

Chapter 2

Background

2.1 This chapter provides an overview of definitional issues, Australia's history regarding cluster munitions, the military applications of such weapons and humanitarian concerns about their use. These issues provide necessary background to the provisions of the bill and have been brought to the attention of the committee by various submissions to the inquiry.

What are cluster munitions?

2.2 There is not yet an accepted international legal definition of cluster munitions. But broadly defined, cluster munitions are air-dropped or ground-launched shells (carrier or container units) that eject a payload of multiple small sub-munitions ('bomblets' or 'grenades' respectively) for saturation coverage of a large area. Sub-munitions are the small explosive-filled or chemical-filled projectiles that comprise the payload for dispersal. Container units can contain any number of sub-munitions, from units to thousands.

2.3 Sub-munition based weapon systems that contain a very small number of sub-munitions not designed for area saturation, especially such as precision guided projectiles, are often not considered cluster munitions. Also, non-lethal sub-munition based systems, such as for producing smoke, illumination, propaganda and pyrotechnics as well as anti-electrical weapons, are not usually considered cluster munitions. This has been evident in the Belgian legislation and United Kingdom bill to prohibit cluster munitions, as well as the declaration of the Oslo Conference on cluster munitions held from 21–23 February 2007 (all of which are discussed in chapter three). These exclusions are generally acknowledged by the Cluster Munition Coalition (CMC)—an international network established in 2003 to campaign to stop civilian casualties from cluster munitions. The CMC generally considers that:

Cluster munitions consist of both a parent carrier munition and several explosive sub-munitions...function by delivering sub-munitions over a wide area from aircraft or land-based systems...[and] are area weapons.¹

2.4 However, some commentators adopt very broad definitions of terminology related to cluster munitions. For example, the United Nations (UN) Mine Action Service defines cluster munitions as 'containers designed to disperse or release

1 Thomas Nash, *Stop Cluster Munitions: Stop Killing Civilians*, February 2007, <http://www.stopclustermunitions.org/dokumenti/dokument.asp?id=24> (accessed 14 February 2007).

multiple sub-munitions', and considers sub-munitions to be 'any [conventional] munition that, to perform its task, separates from a parent munition'.²

Australia and cluster munitions

2.5 From the 1970s to the 1990s, Australia manufactured and maintained limited quantities of cluster munitions for testing purposes, including the Karinga cluster bomb and the US CBU-58B. During this period, Australia tested between 10 and 20 cluster munitions at the Woomera test range in South Australia.³

2.6 Australia does not currently produce cluster munitions or possess a stockpile for deployment, and has never used them in a military conflict. However, Australia possesses some inert cluster munitions for training specialists in the identification and disposal of such explosive ordnance and countermeasures development.⁴ The Australian Department of Defence also is in the process of acquiring an advanced sub-munition weapon system capability, which will be designed with features to minimise the impact on civilian populations.⁵ Recent conflicts to which Australia has been a party, such as in Afghanistan and Iraq, have involved the use of cluster munitions by Australia's allies.⁶

Military uses of cluster munitions

2.7 The use of cluster munitions dates back to World War II. The German SD-2 (*Sprengbombe Dickwandig 2 kg*) or butterfly bomb was used as a strategic weapon against both civilian and military targets and, subsequently, similar weapons were employed by both sides in the conflict. Since World War II, cluster munitions have been used in many major conflicts including in more than 20 countries. According to most estimates, approximately 70 states currently stockpile cluster munitions, which includes over 200 varieties and billions of sub-munitions.⁷

2.8 Cluster munitions have been most commonly used against infantry concentrations, although they also have been developed for anti-armour, anti-runway, mine-scattering and chemical warfare purposes. Many modern cluster munitions contain a mixture of anti-armour, anti-personnel and anti-materiel sub-munitions.

2 United Nations, *Proposed definitions for cluster munitions and sub-munitions: Statement to the Working Group on Explosive Remnants of War*, 8 March 2005.

3 Senator Ian Campbell, *Senate Hansard*, answer to question on notice, 7 November 2006, question 2616.

4 Department of Defence, *Submission 10*, paragraph 31.

5 Department of Defence, *Submission 10*, pp. 3, 5.

6 Australian Network to Ban Landmines and the Uniting Church of Australia Synod of Victoria and Tasmania, *Submission 8*, p. 13.

