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**SPECIFIC HUMAN RIGHTS ISSUES**

**Human rights and weapons of mass destruction, or with  
indiscriminate effect, or of a nature to cause superfluous  
injury or unnecessary suffering**

**Working paper submitted by Y.K.J. Yeung Sik Yuen in  
accordance with Sub-Commission decision 2002/113**

### **Executive summary**

The present updated working paper is submitted pursuant to Sub-Commission on the Promotion and Protection of Human Rights decision 2002/113. In resolution 1997/36 the Sub-Commission expressed concern over the use of particular weapons of mass destruction or with indiscriminate effect, or of a nature to cause superfluous injury or unnecessary suffering, naming specifically nuclear weapons, chemical weapons, fuel-air bombs, cluster bombs, biological weaponry and weaponry containing depleted uranium. In that resolution the Sub-Commission also expressed its conviction that the use or threat of use of those weapons was “incompatible with international human rights and/or humanitarian law” and requested Sub-Commission member Ms. Clemencia Forero Ucross to prepare a working paper on that topic. Resolution 1997/37 added the issue of illicit transfer of these weapons to the mandate. Decision 2001/119 authorized Mr. Y.K.J. Yeung Sik Yuen to prepare the mandated working paper in lieu of Ms. Forero Ucross.

The working paper (E/CN.4/Sub.2/2002/38) was duly submitted to the Sub-Commission at its fifty-fourth session. By decision 2002/113 the Sub-Commission requested the author to submit an updated working paper to the Sub-Commission at its fifty-fifth session.

Part I of the updated paper recalls the undisputed principles of humanitarian law which are enunciated in the earlier paper and refers to Article 2 of the Charter of the United Nations, Article 38 of the Statute of the International Court of Justice, the two Hague Conventions of 1899 and 1907 and the Martens Clause, the Geneva Conventions of 12 August 1949 and relevant articles of Additional Protocols I and II. The present paper also recalls the four established humanitarian law principles by which weapons are to be considered banned, namely:

- (a) If their use has indiscriminate effects (no effective distinction between civilians and belligerents);
- (b) Their use is out of proportion with the pursuit of legitimate military objectives;
- (c) Their use adversely affects the environment in a widespread, long-term and severe manner; and
- (d) Their use causes superfluous injury or unnecessary suffering.

Part I ends by recalling the issue of the listed weapons in the light of the above four principles, dividing them into categories identified by the Sub-Commission and dealing with each of them in turn.

Part II of the updated paper deals with new information.

The new information on depleted uranium (DU) weapons is quite substantial in view of the fact that information and events regarding such weaponry have proliferated. The primary role of the United Nations Environment Programme (UNEP) in investigating the presence of DU in the Balkans and its urgent call for immediate access to sites in Iraq where DU weapons have been used is the focus. The concerns expressed by the Royal Society of the United Kingdom on the situation in Iraq, where a large amount of DU has been deployed without knowing how many soldiers and civilians have been exposed to it, are also highlighted. Emphasis is laid on calls by

UNEP and the Royal Society for an early assessment of the effects of DU in Iraq. Several scientific studies on DU are alluded to, including one where the researcher addresses the “whys” of DU use and concludes that the use of a radiological weapon in the first Gulf war had broken a 46-year military taboo and could be invoked as a precedent to justify the eventual use of “mini-nukes”. Finally, some recent legislative initiatives on DU in Australia and the United States are mentioned.

With regard to nuclear weapons, the latest news is the adoption of a bill on 9 May 2003 by a committee of the United States Senate authorizing the development of “mini-nukes”, which would override a 1993 ban. The author also considers the crisis caused by the admission in October 2002 of the Democratic People’s Republic of Korea that it had a nuclear weapons programme, and the dangers of pre-emptive use of nuclear weapons, wherever it comes from.

The author cites a reported incident in Baghdad that indicates that cluster bombs were used in the last war in Iraq. Yet another reported incident suggests that a fuel-air bomb may have been used there. The ill effects of unexploded cluster bombs in the Lao People’s Democratic Republic and Afghanistan are highlighted, as well as the call by the European Parliament for a moratorium on the use of cluster bombs. With regard to landmines, emphasis is placed on the necessity of clearing them.

The author then deals with directed energy weapons (DEW), which include weapons using radio frequency (RF), electromagnetic frequency (EMF) and microwave energy (ME). The use of such weapons is meant to disrupt computerized circuits with all the potential consequences and could be directed against civilian aeroplanes by terrorists. The author finds that it is unlikely that the “e-bomb” was used in Iraq to disrupt electronic hardware because of present technical constraints. On the other hand, the author believes that an ME weapon was used as long ago as 1960 against a United States embassy before the weapon was developed by the United States itself. An ME weapon may have been used in Iraq, killing civilians in a bus in Al Sqifal. In view of the surreptitious nature of the use of DEW and the reported atrocious mutilations caused at Al Sqifal, the author believes that they would fall within the banned category of weapons causing superfluous injury and unnecessary suffering.

After making a number of general comments on certain specific weapons, the author concludes that all weapons under review in his two papers should be considered banned. States using them have a duty to compensate, clean up and warn. The following recommendations are made:

- (a) The Sub-Commission should call for a new environmental assessment of Afghanistan, with special reference to examining the effects of weaponry deployed in the recent war, to be undertaken by the relevant United Nations bodies;
- (b) The Sub-Commission should encourage scientific assessments of the effects of the use of fuel-air bombs, “bunker busters” and/or “mini-nukes” and DEW;
- (c) The Sub-Commission should consider requesting the United Nations High Commissioner for Human Rights to submit a paper to its next session on progress achieved in these areas.

