

## EDITORIAL

# Explosive remnants of war in the human environment

The numerous wars always in progress somewhere or other on Earth continue to rely for their deadly, destructive, and environmentally damaging effects on explosives, fire, and other conventional means. Such means of warfare can do terrible immediate and long-term damage to humans (both combatants and civilians), to their artefacts and livestock, and to nature. I single out here for exposition the use of land mines and other weapons with similar long-term effects; these are a gruesome and much used means of warfare that is often taken for granted, but for which at least a partial remedy is available.

### The problem

Anti-personnel and anti-vehicle high-explosive land mines are relatively inexpensive, easily employed, and effective means of hindering, slowing down, or channelling the movements of enemy forces and of sapping their morale. They are thus widely and heavily employed by both regular armies and insurgent forces. They are usually constructed and emplaced so as to defy premeditated discovery, but are, of course, designed so as to detonate when inadvertently disturbed. Scatterable land mines, which are now widely employed by technically-advanced armed forces, can be remotely delivered in great numbers by various means, including artillery, rocket and aircraft. The vast majority of all land mines used in warfare are, in fact, not set off by the combatants at which they were directed, and most of them remain ready to explode for many decades into the future.

Then there are the high-explosive munitions other than land mines, including grenades, artillery shells, mortar rounds, bombs, sub-munitions (bomblets) and rockets, that are often expended in vastly greater numbers during warfare than land mines. The increasingly popular explosive sub-munitions which are dispensed via air-dropped cluster bomb units (CBUs) are generally employed in staggeringly high numbers. Whereas most of these many sorts of high-explosive munitions explode as intended at the time of release, a significant fraction (perhaps 10%) malfunctions; these are the so-called duds. And, in turn, a significant fraction (perhaps 50%) of these residual duds remains ready to explode when jolted at some future time. The long-term impact of high-explosive duds is thus quite comparable to that of the residual land mines described above.

The immensity of the problem of land mines and other unexploded remnants of war is difficult to grasp. At present, there are more than (perhaps many more than) 65 million functional land mines in some 56 countries around the world. Presumably even larger numbers of potentially still-explosive duds are to be found in those same and further countries. The records of the International Committee of the Red Cross (Geneva) reveal that these explosive remnants of war are now resulting in more than 800 human fatalities, plus thousands of maimings, per month. In Cambodia alone, remnants have produced more than 36 000 amputees within the past decade or so; and in Somalia, more than 23 000 people have been so mutilated.

The problem of explosive remnants of war exists in many parts of the world, but is perhaps most acute in Africa, where some 18 countries are seriously afflicted, amongst them Angola, Eritrea, Ethiopia, Mozambique, Somalia, and Sudan. In the Middle East, Iran, Iraq, and Kuwait are most affected; in Asia, the main victims are Afghanistan, Azerbaijan, Cambodia, Laos, and Viet Nam; in Latin America, El Salvador and Nicaragua; and in Europe, Bosnia-Herzegovina, Croatia, and Serbia-Montenegro. Even Poland has a residuum of explosive remnants of the Second World War, of which thousands are still being found and disposed of each year; nonetheless, to this day they continue to kill or maim several dozen individuals annually.

Human existence and well-being depend upon continuing access to huge rural areas throughout the world for agriculture, horticulture, grazing, forestry, hunting, fishing and mining. When a rural area becomes a battlefield, the effects of exploding munitions and other actions can be devastating. When that rural area has been a theatre of military operations that have left a residuum of unexploded munitions, this will have severe consequences, both direct and indirect.

In many rural areas throughout the world, the local populace is forced by circumstances to continue to utilize the land upon which it has depended, with the result that there is an appalling frequency of fatalities and maimings, both human and livestock. In my own extensive wartime and post-war travels in rural Viet Nam, I have heard numerous tragic accounts of deaths and maimings wherever I have spoken with farmers and loggers. Indeed, in southern Viet Nam, there appears to be no peasant family that cannot recount a personal tragedy stemming from previously-unexploded munitions.