7 Norwegian Ministry of Foreign Affairs, *Background paper to the Oslo Conference on Cluster Munitions*, February 2007, p. 1, <http://www.regjeringen.no/upload/UD/Vedlegg/Hum/OsloCCM%20background%20paper%201502.pdf> (accessed 5 March 2007).

Anti-runway sub-munitions are designed to penetrate concrete, thereby shattering and cratering runway surfaces to prevent use by enemy aircraft.⁸ But, in his submission to the inquiry, Dr Ben Saul, senior lecturer and co-ordinator, International Law, Sydney University, noted the military utility of cluster munitions has to factor in their imprecision in targeting, costs of removal of failed sub-munitions and restrictions imposed on the mobility of advancing military forces.⁹

2.9 Dr Saul pointed out that cluster munitions have been considered by some military planners to have utility in allowing higher efficiency and wide area targeting of grouped or moving personnel and vehicles or large installations. He also noted that the use of cluster munitions reduces the resources necessary for individual targeting (such as in terms of platforms and logistics) and the risk to personnel.¹⁰ This has been referred to as the benefit of 'economy of use'.¹¹ In some cases, according to the Federation of American Scientists, use of cluster munitions has formed a key tactical response and concept of operations involving certain military contingencies.¹²

2.10 The submission to the inquiry by the Israeli Military Industries outlined some examples of cluster munition development. These include the US Dual-Purpose-Improved-Conventional-Munitions (DPICM), which were designed as anti-armour and anti-personnel weapons during the Cold War to halt an invasion of Central and Western Europe by superior numbers of Soviet tank forces. Israeli Military Industries asserted the DPICMs have been considered a 'force multiplier' and are from four to eight times more efficient than conventional high-explosive ammunition in destroying such targets. It also noted cluster munitions have been effective in countering battery fire, such as during the First Gulf War, where they were nicknamed 'rain of steel' by Iraqi forces.¹³

2.11 The evolution of cluster munition development has included non-lethal forms to damage and disable military-sensitive dual-use infrastructure, and production of modified designs to minimise the production of explosive remnants of war (ERW). The former include the production of anti-electrical weapons, such as employed in Iraq in 1990–1991 and Kosovo in 1999. With these weapons, each sub-munition

8 Federation of American Scientists: Military Analysis Network, *Cluster Bombs*, 26 June 1999, <http://www.fas.org/man/dod-101/sys/dumb/cluster.htm> (accessed 13 February 2007).

9 Dr Ben Saul, *Submission 7*, p. 1.

10 Dr Ben Saul, *Submission 7*, p. 1.

11 Mark Hiznay, 'Operational and Technical Aspects of Cluster Munitions, 2006, *Disarmament Forum*, p. 16.

12 The Federation of American Scientists is a non-profit organisation of scientists that publishes extensively on scientific and technical matters, especially of foreign, security and defence policy significance; Federation of American Scientists: Military Analysis Network, *CBU-97/CBU-105 Sensor Fuzed Weapon BLU-108/B Sub-munition*, 23 January 1999, <http://www.fas.org/man/dod-101/sys/dumb/cbu-97.htm> (accessed 13 February 2007).

13 Israeli Military Industries, *Submission 3*, p. 13.

contains a small explosive charge that detonates above the target and disperses reels of fine conductive fibre to produce short circuits in high voltage power lines and electrical substations.¹⁴ 'Smart' sub-munitions have also been developed to use sophisticated guidance systems to locate and attack specific targets, especially armoured vehicles. As has already been argued in this chapter, guided systems and anti-electrical weapons often have not been considered to be cluster munitions (paragraphs 2.2–2.4).

2.12 Other trends have included development of self-destruction and self-deactivation features if sub-munitions reach the ground without locating a target or fail to explode on impact. Following concerns about the harm caused by cluster munitions to civilians and the 'unacceptable' failure rates of some cluster munitions, Israel has developed and supplied to various countries M85 sub-munitions, which have self-destruct features. IMI's testing regime for its munitions includes computer simulation, advanced ballistics techniques as well as proving ground firing tests. In its submission to the inquiry, IMI stated 'our testing suggests the M85 cluster device has a hazardous dud rate of 0.06%'.¹⁵ The Israeli Military Industries submitted that the UK used these cluster sub-munitions in the 2003 Iraq War. A UK Ministry of Defence spokesperson was reported as stating that the carrier shell 'leaves no unexploded sub-munitions'. This was due to the redundant fusing to ensure self-detonation and design to allow detonation at extreme angles.¹⁶ Between 2003 and November 2006, the UK has provided different accounts of the failure rates of the M85 in its arsenal of between one and five per cent.¹⁷ The US also has made efforts to reduce the failure rates of cluster munitions in its arsenal.¹⁸

