

Circle of Impact:

The Fatal Footprint of Cluster Munitions on People and Communities

Executive Summary

The full report is available on www.handicapinternational.be

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Key findings

AFGHANISTAN

- Boys between five and 14 tending animals are most likely to become cluster munitions casualties.
- In the immediate aftermath of the 2001-2002 strikes, cluster munitions casualties constituted 10 percent of casualties.
- An estimate indicates that there are between 2,814 and 4,132 cluster submunitions casualties in Afghanistan.

ALBANIA

- The total number of cluster submunitions casualties is 56: 10 killed and 46 injured. Most casualties were caused by KB-1 and BLU-97 cluster submunitions.
- The areas contaminated with unexploded cluster submunitions are among the poorest in Europe.

BOSNIA AND HERZEGOVINA (BIH)

- There were at least 92 cluster submunitions casualties, mostly during strikes.
- The typical profile of a post-conflict casualty is a male of working age carrying out livelihood activities.
- The cluster munitions problem is likely to be worse than estimated.

CAMBODIA

- Differentiation of cluster munitions casualties started in September 2006. So far, 127 casualties have been identified.
- Handling cluster submunitions was the leading activity among all casualties, at 55.9 percent.
- Boys in the six to 15 year old age group were 37.8 percent of all cluster submunitions casualties and 47.9 percent of all handling casualties.
- One-third of all cluster munitions fell within one kilometer of villages.

CHAD

- Incomplete data collection does not differentiate ERW casualties, but ERW casualties are on the rise.
- Young male shepherds are most vulnerable to ERW, which block access to water and resource areas.

CHECHNYA/RUSSIAN FEDERATION

- Cluster munitions were used extensively by Russian Federation forces in highly populated areas.
- The total number of cluster submunitions casualties in Chechnya is not known, but there are at least 636 reported casualties.
- Cluster submunitions contribute to war devastation and delay reconstruction.

CROATIA

- Most cluster submunitions casualties occurred during strikes: 206.
- In the post-strike period, boys playing are the most vulnerable group.

ERITREA

- Despite incomplete casualty data, children and internally displaced people (IDP) seem to be most vulnerable to cluster submunitions contamination.
- Cluster submunitions contamination mainly affects rural areas and activities.

ETHIOPIA

- Incomplete casualty data impedes analysis of the human impact of cluster munitions and mines/ERW in general.
- Unexploded cluster submunitions seem to pose a limited and localized threat on farm and pasture land.

IRAQ

- Casualties are underreported in Iraq, especially casualties after strikes.
- A total of 2,989 casualties have been identified.
- Clearance is hindered by the security situation.

ISRAEL

- The human impact of cluster munitions in Israel appears to be limited but the full scope of the problem is not known as the “Israel Police Bomb Disposal Division collects the data but a large portion of the data is classified and cannot be used for research purposes.”¹
- At least 13 casualties occurred during cluster munitions strikes.
- Clearance of unexploded ordnance took six months.

KOSOVO²

- Cluster munitions were used by NATO.
- At least 196 cluster submunitions casualties recorded in Kosovo; more than half of the post-strike casualties were children.
- Cluster munitions primarily contaminated the agricultural and forest areas of Kosovo.
- Cluster submunitions incidents involved serious injuries, often resulting in complex surgery including amputation.

KUWAIT

- Cluster munitions contamination, albeit greatly reduced, continues to hinder industrial and commercial development, as well as shepherding.
- At least 198 casualties occurred in Kuwait, mainly during post-conflict clearance. A lack of data on civilian casualties prevents developing an understanding of the full scope of the human impact.

LAO PEOPLE’S DEMOCRATIC REPUBLIC

- Handling cluster submunitions was the leading activity among casualties, at 34.6 percent.
- Boys in the six to 15 year old age group are 23.1 percent of all cluster submunitions casualties and were 41.9 percent of defusing casualties.
- Over 52.8 million cluster submunitions fell within one kilometer of villages.

LEBANON

- The average annual cluster munitions casualty rate prior to 2006 was two per year; in the first four months after the July-August 2006 conflict this was two per day.
- Total casualties of cluster munitions reached 587 as of April 2007. In 2006 alone, there were 215 cluster submunitions casualties, almost 10 times more than the total mine/ERW casualties in 2005 (22).³
- In 2006, cluster submunitions were used as an area denial mechanism, and are predominantly found in or near residential and livelihood areas. They contaminate approximately 36 percent of the land used for livelihood activities.
- The 2006 contamination, 34 square kilometers, is scheduled to be cleared by the end of 2007.

MONTENEGRO

- At least two civilians were killed and another six injured by cluster submunitions.
- Cluster munitions destroyed significant amounts of property and livestock in a small rural community.
- Submunitions remain unexploded in at least two areas and disrupt access to natural resources, causing fear in the affected communities.

NAGORNO-KARABAKH/AZERBAIJAN⁴

- At least 13 casualties due to cluster submunitions have been confirmed in Nagorno-Karabakh.
- Cluster submunitions contamination has been identified in at least 162 locations.

SERBIA

- There are at least 94 casualties due to cluster submunitions, and possibly up to 100 more.
- People in southeastern Serbia have “almost daily encounters” with unexploded submunitions in areas of livelihood activity near villages.
- A survey assessing the full scope of contamination is awaiting release of NATO strike data.

SIERRA LEONE

- A Nigerian intervention force used cluster munitions in 1997 and at least 28 people were injured and killed during the strikes.

SUDAN

- At least 43 cluster munitions casualties are recorded in Sudan, of which several occurred during strikes on civilian targets such as hospitals.
- Land where ERW contamination is suspected remains unused out of fear, despite land scarcity.
- Mines and ERW impede refugee and IDP return.

SYRIA

- A cluster submunition incident was reported in early 2007 involving at least four children.

TAJIKISTAN

- Cluster submunitions casualties were 58.5 percent of all recorded ERW casualties.
- All but three cluster submunitions casualties occurred in the Rasht district, where they accounted for 94 percent of recorded mine/ERW casualties. Three casualties were reported in Panj district in 2007. Two children were injured and one killed. The incident is still under investigation.

VIETNAM

- By gender and age group, boys between six and 15 years old are the most vulnerable population group, at 23.9 percent of all cluster submunitions casualties.
- Ethnic minorities were 14.6 percent of all cluster submunitions casualties, but only 7.9 percent of the population.
- By 1975, 294 cluster munitions had been delivered per square kilometer in Vietnam. This is about two cluster submunitions per person.

WESTERN SAHARA/MOROCCO

- Confirmed contaminated areas cover the east of the berm in the northern sector around Tifariti and Bir Lahlou.
- There were at least four casualties from cluster submunitions in Western Sahara.

Introduction

“They were found on roofs, on beds, hanging by one wing through ceilings, and the only way for the bomb disposal squads to deal with them was to blow them up with a charge just wherever they happened to be...they tied the whole town up for three days – everything came to a standstill.”⁵

Similar words could often be read in media articles relating to Lebanon in the last few months. However, these words were uttered nearly 55 years ago after the British port town of Grimsby was hit with German SD-2 “butterfly” antipersonnel submunitions on 24 June 1943 – one of the first instances of recorded cluster munitions use.⁶ Cluster munitions were first developed and used during the Second World War by the Soviet Union and Germany. Cluster munitions were used extensively as a tool of modern warfare for the first time by the United States in Southeast Asia between 1965 and 1975.

Subsequent decades have seen cluster munitions used in at least 25 countries or areas that are not internationally recognized, and their use has been alleged in several other places. Until the recent Lebanon crisis, cluster munitions use only managed to spark intermittent international interest, and activism was unable to move governments to renege their preference to keep and use cluster munitions. However, calls for a comprehensive international ban of this indiscriminate weapon are becoming louder. Belgium has already taken this step, and many other countries have taken similar actions, such as moratoria, divestments and destruction of antiquated stockpiles. More importantly, Norway has taken the lead on negotiations towards a new international treaty on cluster munitions.

Most discussion in the negotiations will be generated around the definition of cluster munitions, failure rates and technical “fixes.” However, it is important to remember that cluster munitions are imprecise weapons designed to strike a greater surface area than many other conventional weapons by dispersing smaller yet highly lethal explosive submunitions. The submunitions are usually dispensed in the hundreds at the same time, sometimes in the thousands. Scattered on the surface, they create a “footprint” which is often hundreds of meters wide. Within the footprint, cluster submunitions indiscriminately kill and injure military targets and civilians.

