their hands and time to drink hard.”²²⁴

The metal from ordnance is widely used in household implements and further north in Sudan, pastoralist tribes fashion parts of the metal from UXO into their traditional jewellery.

One rumour has been circulating for some years amongst certain communities. ‘Red Mercury’ is a mythical substance believed to be found in the warheads of particular items of ordnance and worth large amounts of money if extracted. The specific weapons purported to contain Red Mercury vary from place to place. This rumour appears to have started in Angola and Namibia and probably has links to South Africa. Needless to say, attempting to extract non-existent substances from the fuzing systems of UXO is a dangerous practice – though the number of deaths directly attributable to this is unknown.

In a number of countries laws have been passed in an effort to reduce the number of UXO accidents that result from the scrap metal trade. Lao PDR has outlawed certain forms of dealing and this trade has now reduced from its peak in the mid-1980s. However, the UXO LAO Annual Report for 2000 [UXO LAO, 2001 pp.6-7] highlights recent accidents caused by scrap metal salvaging and points to a number of factors that lie behind the perseverance of this practice:

Although the heyday of the Lao scrap metal scene in the mid-1980s has passed, UXO LAO officials say the scrap trade today involves a mixture of accessibility to markets, UXO contamination, and poverty. In some areas of the country, recently improved road access to remote areas and scrap buyers has led to a steady increase in this activity. [...] Locals say it is itinerant foreign merchants (who travel from village to village to buy metal) who are to blame for encouraging this dangerous pursuit. [...] Inflated prices and increased demand also

CASE STUDY

Fishing with UXO, Cambodia

Hun Hakthy (35) used to fish with explosives and explains some of the considerations involved:

“I used to use the B40 rocket particularly for fishing and also the ‘DK’. With the B40 you first of all take the detonator out by unscrewing it, then you chip a hole into the explosive charge in the head of the rocket. Then I would put a detonator into this hole – a detonator with a wick attached. You light the wick off an incense stick and then throw it. Sometimes people take the explosives out completely and put them in a tin can rather than using the whole munition. As well as using UXO that I found, I would also sometimes get explosives from the local military.

“People use a short wick to stop the fish from having time to swim away – this is one of the reasons why people have accidents. Also, sometimes the wick is burning down inside but the

person cannot see where it has burned down to because it is not burning as fast on the outside, especially if the wick is wet, which is very dangerous. Some people also got hurt because they were drunk when they were doing this – and that does not help.

“Sometimes fishing like this in the right place I would get 200kg of fish to sell and eat. A catch like that can be worth a lot. People know that it has risks but living conditions make it worthwhile because you can sell the fish. I did this when I was 20 years old and it meant I could share the money with the other seven people in my immediate family.

“I stopped fishing like this ... agencies started to tell people that this was causing a lot of accidents and was a dangerous thing to do. Groups of people were having accidents at the same time. Although only one person does the fishing, other people like to watch, even though they know it is dangerous. People want to learn the techniques



Hun Hakthy

used because fishing like this is much quicker than with nets. Khmer people say that explosives give you a big net that will catch many fish.”

This suggests that fishing with explosives is not always a subsistence activity but provides a catch that can be sold, bringing cash into the family economy.

appear to be behind a disturbing development in Xieng Khouang Province in which people have begun looking for scrap metal in the many bomb craters that scar the Plain of Jars.

Between 1994 and 1997 the Namibian police successfully prosecuted prominent scrap dealers who had been promoting and profiting from the trade in UXO metal: an effective way of curbing this exploitation of post-conflict communities.

Fishing with explosives

Detonating explosives in water to kill fish is a common practice in many post-conflict countries and communities. Some complex dismantling and reassembling of ordnance may be necessary to fashion a suitable device. The Cambodian government has campaigned against the use of explosives in this way but fishing is a significant part of the rural economy and a large catch can be a valuable source of income.

Interaction with UXO can draw a crowd. Children gather around to watch people who are fishing with explosives because it is exciting. Adults and children alike are also keen to see how the explosives are prepared so they can learn these techniques for themselves.

24 Conversation and e-mail correspondence with Aneez Pasha (Community Liaison Advisor, MAG)



Social factors which affect risk-taking with UXO

5

This section examines

- *The impact on risk-taking of social factors including gender, military experience and age*
- *How attitudes toward UXO develop over time*
- *Risk-taking with UXO as a form of social display*

The social forces that affect the way in which individuals and communities relate to UXO in their environment are complex and vary from culture to culture. Some people avoid using land through fear, while others interact with UXO in an intrusive way. What is clear from this research is that decisions to take risks with UXO are not only a balance between economics and fear, but are also conditioned by important social factors including a sense of social responsibility.

Gender

The data in this report show that men consistently comprise the great majority of UXO victims. Death and injury from accidental contact with UXO may be based on typical divisions of labour within communities – either in the type or location of work.

Men and women often undertake different work in different rural societies. However, data for Cambodia and Kosovo rarely show how this affects their interaction with UXO. In Cambodia, the pattern of

Young UXO survivor, Cambodia

activities when accidents occur is very similar for women as it is for men. Of the 27 female UXO victims in the dataset shown in Section 2, a smaller proportion of women than men was classed as ‘tampering’ with UXO at the time of accident, though this is still the majority group (57 per cent women; 72 per cent men). A number of these victims may in fact have been bystanders. The remainder was injured through farming, collecting food, travelling and fishing (not with UXO or explosives). In Kosovo, three of the five female victims of UXO (including submunitions) were bystanders, whilst the other two are recorded as ‘tampering’ and ‘other’.