Thus, in former battle zones, farming, herding, and forestry become hazardous pursuits. Wood which is destined for lumber becomes unsafe and troublesome with metal embedded in it. And all sorts of other aspects of local development become equally hampered, including the construction of roads, power lines, and irrigation systems. Income from tourism can be all but eliminated.

Any remnant-clearing operations are themselves apt to be environmentally disruptive, sometimes very much so. Moreover, they are time-consuming, technically difficult, expensive (often prohibitively so), never fully successful, and, above all, exceedingly dangerous. Moreover, any material and financial resources diverted to clearing, or to remnant-generated medical, veterinary, and other expenses, are lost to productive activities.

To the extent that areas are deemed simply too dangerous to be exploited, the refugees or migrants thereby generated are likely to overburden both the natural and social resources of their sites of destination, whether rural or urban, which is therefore likely to lead to additional, off-site, damage to the environment.

### **An appeal**

International cooperation, both technical and financial, is needed to help clear the unexploded remnants of past armed conflicts, something that has been unanimously urged by the United Nations General Assembly (UNGA) on a number of occasions (UNGA Resolutions 48/7, 49/215 and 50/82). Moreover, land mines and every other type of high-explosive munition that are apt to become an explosive remnant of armed conflict, should, without exception, be designed to have a built-in, non-removable mechanism that would render it harmless with time.

Existing constraints in international law on the use of land mines and other explosive remnants of war do not provide adequate protection to civilians, either during the time of armed conflict or after its cessation. The central multilateral instrument of relevance here is the 1980 Inhumane Conventional Weapon Convention (UN Treaty Series, UNTS, 22495), Protocol II of which restricts the use of land mines. The Inhumane Weapon Convention has not, as yet, won many adherents (only 62 as of December 1996), despite its rather weak restrictions on land mines and none on other explosive remnants.

Other multilateral treaties that are of indirect relevance to explosive remnants of war include: (a) the 1966 Covenant on Civil and Political Rights (UNTS 14668), which establishes that 'every human being has the inherent right to life' (Article 6), which in turn implies the right to an environment adequate for its realization; (b) 1977 Protocol I on the Protection of Victims of International Armed Conflicts (UNTS 17512), by which 'it is prohibited to attack . . . or render useless objects indispensable to the survival of the civilian population, such as . . . agricultural areas' (Article 54); and (c) various instruments that have or could demilitarize certain geographical areas, for example the 1954 Convention for the Protection of Cultural Property (UNTS 3511), and again 1977 Protocol I on the protection of Victims of International Armed Conflicts (see its Article 60).

It is manifestly clear that land mines and comparable weapons should be outlawed, or, at least, their employment should be severely circumscribed. The Inhumane Weapon Convention could serve this purpose (a) through far wider adoption, and (b) through appropriate strengthening, making such amendment a most suitable issue for the states parties to address once again at their next conference. Moreover, the UNGA has repeatedly called for a global moratorium on the export of land mines (UNGA Resolutions 48/75.K, 49/75.D and 50/70.O), and all relevant countries should continue to be reminded of this appeal.

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**For further reading**

- Anderson, K., Goose, S.D., Schurtman, M. & Stover, E. (Eds) (1993) *Landmines: a deadly legacy*. New York: Human Rights Watch: xii + 510 pp.
- Prokosch, E. (1995) *Technology of killing: a military and political history of antipersonnel weapons*. London: Zed Books: xiv + 224 pp.
- Roberts, S. & Williams, J. (1995) *After the guns fall silent: the enduring legacy of landmines*. Washington: Vietnam Veterans of America Foundation: x + 554 pp.
- USDOS (1993–1994) *Hidden killers*. Washington: US Department of State (Publ. 10098 & 10225): iii + 185 + 86 + vi + 61 + 25 pp.
- Westing, A.H. (Ed.) (1985) *Explosive remnants of war: mitigating the environmental effects*. London: Taylor & Francis: xvi + 141 pp.