Even if we accept the official low failure rates produced under optimal test conditions, in practice a large number of cluster submunitions fail to explode upon impact. Military personnel from user countries consider any post-cluster munitions strike environment a minefield. Due to their sensitivity in comparison with other types of explosive remnants of war (ERW), failed cluster submunitions continue to cause new incidents decades after conflicts.

Since their first deployment, tens of millions, perhaps hundreds of millions, of cluster submunitions have become the most deadly and persistent form of ERW. Unlike the initial blasts, failed cluster submunitions are more discriminate, affecting almost solely civilians. *Fatal Footprint: The Global Human Impact of Cluster Munitions*, a preliminary report in November 2006, found that 98 percent of recorded casualties were civilian. This preliminary report marked a watershed, establishing for the first time in a single document a global frame of reference for the human impact of cluster submunitions.

While technical ways are discussed to reduce the number of casualties, and comparisons are drawn to casualties caused by other weapons or other forms of human insecurity, unexploded cluster submunitions continue to impact hundreds of thousands of civilians, many of whom are children. Spreading through new conflicts, cluster munitions destroy lives, disrupt communities and prevent access to resources needed for economic recovery. The current report seeks to better establish the context, not of the conflicts or their perpetrators, but of the subsequent harm suffered by communities due to cluster munitions use against their “circle of life,” that area encompassing basic human social and livelihood activities in every city, town and village of the world.

The vast majority of cluster submunitions casualties are not only civilians, but occur while people carry out their normal, daily livelihood activities in their usual and accustomed places. The direct socio-economic impact on cluster munitions-contaminated communities and countries is indisputable and cannot continue to be underestimated. Immediate identification and clearance of cluster submunitions from the “circle of life” is the only way to minimize post-conflict casualties, as was shown in Kosovo. In Lebanon, it is acknowledged that emergency clearance and prioritization of livelihood areas was the only way to halt the daily casualties. The experiences of Afghanistan, Cambodia, Iraq, Lao PDR, and Vietnam speak volumes: extensive cluster munitions use generally, and failed submunitions particularly, pose a volatile and generational threat to civilians when clearance efforts are delayed.

The following story is only one among thousands to be told from every country in which cluster munitions have been used against or near civilian populations:

“I have the records of my time in Baghdad...[there were] substantially more individuals who came in my office that filed claims that were valid, that I knew were valid, but I couldn’t pay. Because of the rules associated with the funding, I didn’t always have, week to week, enough money to pay all of the valid claims...I remember one claim where the gentleman...his children were injured by the cluster munition, and they had been playing out in their field, the 13th of August in 03. They saw the object...were attracted to it, went near it, picked it up or touched it, and it detonated. And one of the boys had his

arm blown off; the girl had extensive burns on one side of her body; and the other boy had his eye shot out. And so I was able to pay \$3,000 for the injuries to his children.”⁷

A sum of US\$3,000 paid for the injury of three children is little compensation for the family’s loss of their collective health and well-being, for the boys’ loss of economic opportunity, the isolation for a girl disfigured in the manner described, the anguish of a family one moment whole and the next shattered. Within this report it was not considered appropriate to try to place a monetary value on the lives and well-being of people killed or injured.

Alongside this family stand the majority of impacted civilians for whom even the slightest compensation is far greater than they will ever hope to receive. The countries and regions in which affected communities live are usually poor, underdeveloped, and the economies in which they subsist are primarily agricultural. Already vulnerable, cluster munitions use and the subsequent contamination consequences they suffer only make them more so.

To address the humanitarian needs generated by cluster munitions more adequately and realistically, the research team called upon relevant sources to provide casualty and strike data in their possession. Some have answered that call outright in the public domain or anonymously. Many others have turned a blind eye to changing times: regardless, action on this issue is increasingly being demanded and taken. The story of the innocent civilian *victims*⁸ will continue to be told and recorded to the greatest extent possible.

Additional issues of data collection were identified which need further attention: casualties during strikes are rarely recorded, details on certain groups of casualties are not (made) available, and in some cases media reports are the researcher’s only recourse. When data collection exists, it is not proactive, not nationwide, and often fails to sufficiently differentiate device types, personal details, number of casualties involved, injury types and services provided. Data sets examined exhibit a lack of common terminology, standardized methodology, categories of information collected, and more often than not exhibit poor quality control and verification mechanisms.

This is a research project that has sought to improve understanding of the impact of cluster munitions by documenting short-, mid- and long-term casualties; the cumulative effects of disability and mortality; and the socio-economic impacts on families and communities. While by no means an exhaustive treatment of these impacts, the human character of the impact on affected communities comes into sharper focus.

Although the long-lasting effects of cluster munitions on the security and sanctity of homes and livelihoods are hard facts, they are often overlooked and the subject deemed too broad and interrelated for analytical discussion. However, assuring a secure and productive “circle of life” is the responsibility of all who share it.

On the international front, progress continues. The Third Review Conference of the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons, held from 6 to 17 November 2006, provided an opportunity for Member States to acknowledge and tackle the lasting human impact of cluster munitions – an opportunity which many seized. Entering the conference, six nations were affirming the need for a ban on cluster munitions. By the end of the conference, 25 nations were calling for such action led by the Government of Norway. Subsequently, at the Oslo Conference on Cluster Munitions from 20 to 23 February 2007, 46 states committed to reach a legally binding instrument by the end of 2008. With further meetings set for Lima and Vienna in 2007, and for Dublin in early 2008, there seems reason to hope that a positive end to the treaty process is in sight.

However, the attention the treaty pays to the human impact of cluster munitions will define what long-term actions are taken to meaningfully and consistently resolve the adverse effects these weapons have on those individuals, families, and communities who have paid the price. The true spirit and character of the process will be known by how it addresses human impact.

Katleen Maes
Brussels, 16 May 2007

A way forward to comprehensive victim assistance

Since February 2005, Handicap International has been calling on states to:

- Prohibit the production, use and transfer of cluster munitions;
- Support an international treaty on cluster munitions;
- Destroy their stockpiles of cluster munitions;
- Provide sufficient resources to support individuals, families and communities affected by unexploded cluster munitions and all other ERW.

In February 2007, Norway hosted a crucial conference that led to the adoption of the Oslo Declaration on Cluster Munitions. States joining the declaration committed themselves to “establish a framework for cooperation and assistance that ensures adequate provision of care and rehabilitation to survivors and their communities, clearance of contaminated areas, risk education and destruction of stockpiles of prohibited cluster munitions.”

Inclusion of assistance to *victims* (i.e. the affected individual, his or her family and community) is important, and since the adoption of the Mine Ban Treaty this has become an accepted principle. However, due to the brief nature of the declaration, the lack of explicit mention of social and economic reintegration can be interpreted as a step back from the Mine Ban Treaty, which also includes these two in addition to the (medical) care and (physical) rehabilitation mentioned in the Oslo declaration.

The authors of this report, building on 25 years of HI field experience and nearly 10 years of Mine Ban Treaty monitoring, would like to propose the following suggestions for comprehensive victim assistance.

While not intended to be all-inclusive, a few basic principles of victim assistance are:

- Assistance should not be limited to the directly affected individual but should also extend to his or her family and the affected community.
- Care for *victims* is a long-term issue that needs to continue after the last mine/ERW is cleared.
- Victim assistance involves six components: data collection, emergency and continuing medical care, physical rehabilitation, psychological and social support, economic (re)integration, and disability laws and policies.
- Victim assistance is a human rights issue, assuring equal rights for those affected.
- Victim assistance is not carried out in isolation, but as part of initiatives for other people with disabilities and mine action, as well as cross-cutting public health, development, and poverty reduction strategies.

Victim assistance is the prime responsibility of the affected state, but consistent and long-term support for it by the international community is needed. Victim assistance programming can only be effective if it is based on the needs identified by the *victims* themselves and if they have direct input into policy-making and planning at the local, national and international levels. Assistance can only be sustainable and efficient if it builds on national ownership and systematic coordination between all stakeholders.