It may be that men undertake more intrusive forms of agricultural work (such as ploughing and digging) perhaps in locations where UXO is more likely to be found. Those working in remote places away from villages may also be at greater risk, as communities are less likely to have moved or destroyed items that are not in their immediate vicinity.

An information paper [Secretariat of State for Women’s Affairs, 1995] published by the Sustainable Development Department (SD), Food and Agriculture Organization of the United Nations presents contradictory information regarding the different roles of men and women in rural Cambodian agriculture. Although this information suggests traditional divisions of labour, which may support the predominance of accidents amongst men, it also suggests that such divisions may not be maintained in all areas. The paper suggests that men do undertake more of the ‘intrusive’ agricultural work in rice farming, such as clearing fields and ploughing, but also states: ‘women took over traditional roles of men in the farming system, such as ploughing, during the war years and this has continued to the present time’.

The predominance of men in deliberate UXO contact is reinforced by two important factors: men are more likely to have previous military experience and this in turn affects the confidence with which they approach items of UXO; social display through contact with UXO also seems to be a predominantly male pursuit, linked to the expression of their masculine identity.

Military experience

In their study on spontaneous demining in Cambodia, Handicap International [2001] note: ‘the majority of villagers who now carry out [informal] mine [and UXO] clearance activities in the village served as soldiers at one time’.²⁵ In Kosovo, a number of accidents resulted from the overconfidence of former UCK soldiers in dealing with submunition contamination. People with military experience are more likely to feel confident about moving items of UXO that are on their land and they are more likely to get involved in moving or destroying items that are impeding others. They will probably be able to distinguish between items that have been fired and those that have simply been abandoned, allowing them to evaluate the threat from UXO more accurately.

In post-conflict environments many men may have military experience. Demobilisation of troops can produce social problems, particularly unemployment. In a post-conflict environment such as Kosovo, the former fighters are also unsure how to maintain their identities. King [2000] refers to the UCK being ‘hailed as heroes’ in the immediate aftermath of the conflict, but such a status does not persist without practical expression.²⁶ People’s military experience may put them under pressure to address problems of contamination when they have little real knowledge of this. In Kosovo, former UCK troops undertook much UXO clearance in support of affected communities, particularly in the immediate aftermath of the conflict. The willingness of these people to undertake work for which they were not adequately skilled may have been driven partly by insecurity and partly by a desire to live up to the expectations that communities had of them. A desperately dangerous bravery saw large quantities of ordnance moved away from communities with a number of tragic accidents in the process.

It has been suggested that mine awareness projects do not always find it easy to engage with former military men; certainly there has been plenty of evidence to support this within the international sector of mine action. Ex-military personnel often find themselves without jobs and living within unfamiliar structures. Without support, they may turn to drink and drugs and become amongst the more aggressive members of society. As a result, they are often neglected by NGOs. But they do have knowledge and may be very influential in a community’s relationship with UXO.

SURVIVOR CASE STUDY

The Pepa family, Kosovo

Brekoci Hill is a very small community of just a few houses nearly one kilometre south of Guska village. Locals report that there was a Serb radar position in the trees in the middle of the village and for this reason it became a target in the NATO bombing campaign.

The Pepa family compound surrounds the remains of their house. It is destroyed beyond repair. There are chickens in the yard and three large haystacks provide fodder for animals. The fruit trees are torn and scarred by the bombing.

Pashke Gojan-Pepa (30) was injured by a cluster submunition not long after returning to the village. She has deep scars on the inside of her right thigh. Local doctors have been able to do little about her still swollen leg and she cannot afford to travel further afield for treatment. She has two sons of her own and both she and her husband are unemployed. Pashke's injuries are minor however, for an accident that could have killed or seriously injured her and other members of her family. She describes coming back to this compound after the war:

"Our house was destroyed by the NATO bombing. It was 25th June 1999, the first day that we came back here. I had stayed in Kosovo all through the war so I was the first to come back to the house. I started cleaning around and there were these yellow tubes; I had no idea at that time what bomblets were.

"The local UCK guys didn't know either. They said that they were not dangerous and that they were parts of other exploded bombs and could be piled together. There were lots of them here in the compound but the UCK said it was OK, they spoke to my father also. The UCK picked up a lot



Pashke Gojan-Pepa

of cluster bombs from here, maybe 15 or 17 of them. One man put them on his bicycle and rode to Gjakova to take them to the Italian KFOR troops.

"I was always suspicious of these items and thought they might be dangerous. I didn't move any of them even though the UCK guys said it was OK. My brother is braver though and when he came back here he told me not to be so stupid, that they are safe. First he shook it and then looked into the end of it and said 'why are you being so stupid this is safe – look I am throwing it'.

"I tried to tell him not to, but he was making a point – I remember hearing the explosion then I was gone. I was pregnant at that time and standing

there with my older son. He was very traumatised after this and cried for a fortnight or more non-stop. It was a miracle that he survived. After the accident his jacket was burned and his trousers had been torn off but he was physically unharmed. Thank God that he was not badly hurt and that the fragments that hit me did not harm my unborn baby."

Pashke still has pain in the swollen leg and needs to keep it straight. She cannot stand on it for long without becoming uncomfortable. She is suffering circulation problems but is thankful that no fragments damaged the bone. Pashke's sister Tereza was also injured in the same accident, though again not seriously.

People with previous military experience may also be those who civilians turn to for advice and information about the threats that they face. These people represent established authority figures yet their capacity to give useful advice may be extremely limited. Lack of knowledge or understanding of NATO submunitions has led former UCK troops to undertake dangerous behaviour themselves and pass on inappropriate advice to others who trusted their judgement.

