

Cluster Munitions: Toward a Global Solution

By Steve Goose¹

On March 31, 2003, a United States cluster munition attack on al-Hilla in central Iraq killed at least thirty-three civilians and injured 109. While an egregious incident, this was not an anomaly in the conflict in Iraq, or in Afghanistan in 2001 and 2002, or in Yugoslavia in 1999. In all of these recent conflicts, and others as well, cluster munition strikes caused significant civilian casualties—casualties that could have been avoided had greater care been taken. Worse still, the vast number of explosive “duds” these weapons left behind have continued to kill and maim civilians long after the attacks, and the conflicts, have ended.

In the past decade the international community has banned two weapons—antipersonnel landmines and blinding lasers—on humanitarian grounds.² Cluster munitions now stand out as the weapon category most in need of stronger national and international regulation in order to protect civilians during armed conflict. The immediate danger that cluster munitions pose to civilians during attacks due to their inaccuracy and wide dispersal pattern, the long-term danger they pose after conflict due to the high number of landmine-like submunition duds, and the potential future dangers of widespread proliferation demand urgent action to bring the threat of cluster munitions under control.

Governments and civil society have an opportunity to deal with cluster munitions before they become a global crisis that could easily exceed that posed by antipersonnel landmines. Thus far, cluster munitions have been used in about sixteen countries. But nearly sixty countries have stockpiles of cluster munitions, and the numbers in stockpiles are staggering. The United States alone has cluster munitions containing more than one billion submunitions. Russia and China are likely to have similar quantities. Most of the

¹ The author gratefully acknowledges significant contributions from Bonnie Docherty and Mark Hiznay to the writing of this essay.

² Human Rights Watch was at the forefront of both these efforts, which resulted in the 1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-personnel Mines and Their Destruction (also known as the Mine Ban Treaty), and the 1995 Protocol on Blinding Laser Weapons (Protocol IV) to 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 (also known as the Convention on Conventional Weapons, or CCW).

submunitions now in stockpiles are not sophisticated weapons, but rather those that are known to be highly inaccurate and to have high failure rates, thus producing many hazardous duds.

It is imperative to deal effectively with cluster munitions before they wreak further havoc throughout the world. There is hope for a timely solution because there is already a keen awareness of the problems posed by cluster munitions among governments and nongovernmental organizations (NGOs), and some efforts to resolve the problems are already underway. Most notably, more than eighty NGOs, including Human Rights Watch, on November 13, 2003, launched a new Cluster Munition Coalition to stop the use of these weapons. Moreover, governments have been considering submunitions—if somewhat obliquely—as part of negotiations during the past year on new international law dealing with “explosive remnants of war” (ERW). There is also reason for optimism because humanitarian and military interests largely coincide in the desire to eliminate, or at least decrease dramatically, the indiscriminate effects of the weapon.

What Are Cluster Munitions?

Cluster munitions are large weapons that open in mid-air and scatter widely smaller submunitions, which usually number in the dozens or hundreds.³ Cluster munitions can be launched from the air by a variety of aircraft, including fighters, bombers, and helicopters. On the ground, cluster munitions can be shot out of artillery, rockets, and missile systems. Air-dropped cluster bombs release submunitions most often called “bomblets,” while surface-delivered cluster weapons release submunitions most often called “grenades.”

The military values cluster munitions because of their wide dispersal and versatile submunitions. These munitions are “area” weapons that spread their contents over a large field, or “footprint.” They can destroy broad targets like airfields and surface-to-air missile sites. They are also effective against targets that move or do not have precise

³ “Cluster bombs” is a more common term, but “cluster munitions” is preferable because it encompasses both air- and ground-delivered cluster weapons. For a more in-depth discussion of cluster munitions, see Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: Human Rights Watch, November 2003), and Human Rights Watch, “Fatally Flawed: Cluster Bombs and Their Use by the United States in Afghanistan,” *A Human Rights Watch Report*, vol. 14, no. 7 (G), December 2002. For a complete list of Human Rights Watch documents on cluster munitions, see <http://www.hrw.org/arms/clusterbombs.htm>.

locations, such as enemy troops or vehicles; the submunitions themselves often have both anti-armor and antipersonnel effects.

The submunitions are designed to explode on impact, which differentiates them from antipersonnel mines, which are designed to be activated by the victim. However, when submunitions fail to explode as expected, the “duds” usually remain hazardous and will explode when touched or disturbed in some manner, thus becoming *de facto* antipersonnel mines. While all weapons have a dud rate, also called the initial failure rate, cluster munitions are more dangerous for a number of reasons. First and foremost is the large numbers of submunitions that are released. Nearly every cluster munition will leave behind significant amounts of hazardous unexploded ordnance. Certain types of submunition duds are considered even more volatile and difficult to clear and destroy than most antipersonnel mines. Submunition duds are more lethal than antipersonnel mines; incidents involving submunition duds are much more likely to cause death than injury.