2.13 The uses of cluster munitions have also changed over time, especially as awareness of the humanitarian impact has altered the norms of use. For example, Human Rights Watch has stated that most of the Iraqi civilian casualties during the 2003 Iraq War were caused by artillery delivery of cluster munitions, rather than air-drop. It noted that military planners have decreased their reliance on air-delivery having learned from the casualties and imprecision caused by the larger area of effect (footprint) created by high altitude dispersal in the First Gulf War, Kosovo,

14 Federation of American Scientists, *CBU-94 "Blackout Bomb" and BLU-114/B "Soft-Bomb"*, 7 May 1999, <http://www.fas.org/man/dod-101/sys/dumb/blu-114.htm> (accessed 17 February 2007).

15 Israeli Military Industries, *Submission 3*, pp. 1-2, 8, 14.

16 Craig Hoyle, 'UK Confirms Use of Cluster Munitions', April 2003, *Jane's Defence Weekly*; *Armada International* 2/2004; noted in Israeli Military Industries, *Submission 3*, pp. 16-17.

17 Lord Dubbs, *House of Lords Debates*, 15 December 2006, column 1731. He stated, '...Adam Ingram said on 16 June 2003 that the failure rate of these smart bombs was 2 per cent. An MoD paper of March 2005 put the failure rate at 1 per cent. However, on 8 November this year, Adam Ingram said that these weapons had a 95 per cent success rate.'

18 Defense Technical Information Center, Army RDT&E Budget Item Justification No. 177: *MLRS Product Improvement Program*, (February 2004), <http://www.dtic.mil/descriptivesum/Y2005/Army/0603778A.pdf> (accessed 13 February 2007).

Afghanistan and earlier conflicts. The UK has unilaterally phased out air-delivery of cluster munitions for these reasons. Further, the Human Rights Watch report supports the view of US military officials that the more planning that went into missions using cluster munitions, the more responsible the use and the fewer the civilian casualties.¹⁹

Humanitarian concerns

2.14 Key humanitarian concerns with cluster munitions relate to the civilian casualties caused by the often large footprint and the unexploded ordnance following delivery that functions similarly to land mines. These factors have resulted in civilian casualties that are both immediate and often long outlive the conflict in which the cluster munitions have been deployed. Most of the submissions to the inquiry highlighted these effects and the data and reports by humanitarian organisations on the subject.

The area of effect and civilian populations

2.15 The size of the footprint of cluster munitions can be considerable, especially if large numbers of sub-munitions or high altitude delivery are employed. According to examples of use cited by a report of the Mennonite Central Committee, footprint sizes vary and can amount to areas in square kilometres but often are less than 500 square metres. Factors affecting the size of the footprint include cluster munition and sub-munition design, altitude of sub-munition dispersal, wind and environmental conditions, and terrain factors such as gradient.²⁰ Nevertheless, the Australian Red Cross argued that the use of cluster munitions in populated areas where there are both civilian and military installations, personnel or objects will invariably result in civilian casualties.²¹

Explosive Remnants of War

2.16 The other prime concern with cluster munitions is that many fail to detonate or are designed for later detonation, either of which can explode when disturbed including in the post-conflict environment. Landmine Action UK noted in its submission to the inquiry that civilians in South-East Asia are still being killed or injured from cluster munitions, three decades following their use.²² Austcare World

19 Lord Dubbs, House of Lords Debates, 15 December 2006, p.4; Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq*, p. 58. 2003, <http://hrw.org/reports/2003/usa1203/usa1203.pdf> (accessed 12 February 2007).

20 The Mennonite Central Committee represents 15 Mennonite and Amish bodies in North America and specialises in providing worldwide humanitarian relief and advocacy of peace interests; Mennonite Central Committee, *Cluster Munitions in the US Arsenal*, 2000, <http://mcc.org/clusterbombs/resources/research/death/chapter1.html#73A6> (accessed 21 February 2007).