Children

Children make up a significantly greater proportion of UXO victims than landmine victims (see Section 2). Children are certainly more likely than adults to pick up items of UXO that they find without knowing what these items are. In many rural communities children are responsible for herding animals, a job which can take them over large areas of their local environment.

Children learn from the people around them, and often discover that contact with UXO (or at least military debris) is not stigmatised and may in fact be central to the family economy. (Of course, this point is significant not just for children but for the whole post-conflict population.) One interviewee noted that:

“People in post war countries are often very blasé about weapons and ordnance. Soldiers particularly often keep guns and explosive ordnance in their homes and children come into contact with these there. This familiarity takes away much of the sense of danger about these items and makes them commonplace instead.”²⁷

Children’s attitudes towards UXO may be conditioned by the behaviour of their parents and other adults. It is difficult to persuade children of the dangers if they are living in an environment where family members rely on UXO as an economic resource. In the Cambodia case study below, children play with UXO and deliberately seek to detonate it. They also take the explosives out of items to make improvised fireworks. They have been repeatedly told that this is dangerous by local people but such messages are undermined by the fact that other adults consistently salvage scrap metal and use explosives for fishing.

The risk involved in playing with UXO can be part of its attraction. Although it may be argued that children do not have a realistic understanding of the danger, much

of their interaction with UXO appears to be done in the knowledge that some risk is attached.

The size and shape of munitions may make them attractive to children. In Lao PDR and Cambodia the spherical bomblets of the US cluster bombs resemble balls that children might play with. In Kosovo and elsewhere the bright colours of certain munitions have been noted as interesting to children. Recently, Landmine Action [2001] strongly criticised the use of the BLU97 cluster submunitions, dropped on Afghanistan by the US Air Force. As reported above, this sensitive and powerful submunition was found to be particularly problematic in Kosovo, with high failure rates; the bright yellow colour and small drogue parachutes of the submunitions made them especially interesting for children.

Time and conflict

The relationship that communities have with UXO contamination can change over time as understanding develops and social and economic requirements change. The initial relationship with the source of UXO contamination may also have an effect on the way it is perceived. In Lao PDR, where people have been living with UXO contamination for some 30 years, a close working relationship with UXO has developed in many of the most heavily contaminated parts of the country. In these circumstances, beliefs have been established about the degrees of threat presented by different individual types of munition and also about the danger presented by UXO as a whole.

MAG [1998, p.5] reported:

‘In Xieng Khouang, many villagers express a belief that the more corroded a piece of UXO, the less dangerous it is. This has resulted in practices such as pouring salt on UXO, urinating on it, or depositing it in water to accelerate decomposition. In fact corrosion can actually make an item of UXO more likely to function.

‘[...] Some villagers have gained prestige from their ability to dismantle items of UXO. If several dismantlers are killed over a period of time in one village, the remaining dismantlers achieve even greater expert status by virtue of the fact that they are still alive.’

Accurate or not, ideas such as this can, over time, condition people’s perception of the UXO threat.

CASE STUDY

Phum Pring village, Cambodia

On the western edge of Phum Pring village is a military camp. It has been the site of military camps since the Lon Nol period and the land behind it is littered with huge quantities of UXO and deteriorating explosive ordnance. The ground has been dug away to provide soil for road construction and the bed of this quarry contains hundreds of visible mortars, rockets, artillery shells and rifle grenades. Some ordnance is collected together in piles; other items are lying around individually. The soldiers have moved most of the rockets to lie in the small pools of water that have collected here during the rainy season. They say that they have had problems with rockets detonating spontaneously in the heat. As well as the items on the surface, the soldiers report that the ground beneath also contains a large number of buried items.

Un Vuthy, one of the soldiers at the nearby camp, has tried to keep children out of the area but to no avail:

“One child was killed and another injured here recently when they were playing with UXO. The children take items away from here to play with or they come here and try to burn them to get them to explode. It is exciting for them. They know that there is danger but want to do it. I have tried to chase the children away but they just come straight back. At the base of this tree you can see where they have built fires. Some items they just burn here but with others they take the explosive out and put it in these tin cans. They make small holes in the can to try to make a kind of firework. It is not just dangerous for them. One item that they burned – I think it was an RPG – flew into a farm nearby. The children learn these things from the ex-soldiers who used to take the



Rockets at Phum Pring

explosives out of ordnance – they copy what the adults do.

“Villagers from around here also try to take the copper out of some of the ordnance. One person was injured here because he was trying to get copper to sell in Kompong Speu town. It is just to give them a bit of money to live from day to day because the people here are poor. Another man was killed at the river near here, trying to fish with explosives. He went into the water to find out why it had

not exploded and it killed him. For the adults it is poverty that causes these things. The children are just copying and looking for excitement.

“The pits all around here are from where we have been digging the soil to sell for road construction. One time there was still UXO in the soil when it went on the back of the truck to Kompong Speu. It exploded when the truck was driving along but nobody was hurt. It was probably not a big thing, perhaps a rifle grenade.”

People who move items regularly will come to believe after a while that this practice is safe. However, their convictions may be reassessed when an accident intrudes upon this developing confidence.

According to surveyors who have been gathering information from across the whole of Cambodia, opinion on the problems caused by UXO and submunitions is often divided within and between communities. One reason for this is the long-standing nature of the problem. In affected areas, people have been living with UXO contamination for nearly thirty years; for many people this means their whole lives. When there is an accident, local opinion and anxiety over the problem becomes heightened and UXO becomes seen as a cause for caution and concern. With no further accidents, this anxiety subsides over time and UXO melts again into the array of established dangers that provide the backdrop of rural Cambodian life. The impact of UXO in terms of land denial is not static and can change in relation to recent experiences of the threat.