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## Introduction

1. In its resolution 1996/16, the Sub-Commission on the Promotion and Protection of Human Rights, concerned at the alleged use of weapons of mass or indiscriminate destruction against both members of the armed forces and against civilian populations, resulting in death, misery and disability, and at reports on the long-term consequences of the use of such weapons upon human life and health and upon the environment, and convinced that the production and sale of such weapons are incompatible with international human rights and humanitarian law, urged all States to be guided in their national policies by the need to curb the production and the spread of weapons of mass destruction or with indiscriminate effect, in particular nuclear weapons, chemical weapons, fuel-air bombs, napalm, cluster bombs, biological weaponry and weaponry containing depleted uranium. It also requested the Secretary-General to collect information from Governments, United Nations bodies and specialized agencies and non-governmental organizations regarding these weapons, and to submit a report on the information gathered to the Sub-Commission at its forty-ninth session.
2. The report of the Secretary-General (E/CN.4/Sub.2/1997/27 and Add.1) included a list of treaties prohibiting specific weapons or categories of weapons provided by the United Nations Centre for Disarmament Affairs (E/CN.4/Sub.2/1997/27, annex). In its resolution 1997/36, the Sub-Commission reiterated its concerns about these weapons expressed in its previous resolution and authorized Sub-Commission member Clemencia Forero Ucros to prepare a working paper on this topic. In its resolution 1997/37, the Sub-Commission decided to include the topic of illicit transfer of arms in the working paper. Ms. Forero Ucros did not submit the working paper.
3. In its decision 2001/119, the Sub-Commission authorized Mr. Y.K.J. Yeung Sik Yuen to prepare, without financial implications, the working paper originally assigned to Ms. Forero Ucros, and to submit it to the Sub-Commission at its fifty-fourth session.
4. Mr. Yeung Sik Yuen presented his working paper (E/CN.4/Sub.2/2002/38) to the Sub-Commission at its fifty-fourth session. Many members of the Sub-Commission as well as Governments and non-governmental organizations participated in the debate of this issue.<sup>1</sup> Sub-Commission members Mr. Decaux, Mr. Eide, Mr. Park, Mr. Guissé, Mr. Sorabjee and Mr. Yokota participated in that debate. Mr. Decaux urged that because of the complexities of the topic and for other reasons the paper should focus mainly on depleted uranium weapons.<sup>2</sup> Mr. Eide provided useful guidance on what the author considers to be parallel provisions of human rights law and humanitarian law, giving as an example the human rights provision against arbitrary deprivation of life in relation to the use of weapons with indiscriminate effect.<sup>3</sup> Mr. Park raised a very interesting point about whether the “mutual assured destruction” (MAD) policies of the cold war prevented armed conflict.<sup>4</sup> Mr. Guissé expressed concern about the indications of an increase in cancers following the deployment of DU weaponry and the need for further study in this area.<sup>5</sup> Mr. Sorabjee pointed out the failure of the North Atlantic Treaty Organization (NATO) to call for a moratorium on DU weapons.<sup>6</sup> Mr. Yokota raised the extremely important issue of the consequences of the use of these weapons, including the issue of punishment and reparations.<sup>7</sup>
5. Mr. Alfonso Martinez urged that further work be undertaken.<sup>8</sup> Other members made useful comments, especially Ms. Hampson,<sup>9</sup> who commented also on the vastness of the topic and, as did Mr. Eide, gave useful examples of parallel provisions in humanitarian and human

rights law: the prohibition of summary execution in relation to the use of military tactics or weapons that are indiscriminate in their effect, and the prohibition of inhuman or cruel treatment in relation to the humanitarian law terms “undue suffering” and “causing superfluous injury”. Ms. Hampson also raised the possibility that certain of the weapons discussed could possibly be used in a legal way, an issue that the author will address later in the present paper.

## I. THE FIRST WORKING PAPER

6. Before providing an update to his working paper, the author considers it useful to review briefly his earlier paper. This review will focus especially on the section on humanitarian law, as the present paper contains little elaboration on what the author considers to be undisputed principles of humanitarian law. The author began the prior paper with a brief overview of the provisions of human rights law most likely to suffer serious violations through the use of the weapons of concern, especially the right to life and security of the person. Referring to Article 2 of the Charter of the United Nations, the author discussed the potential “threat power” of a State having these weapons against a State not having these weapons or the capacity to use them with serious consequences, with respect to the rights and duties of States.

7. In paragraphs 22-40 the author provided a more detailed review of major provisions of humanitarian law, that body of law that specifically relates to weapons. First, setting out the sources of humanitarian law (treaties, customary international law, general principles of law, and judicial and expert opinion),<sup>10</sup> the author discussed the development of humanitarian law chronologically, beginning with the Hague Conventions of 1899 and 1907, promulgated to “mitigate [the] severity [of war] as far as possible”. These conventions contain much of the legal vocabulary framing the discussion of weaponry: the concept of proportionality regarding the use of weapons;<sup>11</sup> and the prohibition of employing poison or poisoned weapons or weapons calculated to cause unnecessary suffering or superfluous injury.<sup>12</sup> The author also highlighted the Martens Clause, which limits the arbitrary judgement of military commanders in situations not specifically addressed in the Hague conventions by the existing law of nations, the “laws of humanity, and the dictates of the public conscience”.<sup>13</sup>

8. Turning to the Geneva Conventions of 12 August 1949, the author noted the development of a principle prohibiting methods of warfare or use of weaponry having an indiscriminate effect, as these conventions establish that both the civilian population and combatants *hors de combat* must be spared death or injury from weapons deployed against military targets. This principle was much expanded in Additional Protocol I, especially in articles 50-54, which buttress the principle of proportionality by prohibiting military operations or the use of weapons against civilian populations or against military targets where there is a strong likelihood of undue civilian casualties in relation to the targeted military objective. Combatants are additionally prohibited from conducting military operations against objects which affect the very livelihood of the civilian population, namely destroying foodstuffs, livestock, crops, drinking water installations, supplies or irrigation works, or that unduly damage the environment.<sup>14</sup> Additional Protocol I also sets out the customary law rule that new weapons must be evaluated prior to military use to ensure that their deployment would not be prohibited by existing humanitarian law.<sup>15</sup>

9. Upon evaluation of these and other sources of humanitarian law,<sup>16</sup> the author concluded the section by setting out firmly established principles by which weapons are to be considered

banned: (a) their use has indiscriminate effects (no effective distinction between civilians and belligerents); (b) their use is out of proportion with the pursuit of legitimate military objectives; (c) their use adversely affects the environment in a widespread, long-term and severe manner; and (d) their use causes superfluous injury or unnecessary suffering.