Most models, whether air-dropped or ground-launched, are unguided, and even the few with guidance mechanisms are not precision-guided. Unguided cluster munitions can miss their mark and hit nearby civilian objects. The numerous submunitions are also unguided and disperse over an area that is not always predictable.⁴ Although other types of unguided bombs can miss their target, the humanitarian effects of a cluster attack are often more serious because of the number of submunitions and their wide dispersal. Even if a cluster munition hits its target, the submunitions may kill civilians within the footprint. The inherent risks to civilian life and property increase when these weapons are used in or near populated areas. If cluster munitions are used in an area where combatants and civilians commingle, civilian casualties are almost assured.

Scope of the Problem: Use, Stockpiling, Production, and Trade of Cluster Munitions

Cluster munitions have been used in at least sixteen countries by at least eleven nations.⁵ The affected countries include Afghanistan, Albania, Bosnia and Herzegovina,

⁴ There are exceptions to this. In the Iraq conflict in 2003, the United States for the first time employed cluster munitions containing submunitions that have sensors to guide them, the air-delivered Sensor Fuzed Weapon and the SADARM (“search and destroy armor”) artillery projectile.

⁵ The information in this section is drawn primarily from: Human Rights Watch, “Cluster Munitions: Measures to Prevent ERW and to Protect Civilian Populations,” Memorandum to Delegates to the Convention on Conventional Weapons Group of Governmental Experts on Explosive Remnants of War, Geneva, March 10-14,

Cambodia, Chad, Eritrea, Ethiopia, Iraq, Kuwait, Laos, Lebanon, Russia (Chechnya), Saudi Arabia, Serbia and Montenegro (including Kosovo), Sudan, and Vietnam. Cluster munitions were also used in the Falklands/Malvinas conflict. In addition, unconfirmed reports cite use of cluster munitions in Colombia, Morocco (Western Sahara), Sierra Leone, and Turkey.

Nations known to have used cluster munitions include Eritrea, Ethiopia, France, Israel, the Netherlands, Russia, Saudi Arabia, the former Yugoslavia, Sudan, the United Kingdom, and the United States.

At least fifty-seven countries stockpile cluster munitions. Broken down regionally, these countries include:

- Five in Africa—Eritrea, Ethiopia, Nigeria, South Africa, and Sudan;
- Five in the Americas—Argentina, Brazil, Canada, Chile, and the United States;
- Seven in Asia—China, India, Japan, North Korea, South Korea, Pakistan, and Singapore;
- Twenty-two in Europe—Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Poland, Romania, Serbia and Montenegro, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom;
- Seven in the Former Soviet Union region—Belarus, Kazakhstan, Moldova, Russia, Turkmenistan, Ukraine, and Uzbekistan;
- Eleven in the Middle East/North Africa—Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Oman, Saudi Arabia, and United Arab Emirates.

The United States alone has more than one billion submunitions in stockpiles. Other nations are likely to have billions more. While cluster munitions are often thought of as sophisticated weapons for advanced armed forces, the vast majority of the world's stockpiles consist of weapons based on decades-old technology that did not take concerns about accuracy and failure rate very much into account. Indeed, because cluster munitions are by nature wide-area weapons, accuracy was not seen as a particularly important attribute. Moreover, until very recently the trend was not to

2003. See also Human Rights Watch, "A Global Overview of Explosive Submunitions," Memorandum to CCW Delegates, Geneva, May 21-24, 2002.

spend money to improve the reliability of submunitions, but rather to put more of the high-failure-rate submunitions into each cluster weapon in order to assure a successful strike.

The large stocks of unreliable early generation cluster munitions in the successor states of the Soviet Union and countries of the former Warsaw Pact are of particular concern. The effects of prolonged storage could contribute to extremely high failure rates, and thus high numbers of hazardous duds, if these weapons are used.

Thirty-three countries have produced at least 208 different types of cluster munitions that contain a wide variety of submunitions. The largest producers are likely to be the United States, Russia, and China. Outside of NATO and former Warsaw Pact nations, producers have included Argentina, Brazil, Chile, Egypt, India, Iran, Iraq, Israel, North Korea, South Korea, Pakistan, Singapore, and South Africa.

The full scope of the global trade in cluster munitions is not known. At least nine countries have transferred thirty different types of cluster munitions to at least forty-six other countries. The nine known exporters are Brazil, Chile, Egypt, Germany, Israel, Russia, the former Yugoslavia, the United Kingdom, and the United States. It appears that some older cluster munitions (and their delivery systems) have been transferred as surplus weapons from more to less technologically advanced armed forces. This could be a dangerous trend in the future.

Impact on Civilians

While the number of conflicts in which cluster munitions have been used is still relatively limited, the harm to the civilian population is striking in nearly every case. The attacks have caused civilian deaths and injuries that could have been avoided with better targeting and weapon choices. In most cases, large numbers of explosive submunition duds have taken even more civilian lives and limbs after the cluster munition strikes than during the attacks. The impact can go beyond needless civilian casualties, as extensive submunition contamination can have far-reaching socio-economic ramifications, hindering post-conflict reconstruction and development.