In Kosovo, the attitude towards cluster submunitions was also conditioned by political issues. Submunitions were the result of actions by those perceived as friends, whilst landmines were left by Serbian forces. It has been suggested that this led local awareness education staff to focus particularly on landmines rather than submunitions:

“There was a general avoidance of the subject during their mine awareness education work in schools and with adult groups, even when they had been specifically advised to give this information.”²⁸

Social display through risk taking

The way individuals tackle danger, as an indicator of personal character, is a preoccupation in many societies. UXO provides a source of risk which people can use to express their willingness and capacity for bravery. Where the young are concerned, the need to construct peer group identity is perhaps more pressing and their understanding of the actual risks involved is more limited.²⁹

This status-building role is not just confined to children. In Kosovo, former UCK members and people claiming to be UCK members undertook to remove and dismantle

large numbers of mines and unexploded ordnance. Such public service was often done in front of others, as a form of social display.

Risk and magic

In post-conflict communities, fear can become engrained in everyday life; people have no option but to face the sources of fear in their environment.

In Cambodia and many other countries, this fear may be suppressed by resorting to devices that are empowered through local belief systems. Protective charms are used, particularly by people who consider risk to be part of their daily lives. In western militaries, many people will carry lucky charms of some kind – although their perception of the effectiveness of these charms may be very different from that of other countries and cultures. In Cambodia tattoos are particularly common. They are often acquired by soldiers to provide protection in conflict and carry writing in the ‘Pali’ religious language.³⁰ One deminer working for an NGO in Cambodia boasted two bullet holes in his abdomen that supported the power of his tattoos, if not to divert the bullets completely, at least to ensure survival. In Lao PDR a special metal Buddha was worn by an EOD technician who believed it had the power to stop machines from working and protect from explosions and weapons. Where very specific powers are attributed to charms, other criteria must also be met: the tattoos of the Cambodian deminer had to be accompanied by a particular diet that forgoes eating dogs and some other animals, and also by good moral practice.

Although people who live with risk commonly invest items or practices with power to manage that risk, this does not completely override their own sense of agency in the work that they do. Charms engender background reassurance, supporting people in the dangerous activities that they are forced, through necessity, to undertake. Handicap International [2001, pp. 54-55] state that:

‘...there are strong associations made between village deminers and various magic ‘devices’, which are believed to protect the owner from harm. Village deminers often do have tattoos, or keep protective charms such as Pali inscriptions or forest pig teeth, usually obtained during their military days. However,

CASE STUDY

Jahoc village, Kosovo

The people of Jahoc, just a few kilometres west of Gjakova, were stopped by the Serbian police from leaving their village during the war. They stayed throughout the bombing campaign, usually sheltering in the basements of their houses. The village was bombed several times.

“All we remember is metal pieces coming like a rain. I was afraid the house would fall down. Looking out you could see the neighbouring villages in flames.”

Nikollë Balaj recounts the story of an accident that occurred shortly after the end of the conflict:

“On the 19th July 1999, a former UCK commander was trying to defuze mines and UXO that he had collected on the hillside above the village. He had gathered together some VJ mines and

some cluster submunitions as well. He had put them in the car, brought them to the village and was sitting in the car working on them. Children and men from the village were gathering around to look because the guy was brave and they wanted to see him at work.

“My brother Tom ran out because my son was there and he wanted to get him away. I think he knew that it was dangerous.

“The man in the car was trying to get the fuzes out. I don’t know if he was working on a mine or a cluster bomb. He was inside the car and the other people were outside it, looking in. He had said that he was a specialist at dealing with mines, that he knew all about dangerous items and that the people didn’t need to worry.

“All they found of that guy was his legs. A fragment of metal hit my

brother in the head and he was killed instantly. One of the gypsies had a fragment go through his throat and he also died very quickly.

“My son can only hold his hand in a twisted position. He lacks muscle power in the arm. Perhaps it is a ligament injury. He was in hospital for more than two weeks after the accident. The whole family is unemployed so we cannot afford further treatment for him. But thank God that he is still alive. Three other people, local gypsies, were injured in the blast.

“I don’t know why that commander chose to come here – all I know is that he made us suffer.”

Forced to stay in Kosovo throughout the conflict, the family had received no awareness education at the time of the accident.

the majority of village deminers interviewed during the qualitative research said that they no longer had any confidence in these protective objects, and that they can only be protected by their own knowledge.’

The report is careful to note that even where they do persist, such objects do not usually replace

‘a realisation that safety is also linked to safe practice, care and attention’. These objects probably condition the overall framework of risk analysis that people are working within, rather than operating on specific actions within that framework.

25 This report suggests that 41 per cent of informal deminers surveyed addressed UXO contamination (either solely or as well as landmines).

26 BICC, 2001, p.29: ‘Post-war society in Kosovo is divided between active participants in the military campaign and non-combatants. Former members of the KLA strive for public recognition as war heroes. War memorials and mass publications celebrate the heroism of KLA commanders, individual fighters, and ‘martyrs’. Former membership of the KLA is thus a source of prestige, particularly if the person served in a leading position.’

27 Conversation with Aneesa Pasha, Community Liaison Advisor, MAG.

28 Conversation and email correspondence with Aneesa Pasha (Community Liaison Advisor, MAG).

29 Paul Davies sees this in the light of south-east Asian culture in Kumar (ed) 1997, p.247: ‘These patterns emerge as a result of children playing with unexploded ordnance, which – as in Laos – is often found lying on the surface rather than buried in the ground as with mines. Such unessential ‘adventurist’ risk taking, especially amongst children, is prevalent in both Cambodia and Laos where the warrior is revered and martial ethos is predominant. Fortunately, the unessential nature of this risk taking means it may well be possible to have a significant impact on such behaviour through community awareness education campaigns.’