10. The author then turned to the issue of the listed weapons in the light of his test, dividing them into categories identified by the Sub-Commission in its mandate. He presented standard nuclear weapons (the “big bombs”) first, both in terms of what they do but also setting out the major international action, including treaties, relating to nuclear weapons. These are clearly weapons of mass destruction, and also encompass the other categories identified by the Sub-Commission. He then turned to “mini-nukes” such as the B61-11 earth-penetrating bombs developed by the United States and reported to have a DU nosecone. The author indicated that this weapon has caused international concern since it was developed after the Comprehensive Test-Ban Treaty, which the United States signed in 1996. Regarding “mini-nukes”, the author concluded that they are still nuclear weapons, and also fall into the category of weapons of mass destruction, weapons having indiscriminate effects and weapons causing undue suffering. In the following discussion of biological and chemical weapons, the author likewise identified them as weapons of mass destruction, and also pointed out the irony that while there is a strong international prohibition in terms of treaties concerning these weapons, there has been no such success regarding the far more deadly nuclear weapons.

11. The author placed anti-personnel mines, cluster bombs and fuel-air bombs in the category of weapons having indiscriminate effect.<sup>17</sup> Regarding weapons causing superfluous injury or undue suffering, the author conceded the impossibility of identifying a complete list of such weapons, but did conclude that all the weapons discussed in the working paper would fall into these categories.

12. As weaponry containing depleted uranium (DU) was specifically singled out by the Sub-Commission, and also because it is new weaponry, the author addressed it in a separate section. He referred in his discussion to the obligation to evaluate weapons prior to use for compatibility with existing law. Nonetheless, DU weaponry was used in a number of situations, in spite of convincing evidence that it could not be used without violating humanitarian law. In particular, from the information he has studied, it is clear to the author that these weapons must necessarily be considered banned as causing superfluous injury or undue suffering, or because of a real threat to the environment. These weapons could also be viewed as poisonous. The author also noted a number of ongoing or planned studies on DU weaponry as well as the growing international action in civil society against them, including calls for a moratorium on their use by a number of States and several intergovernmental organizations.

13. The author concluded his working paper by noting that these weapons are intended to be used on enemy soil, thus making their devastation less of an issue for their users and their own nationals than for the “enemy” victims. He also expressed the fear of their imminent use under the pretext of the fight against “terrorism” and the need for “security” - well beyond what is permissible under international law - and indeed fears that the use of “mini-nukes” against so-called “rogue States” could trigger a spiral. In this context, human rights concerns are pushed aside in favour of a notion of “security” which flouts humanitarian norms.<sup>18</sup> He concluded with a plea for international adherence to human rights and humanitarian norms as being the true path to security.

## II. NEW INFORMATION

### A. New information on DU weapons

14. Since the last paper was submitted, information and events regarding the use of weaponry containing depleted uranium has proliferated - far more than for the other weapons under review. For this reason, the author addresses this topic first.

15. At the United Nations level, concerns about the military use of depleted uranium have escalated. On 6 November 2002, the Secretary-General stated that, "International conventions govern nuclear, chemical and biological weapons but new technologies - such as depleted uranium ammunition - pose as yet unknown threats to the environment ... While environmental damage is a common consequence of war, it should never be a deliberate aim."<sup>19</sup> In a statement released the same day for the same occasion, the United Nations Environment Programme (UNEP) stated, "It is vital that maps be prepared and kept to facilitate clean-up activities ... The innocent should not be made to suffer long after the weapons of war have been silenced."<sup>20</sup>

16. UNEP recently completed work on three conflict areas in which weapons containing DU were used or alleged to have been used: Serbia and Montenegro,<sup>21</sup> Bosnia and Herzegovina,<sup>22</sup> and Afghanistan.<sup>23</sup> UNEP also undertook field work and produced reports on Kosovo in 1999<sup>24</sup> and 2001.<sup>25</sup> The investigations into Serbia and Montenegro and Bosnia and Herzegovina were specifically undertaken to assess the presence of DU. These reports confirm the presence of DU on the fields of battle, but also far afield. DU was found in the soil and groundwater. While specifically addressing DU in these areas, the mandate of UNEP did not include investigation into actual medical problems in the area that might be attributable to DU exposure. There is no information therefore on the number of DU-linked illnesses and conditions in these reports.<sup>26</sup> UNEP did, however, include cautionary information about potential problems. For example, the report indicates concern about the use of buildings having DU residue, and recommended that there should be proper clean-up. In all the reports on their post-conflict DU investigations, UNEP commented on potential problems arising from the presence of DU still suspended in the air or found in groundwater and soil. UNEP further commented on the lack of public awareness about DU, urging public information programmes to inform the general public about DU hazards.

17. Despite allegations of the use of DU or perhaps other radiological weapons in Afghanistan and a number of allegations of their possible effects, the UNEP Afghanistan assessment did not include an inquiry into this issue.

18. On 13 February 2003, a resolution on the harmful effects of unexploded ordnance (landmines and cluster submunitions) and depleted uranium ammunition was adopted by the European Parliament. In addition to repeating the call for a moratorium on DU weaponry made in its resolution of 17 January 2001, and calling on member States to ensure that weapons are in conformity with humanitarian law, the European Parliament asked the European Commission to monitor developments in relation to the possible serious widespread contamination of the environment, as well as any acute or appreciable long-term hazard to human health. It also called on the Council to support independent and thorough investigations into harmful effects of DU weapons in areas where they had been used.

19. In spite of substantial international outcry against military action against Iraq in general and the use of depleted uranium weaponry in particular, the United States forces persisted in using DU munitions against Iraq in the March-April 2003 conflict.<sup>27</sup> UNEP, in a press release, immediately called for an assessment of the effects of the use of DU in Iraq.<sup>28</sup> The UNEP Post-Conflict Assessment Unit noted that its prior assessments in the Balkans were made two to seven years after the use of DU weapons and that it was clear that an early study in Iraq would add enormously to understanding how DU behaves in the environment.