The long-term devastation that cluster munitions can cause is most evident in Southeast Asia, as Laos, Cambodia, and Vietnam still struggle to cope with the threat posed by cluster munitions dropped by the United States from 1964 to 1973. The International

Committee of the Red Cross estimates that in Laos alone, nine to twenty-seven million unexploded submunitions remain, and some 11,000 people have been killed or injured, of which more than 30 percent have been children.⁶

Human Rights Watch conducted field investigations into use of cluster munitions in the conflicts in the Gulf War in 1991, Yugoslavia in 1999, Afghanistan in 2001 and 2002, and Iraq in 2003. Short summaries follow:

Gulf War 1991

In more recent years, the most widespread use of cluster munitions was in the Gulf War of 1991.⁷ Between January 17 and February 28, 1991, the United States and its allies dropped 61,000 cluster bombs containing some twenty million submunitions. Cluster bombs accounted for about one-quarter of the bombs dropped on Iraq and Kuwait. A significant number of surface-delivered cluster munitions were also used. The number of civilian casualties caused by the cluster strikes is not known.

A U.S. Air Force post-war study cited an “excessively high dud rate” due to the high altitude from which cluster bombs were dropped and the sand and water on which they landed.⁸ Even using a conservative 5 percent dud rate, more than one million unexploded submunitions were left behind by cluster bombs, and a similar number by ground cluster systems. By February 2003, these had killed 1,600 civilians, and injured more than 2,500 in Iraq and Kuwait. Despite one of the most extensive and expensive clearance operations in history following the war, there were still 2,400 cluster munition duds detected and destroyed in Kuwait in 2002, and a similar number in 2001.

Cluster bombs were used extensively in urban areas, particularly in southern Iraq. The plethora of unexploded bomblets on major roads put both refugees and foreign relief groups at risk. The bomblets particularly endangered children; 60 percent of the victims were under the age of fifteen. Unexploded bomblets slowed economic recovery because industrial plants, communication facilities, and neighborhoods had to be cleared before

⁶ International Committee of the Red Cross, “Explosive Remnants of War: The Lethal Legacy of Modern Armed Conflict,” June 2003, p. 6.

⁷ Most of the information in this section was first published in Human Rights Watch, “U.S. Cluster Bombs for Turkey?,” *A Human Rights Watch Report*, vol. 6, no. 19, December 1994, pp. 15-19.

⁸ U.S. Air Force, “Gulf War Air Power Survey,” vol. II, pt. I (1993), p. 261.

they could be restored. Iraqi authorities said that they removed tens of thousands of bomblets from such areas. Submunitions also needed to be cleared before people could extinguish the oil fires in Kuwait.

Yugoslavia and Kosovo 1999

In Yugoslavia, the United States, the United Kingdom, and the Netherlands dropped 1,765 cluster bombs, containing about 295,000 bomblets, from March to June 1999.⁹ Human Rights Watch documented that cluster strikes killed ninety to 150 civilians and injured many more. This constituted 18 to 30 percent of the total civilian deaths in the conflict, even though cluster bombs amounted to just 7 percent of the total number of bombs dropped. The most notable case of civilian deaths occurred in Nis on May 7, 1999, when bomblets mistakenly fell on an urban area, killing fourteen and wounding twenty-eight civilians. The incident led President Clinton to suspend temporarily U.S. use of cluster bombs in the campaign.

The U.N. Mine Action Coordination Center estimated that a dud rate between 7 percent and 11 percent, depending on bomb model, left more than 20,000 unexploded bomblets threatening civilians. Some bomblets penetrated up to twenty inches deep, making clearance slow and difficult. In the year after the war's end, bomblets killed at least fifty civilians and injured 101, with children being frequent victims. Bomblets also interfered with the return of refugees and slowed agricultural and economic recovery.

Afghanistan 2001-2002

The United States dropped about 1,228 cluster bombs containing 248,056 bomblets in Afghanistan between October 2001 and March 2002.¹⁰ Cluster bombs represented about 5 percent of the U.S. bombs dropped during that time period. In a limited sampling of the country, Human Rights Watch confirmed that at least twenty-five civilians died and many more were injured during cluster strikes in or near populated areas. These casualty figures do not represent the total for the country because some deaths and injuries go

⁹ The information in this section is drawn primarily from Human Rights Watch, "Civilian Deaths in the NATO Air Campaign," *A Human Rights Watch Report*, vol. 12, no. 1 (D), February 2000, and Human Rights Watch, "Ticking Time Bombs: NATO's Use of Cluster Munitions in Yugoslavia," *A Human Rights Watch Report*, vol. 11, no. 6 (D), May 1999.

¹⁰ The information in this section is drawn primarily from Human Rights Watch, "Fatally Flawed": Cluster Bombs and Their Use by the United States in Afghanistan," December 2002.

unreported and because Human Rights Watch did not attempt to identify every civilian casualty due to cluster bombs. The United States learned some targeting lessons from its experience in the Gulf War and Yugoslavia, but it continued to make costly cluster bomb strikes on populated areas. The thirteen deaths from an errant cluster bomb in Qala Shater were reminiscent of the fourteen deaths from a stray bomb in Nis, Serbia. While Afghan villages are smaller than Yugoslavian cities, such targets accounted for most, if not all, civilian casualties during cluster bomb strikes in Afghanistan.