30 Seanglim Bit [1991, p.64]: ‘The position of the spirit world in the Cambodian belief system is well established and provides justification for the use of amulets and magical potions for soldiers entering battle; it underlies the strong belief in the utility of astrology to guide decision-making for all levels of the society, and offers an explanation of why fortuitous and malevolent things occur at all levels of social interaction.’



6 Cluster munitions

This section examines

- *The particular problems caused by unexploded cluster munitions*
- *The contamination of a displaced persons camp in Eritrea by UK-manufactured BL755 cluster munitions*
- *How concern for the safety of others, especially children, can lead people to move UXO out of a sense of responsibility*

BL755 cluster bomb container, Eritrea

Cluster bombs have a controversial past. Prokosch [1995] charted both the development of cluster bombs and the emergence of popular protest against them. The initial protests within the USA, during the Vietnam War, were particularly focused on the capacity of these weapons to inflict civilian casualties at the time of use. In recent years cluster bombs and their submunitions have come under increased scrutiny for having apparently higher failure rates than ‘unitary’ (single warhead) munitions. This, coupled with the large numbers in which individual submunitions can be used, causes serious UXO contamination.

Both Cambodia and Kosovo are contaminated by unexploded cluster submunitions. The US bombing of Cambodia in the first half of the 1970s, in support of the Lon Nol Government against the Khmer Rouge and in an effort to interdict sections of the Ho Chi Minh Trail, has left an enduring legacy. The GeoSpatial International Cambodia National Level One Survey Project in Cambodia has evidence of at least 17,235 United States cluster bomb attack sites – although the

actual number of bombs dropped on each of these target sites is not known. In Kosovo in 1999, British and American forces used cluster bombs extensively against Serbian positions, facilities, armoured vehicles and troops. NATO submunitions have killed more people in the post-conflict period than Serb-laid landmines, and are the primary UXO problem in the province.

Afghanistan

Cluster bombs have been used again during the US bombing of Afghanistan – the same BLU-97 bomblets as were particularly criticised for their post-conflict impact in the wake of the Gulf War and the bombing of Kosovo. Concern has also arisen over the colour of the unexploded bomblets, which is similar to that of US air-dropped food parcels. Human Rights Watch (2001) noted that:

'BBC Worldwide Monitoring reported that U.S. Psychological Operations units broadcast a radio message warning Afghan civilians of the similar yellow colour of the cluster bomblets and the food packages, noting that cluster bombs will not be dropped in the areas where food is air-dropped but stating, "[We] do not wish to see an innocent civilian mistake the bombs for food bags and take it away believing it might be food".'

Extensive media reporting of cluster bomb use in Afghanistan, along with criticism from leading politicians, confirm that these weapons are developing a public reputation for causing an excessive post-conflict threat.

High-density contamination

Cluster submunitions present certain consistent forms of UXO contamination. A number of factors make their impact more acute and more threatening. Some of these are social, above all, poverty. Others relate to the nature of the contaminated environment: density of UXO within an area, the presence of sub-surface UXO, and other factors such as vegetation.

The use of cluster bombs is capable of producing both a high density of contamination and sub-surface contamination. Submunitions consistently produce the more problematic forms of UXO contamination. Within this category, some types are more threatening than others and are generally more sensitive when

encountered as UXO. Similarly, some types will be more prone to failure than others.

Unexploded ordnance is often particularly threatening to refugees and the displaced, who must return to their homes in former conflict areas and try to live with and around the problems. It is particularly disturbing that the population in the case study on the following pages has been co-existing with the problem in their place of refuge.

Future impact

Air-dropped cluster munitions have been, to date, the weapons of major powers. But land-based delivery systems for submunitions, notably multiple launch rockets systems, make them practical and affordable for many more militaries. Given this, and the consequent likelihood that large numbers of submunitions will become more common amongst explosive remnants of war, it is right to scrutinise both the weapons themselves (in an effort to reduce their post-conflict impact) and the decision-making that approves their use.

In modern conflicts, the moral authority of a military intervention stands increasingly on its ability to single out enemy targets from within a broader society with which it claims to have no quarrel. The plausibility of the claim – that a military has done all it can to minimise civilian casualties – is becoming ever more important, both in the immediate use of weapons and the long-term impact if they fail to explode.

With the growing number of specialist NGOs able to comment on these issues, this capacity for discrimination is more often scrutinised by the international community. It is a powerful tool in the armoury of conflict propaganda and one which can be used by both sides: by those who are claiming to discriminate and those who claim that such efforts are failing and that civilians are bearing the brunt of attacks. The way in which the appropriateness of different weapons systems is evaluated for the achievement of particular ends says a great deal about how much this concern for civilians is either central to political decision making or has merely become part of the rhetoric of war.

Awareness of the exceptional post-conflict impact on civilians caused by cluster munitions will undoubtedly undermine public support for future military interventions when these weapons are used.

CASE STUDY

Korokon camp, Eritrea

The people living in Korokon camp are internally displaced people. They are waiting to return to their homes in areas near the disputed border with Ethiopia, homes that they fled when war broke out in 1998. The fighting was to last for two years and now, despite a cessation of the conflict, many still cannot return.