20. In another press release,<sup>29</sup> UNEP issued a preliminary assessment of its forthcoming "Desk study on the environment in Iraq" in which it will outline its strategy for protecting the people and the environment in Iraq. UNEP indicated the need to assess the sites struck by DU weaponry, which will require that the users of these weapons provide the coordinates of the targeted sites. UNEP also indicated that "intensive use of DU weapons has likely caused environmental contamination of as yet unknown levels or consequences".

21. On 27 April, UNEP director Klaus Toepfer asked that the United Nations be allowed into Iraq immediately to assess environmental threats posed by weapons used during the war, including DU weapons. It was feared that DU weapons might threaten Iraq's water supply and create potentially dangerous radioactive dust.<sup>30</sup> Presenting UNEP's latest, 98-page report, Dr. Toepfer said that the main conclusion of that study was that UNEP had to go as soon as possible into the field. Margaret Beckett, Environment Secretary of the United Kingdom, said that her country welcomed the UNEP study but declined to comment further. Dr. Toepfer stressed that UNEP, which gets a large share of its funding from the United States, did not have any political agenda and that its main goal was humanitarian. As well as the effects of DU munitions, experts would study chemical and other hazardous waste, the torching of oil-filled trenches and the damage to sewage systems in the war.

22. On 24 April 2003 the Royal Society joined the call for full disclosure of DU use in the Iraq war.<sup>31</sup> Professor Brian Spratt, who chaired a Royal Society working group which published two reports on the health hazards of DU, made the following telling remarks:

"The coalition needs to acknowledge that DU is a potential hazard and make inroads into tackling it by being open about where and how much has been deployed. Fragments of DU penetrators are potentially hazardous, and the Royal Society study recommended they should be removed, and areas of contamination around impact sites identified and where necessary made safe. Impact sites in residential areas should be a particular priority. Long-term monitoring of water and milk to detect any increase in uranium levels should also be introduced in Iraq. The society's study concluded that few soldiers or civilians were likely to be exposed to dangerous DU levels. But it is now calling for tests for soldiers exposed to 'substantial' levels. It is only by measuring the levels of DU in the urine of soldiers that we can understand the intakes of DU that occur on the battlefield, which is a requirement for a better assessment of any hazards to health. It is vital that this monitoring takes place, and that it takes place within a matter of months."

23. Professor Spratt called as well for monitoring of DU levels in a wide sample of soldiers, including "foot soldiers", and field hospital staff across Iraq, and Iraqi civilians, adding:

“It is highly unsatisfactory to deploy a large amount of material that is weakly radioactive and chemically toxic without knowing how much soldiers and civilians have been exposed to it.”

24. The United Kingdom has said that it will make available records of its use of DU rounds and offer veterans voluntary DU tests. On the other hand, the United States says it has no plans for any DU clean-up in Iraq. It does not test all exposed veterans.

25. Since the last report there have been important new studies or reports about DU by scientists and independent researchers. One study involved a test of 27 Gulf war (1991) veterans, analysing urine samples for U 234, U 235, U 236 and U 238 and showing that 14 tested positive for DU.<sup>32</sup> The study refers to another study with rats showing that DU is deposited in the kidneys and bones. It also cites other studies showing the oncogenic (cancer-inducing) properties of DU as well as chromosomal instabilities.

26. The European Committee on Radiation Risk (ECRR) has continued to study DU and in 2003 issued recommendations indicating stronger evidence that the older radiation risk model of the International Commission of Radiological Protection (ICRP) is inaccurate. In the view of ECRR, ICRP underestimates the risk factor from internal radioactive particles (such as inhaled DU) by a factor of 100 to 1,000. As with the earlier ECRR paper, it is not within the competence of the author to say which model is correct. The author is aware that some experts who reject the ICRP risk factors do not necessarily accept the ECRR view.

27. Civil society and non-governmental organizations are becoming increasingly concerned about victims of DU weaponry, the more so in the light of actions initiated by developers and users of DU in trying to stifle discussion about DU and withhold information or falsify evidence outright.<sup>33</sup> In any case, it is apparent that the anti-DU movement is growing. Most independent scientists and lawyers focus on the illegality of depleted uranium weaponry in the light of international humanitarian norms or the impact of DU on health or the environment. While there are clear differences of opinion on how bad depleted uranium really is, no one except the military forces using depleted uranium weapons accept that they have no potential to unduly damage both health and environment. Further, some researchers are beginning to address the “whys” of DU use. For example, a leading researcher now takes the view that one of the reasons for using depleted uranium weapons against Iraq in 1991 and in the Balkans was to “test the opposition of the Western public opinion to the induction of radioactivity on the battlefield, and so to get the world population accustomed to the combat use of depleted uranium and fourth-generation nuclear weapons.”<sup>34</sup> He felt that the use of DU weapons in the first Gulf war was meant to break a military taboo against the limited use of radiological weapons on the battlefield so that it could be invoked as a precedent to facilitate a transition to the use of so-called fourth-generation nuclear weapons, including mini-nukes designed to be used as “bunker busters”. The same views are shared by another scientist.<sup>35</sup>

28. Since the last report, other States are considering legislative initiatives on DU. For example, there is an initiative in the Parliament of Australia to ban DU. A bill has been introduced in the United States House of Representatives to mandate a thorough assessment of the medical consequences of DU exposure.<sup>36</sup>

## **B. New information on nuclear weapons**

29. The most dramatic new information on nuclear weapons is that the United States administration is seeking a lifting of the 1993 ban on development of new small-scale nuclear weapons (the Spratt-Furse Law). On 9 May 2003 a committee of the United States Senate passed a bill to that effect. The measure calls for the development of a “bunker buster”-type bomb to be called the “robust nuclear earth penetrator”.<sup>37</sup> This weapon is intended to generate shock waves that could crush targets 300 metres underground. Critics have claimed that fall-out from this bomb would cover a wide area and cause a huge number of casualties.<sup>38</sup> The bill also allows for the development of other nuclear weapons having an explosive force of less than 5,000 tonnes of TNT. The author cannot help but observe that in spite of efforts since 1945 to make the use of nuclear weapons unthinkable, the very fact that plans are being drawn up for giving them a tactical application is shocking and dangerous.