21 The Australian Red Cross, *Submission 9*, p. 2.

22 Landmine Action UK, *Submission 5*, p. 1.

Humanitarian Aid submitted that over 40 per cent of the casualties from ERW recorded in 1973–1997 were caused by cluster sub-munitions.²³

2.17 The Federation of American Scientists has noted the major difference between ERW cluster sub-munitions and placed mines is that sub-munitions often are visible as they are typically not designed to burrow into the ground, whereas placed mines are usually deployed so that they are concealed. However, cluster sub-munitions can penetrate the surface and the UN Mine Action Coordination Centre (MACC) has reported finding sub-munitions that have penetrated the ground by up to 50 centimetres.²⁴ Various reports have suggested penetration is most likely to occur in instances where there have been soil movements, rain, melting snow, soft terrain such as ploughed land, or after having landed in water. In such instances, according to the UN Office for the Coordination of Humanitarian Affairs, cluster sub-munitions may not be identified by detection technology or can rise to the surface in areas that have been cleared.²⁵

2.18 The CMC has argued that cluster sub-munition ERW impact disproportionately on the developing world both in the humanitarian and socio-economic senses. It pointed out that civilians are often attracted to failed sub-munitions because they are seen as potential providers of valuable scrap metal. According to the CMC, in addition to casualties, failed sub-munitions can prevent the use or rehabilitation of community infrastructure and services and deter economic activity and land development.²⁶ The Australian Network to Ban Landmines (ANBL) and the Uniting Church of Australia Synod of Victoria and Tasmania voiced similar concerns. They maintained that the denial of agricultural land has the potential to be particularly damaging, as affected communities are often in the developing world and supported by subsistence farming. These communities also have the additional burden of supporting the cost of caring for those disabled by ERW.²⁷

2.19 Also, brightly coloured sub-munitions—designed to reduce the risk to civilians by increasing their visibility—have actually caused problems with children mistaking them for toys. In Afghanistan, US BLU-97 (Bomb Live Unit) cluster munitions were the same colour as humanitarian rations, resulting in a subsequent

23 Austcare World Humanitarian Aid, *Submission 2*, p. 4.

24 Human Rights Watch, 'Cluster bombs in Afghanistan', October 2001, *Human Rights Watch Background*, <http://www.hrw.org/background/arms/cluster-bck1031.htm> (accessed 15 February 2007).

25 Ross Mountain, 'A Call for a Freeze on the use of Cluster Munitions', 27 November 2003, *Statement by the Inter-Agency Standing Committee to the Meeting of State Parties to the CCW Convention*.

26 Cluster Munitions Coalition, *Cluster Munitions: Civilian Effects of the Weapon*, www.stopclustermunitions.org/dokument1/dokument.asp?id+57 (accessed 22 March 2007).

27 Australian Network to Ban Landmines and the Uniting Church of Australia Synod of Victoria and Tasmania, *Submission 8*, p. 6.

change to the colour of the rations to avoid confusion and further civilian deaths.²⁸ The Medical Association for Prevention of War (MAPW) and the ANBL noted that parachuted sub-munitions suspended in trees have also been attractive to children, as have spherical sub-munitions that resemble balls.²⁹

The problem of failure rates

2.20 All ammunition has some degree of failure, but even a small failure rate of cluster sub-munitions can result in large numbers of unexploded ordnance, as they are often delivered in the hundreds or thousands and with rapid rates of fire. The Medical Association for Prevention of War (Australia) submitted:

While a low failure rate of, say, 1% looks attractive, when literally millions of cluster munitions are spread that translates to tens of thousands of live munitions still.³⁰

2.21 A report to a US Congressional inquiry stated that, in the past, US requirements for the failure rates for some of its stockpiled artillery launched sub-munitions have been five per cent or less, while it has not had strict requirements for others. According to the report, overall reliability of sub-munitions launched during the First Gulf War was 97 per cent. It noted the failure rates for the M77 sub-munitions of the Multiple Launch Rocket System (MLRS) were particularly problematic, ranging from 2–23 per cent, resulting in 154–1,777 undetonated sub-munitions per full launcher load (12 rockets containing 644 sub-munitions each), which could be delivered at 60 second intervals.³¹

2.22 Various non-government organisations (NGOs), including MAPW in its submission to the inquiry, have argued that at this stage the problems of high failure rates for cluster munitions are not balanced by technical development of more reliable sub-munitions.³² The aforementioned US report acknowledged that more technically sophisticated cluster munitions are often more expensive than standard weapons, thereby limiting their production and replacement of older designs.³³ Therefore, various NGOs have maintained that most of the cluster munitions remaining in global

28 Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq*, 2003. <http://hrw.org/reports/2003/usa1203/usa1203.pdf> (accessed 12 February 2007).