Many people in the camp are from areas around Shilalo in the west. People have only recently started returning to this town since the land has been made safe from unexploded ordnance. Just to the south of Shilalo and spreading east and west, the trenches of the Ethiopian and Eritrean forces cut across the landscape. Around these trenches minefields of PMN blast mines and POMZ fragmentation mines are being cleared by international agencies. There are anti-tank mines on some of the old Eritrean roads: the Ethiopian military built new roads when they occupied the area so as to avoid the mines.

However, it is unexploded ordnance rather than landmines that currently causes the greatest number of accidents.

In Eritrea UXO is pervasive. In its different forms it has been scattered around large areas of the country. As well as contamination around the recent battle areas along the Ethiopian border, there is still a legacy from the 30-year struggle for Eritrean independence that ended in 1991. This contamination persists in areas well away from the recent front lines.

Korokon was a small community that has now become a substantial refugee camp. The camp is spread around a bowl of land between seven low stony-topped hills. Where people are living on the hillsides the land is dusty and barren, but the bowl drains water from these slopes into a low valley of more fertile land stretching to the west.



Cluster munitions being destroyed near Korokon camp

The rainy season has seen the camp swell to some 17,000 occupants as the government has relocated people from Kotobia and Tologomja camps into Korokon. The rains make these smaller camps impossible to reach. The relocation means it is easier to administer the camps but it places a great strain on resources in Korokon. There is a Health Station staffed by a nurse and pharmacist, a medical service appropriate for a community of about 5,000, but no doctor or ambulance. The site of the camp has provided ample space for expansion and despite its growth the houses are not densely crowded together. However, recent expansion has led people to live even closer to a large number of unexploded submunitions.

The Ethiopian forces used cluster bombs to attack Eritrean positions from the air. One such attack was undertaken on Korokon in May 2000.

On some of the hills on the northern side of the camp, low stone walls suggest that previously there may have been military positions. However, according to the camp administrator and other people who were in this area when the bombing occurred, no military forces were here when the air strike happened:

“It was 9th May 2000. There were 7,000 families here at the time of the air strike but no military personnel. They had retreated through this area already. The aircraft came in low and dropped the cluster bomb cases one at a time. They dropped more than ten cases I think. Only one person was killed in the air strike, a young child. Everybody just ran to find somewhere to hide.”

One reason for the low number of casualties during the bombing was the very high failure rate amongst the



The impact of unexploded submunitions at Korokon

Working for the first time in Korokon in January 2001, the HALO Trust found and destroyed 402 BL755 submunitions from the playground of the school and rough grazing land nearby. HALO also cleared PTAB and AO-1 submunitions as well as mortars and grenades from a section of the road that provides access to Korokon from nearby Shombuko. During the clearance in the camp, they noted that local people (both children and adults) seemed accustomed to moving the bomblets around. Overnight, additional bomblets were placed near a marking post in an area that had previously been cleared, an effort by local people to assist with the clearance process. HALO found two cluster bomb containers that still contained submunitions, some of which were also moved overnight.

During a second phase of clearance, four empty cluster bomb cases were located around a dry stream bed to the south-east of the camp, some 200m away from the nearest houses. Further up the stream bed, Teclemariam Keflezghi, a local man, points out two items that he buried after finding them in the stream. One is clearly visible as a complete BL755, the other is buried out of sight. Like many of the other adults who have moved submunitions around the camp, he states that he was not worried for himself but was concerned for the safety of the children.

Away from this area, severe levels of contamination remain on the north-western side of the camp. At the bottom of the wadi running down from the sandy land below the north-western hills of the camp there is an empty cluster bomb canister. Following the wadi up the low slope, there are around seven BL755 munitions. Some have been hidden

here by local adults, others have either landed, washed here by the rains or carried by children. The wadi is used as a latrine by many of the people on this side of the camp and the sight of human excrement next to unexploded submunitions gives a clear indication of the proximity in which people have been living to these weapons. The sand is constantly reshaped by the water of the rainy season. The metal crown of another BL755 becomes visible out of the silt after a night of rains. The land is also in constant use, as an access route to other areas of the camp and for grazing animals close to the houses. People live on the land where it starts to turn from sand into the stony ground of the hillside.

Above this area, following the hillside round to the north, the rocky slopes are covered in munitions either whole or in parts. Metal crowns, fuzes, copper shaped-charge cones and fragmentation casings are scattered amongst some 20 or so complete munitions that could be found during a cursory walk-through of the area. This land is used by child herders, moving their animals through to graze north of the camp. The slope is capped by the low walls of former military positions.

munitions that were dropped. The legacy of this bombing is a refugee population which has been living amongst large quantities of unexploded ordnance for more than a year. Many people who remain alienated from their homes due, amongst other things, to the presence of unexploded ordnance near to the former battle lines, must live with the same problem in the place where they have sought or been given refuge.

Even after Eritrean military engineers and teams from the HALO Trust have undertaken work around the camp, new munitions are still being found. The HALO Trust is now working in Korokon again, clearing new areas of contamination.

The BL755 submunitions that litter the camp were manufactured in the UK by Hunting Engineering Ltd (now Insys).



Unexploded B755 submunition, Korokon camp

CASE STUDY

Korokon camp, Eritrea (cont)

Although apparently abandoned by the time of the bombing, these were the likely targets of the Ethiopian attack. After the bombing, these positions were claimed by children, as a place to play and in which to hoard the items that they found across the slopes nearby.