30. Much international concern has been raised by the statements by some countries about their willingness to use nuclear weapons offensively in a “first strike”, or even in a “pre-emptive strike”. The present crisis between the Democratic People’s Republic of Korea and the United States following the former’s defiant admissions in October 2002 that it had a covert programme to enrich uranium for nuclear arms and revived a plutonium programme frozen under a 1994 pact between the two countries is of grave concern. It is likely that the Democratic People’s Republic of Korea already has a few nuclear weapons and may be a few steps from declaring itself a nuclear power. This could provoke the Republic of Korea to “go nuclear”, which could in turn make Japan re-think its non-nuclear posture.

31. During his first official visit to the United States, President Roh of the Republic of Korea recently pledged, with his host counterpart, to work with the international community to achieve the “verifiable and irreversible elimination” of nuclear weapons by the Democratic People’s Republic. They noted with serious concern statements from that country about possessing nuclear weapons and its threat to demonstrate or transfer them. Although both Presidents stated that they were confident that the crisis could be solved peacefully, there is mounting concern among informed observers that President Kim Jong II and his regime would likely respond pre-emptively with a little “shock and awe” of their own if they felt that they were being isolated and pushed into a corner. Sir Malcolm Rifkind, former Secretary of State for Foreign and Commonwealth Affairs of the United Kingdom expressed the view recently that “North Korea is disintegrating fast” and cautioned that “desperate men are dangerous”.<sup>39</sup>

32. The author cannot but recall that in his first paper (E/CN.4/Sub.2/2002/38, paras. 75 and 79) he expressed his concerns about the United States Nuclear Posture Review which indicated that the Pentagon had been ordered to draw up war plans for the first use of nuclear weapons against the so-called “axis of evil” countries, which includes the Democratic People’s Republic of Korea.

33. The author shares the conviction of the General Assembly of the United Nations, as expressed in its reference to the International Court of Justice for an advisory opinion on the legality of the threat or use of nuclear weapons (*ibid.*, paras. 43-44), that the complete elimination of nuclear weapons is the only guarantee against the threat of nuclear war.

### **C. New information on cluster bombs**

34. Cluster bombs continue to receive widespread criticism from governmental and non-governmental organizations, in line with what the author presented on this subject in his earlier paper. Cluster bombs were used in Iraq, although at this time, the author is unable to locate much information about the quantities and the sites where these weapons were used. This is mainly because the media are controlled by the coalition forces and news is percolated through “embedded” reporters. The author is, however, in a position to refer to a report by an NGO, the Iraq Peace Team (IPT), on civilian casualties and infrastructure damage in the March-April 2003 attack on Baghdad which tends to show that cluster bombs were indeed used.<sup>40</sup> Of the 17 reported casualties, one is particularly relevant. The house of a named Iraqi family at a given address in Al Tujjaar in north Baghdad was visited on 27 March by the above organization. The outer walls were found to bear hundreds of marks made by small, uniform, cubed metal pellets with sharp edges three to five millimetres thick. Three occupants of an upstairs room, including a child of 6, were reported to have been injured by metal fragments dispersed by a bomb. The details given in the report are consistent with a cluster-bomb explosion. A named French plastic surgeon with extensive experience working in war zones later confirmed that the pellets appeared to be from a cluster bomb.<sup>41</sup>

35. Unexploded cluster bombs in the Lao People’s Democratic Republic, left over from the Viet Nam war, continue to kill between 100 and 300 persons per year. One journalist reported that up to 90 million clusters were dropped in Laos (ibid., para. 111) with a reported 30 per cent failure-to-explode rate.<sup>42</sup> The reporter indicates that the British Mines Advisory Group (a leading mine-clearing group) recently found 376,000 unexploded ordnance, mostly cluster-bomb fragments, in a 20-km<sup>2</sup> area.

36. UNEP commented on the hazard of unexploded cluster bombs in Afghanistan in its report of post-conflict environmental concerns.<sup>43</sup> UNEP also commented on extensive environmental damage from extended military operations over 20 years.

37. The European Parliament expressed its grave concerns about cluster bombs in its above-cited resolution of 13 February 2003, extending its call for a moratorium on depleted uranium weapons “pending the conclusions of a comprehensive study of the requirements of international humanitarian law” to cluster bombs.

### **D. New information on other weapons**

38. Since the last working paper, concerns about chemical weapons have been focused on the possibility of anthrax use in Iraq and the possibility of the reintroduction of the smallpox virus. In the United States many civilian medical personnel as well as military personnel who would potentially serve in Iraq were vaccinated against both anthrax and smallpox. Some raised complaints about forced vaccinations, and apparently some Australian soldiers who refused the anti-anthrax vaccine were sent home from the Gulf area.

39. There has not been much information available about the possible use of fuel-air bombs against Iraq, again because of the control of the coalition forces over the media. However, the IPT in the report referred to above mentioned an incident at Al Qadisiyeh, Baghdad, which points to the use of such a bomb. On 23 March 2003, four houses were flattened by a bomb

which left a crater about 125 feet in diameter and more than 25 feet deep. One named person who was outside at the time the bomb hit and who was injured said that he heard a deafening noise and was thrown back by a huge fireball.

40. Regarding landmines, there have been continuing concerns about the urgent necessity of clearing a number of countries, especially in Africa.

#### **E. New weapons: directed energy weapons (DEW)**

41. In the last working paper (*ibid.*, para. 175) the author mentions new weapons which, although identified, could not be evaluated then. They are the so-called “directed energy weapons” (DEW), which include weapons using radio frequency (RF), electromagnetic frequency (EMF) and microwave energy (ME). DEW are designed and used so as not to leave evidence. Damage is caused without any perceptible projectile, without a sound and without need of precise visual targeting. Walls will not impede an RF, EMF or ME attack.

42. While EMF weapons are principally meant to disrupt military hardware which rely on modern technologies, they can be misused in multifarious ways which violate humanitarian law. Those weapons are meant to emit waves that would jam or disrupt computers. Smart weapons, fighter aircraft, highly sophisticated tanks, etc., which rely heavily on computers, would be affected so that their weapons would miss the targets or planes would crash. They could also be used by terrorists, if made available, against civilian aircraft. The so-called e-bomb, a bomb which when exploded would release an electromagnetic pulse (EMP) capable of disabling computerized circuitry with all the potential damaging consequences, was awaited by military observers to be tested in combat in Iraq.