The main challenges for victim assistance which we have identified are:

- Access to care: this includes physical access, economic accessibility, and access to information, all of which must be provided in a culturally appropriate manner.
- Variety and effectiveness of assistance: all components of victim assistance should be considered interrelated and equally important. Referral systems need to be in place and need to be reinforced.
- Capacity and sustainability: this includes infrastructure and human resource capacity, which needs to be reinforced by training and increased retention of staff. National and local services should gradually replace international ones, for which national states should seek increasingly diversified funding.
- Rights implementation: implementation of general and specific legislation addressing discrimination against people with disabilities should be reinforced.

- Monitoring of progress: due to the diverse nature of victim assistance and to the voluntary nature of reporting on it, progress for both victim assistance-specific and cross-cutting programs beneficial to victims is not being adequately mapped.
- Prioritization: mine/ERW assistance is often not seen as a priority in comparison to other emergencies, such as conflicts and HIV/AIDS; this is especially the case for cluster submunitions victim assistance.

While recognizing that victim assistance needs to be tailored to the requirements of each specific individual and the affected community, some general principles definitely apply, which need to be addressed in treaty text:

- In order to acknowledge the human impact caused by cluster submunitions and to raise the profile of assistance to those affected, victim assistance should be mentioned under the heading of the general obligations.
- A definition of the cluster submunitions victim should be included under the definitions section, i.e. the affected person as part of a larger group of people with disabilities, his or her family and community.
- Further, a separate article on victim assistance should be created which clearly reflects the varied and complex nature of victim assistance and indicates the dual responsibility of both national and international actors. While this report is not the place to propose such a draft article, the following components would reinforce victim assistance efforts:
 - Each State Party undertakes to provide comprehensive assistance to cluster submunitions *victims*, using existing systems or creating specialized services when needed.
 - Each State Party commits to promote, protect, ensure and report on full and equal access to all human rights and fundamental freedoms by all cluster submunitions *victims*, as well as to promote respect for their inherent dignity.
 - Such promotion includes, but is not limited to: the implementation of data collection, emergency and continuing medical care, physical rehabilitation, psychological support, social inclusion, economic inclusion and reintegration, legal support, disability laws and policies – directly linked with the affected communities (i.e. as close to them as possible).
 - These efforts will be systematically coordinated, planned and prioritized, and roles of responsibility will be delegated to the competent authorities and to the *victims* to ensure national ownership and sustained capacity of the affected states.
 - Where relevant, victim assistance will be linked to broader development, poverty reduction, public health, and disability initiatives.
 - If a State Party believes that it will be unable to ensure the provision of assistance to cluster submunitions *victims*, that State Party undertakes to submit a request to other States Parties indicating the nature of the proposed programs, objectives, assessment of the needs of beneficiaries, circumstances which impede the ability of the State Party to assist the *victims*, and any other information relevant to the request for assistance.
- Under international cooperation, exchange of information and expertise, as well as providing information to the relevant data collection repositories, should not be limited to clearance activities, but should extend to other components of ERW action – including victim assistance. This is in addition to the provision that States Parties in a position to do so will support the assistance efforts of affected states, in cooperation with relevant national and international actors.
- Under transparency measures, reporting on progress in victim assistance, both specific programs and relevant cross-cutting programs, should be obligatory for both affected and donor states.

In addition to the victim assistance-specific components, the authors of this report, together with their colleagues from the Cluster Munition Coalition, believe that a future treaty on cluster munitions must include, as a minimum:

- A prohibition on the use, production, transfer and stockpiling of cluster munitions, as defined;
- A definition of cluster munitions that does not exclude those that have submunitions equipped with self-destruct mechanisms;
- No provision allowing for cluster munitions with submunitions with a certain reliability standard;

- Application in all circumstances, including during conflicts of either an international or a non-international nature;
- A prohibition on providing assistance to anyone to use, produce, transfer or stockpile cluster munitions;⁹
- An obligation to destroy their stockpiles of cluster munitions within a specified period of time, which must be as short as possible;
- An obligation to mark, fence, and clear contaminated areas as soon as possible, but no later than a specified deadline, and to establish and maintain effective capacity to undertake these actions;
- An obligation to provide assistance with marking, fencing and other warnings, risk education and clearance; users of cluster munitions should have special obligations to participate in such assistance, including the provision of timely and detailed information on use;
- An acknowledgement of the responsibility to protect civilians from cluster munitions at all times through the obligations contained in the new treaty;
- A compliance provision committing states to provide maximum cooperation and transparency;
- An obligation to submit annual transparency reports;¹⁰
- A requirement to adopt national implementation measures, including penal sanctions;
- A provision prohibiting any reservations to any articles of the treaty;
- A provision prohibiting withdrawal from the treaty if engaged in armed conflict;
- Provisions for annual meetings of States Parties and regular Review Conferences;
- No provision for a transition period on the prohibition on use, production and transfer;
- No geographic exceptions for the prohibition on use, production and transfer.

Timeline

Cluster submunitions use and user timeline		
Year	Country/Area	Used By
1965	Lao PDR • Vietnam	United States (US)
1966	Lao PDR • Vietnam	US
1967	Lao PDR • Vietnam	US
1968	Lao PDR • Vietnam	US
1969	Lao PDR • Vietnam • Cambodia	US
1970	Lao PDR • Vietnam • Cambodia	US
1971	Lao PDR • Vietnam • Cambodia	US
1972	Lao PDR • Vietnam • Cambodia	US
1973	Lao PDR • Vietnam • Cambodia • Syria	US • Israel
1974	Vietnam	US
1975	Vietnam • Western Sahara	US • Morocco
1976	Western Sahara	Morocco
1977	Western Sahara	Morocco
1978	Western Sahara • Lebanon	Morocco • Israel
1979	Western Sahara	Morocco
1980	Western Sahara • Afghanistan	Morocco • Soviet Union
1981	Western Sahara • Afghanistan	Morocco • Soviet Union
1982	Western Sahara • Afghanistan • Lebanon	Morocco • Soviet Union • Israel
1983	Western Sahara; Afghanistan	Morocco • Soviet Union
1984	Western Sahara; Afghanistan	Morocco • Soviet Union
1985	Western Sahara • Afghanistan	Morocco • Soviet Union
1986	Western Sahara • Afghanistan	Morocco • Soviet Union
1987	Western Sahara • Afghanistan • Chad	Morocco • Soviet Union • Libya
1988	Western Sahara • Afghanistan	Morocco • Soviet Union
1989	Western Sahara • Afghanistan	Morocco • Soviet Union
1990	Western Sahara	Morocco
1991	Western Sahara • Kuwait, Iraq, Saudi Arabia • Croatia • Eritrea	Morocco • US/Coalition Forces (US/CF) • Republic of Serbian Krajina (RSK) • USER • Ethiopia
1992	Croatia • Bosnia and Herzegovina • Tajikistan • Nagorno-Karabakh	RSK • Internal factions • Tajikistan government forces (TGF), Russia • Azerbaijan
1993	Croatia • Bosnia and Herzegovina • Tajikistan • Nagorno-Karabakh	RSK • Internal factions • TGF, Russia • Azerbaijan
1994	Croatia • Bosnia and Herzegovina • Tajikistan • Nagorno-Karabakh • Chechnya	RSK • Internal factions • TGF, Russia • Azerbaijan • Russia
1995	Croatia • Bosnia and Herzegovina • Tajikistan • Chechnya • Sudan	RSK • Internal factions, NATO • TGF, Russia • Russia • Sudanese government forces (SGF)
1996	Tajikistan • Chechnya • Sudan • Afghanistan • Lebanon	TGF, Russia • Russia • SGF • Northern Alliance, Taliban • Israel
1997	Tajikistan • Sudan • Afghanistan • Sierra Leone	TGF, Russia • SGF • Northern Alliance, Taliban • Nigeria/ECOMOG
1998	Sudan • Afghanistan • Ethiopia	SGF • Northern Alliance, Taliban • Eritrea
1999	Sudan • Afghanistan • Albania • Serbia, Montenegro, Kosovo • Chechnya	SGF • Northern Alliance, Taliban • NATO, Serbs • NATO • Russia
2000	Sudan • Afghanistan • Eritrea	SGF • Northern Alliance, Taliban • Ethiopia, Eritrea
2001	Afghanistan	US
2002	Afghanistan	US
2003	Iraq • Kuwait	US/CF
2004	Iraq	US/CF
2005	Iraq • Lebanon	US/CF • Israel
2006	Iraq • Lebanon • Israel	US/Coalition Forces • Israel • Hezbollah

Conclusion

Landmines have long been recognized internationally as indiscriminate weapons of war. The impact of their use in human and socio-economic terms has received considerable attention, generated studies, contributed to policies and, in the end, led to one of the most successful international instruments and a process for monitoring states' compliance with their mine ban treaty commitments.