Coping with the problem

The people living closest to the densest remaining areas of cluster bomb contamination have been living in fear for their children. A group of the men living here have moved and buried a large number of the munitions. On the sandy silt of the low bowl they have hidden them in the deep cracks which run as tributaries into the central wadi. They have then put a bundle of thorn branches over the crack as both a deterrent to children and a makeshift marker. Another man buried two in the sand next to a bush – he has marked the site with two stones. Further up the hillside there are still more hidden items, either gathered together under thorn bushes or buried under small piles of stones. They believe that they have hidden and buried more than 20 items around the hilltop. They are unanimous about the reasons for their actions: concern for the safety of their children.

Tzagia Manna (70) has hidden and buried a considerable number of the BL755 submunitions.

“I don’t know if they were live or not but I was afraid that the children would play with them and be killed. You can see the children here – they have no real toys. They will pick up anything in front of them, if it is interesting. These children do not know about the dangers and cannot understand them. They are not afraid, even when we tell them of the danger and tell them to go



Tzagia Manna

away. But I know that ten or 20 children could be killed by playing together with these things. So I have moved them out of the way myself.

“I was not afraid when I was moving them. I did it very carefully and gently. I just moved them as little as possible to put them in a hole or out of the way. And I am an old man – living here in this camp. If I die moving these things because I am worried about the children then so be it – if it is between me and them it would be better that I die.”

Tzagia and his wife, together with most of those who have recently been settled along the north-western slope of the camp, had no warning or knowledge that the area was littered with explosive debris.

Although the men here are able to recall and point out the areas where they have buried items, their efforts are no match for the children who are spending their school summer holidays playing and herding animals across this area. They know the

locations of many more items, both in and around the wadi and up on the hillside nearby. Boys and girls alike are eager to report what they have found.

Failure rates

The failure rate among the items dropped here is extremely high. Assuming ten canisters were dropped, each containing 147 submunitions, the 402 submunitions destroyed by HALO and a further 23 seen during a preliminary walk through of the site suggest a failure rate of almost 29 per cent. In addition to this, local people state that the Eritrean military engineers had already destroyed a large number of bomblets. The actual failure rate here seems likely to be very much higher.

A large number of the submunitions also appear to have broken up on impact with the ground. This, plus the large number of whole, unexploded submunitions, suggest that many of them had not had time to arm before impact.

Children and submunitions

Amotetzion Ghebrehewit lost her son to one of the submunitions that litter areas of the camp. She and her son had lived through an air strike in Deda in 1999 in which her sister was killed by a napalm bomb. Her husband died some years ago. She is from Ado Allah, a village close to the border and still inaccessible; the family fled from there during the first part of the conflict in 1998.

“By the Ethiopian calendar, my son Golom, was killed on 24th August last year [2000]. By the European that would be 4th or 5th September. He was 16 years old then. He was just playing – I didn’t know what he was doing or that it was dangerous.”

Her son was killed trying to crack open a BL755 bomblet with a stone. Some of the children had taken to using the bright copper cone of the ‘shaped charge’ to make bells for their animals. They would collect them from amongst the debris of the ordnance or try to prise them out of complete submunitions, and hang two cones

together on string around the animal’s neck to make the bell. Golom might have been doing the same or he may just have been investigating the unusual object. When the submunition exploded it caused a severe head injury; his friends believe that this is what killed him. His right arm was cut off at the shoulder. People brought a car over as an ambulance but he was already dead.

Golom was killed on the north-western slope of the camp, below a water tower near to which children had been collecting submunitions together. On top of the hill, in a small stone enclosure that was probably an old military position, the children had made a den. Inside were some 20 BL755s when the HALO Trust first searched the site.

At the time of the accident, no one was living in this area, which was just grazing land and a place where the children played. With the onset of the rainy season, however, more people have been moved to Korokon and the contaminated slopes are now home to a substantial population.



Golom Ghebrehewit's aunt

The failure of so many submunitions to arm before hitting the ground contributed to the scale of the remaining contamination but also probably to the lack of further casualties. Although still dangerous, many of these munitions are not as sensitive as they would be if they had completed their arming cycle.



7 Conclusions and recommendations

Significant UXO contamination presents an enduring problem for post-conflict communities. This is similar to the problems caused by landmines, but this report has highlighted some important differences.

UXO casualties

UXO has a greater propensity to kill than anti-personnel landmines. Accident survivors may suffer a range of serious injuries including loss of limbs, blindness, burns and puncture wounds. These injuries can cause long-term social problems for accident survivors and make them economically dependent on others.

In Cambodia and Kosovo, statistics show that men make up the majority of UXO victims, while children are more likely to fall victim to UXO than landmines.

Most UXO accidents occur when people are going about their daily work. People have accidents with UXO through a combination of:

Locating sub-surface UXO with a large-loop detector, Kosovo

- accidental contact
- deliberate contact without a realistic understanding of the danger
- deliberate contact because of fear of more dangerous contact – to use land safely and to protect children
- deliberate contact because of poverty and economic need – clearing land, salvaging scrap metal or using explosives.

Deliberate contact ('tampering') is a significant cause of UXO accidents but this category is problematic and does not tell the full story. In Kosovo, a significant proportion of victims did not initiate the explosion themselves but were bystanders. For both Cambodia and Kosovo, a substantial proportion of remaining accidents are linked to activities which are central to the rural economy. In Eritrea, people moved UXO out of a sense of social responsibility, and in particular to protect children.

Land denial

A number of factors make land denial caused by UXO more likely to be absolute. Area contamination, subsurface UXO and dense vegetation or debris make the threat of unexploded ordnance seem greater and land denial more likely. Soft ground and dense vegetation also increase the likely failure rate of munitions. So areas of subsurface UXO and UXO in vegetation are also likely to have a greater density of unexploded items.