43. According to a technology writer for the Associated Press, the United States had plans to fire a cruise missile tipped with a high-power EMP emitter (the e-bomb) which Jane’s Information Group claims “fries the electronics without killing the people”.<sup>44</sup> The e-bomb was finally reported not to have been used because it was so big that it would take a truck, not a cruise missile, to carry it.<sup>45</sup> However some DEW could also be used as anti-personnel weapons and appear to have been so used already.

44. According to a former employee of the United States Navy, the first deliberate use of non-ionizing irradiation of human beings occurred in 1960 when a host country covertly directed radar-like microwave beams at a United States embassy. According to the same source,<sup>46</sup> in April 1976, Secretary of State Henry Kissinger wrote to the embassy concerning the physiological effects of the radiation on the personnel. Those included malaise, irritability and fatigue. The telegram went on to state:

“At this time the ... [host country] believed that the induced effects were temporary. Subsequently, it has been verified that the effects are not temporary. Definitely tied to such radiation and the UHF/VHF electromagnetic waves are: (a) cataracts, (b) blood changes that induce heart attacks, (c) malignancies, (d) circulatory problems, (e) permanent deterioration of the nervous system. In most cases the after-effects do not become evident until long after exposure - a decade or more.”<sup>47</sup>

45. The United States responded with “Operation Pandora” to study the health and psychological effects of low-intensity microwaves. From 1965 to 1970 extensive studies were carried out demonstrating how to induce heart seizures, create leaks in the blood/brain barrier and produce hallucinations. In documents filed under the Freedom of Information Act Richard Cesaro, Director of the Defense Advanced Projects Research Agency, confirmed that the programme’s aim was to discover, for potential weapons application, whether a carefully controlled microwave signal could influence the mind.

46. A Belgian doctor who braved the war in Iraq in his Baghdad Diary has provided an account of a possible first military antipersonnel use of DEW.<sup>48</sup> The horrible account is given of a bus containing civilians that was fired upon on 1 April 2003 in Al Sqifal, near Hilla, from an American checkpoint. According to reports from Dr. Saad El-Fadoui, a 52-year-old surgeon who studied in Scotland and who immediately went to the site of the incident from Hilla Hospital, “the bodies were all carbonized, terribly mutilated, torn into pieces”. In and around the bus he saw heads, brains and intestines. According to witnesses no one had heard the sound of an explosion and no traces of shrapnel were found on the bodies.

47. The author is in no position to vouch for the veracity of the reported account at Al Sqifal and can only deduce from his readings that a DEW, probably using microwave energy, could have been used in that incident. However, from the information available on DEW, namely the surreptitious nature of their use and their atrocious effect of literally dismembering victims, the author feels that they may fall within the category of weapons causing superfluous injury and unnecessary suffering and would thus be banned under humanitarian law.

#### **F. General comments**

48. Since the author presented his first paper, the use of the term “weapons of mass destruction” (WMD) has become almost a household term. This was partly in the context of weapons alleged to be in the arsenals of Iraq. In a number of cases, some, if not all, of the weapons under review in these papers are referred to by others as WMD. The author prefers a more cautious use of this term, limiting WMD to weapons causing massive physical destruction over a wide area, such as nuclear weapons, “mini-nukes” and bunker busters, and to many biological and chemical weapons - depending on how and where they are deployed. This does not mean that WMD are not also illegal because they are weapons of indiscriminate effect (WIE) or of a nature to cause superfluous injury (WSI) or unnecessary suffering (WUS), but rather that they are singled out as extraordinarily destructive.

49. While in the first paper the author discussed fuel-air explosives under the heading of WIE, the author is also of the opinion that certain of these bombs (especially the BLU-82 15,000-pound “Big Blue” bombs and the new 21,500-pound MOAB) could be categorized as WMD, especially in relation to where they are used. Even smaller fuel-air explosives could be categorized as WMD if used in densely populated urban areas. The author is also not convinced that these weapons would be used in a way that would not result in impermissible consequences, even if that were “technically” possible. Additionally, there has not yet been serious study of the possible grave environmental consequences of these weapons, such as causing earthquakes, which would on their own be a reason to ban them.

50. Anti-personnel mines and cluster bombs, having limited explosive or destructive power, were presented as WIE in the first paper, primarily for the reason that these weapons cannot distinguish between combatant and civilian. Cluster bombs also have serious dispersal and detonation problems that aggravate their inherent indiscriminate effect. Although theoretically anti-personnel landmines and cluster bombs could be used in a “discriminate” way limited to combat use and permissible targets, history is a wise teacher and has attested to the paucity of “clean use” scenarios carried out by the responsible belligerents. Thus, when combat ceases, large numbers of explosive munitions remain - in some cases for years after hostilities cease - to harm. Removal efforts are very costly and, for many countries, prohibitive. Further, in recent wars where cluster bombs have been used, inordinate numbers of civilians were killed or injured during and after the conflict.

51. As stated in the first paper, all the weapons under consideration, including weapons containing DU, can be considered prohibited because they are WIE, WSI and WUS. Additionally, nuclear weapons, weapons containing depleted uranium, or other “radiological” weapons necessarily cause impermissible damage to the environment.

52. The author is, of course, aware of the continuing controversy over DU weapons, fuelled by what the author considers cavalier disregard, if not deception, on the part of the developers and users of these weapons regarding their effects. While the author is not in a position to evaluate the many scientific studies of these weapons, it is impossible to ignore the findings of credible medical research. On that ground alone, DU weapons should not be used pending further study. Furthermore, the United States Department of Veterans’ Affairs (VA) figures of deaths of veterans who served in the first Gulf war (over 8,000), coupled with an about equally startling disability rate (206,861 of 696,778 veterans on paid disability), is sufficient to indicate that something is seriously amiss.<sup>49</sup>

53. It is clear from the recent Iraq conflict that the “threat power” of DU weapons may be considerable. In the author’s view, one reason for the failure of Iraqi military efforts against the ground troops is awareness of what prolonged military operations with DU weaponry would do to their country in terms of post-conflict deaths, illness and environmental pollution. In this sense, Iraqis appear to have been more “terrorized” by DU weapons use than from the “shock and awe” bombings. In any case, these weapons do have a great capacity to terrorize, and should be looked at from the perspective of “threat power” and terrorism in armed conflict.