The use of cluster munitions creates very similar problems in terms of indiscriminate, persistent, and disproportionate harm to civilians in the short and long terms. There is no doubt that cluster munitions leave one of the most problematic and impacting legacies of warfare today due to their fatal 'footprint': the wide area they are designed to cover, their high failure rates, and their sensitive nature as ERW. Casualty data and reports demonstrate what military sources have long known: cluster submunitions-contaminated areas are often "*de facto* minefields."

Cluster munitions are designed to kill and maim. Failed cluster submunitions cause more casualties per incident and subsequent injuries are as severe or even more disabling than landmine injuries. Cluster submunitions are prone to detonation during normal livelihood activities. The sensitivity of some submunitions is so extreme that detonations causing casualties have been reported from the vibrations of cars, animals, bicycles or even people on foot simply passing by. Often, casualties occur merely in the vicinity of an explosion, creating a specific and recognizable pattern of civilian harm. Failure rates are dependent on numerous environmental conditions which are not in the control of users. In reality, this makes submunitions failure rates inevitably higher, contamination worse, and thus the human impact greater than assumed based on manufacturers' estimates.

Circle of Impact: The Fatal Footprint of Cluster Munitions on People and Communities, reconfirms that civilians are almost the sole victims of cluster munitions at 98 percent of casualties. The vast majority of cluster submunitions casualties confirmed by this report were among the poor in their country, area or region, and often among the poorest. This report has gathered extensive information from numerous sources from both previously and newly reported data. Statistical evidence of at least 13,306 recorded and confirmed cluster submunitions casualties was compiled. This does not include extrapolations or estimates. A conservative estimate indicates that there are at least 55,000 cluster submunitions casualties but this figure could be as high as 100,000 cluster submunitions casualties.

During the course of the research, one previously unreported area with cluster submunitions casualties was identified – Nagorno-Karabakh. Cluster munitions use and/or contamination was also confirmed in eight additional countries. While casualties in several of these countries are suspected, they are not included in the totals due to a lack of cross-checking information. Significant numbers of additional casualties were identified in high-use countries, including significant numbers in Lebanon, Serbia and Vietnam.

Examination of detailed casualties consistently linked to particular livelihood activities and locations shows that cluster munitions use results in significant socio-economic impact. Considering the lack of rapid and comprehensive clearance vital to reducing civilian casualties, and the insufficient risk reduction specific to cluster munitions, the use of these weapons has created needs for survivors, their families and communities which have yet to be adequately addressed.

There is also evidence that a high percentage of casualties due to unknown ERW in areas which are known to be contaminated with failed cluster submunitions are, in fact, cluster submunitions casualties. In the countries which experienced the greatest use, the number of cluster submunitions casualties among those where the device that caused the incident is unknown is *at least* equivalent to the rate of cluster submunitions casualties where the device is known. In many cases, this would mean that cluster submunitions casualties make up 40 to 50 percent of casualties where the device is not known. Many more exhibit the typical injury and activity signatures caused by cluster submunitions.

The persistence of inadequate data collection and dissemination in the public domain concerning strikes, subsequent contamination, and casualties remains. As a result:

- Exactly how many cluster submunitions lie dormant, no one can say.
- Exactly how many cluster submunitions casualties there are, no one can say either.

Despite limited data, a few lessons can be drawn from the overwhelming similarities exhibited by various countries affected by cluster munitions, which will continue to pose a significant, lasting, and indiscriminate threat.

Lesson 1: Accurate, timely, transparent data and analysis is the key to effective humanitarian action for impacted communities

Analysis shows that only 12 percent of cluster munitions-affected countries or areas (three) have near-complete data collection, 64 percent (16) have limited or episodic data collection and 20 percent (five) have no data collection system. Only 16 percent (four) possessed or shared data on conflict casualties and 44 percent (11) differentiated to some extent

between cluster submunitions and other ERW. An overwhelming majority, i.e., 96.8 percent of all confirmed submunitions casualties (12,886) occurred where there is limited or no data collection.

In most cases, the nature of conflict and its immediate aftermath have hindered effective data collection, and complete information on cluster submunitions casualties for the three stages (strike, post-strike, and post-conflict) at which cluster munitions pose a threat is unobtainable. Unless reported in the media, limited information is available about casualties during strikes, as is the case for Chechnya. From existing data, it is often impossible to ascertain whether a casualty occurred during a strike or due to a failed submunition shortly after. Little effort is undertaken to improve information on strike and post-strike casualties retroactively. Even in countries where data collection is considered relatively complete, information about casualties during strikes is scarce and post-strike casualties are underreported. However, when looking at two high-use cases -in Iraq where limited media analysis identified more than 1,000 strike casualties in 2003, and in Lao PDR where more than 4,000 casualties due to failed munitions were recorded - a chilling picture of the potential scope of the impact appears.

Similarly, not only are all casualties (such as internally displaced people or refugees) not recorded, but insurgent, militant, and military casualties are also not included in many databases. Sometimes this information is recorded but not made publicly available, possibly to downplay the impact of cluster munitions on the user's own troops.

While the military casualty figures are doubtless significantly underreported, civilian casualties were found to be vastly underreported in most high-use locations, namely Afghanistan, Cambodia, Chechnya, Iraq, Lao PDR and Vietnam.

Additional issues impacting data collection are: many casualties or their communities do not know exactly what type of device caused the incident; data collectors might not have the expertise to deduce this type of information; and casualty databases or injury surveillance mechanisms are not linked to strike or mine-use data. Consequently, a large percentage of casualties are recorded as caused by an unknown device or an erroneous device is indicated. Most of these issues can be addressed with increased training, resources, and prioritization.

While this lack of information directly affects the ability of survivor assistance providers to operate effectively, other actors' work is likewise inhibited by this lack of information. Casualty data collection and reporting is not only relevant to the humanitarian mine action sector for clearance, MRE, and survivor assistance providers, but to international, national and local development, poverty reduction, and disability actors as well. However, there is little evidence that these activities are being linked to mine/ERW casualty data. While in Afghanistan, Cambodia and Lao it is generally recognized that poverty reduction, community development, and infrastructure projects should include clearance of contaminated areas, there do not yet appear to be strong and coordinated efforts between these activities, casualty data collectors, and survivor assistance providers.

Differentiation of device types causing casualties, including cluster submunitions, is necessary to fine-tune survivor assistance and community development projects. In areas where there are many cluster submunitions casualties there tend to be trends in the type and level of disability. For example, there is a high rate of partial or total blindness and hand or arm amputations among cluster submunitions survivors, which makes many types of vocational training problematic at best. Although this is also true of other ERW types whose "injury signature" corresponds with that of cluster submunitions, in most countries the bulk of ERW casualties are not caused by these other ERW device types but are mainly caused by cluster submunitions.

Lesson 2: Targeting practices and subsequent contamination of civilian areas causes disproportionate and persistent harm to communities

While it is not within the scope of the current study to conduct an extensive and/or exhaustive analysis of strike data, initial analysis of the available data was carried out for the purpose of placing the cluster munitions impact on communities in context. The project performed initial analysis of (partial) strike or contamination data obtained over a 42-year period for nine countries, confirming the use of at least 440 million cluster submunitions. Estimating failure rates between five and 30 percent on average, to date 22 million to 132 million would have become ERW. Given recent failure-rate estimates of the ageing US cluster munitions used by Israel in Lebanon, and the known failure rate of the most prolifically dispensed submunition in history, the BLU-26, these estimates are unquestionably conservative: they represent the *minimum number of cluster submunitions dispensed* since 1965.