Using a conservative estimate of a 5 percent dud rate, the cluster bombs dropped by the United States likely left more than 12,400 explosive duds. From October 2001 to November 2002, at least 127 civilians as well as two deminers were killed or injured by these cluster duds. Common post-strike victims in Afghanistan have included shepherds grazing their flocks, farmers plowing their fields, and children gathering wood. Duds have also interfered with the economic recovery of the country, as they litter farmland, orchards, and grazing areas, which provide Afghans sustenance.

Iraq 2003

The United States and the United Kingdom dropped nearly 13,000 cluster munitions, containing an estimated 1.8 to 2 million submunitions, in the three weeks of major combat in March and April 2003.¹¹ While only air-dropped cluster bombs were used in Yugoslavia and Afghanistan, far more surface-delivered than air-dropped cluster munitions were used in Iraq. A total of at least 1,276 air-dropped cluster munitions were used, containing more than 245,000 submunitions. A total of some 11,600 surface-delivered cluster munitions were used, containing at least 1.6 million submunitions. Human Rights Watch's field investigation concluded that cluster munition strikes, particularly ground attacks on populated areas, were a major cause of civilian casualties; hospital records show cluster strikes caused hundreds of civilians deaths and injuries in Baghdad, al-Hilla, al-Najaf, Basra, and elsewhere.

The United States and the United Kingdom have not revealed full details about the cluster munitions they used, especially with respect to U.S. artillery projectile cluster munitions. However, based on available information on numbers, types, and reported failure rates, it is clear that Coalition cluster strikes have left many tens of thousands, and perhaps 200,000 or more, submunition duds. While the United States and the United

¹¹ The information in this section is drawn primarily from Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: Human Rights Watch, November 2003).

Kingdom both used new types of more technologically advanced cluster munitions in Iraq, they also continued to use older types known to be inaccurate and to have high failure rates. Again, hospital records in a handful of cities indicated that by the end of May, submunition duds had already caused hundreds of civilian casualties.

Toward a Global Solution

The immediate effect and long-term impact of the use of cluster munitions over the past forty years have demonstrated that cluster munitions pose unacceptable risks to civilians. This is particularly evident from their increased use around the globe in the past thirteen years, with the two conflicts in Iraq as bookends. Having reached that conclusion, the question becomes, what can be done? Governments and NGOs—at long last—have been attempting to address that question in recent years, taking a number of different approaches to the issue.

A small number of NGOs have called for a complete ban on all cluster munitions, most notably the Mennonite Central Committee. While support for a ban has grown, particularly in the wake of the Iraq conflict, most NGOs have not advocated for a total prohibition.

Human Rights Watch has been raising concerns about cluster munitions since the early 1990s, and in 1999 it was the first NGO to call for a global moratorium on use of cluster weapons.¹² Although Human Rights Watch has not called for a permanent ban on cluster munitions, believing that a blanket prohibition is not justified under existing international humanitarian law, it strongly urges a moratorium based on the humanitarian impact of the weapons. In conflict after conflict, the cost to civilians of cluster munition use has been and continues to be unacceptably high. Human Rights Watch has called for no further use of cluster munitions until their humanitarian problems have been resolved.

The new global Cluster Munition Coalition launched on November 12, 2003, and endorsed by more than eighty NGOs has taken a position similar to that of Human

¹² Human Rights Watch called for a halt to the use of cluster munitions by allied forces during the Kosovo conflict and later that year formally called for a global moratorium. Human Rights Watch, "Cluster Bombs: Memorandum for Convention on Conventional Weapons (CCW) Delegates," Geneva, December 16, 1999.

Rights Watch.¹³ (See below for additional details). It is a loose and diverse coalition, and different members of the coalition have different ideas about how the humanitarian problems can and should be addressed; some believe that they will not and cannot be resolved.

Indeed, the solution to the cluster munition problem will likely require pursuing many different avenues simultaneously. Any solution will have to have both international and national components. A legally binding international agreement is a desirable, and necessary, future objective. But in the short term, development of model policies, practices, and regulations at the national level is essential. Any solution will have to address both the technical problems associated with cluster munitions, most notably the failure rate and high number of duds, and the targeting and use issues, most notably use in or near populated areas. It will have to address both air- and ground-delivered cluster munitions. It may require the flexibility to take different approaches to different types of cluster munitions, including the notion of a ban on the “worst offenders”—those cluster munitions known to have especially high failure rates, to produce large numbers of hazardous duds, or to be very inaccurate.

Cluster Munitions and International Humanitarian Law

In many if not most cases the use of cluster munitions raises concerns under international humanitarian law (IHL). This body of law, which governs conduct during armed conflict, requires belligerents to distinguish between combatants and non-combatants and prohibits as “indiscriminate” any attacks that fail to do so. Human Rights Watch has not called for a prohibition on all cluster munitions under international humanitarian law because, unlike antipersonnel mines, cluster munitions are not inherently indiscriminate; they can be used in such a way as to respect the legal distinction between military targets and civilians.