29 Medical Association for Prevention of War (MAPW) and Australians for Lebanon, *Submission 6*, p. 8; Australian Network to Ban Landmines and the Uniting Church of Australia Synod of Victoria and Tasmania, *Submission 8*, p. 8.

30 Medical Association for Prevention of War (Australia), *Submission 6A*, p. 3

31 United States General Accounting Office, *Report to Congressional Requestors: Operation Desert Storm, Casualties caused by Improper Handling of Unexploded US Sub-munitions*, pp. 5-6, 1993, <http://archive.gao.gov/t2pbat5/149647.pdf> (accessed 12 February 2007).

32 Medical Association for Prevention of War (Australia), *Submission 6A*, p. 3.

33 United States General Accounting Office, *Report to Congressional Requestors: Operation Desert Storm, Casualties caused by Improper Handling of Unexploded US Sub-munitions*, p. 5, 1993, <http://archive.gao.gov/t2pbat5/149647.pdf> (accessed 12 February 2007).

military arsenals are those that are known to have a record of higher failure rates. Nevertheless, there is increasing recognition of the problem of high failure rates and various countries have taken unilateral measures to reduce their reliance on such models (discussed in chapter three).³⁴

2.23 In their submissions, MAPW and ANBL cited an increasing concern among some NGOs that some of the failure-reduction measures developed for cluster munitions have been unsuccessful. ANBL noted the Combined Effects Munition of the BLU-97 was designed with two independent fuses to ensure detonation at any angle of impact. However, mine removalists have estimated the failure rate in Kosovo of these sub-munitions was seven per cent.³⁵ Also, ANBL pointed out that the UN MACC has revealed 631 unexploded M85 sub-munitions—designed for very low failure rates—were found in South Lebanon following the 2006 conflict. However, an international landmine and explosive expert has reported that three varieties of the M85 were found, one of which did not have self-destruction capabilities. He argued that it is unclear what proportion of the failed M85 sub-munitions were the more advanced types with self-destruction capabilities. Further, he noted that without data on how many of these sub-munitions were deployed, it is unclear whether this number is indicative of the number launched and failure rate.³⁶ Despite debate about the accuracy of the statistics, the following section makes clear that the use of cluster munitions, including their use in recent conflicts, has injured and killed many innocent civilians including children.

Effect of recent uses of cluster munitions

2.24 Most of the data on cluster munition use and its legacy as ERW has been produced by NGOs active in international humanitarian work. This data has suggested that in the First Gulf War 61 000 cluster munitions containing 20 million sub-munitions were dropped in six weeks.³⁷ Also, it has suggested an estimated 248 056 sub-munitions were dropped over Afghanistan in six months during 2001–2002 and between 1.8 and two million sub-munitions were delivered in Iraq in three weeks in 2003. A failure rate of five per cent would have resulted in an ERW legacy of one million, 12 400 and 90 000 unexploded sub-munitions respectively in the First Gulf War, Afghanistan and the 2003 Iraq War.³⁸

34 Stephen Goose, 'Humanitarian consequences and international response'. 18 March 2004, Presentation to the Conference *Cluster Bombs: Effective Weapon or Humanitarian Foe*.

35 Australian Network to Ban Landmines and the Uniting Church of Australia Synod of Victoria and Tasmania, *Submission 8*, pp. 5, 10; Medical Association for Prevention of War (Australia), *Submission 6A*, p. 3.

36 Cited in Daniele Ressler and Elizabeth Wise, 'Cluster Munitions and ERW in Lebanon', 2006, *Journal of Mine Action*, <http://maic.jmu.edu/journal/10.2/focus/resslerwise/resslerwise.htm>, (accessed 27 February 2007).

37 Steve Goose, *Human Rights Watch World Report, Cluster Munitions: Toward a Global Solution*, 2004, <http://hrw.org/wr2k4/12.htm> (accessed 22 February 2007).