Another feature of the strike data is patterns in use over time. Cluster submunitions, a large area weapon that generally causes human casualties within each footprint while creating little infrastructure damage, seem to have been used instead of ground forces in Southeast Asia, Iraq, Kosovo, and Lebanon. Analysis of available data indicates that near the end of conflict, cluster submunitions use increases as a tool to increase troop mobility and/or withdrawal. As the US began the withdrawal of its combat troops from Vietnam, the use of cluster munitions escalated not only in that country, but in Lao PDR and Cambodia as well: between 1970 and 1975, 74 percent of all cluster submunitions (at least 326) were dispensed, with 39 percent (at least 172 million) dispensed in 1970 alone. In Kosovo, cluster munitions were used by NATO without the deployment of any NATO ground forces. This seems to have been the case in Afghanistan and Iraq as well. Most recently, the widely publicized, documented, and internationally condemned example of Israeli cluster munitions use in the

last 72 hours of the conflict with Lebanon, when up to 90 percent (approximately 4 million) of the cluster submunitions in that conflict were used, is linked directly to the Israeli forces' movement.

Cluster munitions were used on a wide range of locations, from built-up urban areas to more sparsely-populated rural environments, often against unknown, non-specific, hidden, and moving targets. In many cases, cluster munitions were not used against regular standing armies but against irregular forces, which by their very nature are very difficult to target and are often near civilian locations. In some cases, such as Chechnya, they explicitly targeted civilian targets. Cluster munitions are wide-surface weapons contaminating more than the military target. This was overwhelmingly evident in most affected countries, from Southeast Asia to Europe.

This has resulted in the most problematic characteristic of the strike data observed, i.e. the level of cluster munitions use within populated areas or their immediate surroundings – within the “circle of life” mentioned in the introduction to this report. The use of cluster munitions in civilian areas results in civilian casualties, and does so in a manner disproportionate to the supposed military objective. Even limited information on casualties during strikes indicates that many cluster submunitions casualties were civilians, as was the case in Iraq.

The body of evidence on the targeting of cluster munitions (or the lack thereof) is clear. In Lao PDR and Cambodia, for example, 20.1 percent of the cluster munitions (59.2 million – more than were used in Iraq in total) were dispensed within a one-kilometer radius of the villages. In Afghanistan, seven of the 10 highest population centers recorded the highest number of cluster munitions strikes in 2001-2002. Cluster munitions strikes were also made in highly populated civilian areas of Croatia, Chechnya, and Serbia.

Use in or near civilian areas produces contamination in locations where people live and work. Use in livelihood areas adjacent to human habitation leads to even higher failure rates and greater contamination owing to the soil conditions and ground cover in terrain such as farmland, crops, fields, rice paddies, orchards, forests and jungle. In Lebanon, nearly half of the strike locations were identified as livelihood areas such as farmland and orchards. An additional 35 percent were located within houses and residential areas. People in contaminated areas of Serbia have “almost daily encounters” with unexploded submunitions in areas of livelihood activity near villages, including areas that used to be corn fields, woods, and pastures.

Even when cluster munitions are used on sparsely populated areas, they still pose a danger to people tending animals or to those who need to supplement their living by collecting food and wood from forests, as was the case in Albania.

Overall, the impact of cluster munitions use on civilians in each country or region is generally proportional to the number of submunitions used: the greater the use, the greater the impact. However, other factors can exacerbate the impact, such as higher population density in a particular contaminated area, as in the case of Quang Tri province in Vietnam, where twice as many casualties occurred in the emergency post-strike phase as in the significantly more contaminated Savannakhet province of Lao PDR.

However, population density is not the only determinant of casualty rates. There is a direct relationship between the availability of arable land and resources and the casualty rate. The greater the demand for arable or other subsistence lands, the more impoverished communities are forced to interact with cluster submunitions contamination. The most vulnerable communities suffer proportionate to their need to survive in already difficult circumstances. For example, the ethnic minority populations in the uplands and highlands of Quang Tri province in north-central Vietnam are several times more likely to become casualties while farming than are people in the lowlands. In Afghanistan, nomads in sparsely inhabited areas were especially vulnerable to cluster submunitions contamination in their grazing lands and trails, leading an already impoverished population to the additional risks of scrap metal collection to sustain their income.

Lesson 3: Cluster submunitions create a peak in returnee casualties during the post-strike period: measures for protection are crucial

A distinct spike in cluster submunitions casualties was identified during the “returnee” period in numerous impacted countries, such as Afghanistan, Albania, Kosovo, Lao PDR, Lebanon and Vietnam. Populations unaware of and unprepared for the dangers of unexploded cluster munitions constitute near-majorities of the total cluster submunitions casualties during this period. In cases of prolonged use and high rates of contamination the peak lasts up to five years. In lesser-contaminated locations where the conflict was shorter, the same “spike” is clearly visible in a more compressed timeframe (one to two years). Children are especially vulnerable during this period, but women also seem to be more affected at this time than in later stages. In Kosovo, 53 percent of cluster submunitions casualties in 1999 occurred in the two months after the end of the conflict, with boys constituting the largest group.

Initially, incidents during the post-strike phase occur while people are returning home and performing house reconnaissance. In the second phase, incidents happen while people are taking risks to provide for their livelihoods in contaminated areas. The predominant activities and locations of these incidents are in or near population centers, in the fields, and in other areas where people access daily subsistence resources.

Given the precarious economic situation of most people after conflict and the limited resources available, immediate clearance, risk education, and alternative livelihood programs are the only way to stop casualties from occurring at such elevated rates.

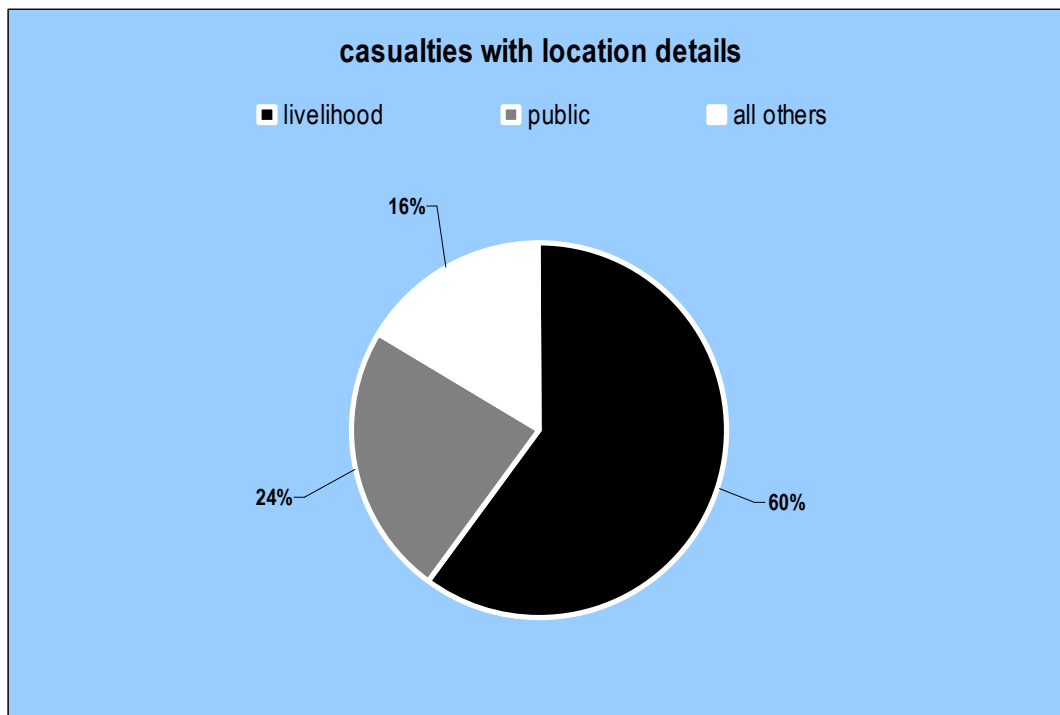
Lesson 4: Cluster munitions use limits economic opportunities for poor families through death, disability, and hazards to livelihood

Not only are civilians most at risk, but the vast majority of civilian casualties occur while people carry out their normal, daily livelihood activities in their usual and accustomed places. Since cluster munitions use most impacts economically vulnerable people in areas already suffering economic hardship, this amply demonstrates the direct socio-economic consequences affecting communities and countries.