However, some uses of cluster munitions consistently rise to the level of being indiscriminate. Particularly troublesome are strikes in or near populated areas, which regularly cause civilian casualties both during strikes, due to the difficulty in precisely targeting cluster submunitions, and after strikes, due to the large number of explosive duds inevitably left behind. An attack is disproportionate, and therefore prohibited, if it “may be expected to cause incidental loss of civilian life, injury to civilians, damage to

¹³ Human Rights Watch was one of the leading NGOs in bringing about the new coalition and sits on its initial steering committee.

civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.”¹⁴ Based on research in Iraq, Afghanistan, and Yugoslavia, Human Rights Watch believes that when cluster munitions are used in any type of populated area, there should be a strong, if rebuttable, presumption that an attack is disproportionate. Furthermore, given the foreseeable dangers of using cluster munitions in certain circumstances, an attacker could be judged to have failed to “take all feasible precautions” to avoid civilian harm as required under international humanitarian law.¹⁵

Convention on Conventional Weapons

Given the devastation already caused by cluster munitions, and the potential for much more far-reaching harm, it seems clear that the international community should formally regulate cluster munitions as it has other problematic weapons, such as anti-vehicle landmines and incendiary weapons. Specific new international law could clarify and strengthen the IHL restrictions noted above relevant to cluster munitions.

The logical venue for dealing with cluster munitions is the 1980 Convention on Conventional Weapons (CCW), which has four protocols addressing different weapons. In December 2001, the Second Review Conference of the CCW agreed to evaluate ways to deal with explosive remnants of war (ERW).¹⁶ In December 2002, the CCW States Parties decided to draft a new instrument, and on November 28, 2003, they reached agreement on Protocol V on Explosive Remnants of War.

Human Rights Watch welcomed the new protocol, though lamenting the weakness of much of the language. The protocol makes a state responsible for clearance of all ERW in territory under its control; it is also to provide warnings and education and take other measures to protect the civilian population. The user of weapons that leave explosive

¹⁴ Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) of 8 June 1977, article 51(5)(b). Protocol I codified and in some measure expanded upon existing law, particularly relating to the conduct of hostilities. Today, many, if not most, of its provisions are considered reflective of customary international law.

¹⁵ Protocol I, art. 57(2)(a)(ii).

¹⁶ Explosive remnants of war include cluster munition duds and all other types of explosive ordnance (such as bombs, rockets, mortars, grenades, and ammunition) that have been used in an armed conflict but failed to explode as intended, thereby posing ongoing dangers. ERW also include abandoned explosive ordnance that has been left behind or dumped by a party to an armed conflict.

remnants is to provide assistance for clearance of such ERW in territory not under its control.

Regrettably, the protocol covers only post-conflict measures. Delegates opted not to negotiate on “preventive measures,” such as technical improvements or use restrictions, or specific weapons systems, such as cluster munitions. Instead of making these the subject of negotiations, governments agreed only to discuss possible technical improvements for submunitions and whether or not existing international humanitarian law is sufficient to address issues related to submunitions. While the discussions on the latter topic were limited, most states seemed content with the conclusion that the rules of IHL are adequate and that the main challenge is finding way to improve observance and implementation of the rules. Some states, most notably Norway, questioned this conclusion, noting that IHL is ever evolving, and called for further examination of the way IHL has been applied thus far to the use of cluster munitions.

What seems most telling in this regard is the “ground truth” from recent conflicts. Nations such as the United States, the United Kingdom, and the Netherlands that consider themselves to have among the most sophisticated militaries in the world, with a great understanding of and respect for international humanitarian law, have used cluster munitions and done so in a fashion that has caused extensive civilian casualties and other civilian harm. This calls into question the adequacy of existing international humanitarian law and points to the need to strengthen existing rules or create new rules in order to offer adequate protections to civilians from the effects of cluster munitions.

As the negotiations on ERW progressed, a number of countries stressed the need to tackle more directly the issue of submunitions. In June 2003, Switzerland called for the establishment of a mandate as soon as possible to negotiate a new protocol on submunitions. Supportive countries included Austria, Belgium, Canada, Denmark, France, Ireland, Mexico, the Netherlands, New Zealand, Norway, and Sweden. Those opposed to further work on submunitions included China, Pakistan, Russia, and the United States. In the end, when concluding Protocol V, CCW States Parties agreed only to continue discussions on preventive measures and specific weapons.¹⁷

¹⁷ In the compromise language, States Parties agree: “To continue to consider the implementation of existing principles of international humanitarian law and to further study, on an open-ended basis and initially with particular emphasis on meetings of military and technical experts, possible preventative measures aimed at improving the design of certain types of munitions, including submunitions, with a view to minimizing the humanitarian risk of these munitions becoming ERW. Exchange of information, assistance and cooperation

It is not difficult to envision key elements of any future instrument on cluster munitions. It should address both technical and targeting issues. It should contain a prohibition on use in or near populated areas. It should have requirements regarding accuracy and circumstances of use. It should require a very high reliability rate, one that should be determined by military and humanitarian experts, perhaps with 99 percent as a starting point. It should require that old stocks that do not meet the new standards be retrofitted or destroyed. It should prohibit the transfer of cluster munitions that do not meet new standards. It should require detailed transparency reporting on existing types and technical characteristics of cluster munitions, (for example, number of submunitions, fuze type, estimated footprint, and known failure rate).