54. Owing to the constraints imposed on the author, other related legal issues have not been addressed. The major one, in the author’s view, is the concern raised by Sub-Commission member Mr. Yokota about the legal obligations of the users of illegal weapons, especially in the light of the Hague Convention of 1907, article 3: “A belligerent Party which violates the provisions of the said Regulations shall, if the case demands, be liable to pay compensation. It shall be responsible for all acts committed by persons forming part of its armed forces.” With the added burdens of the duty to warn and the duty to clean up, use of these weapons could be very costly indeed were the international community to insist on full compliance with humanitarian law in all circumstances. The Sub-Commission’s prior work on the issue of compensation,<sup>50</sup> as well as the continuing work on this topic at the Commission on Human Rights, are clearly relevant to this issue.

### III. CONCLUSIONS AND RECOMMENDATIONS

55. The main legal conclusion reached by the author is that all the weapons under review in his two papers should be considered banned, whether or not there is a specific treaty banning them. Weapons which are the subject of a specific treaty should also be considered universally banned for all States, regardless of whether a State is a signatory. States that have employed any of these weapons should assume their duties relative to compensation, clean-up and warning.

56. A second major conclusion relates to a pressing “need to know” regarding what weapons were used and where in Afghanistan, Iraq and any other conflict areas where any of those weapons have been deployed. This information is vital to be able correctly to assess damage and to provide medical assistance to those affected, in conformity with the right to health. For this reason, the Sub-Commission could join in the appeals of other entities of the United Nations for such disclosure.

57. The Sub-Commission, acting on allegations of violations to the right to a healthy environment, can also call for a new environmental assessment of Afghanistan that would more closely examine effects from weaponry used post-11 September. Included in such an assessment, and in the one now called for by UNEP in Iraq, should be full and impartial assessment of the effects of the weapons used on the affected populations, including veterans of the conflicts. Such assessment could be undertaken by WHO and by other impartial medical assessment teams. There is also a particular need to assess fully the environmental and health consequences of the use of DU weaponry.

58. Regarding the use of fuel-air bombs and existing or planned “bunker busters” and/or “mini-nukes” the Sub-Commission should encourage scientific assessment of the “earthquake-producing” potential of these weapons as well as contamination aspects. In the same way, the Sub-Commission should encourage scientific assessment of DEW and call for an in-depth study of the nature of those weapons, their ill effects and potential misuse which would infringe humanitarian law.

59. Owing to rapid developments in this area, the Sub-Commission might consider requesting the High Commissioner to prepare a paper for the fifty-sixth session on progress achieved in all these areas. Of particular interest would be information on the results of the testing of United Kingdom veterans as well as any information from UNEP and WHO on assessment in Iraq. Specific areas to be addressed might include seeking information from Governments, specialized agencies and non-governmental organizations on the legal implications of the “threat power” potential of existing or proposed weapons.

## Notes

<sup>1</sup> See E/CN.4/Sub.2/2002/SR.18.

<sup>2</sup> Ibid., para. 80. This is one of the reasons that the author has paid special attention to DU weapons in the present paper.

<sup>3</sup> Ibid., para. 81.

<sup>4</sup> Ibid., para. 82. The author does think that MAD prevented a war between the nuclear powers, but it did little to prevent smaller-scale conflicts throughout the world during that period.

<sup>5</sup> Ibid., para. 83.

<sup>6</sup> Ibid., para. 84. The author has no insight into this failure except to note the composition of NATO.

<sup>7</sup> Ibid., para. 85.

<sup>8</sup> E/CN.4/Sub.2/2002/SR.19, para. 31.

<sup>9</sup> Ibid., paras. 33 and 36.

<sup>10</sup> Statute of the International Court of Justice, Article 38. The author considers the listing therein to be a statement of the customary law on sources of international law.

<sup>11</sup> See the Hague Convention of 18 October 1907, annex: Regulations respecting the Laws and Customs of War on Land, article 22.

<sup>12</sup> The term “superfluous injury” is from the Hague Convention of 1899 (art. 23), the term “unnecessary suffering” from the Hague Convention of 1907 (art. 23), which the author considers *mutatis mutandis*, as covering the same situations.

<sup>13</sup> While found in the Hague Conventions of both 1899 and 1907, it is usually cited as the eighth preambular paragraph of the latter.

<sup>14</sup> Additional Protocol I, art. 35 (3). Comparable provisions are found in Additional Protocol II, articles 13-15.

<sup>15</sup> Art. 36. As the author wrote, this provision was stressed by the International Court of Justice in its advisory opinion on nuclear weapons. See E/CN.4/Sub.2/2002/38, para. 35.

<sup>16</sup> The author also discussed other sources, including the Convention on Prohibition or Restriction on the Use of Certain Conventional Weapons which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects (Conventional Weapons Convention) of 1980 and a number of other decisions of the International Court of Justice, in his working paper.

<sup>17</sup> Regarding fuel-air bombs, the author would like to mention that Mr. Ric Finke has withdrawn the information he provided (see E/CN.4/Sub.2/2002/38, para. 123 and note 60). Nevertheless, the author still concludes that fuel-air bombs must be indiscriminate owing to the sheer size of the explosions, making civilian casualties unavoidable. There have been allegations that these bombs can set off earthquakes, and these weapons may also be illegal for that reason alone. The author learnt with dismay that a new bomb, bigger than the 15,000 pound “Big Blue” (see E/CN.4/Sub.2/2002/38, para. 119), now exists in the United States arsenal. The massive ordnance air burst (MOAB), nicknamed “mother of all bombs”, is, according to *Newsweek* (24 March 2003), reported to weigh 21,500 pounds.

<sup>18</sup> The author is indeed distressed that this has occurred, and submits this paper with the profound hope that the international community will rally to the cause of full compliance with all norms of international law, especially those relating to armed conflict, human rights and the rule of law.