The majority of cluster munitions casualties worldwide are poor, uneducated young males at work. Males represent 76.8 percent of casualties where the gender is known and constitute a similar percentage of casualties carrying out livelihood activities. Casualty data show that the people most likely to become cluster submunitions casualties are adult men at nearly 45 percent of total casualties and that the majority of them were undertaking livelihood activities at the time of the incident. Often they are agricultural workers or subsistence farmers, in some cases supplementing their daily subsistence needs by foraging for food or collecting scrap metal to sell. Boys constitute the vast majority of child casualties, averaging between 85 and 90 percent. In particular, boys between five and 15 are the most vulnerable to becoming cluster submunitions casualties, and often become casualties in groups while playing with items, in parallel with activities such as herding and farming. In most cases boys constitute the second largest group of casualties, if not the largest as is the case in Afghanistan, Kosovo and Lao PDR.

In many of the affected countries, men are the traditional earners; as adult males and boys represent the majority of casualties, the socio-economic loss for both the immediate term and distant future cannot be underestimated. At least two generations will be greatly affected, particularly since the relative poverty of the people affected reduces their chances of benefiting from education, social security, or adequate medical assistance.

A comparison between casualty activities and regional economic and social data shows that there is more to these incidents than just being men at work. Cluster submunitions casualties often occur while people enter dangerous livelihood areas basic to their economic existence or try to find resources which could add to meager incomes (60 percent of casualties). In Afghanistan, all casualties who had received MRE and knew they were engaging in risk-taking behavior did so out of economic necessity. In Laos, over 1,000 people were killed by submunitions while digging, mostly out in the field weeding or sowing their crops. In Albania, although cluster munitions contamination is limited in extent and area, nearly 70 percent of the population stated they needed to enter contaminated land out of economic necessity. In these three cases, as is typical of the predicament faced by many cluster submunitions-affected communities, people have little choice but to continue to use their land.



In the longer term, the high rate of male casualties and economic hardship will also result in a higher number of female casualties, as female-headed households will have to carry out tasks traditionally performed by men. This pattern is already visible in Tajikistan, which displays a markedly higher percentage of female casualties. In Kosovo, the risk of extreme poverty is twice as high for women-headed households than for male-headed ones.

There is a link between education and income levels and the incidence of casualties, with those having the lowest education and income being the most vulnerable. In Vietnam, 97 percent of mine/ERW-impacted families earned less than US\$200 per year and 95 percent of mine/ERW casualties did not attain a high school education. In Lebanon, at least 52 percent of cluster munitions survivors live on a monthly income that is less than US\$ 330 and 77 percent did not complete secondary education. In general, unemployment and isolation increases after the incident, especially among the poorest groups and in professions where mobility is needed

Among the socio-economic impacts, psychological impact is a little-included casualty datum and is found in few surveys. However, neither the trauma a cluster submunitions incident causes all involved, nor the fear of cluster submunitions contamination, should be underestimated. Casualty reports indicate that cluster munitions strikes, their suddenness, and the widespread death and injury impart lasting trauma – many survivors report that they experience psychological hardship after the event which can lead to economic impacts such as inability to work. In Bosnia and Herzegovina, the death of a villager herding animals due to a cluster submunition made locals in the area afraid and led them to keep their livestock in the stables rather than going out to graze.

Cluster munitions contamination also adversely impacts broader development and security, as it delays the return of IDPs and blocks land for road, dam, and electricity construction or reconstruction. The Afghanistan Poverty Reduction Strategy states that mine/ERW contamination deters people from accessing basic services such as health clinics and from sending their children to school. The equivalent of one year of clearance is needed to construct roads and power lines in contaminated land. In Lao PDR, hydroelectric dam construction is being slowed down by BLU clearance and risk education is needed for all those involved in the project.

Lesson 5: Full disclosure of cluster munitions strike details and immediate clearance of failed cluster submunitions is imperative to minimizing casualties and socio-economic loss in impacted communities

A full reckoning of casualties from both submunitions strikes and subsequent contamination is probably impossible, but a consistently disproportionate pattern of harm to civilians has been demonstrated. From Southeast Asia to Afghanistan, Iraq, Chechnya, Lebanon, and other places, reports of cluster munitions either targeted at or inadvertently used against civilians have continued, as do reports of failed submunitions and their impact on communities – the number of casualties grows daily. Time and time again, this fatal footprint determines the fate of individuals and communities, often decades after the initial conflict.

Planning and implementing a comprehensive response to the threat posed by cluster munitions can only be done when complete and accurate information about strike locations is provided to those in charge of dealing with the response. This needs to be done in a timely manner. Otherwise, new strike locations will continue to be identified on a regular basis, as is the case in Kosovo, Lebanon and Nagorno-Karabakh. While strike coordinates can be mapped, they are not sufficient to determine where cluster submunitions suspected hazard areas (SHA) should or would be. This also depends on the circumstances of the cluster munitions' delivery and the terrain on which they are delivered and requires additional assessment. In this particular regard, contamination mapping could begin with marking, reconnaissance and MRE, then proceed to area reduction, clearance, survivor assistance and infrastructure repair. When provided with sufficient information, clearance efforts could be mounted more swiftly and efficiently. They thereby reduce not only the short-term, but also the mid- and long-term impacts of cluster submunitions, as well as the resources needed for these operations. In Cambodia, clearance efforts were said to significantly, concretely contribute to reducing poverty by reducing the impact of new casualties on impoverished families.

The international community has realized that fast and effective clearance is vital. The entry into force of Protocol V of the Convention on Certain Conventional Weapons (CCW) on Explosive Remnants of War seeks to regulate ERW clearance, including the clearance of UXO caused by cluster munitions. However, past events have shown that even fast clearance has not been enough to prevent cluster submunitions from causing civilian casualties. Furthermore, as this Protocol is not retroactive, it will not address the harm that has been done already, nor change the level of assistance to affected communities. The experiences of Afghanistan, Cambodia, Iraq, Lao PDR, and Vietnam say it all: extensive cluster munitions use generally and failed submunitions particularly pose a volatile and multi-generational threat to civilians where clearance efforts are delayed. Immediate identification and clearance of submunitions contamination is the only way to minimize post-conflict casualties. However, while immediate and comprehensive clearance remains vital for reducing civilian casualties, swift clearance responses have not been sufficient to prevent significant casualties from occurring in places like Albania, Lebanon, and Kosovo.

The evidence of *where* cluster munitions are dispensed and *when* that use reaches its peak indicates that there should be an awareness of the impact these munitions will have on communities. The armed forces of the world's leading cluster

munitions user, the United States, consider any area contaminated with cluster submunitions a *de facto* minefield, and the casualty and community analysis is consistent with that assessment.

A sufficient body of evidence is presented in this report to warrant a focused, empirical study of the impact of cluster submunitions from a similar perspective – not simply as ERW, but as *the* ERW to be reckoned with in cluster submunitions-affected countries and areas. This munition type exhibits greater kinship with landmines than with other ERW types and often accounts for as many or more casualties than all other ERW combined.

There are clear indications that preventing the use of cluster munitions is the only way to protect civilian populations from undue harm. The introduction to *Circle of Impact* notes that cluster munitions were first used with harmful impact on civilians during the Second World War. In conclusion, it can be observed that the vast majority of submunitions used since 1965 were also designed for another time and another war, for which they were designed as destructive, wide-area weapons. That war was the Cold War.

On 23 February 2007, 47 out of 50 governments rallied behind the so-called Oslo Declaration which states:

“Recognizing the grave consequences caused by the use of cluster munitions and the need for immediate action, states commit themselves to:

1. Conclude by 2008 a legally binding international instrument that will:

(i) prohibit the use, production, transfer and stockpiling of cluster

munitions that cause unacceptable harm to civilians, and

(ii) establish a framework for cooperation and assistance that ensures adequate provision of care and rehabilitation to survivors and their communities, clearance of contaminated areas, risk education and destruction of stockpiles of prohibited cluster munitions.

2. Consider taking steps at the national level to address these problems.

3. Continue to address the humanitarian challenges posed by cluster munitions within the framework of international humanitarian law and in all relevant fora.

4. Meet again to continue their work, including in Lima in May/June and Vienna in November/December 2007, and in Dublin in early 2008, and welcome the announcement of Belgium to organize a regional meeting.”

As a Cold War relic, cluster munitions are coming closer to being prohibited by the day. An increasing number of states have recognized the human impact of these weapons and chosen to act against them. However, even with a legally binding instrument on cluster munitions, the existing legacy will continue to exact its toll on innocent civilians. The hardships of survivors, their families, and communities will last until sufficient resources are allocated to neutralizing the risks of their exposure to the lingering and indiscriminate threat posed by cluster munitions.