Technological Approaches

Among many militaries, there is an increasing willingness to attempt to deal with cluster munition problems through technological improvements that lower the failure rate and increase accuracy. As noted, an explicit part of the mandate of the CCW Group of Governmental Experts working on explosive remnants of war was to discuss preventive measures to decrease failure rates. Commonly cited were self-destruct mechanisms (those will cause the submunition to explode after a certain period of time if it fails to explode on contact) or other secondary fuzes that serve as a back-up to ensure detonation.

The new CCW Protocol V on Explosive Remnants of War in Article 9 encourages States Parties “to take generic preventive measures, aimed at minimising the occurrence of explosive remnants of war, including, but not limited to, those referred to in part 3 of the technical annex.” The annex, which contains “suggested best practice” to be implemented on a voluntary basis, states that, among other measures, “A State should examine ways and means of improving the reliability of explosive ordnance that it intends to produce or procure, with a view to achieving the highest possible reliability.” An earlier draft called for a reliability rate of 99 percent. During the CCW ERW process, Switzerland led the way in pushing for agreement on a reliability standard for submunitions.

would be part of this work.” CCW document , "Recommendation of the Working Group on Explosive Remnants of War," CCW/MSP/2003/CRP.1, November 27, 2003.

In 2001, then-U.S. Secretary of Defense William Cohen issued a policy decision that all future submunitions must have a dud rate of less than 1 percent. In August 2003, General Richard Myers, chairman of the Joint Chiefs of Staff, said the U.S. Army planned to produce self-destruct fuzes for submunitions in some ground-launched cluster munitions (Dual Purpose Improved Conventional Munitions, DPICMs) in 2005.¹⁸ In Iraq, the United States used for the first time air-dropped CBU-105 Sensor Fuzed Weapons and surface-launched M898 SADARM artillery projectiles, both of which contained submunitions with self-destruct features. Likewise, the United Kingdom introduced the L20A1 artillery projectile with an Israeli-designed self-destructing submunition. Other countries that are reported to have developed or deployed cluster munitions with a self-destruct or self-neutralizing capability include France, Germany, Italy, Romania, Russia, Singapore, and Slovakia.

In Iraq, the United States also made greater use of the Wind Corrected Munitions Dispenser, first seen in Afghanistan, in order to increase the accuracy of air-dropped cluster bombs. In perhaps the greatest technological advance, the submunitions in the CBU-105 and SADARM Sensor Fuzed Weapon are capable of independently sensing and attacking specific targets like armored vehicles. Thus, these weapons are designed to address the multiple problems associated with cluster munitions: the inaccuracy of both the munition and the submunition, and the large number of persistent duds.

While each of these technological developments needs to be further studied and assessed in order to determine their effectiveness and the degree to which they improve protections for civilian populations, the trend is encouraging and should be continued.

At the same time that nations continue efforts to improve the reliability and accuracy of cluster munitions, they should also consider if weapons with fewer humanitarian side effects can replace them. For example, air-dropped cluster bombs appear to be of diminishing importance to the U.S. military, given the prevalence of less expensive precision-guided munitions and the existing and emerging alternatives to cluster munitions.

¹⁸ Letter from General Richard B. Myers, chairman, Joint Chiefs of Staff, to Sen. Patrick Leahy, August 11, 2003. Myers said the U.S. Army plans to add a self-destruct fuze to the 155mm extended-range DPICM in 2005. It "is also developing a self-destruct fuze to reduce the dud rate to below 1 percent for its cluster munitions in rocket and other cannon artillery systems. This new fuze may be available for future production of Army cluster munitions as soon as 2005."

While technological improvements present one avenue to help remedy the cluster munition problem, there is also reason to question whether a technical “fix” is truly feasible, and whether it is a valid approach on a global scale. There is reason to question whether even the most advanced military will be able to lower the dud rate sufficiently to offset the dangers posed by the release of hundreds, or even thousands, of submunitions at a time. There is reason to question whether low reliability rates that may be achieved in testing will ever be duplicated under battle conditions or in environments that may increase failure rates (such as sand, soft ground, trees, high winds, etc.). There is reason to question how accurate a weapon can be that is designed to cover a broad area.

Apart from technical feasibility, there is very much reason to doubt that a technological solution will ever be pursued by the less advanced and less wealthy militaries, who may not have the know-how or money to do so. Countries with major armed forces such as Russia and China have said they could not afford such an approach for all submunitions. Finally, there is the question of the fate of existing stocks. While the United States introduced new technologically improved cluster munitions in Iraq, it also continued to use large quantities of old, unreliable, inaccurate cluster munitions. The new U.S. standard for reliability applies only to future (post-2005) submunition production, and permits use of all the “legacy” submunitions in stock—those that have already proven to be of great danger to civilian populations.