The denial of one area of land can shift patterns of land use around the community. Suspect land, when it is not completely abandoned, may be used for different purposes in an attempt to minimise risk. In addition, where other economic options are available, people are clearly less likely to feel forced to take the risk of using contaminated land. Economic inputs from NGOs can reduce pressure on local resources and thereby alleviate the impact of UXO in these areas in the short term. This emphasises the need for partnership between the mine action sector and relief and development projects to present a broad package of assistance to communities, to alleviate pressure on the contaminated environment whilst UXO and landmines are being cleared.

Ultimately, land denial not only affects economic productivity; it can also produce wholesale change in

traditional social and economic practices. At its most extreme, whole communities may be abandoned.

Reconstruction and development

The presence of UXO prevents the use and rehabilitation of infrastructure and community resources, including housing, water and irrigation systems, paths between villages, schools, clinics and markets. These commonly need UXO clearance to allow their use or construction to go ahead.

Unexploded ordnance can also have a severe effect on development, exacerbating poverty by impeding agriculture and the resumption of commercial activities. For example, this research found the reconstruction of a company in Kosovo has been halted by the presence of large quantities of UXO; and in Cambodia, UXO stopped villagers in subsistence communities growing food or opening up new land for farming.

UXO and poverty

For those living in poverty, UXO can be the mainstay of economic survival. People who are economically marginalized within communities may find that UXO is one of the few resources available to them. As a result, demand for scrap metal can lead impoverished communities – including children – to interact with ordnance. But the value of UXO is not always in its price at sale; metal and explosives from munitions are used in construction, farming and fishing. In some cases, however, perceptions of the potential value of UXO may be based on mistaken ideas and rumours.

Social factors

The social forces that affect the way in which individuals and communities relate to UXO in their environment are complex and vary from culture to culture.

The location and 'intrusive' nature of agricultural work is significant in increasing the likelihood of UXO accidents among those most likely to carry out these tasks.

Men are more likely to have had military experience – which provides familiarity with many forms of explosive ordnance and can promote misplaced confidence as to how UXO can be interacted with safely. Demobilised

troops may be uncertain of their social identities in the post conflict environment; their skill and bravery in addressing UXO contamination is a dangerous source of status. As well as interacting with UXO themselves, former military personnel may be authority figures that other people turn to for advice, although they may give that advice without real experience, resulting in accidents.

Children are more likely to pick up items of UXO out of ignorant curiosity, and their work within some rural communities (particularly herding) can take them across large parts of their locality so that finding UXO is more likely. Where children are aware that UXO is dangerous they may have an unrealistic grasp of what this danger involves, being unable to conceptualise death or the loss of sight and limbs as permanent damage. Making UXO explode is exciting to children, and they can compete to show how brave they are in doing so.

Both adults and children who deal with UXO to display skill and bravery are unlikely to keep crowds at a safe distance. This is a factor behind the large number of 'bystanders' injured in UXO accidents.

The historical relationship of a community to a conflict produces different understandings of the UXO threat that can change over time. Living with UXO contamination for a long time allows beliefs to develop about UXO and how to interact with it.

Cluster munitions

International awareness and concern is growing regarding the post-conflict impact of unexploded submunitions. Some cluster submunitions have higher failure rates than other forms of explosive ordnance. This, combined with the volume of submunitions that can be disseminated very quickly, leads to particularly severe wide area contamination on both the surface and underground. This poses huge problems for post-conflict populations.

The proliferation of cluster weapons is being accelerated by the development of more land-based delivery systems, which will be practical and affordable to a wider market.

Recommendations

New international humanitarian law to minimise the legacy of future conflicts is urgently required. States Parties to the Convention on Conventional Weapons should move with the urgency this problem deserves to negotiate a new protocol on explosive remnants of war. But there must be a recognition that the only truly effective way to protect civilian populations is by eradicating UXO, both in the immediate aftermath of conflict and longer term.

The key elements of a new protocol should therefore include:

1. The users of explosive munitions, including cluster submunitions, should be responsible for the clearance of unexploded ordnance, or for providing financial assistance sufficient to ensure its clearance, without delay, after active hostilities have ceased. Where necessary this should be implemented by appropriate humanitarian mine action NGOs under the auspices of the UN, and in every case to recognised International Mine Action Standards (IMAS). Agreements to terminate hostilities, peace negotiations and other relevant military technical agreements should include provisions allocating responsibility, standards and procedures for signing off land as cleared. Alternatively a post-clearance charge, audited by specialist neutral observers, should be allocated by the UN following clearance.
2. Technical information to facilitate clearance should be provided to the UN and clearance organisations immediately after use. This should include accurate data on types of ordnance used, geographical locations and render safe procedures.
3. The users of weapons likely to have a long-term impact should provide appropriate information and warnings, such as awareness education, to civilians both during and after conflict.
4. Given the particular problems caused by cluster submunitions, specific measures are also necessary to require military commanders and responsible politicians to minimise the density and size of post-conflict cluster munition contamination by considering the environment within which potential targets are located. The International Committee of

the Red Cross have proposed a prohibition on the use of cluster munitions in or near concentrations of civilians.

5. The users of explosive ordnance should consider their responsibility towards the survivors of UXO accidents. As with landmines, people who have been injured or disabled by other explosive remnants of war will require at least some of the following: emergency first aid, medical care including surgery, physical aids or prosthetics, psychiatric support, and assistance for long-term social and economic rehabilitation.

In addition:

- awareness education should address the cultural and social factors identified in this report, for example recognising the need to target specific messages about UXO at groups such as children and former fighters;
- UXO clearance should be integrated with wider development programmes to alleviate the impact of UXO before clearance is complete.

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