Overview of cluster munitions contaminated countries and areas where casualties are suspected

Country	Period of cluster munitions use	Types of cluster submunitions identified	Contamination estimate	Failure rate estimate	Casualties	Data collection	Economic indicators (GDP in US\$ - HDI ¹¹)
Angola	It is unknown when cluster munitions were used in Angola and by whom. Angola stockpiles cluster munitions. ¹²	PTAB-2.5 K0 and AO-2.5 RT ¹³ and RBK-250/275 cluster munitions canisters were found; some were destroyed in stockpile depot fire. ¹⁴	Stockpiled cluster munitions were seen in and near ammunition dump in Luanda in 2001 and also elsewhere in Angola. ¹⁵	N/A	No known casualties: Luanda dump was removed, but it is possible that submunitions remain underground beneath a residential area newly built on the site. ¹⁶	Incomplete	GDP (PPP): 51.9 billion Per Capita: 4,300 HDI: 0.439 Rank: 161, low
Democratic Republic of Congo	It is unknown when cluster munitions have been used and there are no known use allegations. ¹⁷ DRC is not known to have stocks.	No types have been identified, but DRC possesses 122mm BM-21 that can be fitted with cluster warheads. ¹⁸	Unknown	N/A	145 casualties: 7.8 percent of recorded mine/ERW casualties, including two cluster munitions incidents recorded in Orientale Province 2006-2007, killing five. ¹⁹	Incomplete	GDP (PPP): 44.6 billion Per Capita: 700 HDI: 0.391 Rank: 167, low
Russian Federation (excluding Chechnya)	User, stockpiler and producer of cluster munitions. No known strikes have occurred in Siberia.	Most used were: AO-2.5, AO-1SCh, PTAB-2.5/M, OFAB-2.5, and ShOAB-0.5 submunitions. ²⁰	Contamination was found in Chita province, Siberia.	N/A	Three fatal child casualties (two boys, one girl) caused by ShOAB-0.5 submunition in Chita, Siberia in 2006, possibly left as a result of military training or activity. ²¹	None	(Figures are for Russian Federation) GDP (PPP): 1.723 trillion Per capita: 12,100 HDI: 0.797 Rank: 65, medium
Guinea Bissau	There was possible use during the 1989-1999 civil war, but no air-delivered munitions. ²²	PTAB-2.5 and RBK-250 were found ²³	Large numbers of submunitions were in weapons depots. ²⁴ Unstable PTAB-2.5s are scattered as a result of a June 1998 depot attack. Clearance started as of 2007. ²⁵	Unknown	11 ²⁶	Unavailable / incomplete	GDP (PPP): 1.224 billion Per capita: 900 HDI: 0.349 Rank: 173, low
Liberia	Allegedly, the US carried out a strike in 1997 in support of West African troops. ²⁷	Unknown US-produced.	No contamination was found, but cluster munitions damage to Monrovia airport runway was alleged. ²⁸	Unknown	No known casualties	None	GDP (PPP): 2.911 billion Per capita: 1,000 HDI: N/A
Pakistan / Kashmir	In 1971, India allegedly used cluster munitions in Kashmir and the Former Soviet Union reportedly used cluster munitions in FATA during the Afghanistan invasion. ²⁹	Unknown	Dara Sher Khan in Kashmir and FATA border areas with Afghanistan, North and South Waziristan, Kurram and Bajaur agencies could be contaminated. ³⁰	Unknown	Reportedly, 25 percent of casualties in Dara Sher Khan are due to ERW, including cluster munitions. ³¹	None	(Figures are for Pakistan) GDP (PPP): 427.3 billion Per capita: 2,600 HDI: 0.527 Rank: 135, medium
Saudi Arabia	Cluster munitions were used against Iraqi Army during the so-called battle of Khafji from 29 January to 1 February 1991. ³²	CBU-59 bombs with BLU-77 submunitions, with Mk118 (Rockeye) submunitions. ³³	Borders of Saudi Arabia with Iraq and Kuwait are contaminated by ERW. ³⁴	Unknown	No known casualties	None	GDP (PPP): 374 billion Per capita: 13,800 HDI: 0.777 Rank: 76, medium

Uganda	Unknown; cluster munitions may have been used in the conflict between the Lord's Resistance Army and the Ugandan Government from 1986 onwards. ³⁵	Suspected DPICM submunitions were found by Mines Awareness Trust (MAT). ³⁶ PTAB-2.5 M cluster submunitions have also been identified. ³⁷	At least 65 submunitions were removed from the Omel-Gulu area in 2006-2007 ³⁸	N/A	An estimated three percent of 1,387 recorded casualties are cluster submunitions casualties. ³⁹ Five more casualties were suspected in 2006. ⁴⁰	Incomplete	GDP (PPP): 51.89 billion Per capita: 1,800 HDI: 0.502 Rank: 145, low
Yemen	Unknown	Yemen stockpiles KMG-U aerial dispensers that are Soviet manufactured and release AO-2.5, ODS-OD, PTAB-2.5, and PTAB-1M submunitions. ⁴¹	Nineteen of 20 governorates are mine/ERW affected. No figures on cluster munitions specifically. ⁴²	Unknown	No casualties were recorded, but reportedly casualties have occurred. ⁴³	Incomplete ⁴⁴	GDP (PPP): 20.38 billion Per capita: 900 HDI: 0.412 Rank: 150, low

Confirmed cluster submunitions casualties in affected countries and areas

Confirmed cluster submunitions casualties	Total	Injured	Killed	Unknown status	Man	Woman	Boy	Girl	Military	Deminer	Unknown	Estimated casualties	
												low	high
	13,306	7,246	5,475	585	4,210	1,020	3,007	530	275	358	3,906	55,539	65,569
Afghanistan	733	557	175	1	322	50	232	34	79	9	7	2,814	4,132
Albania	56	46	10	0	21	5	1	1	3	20	5		
Bosnia-Herzegovina	92	79	13	0	0	1	0	0	0	5	86	60	
Cambodia	127	98	29	0	42	13	61	11	0	0	0		
Chad	N/A												
Croatia	237	217	20	0	120	80	21	11	1	4	0		
Chechnya	636	335	301	0	2	29	39	1	4	N/A	561	1,000	
Eritrea	10	7	3	0	0	0	4	0	0	0	6	170	
Ethiopia	272	215	57	0	0	0	0	0	0	0	272		
Iraq	2,989	1591	1381	17	261	63	97	56	125	100	2,287	5,500	8,000
Israel	13	12	1	0	1	1	1	0	0	0	10		
Kosovo	196	135	61	0	52	5	87	1	32	15	4	300	500
Kuwait	198	137	61	0	0	0	0	0	1	191	6	4,000	
Lao PDR	4,837	2,179	2,531	127	2,293	471	1,670	279	0	0	124	6,620	
Lebanon	587	462	125	0	341	51	135	23	24	11	2	336	587
Montenegro	8	6	2	0	0	1	4	0	0	0	3		
Nagorno-Karabakh	13	8	5	0	5	0	7	1	0	0	0		
Serbia	94	66	28	0	50	26	10	3	N/A	3	2	100	
Sierra Leone	28	18	10	0	0	0	0	0	0	0	28		
Sudan	43	25	18	0	0	0	0	2	4	0	37	89	
Syria	5	4	1	0	0	0	0	0	1	0	4		
Tajikistan	48	18	30	0	18	9	16	5	0	0	0		
Vietnam	2,080	1,030	610	440	682	215	620	102	1	0	460	34,550	52,350
Western Sahara	4	1	3	0	0	0	2	0	0	0	2		

¹ Chief Superintendent Michael Cardash, Deputy Head, Bomb Disposal Division, Israeli police, Jerusalem, 14 November 2006, in response to request by HI on 9 November 2006.

² The designations employed do not imply an expression of any opinion on the part of HI concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

³ ICBL, *Landmine Monitor Report 2006*, p. 999.

⁴ In 1991, the region of Nagorno-Karabakh declared independence from Azerbaijan as the Nagorno-Karabakh Republic (NKR). The sovereign status of NKR is not recognized by any state, including Armenia. Three UN Security Council Resolutions (853, 874, and 884) and UN General Assembly Resolutions 49/13 and 57/298 refer to Nagorno-Karabakh as a region of Azerbaijan. The map, as well as designations employed and the presentation of material on this map do not imply an expression of any opinion on the part of HI concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

⁵ Commander Sir Aylmer Firebrace, C.B.E., R.N. Chief of Fire Staff, British National Fire Service *Fire and the Air War* National Fire Protection Assoc. (U.S.), 1946, <http://www.inert-ord.net/usa03a/usa6/bfly/index.html>, accessed 20 April 2007.