38 Austcare World Humanitarian Aid, *Submission 2*, p. 4.

2.25 Cluster munitions were used in the fighting in South Lebanon and Israel during July–August 2006. The UN MACC estimated Israel fired up to 6 000 bombs, rockets and artillery shells each day during the 34 day conflict, with 90 per cent of the cluster munitions launched in the final three days. Also according to the UN, the cluster munitions had a 40 per cent failure rate resulting in possibly a million sub-munitions failing and becoming ERW.³⁹ In its submission to the inquiry, Israeli Military Industries pointed out that these were mostly the older and more failure prone M77, rather than the more sophisticated M85 sub-munitions.⁴⁰ The UN has indicated it will take another 12 months to clear the ERW, although an Australian humanitarian mission to South Lebanon has expressed concerns that this is an optimistic estimate. The Australian mission also noted that the primary locations of the cluster munition ERW included sites in or near residential houses, gardens and agricultural plantations.⁴¹

2.26 Human Rights Watch has reported that Hezbollah also used cluster munitions during the conflict, although to a lesser degree. It was the first recorded use of cluster munitions by Hezbollah and of the particular Chinese-made model of cluster munitions. Israel initially withheld details about the strikes for security reasons, according to Human Rights Watch, but has since revealed that 113 cluster munitions were fired, containing 4 407 sub-munitions. The attacks caused one death and 12 injuries with the low casualties possibly resulting from incorrect usage, according to Human Rights Watch. Israel has not disclosed any information about the failure rate or the ERW legacy.⁴²

2.27 Human Rights Watch has collected data on the legacy and removal of cluster munitions as ERW from the First Gulf War in 1991 until February 2003. It has suggested failed cluster sub-munition ERW from the First Gulf War resulted in 1 600 deaths and 2 500 injuries to civilians in Iraq and Kuwait. In 2002, more than ten years after the conflict and following prolonged and intensive clean-up campaigns, 2 400 failed cluster sub-munitions were detected and destroyed.⁴³ NGO estimates of the casualties caused by cluster munitions in the 2003 Iraq War have suggested deaths have been in the hundreds.⁴⁴ The UN has reported 26 deaths and 162 injuries from all

39 BBC News, 'Million bomblets' in S Lebanon, 26 September 2006, http://news.bbc.co.uk/2/hi/middle_east/5382192.stm (accessed 13 February 2007).

40 Israeli Military Industries, *Submission 3*, pp. 13-15.

41 Medical Association for Prevention of War (MAPW) and Australians for Lebanon, *Submission 6*, pp. 6, 8.

42 Human Rights Watch, *Lebanon/Israel: Hezbollah hit Israel with cluster munitions during conflict*, 19 October 2006, <http://hrw.org/english/docs/2006/10/18/lebano14412.htm> (accessed 20 April 2007).

43 Steve Goose, *Human Rights Watch World Report, Cluster Munitions: Toward a Global Solution*, 2004, <http://hrw.org/wr2k4/12.htm> (accessed 22 February 2007).

44 Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq*, 2003, <http://hrw.org/reports/2003/usa1203/usa1203.pdf> (accessed 12 February 2007).

types of ERW in the 2006 Lebanon conflict, with all the deaths and all but five of the injuries having been caused by cluster munitions.⁴⁵ An Australian humanitarian mission to South Lebanon has reported that a third of these casualties have been children.⁴⁶

Committee view

2.28 It is clear that the use of cluster munitions has and continues to kill and maim many civilians, including children, who through no fault of their own are caught up in a military conflict. In many cases, communities face enormous difficulties rebuilding their livelihoods because of ERW. In particular, the evidence available and presented to the inquiry clearly demonstrates the use of older-model cluster munitions designed for area-saturation and without self-destruction or self-neutralisation mechanisms have had an enduring destructive humanitarian impact. It also underscores the potential impact of the large footprint associated with cluster munitions and the devastating consequences when used in the vicinity of civilians and residential areas. The committee accepts that there is an urgent need for measures to be taken to prevent the use of such deadly weapons from harming civilian populations.

2.29 However, the committee accepts that distinctions need to be made between different types of cluster munitions. In particular, this includes lethal designs and those that are non-lethal but could still be used to damage military-sensitive infrastructure. It also includes the distinction between sub-munition based weapon systems that are, and those that are not, designed for area-saturation. The latter includes limited number, precision-guided sub-munitions. The committee also welcomes design developments to minimise the humanitarian impact of area-saturation cluster munitions, such as self-destruction and self-neutralisation capabilities. However, it notes the conflicting information about the effectiveness of these modifications. The following chapter considers the international regime governing the use of cluster munitions.

45 Handicap International, *Ban Mines Newsletter: Handicap International's Newsletter on Landmines & Cluster Munitions*, January 2007, p. 2, http://en.handicapinternational.be/download/EN_Newsletter_19_FINAL.pdf (accessed 19 February 2007).

46 Medical Association for Prevention of War (MAPW) and Australians for Lebanon, *Submission 6*, p. 6.