Targeting and Use Issues

While lowering the failure rate could mitigate the negative impact of cluster munitions following a strike, it would not address the danger posed to civilians during cluster attacks. There is also a need for regulations on the circumstances in which cluster munitions are used. Human Rights Watch field investigations in Yugoslavia, Afghanistan, and Iraq have shown that use of cluster munitions in or near populated areas almost inevitably leads to civilian casualties. If an armed force chooses to use cluster munitions, the most important operational constraint should be no use in or near populated areas.

Like Human Rights Watch and other NGOs, the International Committee of the Red Cross has formally called for a prohibition on the use of submunitions against any military object located in or near civilian areas. However, this proposal has received the support of only a few governments. It remains under discussion within the CCW. In June 2003, Norway submitted a paper to CCW delegates suggesting appropriate

measures for the use and targeting of cluster munitions and posing a set of questions on submunition use and targeting to be considered by other governments.

In addition to the prohibition on use in populated areas, there should also be a requirement to record and report information regarding cluster munition strikes, in order to facilitate risk education and rapid clearance. Such information should include location of the strike, number, and type of munitions and submunitions, and technical information to ensure safe clearance operations.

Governments should also assess the feasibility and effectiveness of other potential restrictions on use aimed at avoiding civilian harm, including restrictions related to delivery parameters (such as excessively high or low altitude delivery) and use in environments prone to increase the failure rate of submunitions.

“Worst Offenders”

While Human Rights Watch has not called for a comprehensive prohibition on cluster munitions, it believes that the vast majority of cluster munitions in existing stockpiles of nearly sixty nations should never be used. These weapons are so inaccurate and/or so unreliable as to pose unacceptable risks to civilians, either during strikes, post-conflict or both. A number of NGOs, including Human Rights Watch, are working to develop a list of “worst offenders”—those cluster munitions that are especially dangerous for civilian populations and thus should either be modified or withdrawn from military service and destroyed.

While a good deal of research still needs to be done to identify the worst offenders, prior to the 2003 Iraq conflict Human Rights Watch called on the United States not to use four types of cluster munitions because of the foreseeable dangers to civilians: CBU-99/CBU-100 Rockeye cluster bombs, CBU-87 Combined Effects Munitions (cluster bombs), Multiple Launch Rocket Systems (MLRS) with M77 submunitions, and 155mm artillery projectiles with M42 and M46 Dual Purpose Improved Conventional Munition submunitions.¹⁹ It is important to note that, except for the Vietnam-era Rockeye, these are relatively new types of cluster munitions, first used extensively in the 1991 Gulf War. Most of the world’s cluster munitions would pose even more dangers to civilians than these that Human Rights Watch has already put on a “no use” list.

¹⁹ Human Rights Watch Briefing Paper, “Cluster Munitions a Foreseeable Hazard in Iraq,” March 2003.

Some nations might invest the funds to improve the reliability and accuracy of their old cluster munitions. As noted above, the United States is retrofitting some of its ground-delivered submunitions with self-destruct devices. However, it is likely that most nations will find this step too expensive, or not cost-effective compared to purchase of other weapons that could accomplish the same military objective.

Air- vs. Ground-Delivered Cluster Munitions

Because the only cluster munitions used by allied forces in the Kosovo and Afghanistan conflicts were air-dropped, international attention (both government and NGO) has been focused on cluster bombs rather than surface-delivered cluster weapons. The 2003 war in Iraq has changed that. Far more ground submunitions (at least 1.6 million) were used than air (about 245,000), and the great preponderance of civilian casualties caused by cluster munitions were due to ground systems.

While the sheer number of ground-delivered cluster submunitions is daunting, the fact that they were used extensively in populated areas is equally disturbing. It appears that in Iraq, the U.S. and U.K. air forces learned a lesson from previous conflicts and largely heeded the call of Human Rights Watch, the ICRC, and others in greatly restricting the use of cluster munitions in or near populated areas. There were only a few known instances of civilian casualties due to air cluster attacks, notably in al-Hilla. The air forces for the most part avoided civilian concentrations and in some instances used more accurate and reliable cluster bombs.

It seems the same rules did not apply to ground forces. While a vetting process to determine the legality and appropriateness of cluster strikes was in place for both the United States and the United Kingdom, it did not prevent widespread attacks in Baghdad, al-Hilla, al-Najaf, Basra, and elsewhere that killed and injured hundreds of civilians. In the case of the United States, cluster strikes in populated areas were often made using radar to remotely hone in on targets, without any visual confirmation whether civilians were present in the target area. U.S. combatants told Human Rights Watch that cluster munition warheads were often the only weapon choice available, particularly in the case of the MLRS, and that it was often a choice they did not like. U.S. after-action reports have highlighted the need for non-submunition alternatives.