⁶ Human Rights Watch (HRW), *Timeline of Cluster Munition Use*, February 2007, <http://hrw.org/backgrounder/arms/cluster0207/3.htm>, accessed 20 April 2007.

⁷ “The Iraq War’s Civilian Toll,” *Weekend All Things Considered*, National Public Radio, Washington, D.C., 15 April 2007, excerpted from program transcript, p. 1. The interviewee was John Tracy, a military lawyer who paid “solatia” or condolence payments during his tour in Baghdad. “...the U.S. government has so far paid \$31.6 million for loss of life, injury and property to civilians in Iraq. These payments are made at the discretion of commanders and of military lawyers like John Tracy, who adjudicated nearly 2,000 claims in Iraq in 2003 and 2004.”

⁸ Victims of cluster submunitions include the directly affected individual, his/her family and the community affected.

⁹ “Assistance” should be understood to include, among other things, a prohibition on investments, on involvement in joint military activities in which cluster munitions may be used, and on transit of cluster munitions.

¹⁰ The reports should include, for example, information on national implementation measures, stockpiles and stockpile destruction, contaminated areas and clearance activities, risk education activities, victim assistance activities, and *victims’* rights.

¹¹ Unless otherwise noted, Human Development Index figures were obtained from UNDP, *Monitoring Human Development: Enlarging People’s Choices; Human Development Index*, http://hdr.undp.org/hdr2006/pdfs/report/HDR_2006_Tables.pdf, accessed 10 April 2007. The HDI measures the average progress of a country in human development. Countries are rated by HDI and included in one of three groups related to HDI figures: low, medium, and high human development. Rankings are out of 177 countries. The GDP figures were obtained from CIA, *The World Factbook*, 2006, <https://www.cia.gov/cia/publications/factbook/geos/>.

¹² HRW, *Dirty Dozen*.

¹³ Andrew Smith, Director, AVS Mine Action Consultants, photographs at <http://www.nolandmines.com/Angolaindicatordpictures/angolaindicators9q.htm>, accessed 13 March 2007.

¹⁴ HRW, “Survey of Cluster Munitions Policy and Practice,” February 2007, <http://www.stopclustermunitions.org/files/HRW%20Survey%20on%20cluster%20munitions.pdf>, accessed 28 March 2007; Email from Kenneth O’Connell, Country Director, Menschen gegen Minen, 21 March 2007.

¹⁵ *Ibid.*

¹⁶ *Ibid.*; email from Marc Bonnet, Chief Technical Advisor, UNDP, Luanda, 16 March 2007

¹⁷ Email from Stephen Goose, Director of Arms Division, HRW, Washington, D.C., 4 April 2007.

¹⁸ *Ibid.*

¹⁹ Mine Action Coordination Centre-Democratic Republic of Congo, *Accidents Récents de Mines ou UXO en RDC* (recent accidents from mines and UXO in DRC), http://www.macc-drc.org/pdfdoc/drc_accidents_recents.pdf updated 5 March 2007, accessed 3 April 2007.

ICBL, *Landmine Monitor Report 2006*, p. 342.

²⁰ HRW, *Dirty Dozen*.

²¹ “Explosion almost kills 2 children in Chita province (translation),” *Regnum News Agency*, 31 October 2006, <http://www.regnum.ru/news/730830.htm> Accessed 4 April 2007; “Will Military personnel answer for the explosions of children in Chita province? (translation)” *Regnum News Agency*, 31 October 2006, <http://www.regnum.ru/news/731013.html> Accessed 4 April 2007.

²² Kim Jina and Kristen West, “Guinea-Bissau”, in *Journal of Mine Action*, Winter 2006, <http://maic.jmu.edu/journal/10.2/profiles/guinea-bissau/guinea-bissau.htm>, accessed 2 April 2007; interview with Tammy Hall, Senior Technical Advisor, UNDP, Geneva, 22 March 2007.

²³ Opening Statement by Simon Conway, Director, LMA-UK, Third Review Conference, Convention on Certain Conventional Weapons, Geneva, 9 November 2006, <http://www.minesactioncanada.org/home/index.cfm?fuse=Home.News&ID=241>, accessed 2 April 2007.; HRW, *Dirty Dozen*.

²⁴ Telephone interview with LMA-UK staff, London, 30 March 2007.

²⁵ Email from Dan Ayliffe, Desk Officer Guinea Bissau, LMA-UK, London, 2 April 2007.

²⁶ Telephone interview with LMA -UK staff, London, 30 March 2007: These casualties occurred at a weapons depot from explosion involving cluster munitions.

²⁷ Global Security, *Military: Operation Assured Lift*, http://www.globalsecurity.org/military/ops/assured_lift.htm, accessed 5 April, US Department of Defense, photograph taken by Sgt. Paul R. Caron, US Air Force on 17 February 2007, <http://www.dodmedia.osd.mil/>, accessed 4 April 2007.

²⁸ *Ibid.*

²⁹ FATA is the acronym for Federally Administered Tribal Areas; email from Naveed Ahmad Shinwari, Executive Director, Community Appraisal and Motivation Program (CAMP), Peshawar, 5 April 2007; Zofeen T. Ebrahim, “Pakistan: The Maiming by Landmines Continues,” *Inter Press Service News Agency*, Pakistan, 29 March 2005, <http://ipsnews.net/interna.asp?idnews=28055>, accessed 4 April 2007.

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- ³⁰ E-mail from Naveed Ahmad Shinwari, CAMP, Peshawar, 5 April 2007.
- ³¹ *Ibid.*
- ³² Wikipedia, *Battle of Khaffi*, http://en.wikipedia.org/wiki/Battle_of_Khaffi, accessed 28 March 2007.
- ³³ CMC, *Saudi Arabia*, <http://www.stopclustermunitions.org/info.asp?c=14&id=28>, accessed 28 March 2007.
- ³⁴ Borrie John, *Explosive remnants of war: A global survey*, Landmine Action (UK), London, 2003, p. 20, http://www.landmineaction.org/resources/ERW_global_survey.pdf, accessed 6 April 2007
- ³⁵ Uganda Conflict Action Network, *Conflict*, 2006, <http://www.ugandacan.org/history.php>, accessed 2 April 2007.
- ³⁶ Nigel Howard, MAT, "Mines Awareness Trust in Eastern Africa," in *Journal of Mine Action*, Issue 10.1, August 2006, updated 3 August 2006, <http://maic.jmu.edu/journal/10.1/focus/howard/howard.htm>, accessed 20 March 2007. Although MAT identifies the submunitions as M79, their description does not match data on this kind of grenade; based on photographic evidence, researchers suspect it is a type of M87 DPICM submunition released from an M971 mortar round containing 24 DPICM submunitions. HI was unable to obtain confirmation from the author of the article, the photographer, or MAT.
- ³⁷ Email from Thomas Nash, Coordinator, CMC, 29 April 2007.
- ³⁸ E-mail from Marcos Rossini, Head of Mine Action, Associazione Volontari per il Servizio Internazionale (AVSI), Kampala, 2 April 2007.
- ³⁹ AVSI, *Gulu District Landmine/ERW Victims Survey Report*, 31 May 2006, p. 20. Rossini, Head of Mine Action, AVSI, Kampala Uganda, 2 April 2007, stated that a more precise number of casualties caused by cluster munitions in Gulu is not available because respondents to the survey usually identify munitions in photographs during incident interviews.
- ⁴⁰ Nigel Howard, MAT, "Mines Awareness Trust in Eastern Africa," in *Journal of Mine Action*, Issue 10.1, August 2006, updated 3 August <http://maic.jmu.edu/journal/10.1/focus/howard/howard.htm>, accessed 20 March 2007.
- ⁴¹ HRW, *Dirty Dozen*.
- ⁴² ICBL, *Landmine Monitor Report 2006*, p. 784.
- ⁴³ Observation during MRE field trip in Aden, 4 February 2007.
- ⁴⁴ ICBL, *Landmine Monitor Report 2006*, pp. 792-793.