<sup>19</sup> Statement of United Nations Secretary-General Kofi Annan on the occasion of the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict. Press release SG/SM/8463.

<sup>20</sup> UNEP Information Note 2002/27.

<sup>21</sup> UNEP, “Depleted Uranium in Serbia and Montenegro: Post-Conflict Environmental Assessment”, 2002.

<sup>22</sup> UNEP, “Depleted Uranium in Bosnia Herzegovina: Post-Conflict Environmental Assessment”, March 2003.

<sup>23</sup> UNEP, “Afghanistan: Post-Conflict Environmental Assessment”, 2003.

<sup>24</sup> UNEP, “The Kosovo Conflict - Consequences for the Environment and Human Settlements”, 1999.

<sup>25</sup> UNEP, “Depleted Uranium in Kosovo: Post-Conflict Environmental Assessment”, 2001.

<sup>26</sup> There was a medical “sub-team” from the World Health Organization (WHO) and the United States Army that looked into the situation of three hospitals in Bosnia and Herzegovina and examined some medical data and statistics, but a report on their findings is not yet available.

<sup>27</sup> In a pre-war United States Department of Defense briefing on potential depleted uranium use in military actions against Iraq, Col. Naughton stated: “As a practical matter, if we use Abram tanks we have no choice. We do not have an alternative for the Abram tank.” United States Department of Defense, press release of 15 March 2003. Transcript available at <http://www.scoop.co.n2/mason/stories/W00303/S00209.htm>.

<sup>28</sup> UNEP, press release of 6 April 2003.

<sup>29</sup> *Ibid.*, 24 April 2003.

<sup>30</sup> Reuters, 28/29 April 2003.

<sup>31</sup> Full views of Professor Spratt of the Royal Society, as reported by the BBC News Online environment correspondent, can be found at <http://news.bbc.co.uk/1/hi/sci/tech/2972613.stm>.

<sup>32</sup> A. Durakovic, P. Horton and L. Deitz, "The Quantitative Analysis of Depleted Uranium Isotopes in British, Canadian and U.S. Gulf War Veterans", *Military Medicine*, vol. 167, No. 8, 2002, p. 620.

<sup>33</sup> The author raised some concerns about this in E/CN.4/Sub.2/2002/38, paras. 145-149. A recent article attests to some of this. See P. Bein and K. Parker, "Uranium Weapons Cover-up", in *Politics and Environmental Policy in the 21st Century*, Faculty of Political Sciences, University of Belgrade, 2003 (forthcoming) (drafts with the author). In some cases, persons and groups who have raised concerns about possible DU use in Afghanistan or the effects of DU use in Iraq are called "sympathizers" of either the Taliban, al-Qa'idah or Saddam Hussein, in a rather blatant attempt to turn the focus away from objectivity towards a view that puts the Governments in a better light. In other situations, the opinions of Iraqi doctors or scientists is discarded, presumably because they are Iraqi, with no attempt to actually counter what they are saying about the health of Iraqis exposed to DU in the earlier Gulf war. In its report published in October 1999 on the Kosovo conflict, UNEP/UNCHS (Habitat) appropriately observed in the opening sentence that "perhaps the most endangered natural resource in time of war is truth". The author feels that this applies to the stand of military users of DU.

<sup>34</sup> A. Gsponer, "Depleted-Uranium Weapons: the Whys and Wherefores", Independent Scientific Research Institute, 31 January 2003, p. 26, available at <http://arXiv:physics/0301059v5>. Dr. Gsponer also is of the opinion that depleted uranium weapons can in no way be considered "conventional" weapons, but belong to a category that he calls "low-radiological nuclear weapons to which emerging types of nuclear explosives belong", and that this reinforces the view that "depleted uranium weapons are illegal according to international law and contrary to the rules of war". *Ibid.*, p. 22.

<sup>35</sup> Leuren Moret, former scientist at the Livermore Nuclear Weapons Laboratory. Views expressed in a press release issued by the Association of Humanitarian Lawyers on 25 April 2003.

<sup>36</sup> U.S. Cong., H.R. 1483, 27 March 2003.

<sup>37</sup> Agence France Presse, 10 May 2003.

<sup>38</sup> P. Richter, "Research on small nukes clear Senate committee", *Los Angeles Times*, 10 May 2003.

<sup>39</sup> *The Times*, 27 December 2002.

<sup>40</sup> IPT claims to be a project of a Chicago-based grassroots-group, Voices in the Wilderness, which has worked in Iraq since 1996. Its report, prepared by 16 named persons, can be viewed at [www.iraqpeaceteam.org](http://www.iraqpeaceteam.org).

<sup>41</sup> At the time of writing there appears to be mounting evidence about cluster-bomb deployment in Iraq.

<sup>42</sup> C. Hallinan, "Cleaning up the mess in Iraq", *Asia Times*, 1 May 2003.

<sup>43</sup> UNEP, "Afghanistan: Post-Conflict Environmental Assessment", op. cit., p. 50.

<sup>44</sup> [www.newsmax.com/archives/articles/2003/2/16/183535.shtml](http://www.newsmax.com/archives/articles/2003/2/16/183535.shtml).

<sup>45</sup> "High tech, low effect", *Newsweek*, 7 April 2003, p. 5.

<sup>46</sup> William McIntosh, <http://www.geocities.com/adrian9999999999/DEWandT1.html>

<sup>47</sup> Ibid.

<sup>48</sup> Geert van Moorter, available at [http://www.irak.be/ned/missies/MedicalMissionColetteGeert/two\\_belgian\\_doctors\\_in\\_baghdad](http://www.irak.be/ned/missies/MedicalMissionColetteGeert/two_belgian_doctors_in_baghdad).

<sup>49</sup> United States Department of Veterans' Affairs, "Gulf War Information," Veterans Benefits Administration, Office of Performance Analysis Integrity, May 2002. Equally alarming figures for United Kingdom veterans, plus the clear medical catastrophe in Iraq, reinforce the view that DU weapons may be the single most important causal factor in these deaths and illnesses.

<sup>50</sup> T. van Boven, Study concerning the right to restitution, compensation and rehabilitation for victims of gross violations of human rights and fundamental freedoms (E/CN.4/Sub.2/1993/8).

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