Sensitivity to the dangers to civilians must extend to ground forces using cluster munitions as well as air forces. Uniform standards should apply, particularly with respect to no use in populated areas. Armed forces should develop a vetting process for cluster munition strikes, particularly for surface-launched cluster munitions, that successfully reduces the harm to civilians. Ground forces need to catch up to air forces when it comes to cluster munition targeting and technology.

Intersection of Humanitarian Concerns and Military Interests

The effort to reduce the risk to civilians posed by cluster munitions may significantly benefit from recent concerns in some military circles about the weapons. The armed forces of some nations are increasingly seeing a military advantage to addressing the problems of reliability and accuracy.

Reports after the Gulf War, Kosovo, Afghanistan, and Iraq have all cited the negative impact of cluster munition duds on U.S. and allied forces, as well as peacekeepers: the duds have killed and injured numerous military personnel and have directly affected military operations. The presence of duds can decrease the mobility of one's own troops. Concerns about such dangers and impediments have compelled some coalition forces in Iraq to join those who question use of the weapon. In particular, U.S. and U.K. combat experiences with artillery and MLRS submunitions led some soldiers and Marines to call for an alternative weapon with fewer deadly side effects. A post-conflict "lessons learned" presentation by the U.S. Third Infantry Division echoed the concerns of its field officers. The division described dud-producing submunitions, particularly the DPICM, as among the "losers" of the war. "Is DPICM munition a Cold War relic?" the presentation asked. The dud rate of the DPICM, which represented more than half of the available arsenal, was higher than expected, especially when not used on roads. Commanders were "hesitant to use it . . . but had to." The presentation specifically noted that these weapons are "not for use in urban areas."²⁰

It is essential that NGOs and international organizations seeking solutions to the cluster munition problem engage directly and extensively with armed forces and take advantage of this space where military necessity and humanitarian concern coincide.

²⁰ Third Infantry Division, "Fires in the Close Fight: OIF [Operation Iraqi Freedom] Lessons Learned." http://sill-www.army.mil/Fa/Lessons_Learned/3d%20ID%20Lessons%20Learned.pdf (accessed November 10, 2003).

National, Regional and International Steps

It is likely that before an international instrument can be seriously contemplated, there will need to be some model positions, policies, and practices established at the national level that will show the way for others. To date, not a single government that possesses cluster munitions has yet formally endorsed the call for a moratorium on use until the humanitarian problems are resolved. However, as noted above, there has been some positive momentum in the past several years—momentum reflected in part by the efforts by the United States and others to improve the reliability and accuracy of cluster weapons, and in part by the activity at the CCW.

In addition, there have been a number of steps taken at the national level deserving mention. Norway has foresworn the use of air-dropped cluster munitions in international conflicts (and prohibited their use in Afghanistan). Belgium has reportedly destroyed all of its obsolescent BL-755 cluster bombs (a type used by the United Kingdom in Iraq). Sweden has reportedly removed from service obsolescent Rockeye cluster bombs (a type used by the United States in Iraq). Australia said in April 2003 that it does not use cluster munitions; and in October 2003, the Australian Senate passed a motion calling for a moratorium on use.

Regional and international bodies have expressed opposition to cluster munitions. During the Afghanistan conflict, the European Parliament passed a resolution calling for an “immediate moratorium” on use of cluster bombs until an international agreement addressing the weapon was reached. On the final day of the CCW negotiations in November, the United Nations agencies issued a statement calling for a freeze on use of cluster munitions until humanitarian concerns are addressed.

A key challenge for NGOs is to promote a core group of governments that can provide leadership on this issue, for that is sorely lacking at this time.

Cluster Munition Coalition

On November 13, 2003, nongovernmental organizations came together to launch the Cluster Munition Coalition (CMC) in the Hague, the Netherlands. At its birth, the CMC was endorsed by eighty-five NGOs from forty-two countries. The coalition was formed as a global response to cluster munitions and to the humanitarian crisis caused by explosive remnants of war more generally.

The Cluster Munition Coalition calls for:

- No use, production, or trade of cluster munitions until their humanitarian problems have been resolved.
- Increased resources for assistance to communities and individuals affected by unexploded cluster munitions and all other explosive remnants of war.
- Users of cluster munitions and other munitions that become ERW to accept special responsibility for clearance, warnings, risk education, provision of information, and victim assistance.

Human Rights Watch and a handful of other NGOs took the lead in forming the coalition not just out of concern for the negative humanitarian effects of cluster munitions and ERW, but out of recognition that nongovernmental organizations needed to be more active and more organized to have an impact. The Cluster Munition Coalition has many challenges before it, but its very existence has put governments on notice that this is not an issue that will be ignored, or only lamented with the next war; an ongoing and ever-growing effort is underway to ensure that cluster munitions do not create their own global crisis.

It is abundantly clear that dealing with cluster munitions effectively will require much greater effort on the part of governments, international organizations, and NGOs. Thus far, few, if any, have devoted the time, energy, and passion to the cluster munition issue that was brought to bear, for example, on the antipersonnel mine issue. Now is the time for those with vision to seize the moment.