ICBUW

International Coalition to Ban Uranium Weapons

United Nations Report 2006

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Introduction

We, the International Coalition to Ban Uranium Weapons, are writing on the occasion of the International Day for Preventing the Exploitation of the Environment in War and Armed Conflicts to urge the U.N. to consider a ban on uranium weapons, specifically depleted uranium weapons, which have been used in at least four wars and most recently in urban areas in the Iraq War of 2003.

UN Secretary-General Kofi Annan, in a press release commemorating the first anniversary of the International Day for Preventing the Exploitation of the Environment in War and Armed Conflicts on November 6, 2002, said: "*International conventions govern nuclear, chemical and biological weapons, but new technologies - such as depleted uranium ammunition - pose as yet unknown threats to the environment. Damage to the environment in war is also an impediment to the restoration of peace and rebuilding of society*."

Concern about the possible harmful environmental and health effects of depleted uranium munitions led an international network of grassroots organizations, NGOs and other groups, to found the International Coalition to Ban Uranium Weapons (hereafter termed the Coalition) in 2003. The Coalition is dedicated to stopping the production, testing, sale, stockpiling, financing, transport and export of depleted uranium weapons as well as the decommissioning of existing stockpiles. The Coalition is currently made up of more than 80 grassroots organizations worldwide.

Two resolutions of the Sub-Commission to the UN Commission on Human Rights (1996/16 and 1997/36) have specified that the use of depleted uranium munitions is not in compliance with present International Humanitarian and Human Rights Law. These resolutions have had no impact thus far on the production and use of depleted uranium munitions.

Environmental as well as International Humanitarian Law include the principles of precaution and proportionality. At the very least, nations should observe these principles, if not live up to them. Adhering to the precautionary principle means that nations should decide against the use of depleted uranium weapons until it is scientifically proved that depleted uranium is harmless to the environment and to human health; furthermore the burden of proof should be placed on the users, military and governments, to prove that depleted uranium is harmless.

An indisputable fact about depleted uranium is that its half-life is 4.5 billion years. Once depleted uranium (DU) is in the environment, it will be around for thousands of generations.

In addition to its radioactivity, depleted uranium is a highly chemically toxic heavy metal, like nickel, cadmium and even lead. Lead is known to cause health

problems in children. Nickel and cadmium are carcinogenic. Depleted uranium has been shown to be more hazardous than nickel, which is a known carcinogen (A.C. Miller et al., Military Medicine 167, 2002). In this regard, the precautionary principle would seem to be of the utmost importance.

Written and customary International Humanitarian Law prohibits poisons. Uranium is a poison. These laws also rule against the use of weapons with indiscriminate effects, or which cause superfluous injury or unnecessary suffering. Depleted uranium, which remains in the environment for centuries, has been used in urban areas and, as nations have left military vehicles destroyed by DU shells in urban, rural, and desert areas, it may cause harm and unnecessary suffering for years after the cessation of hostilities. International Humanitarian Law also proscribes devastating the environment. Depleted uranium by its half-life alone can contaminate soil, water and even air for centuries.

We say this knowing that depleted uranium has been a controversial topic but these aspects of depleted uranium are incontrovertible.

Environmental Effects

A chief problem with depleted uranium is the dust created when a depleted uranium penetrator strikes a tank or other hard object, such as a building. The chemically toxic and radioactive metal dust, which can be inhaled, can stay in the body for months and even years. DU dust also becomes one with the soil, air and water.

Although many DU shells do not hit their target, and so do not create respirable dust, intact DU shells fired at high velocities burrow into the ground, corrode. In Bosnia-Herzegovina, the UNEP team found that some DU shells in the ground had lost 25 percent of their mass in just 7-8 years. Depending on how many shells are in the vicinity, this corrosion over time can lead to the contamination of soil and ground water. Intact DU shells also give off a small amount of radiation.

The DU aerosol that is created at the high temperatures reached (more than 3,000ºC) when a shell hits a tank; creates DU particles 1.5 microns in diameter or less. These particles can travel for miles - in New York State it was proved that DU aerosol had travelled at least 26 miles. However, and in the desert especially, DU particles that fall to the ground whether at the time of impact or later on, can be easily re-suspended in the air for humans and animals to inhale or ingest. DU particles that are less than 100 nanometres behave as a gas and can stay in the air indefinitely. They are not bound by the laws governing the behaviour of particles, which is what the methodology of the International Committee on Radiological Protection (ICRP) is based on.

The use of gas in war is a violation of the Geneva Protocol on the Use of Gas. It is well established that DU powder can become an invisible metal fume or gas. DU will be part of the environment forever, whether as dust or in gaseous form, or as corroded metal.

When a DU shell hits a tank, the very high temperatures also vaporize the metals at and around the point of impact. They form part of the aerosol. Such nanoparticles have been found to cause disease, according to the work of Italian scientists, Drs.Antoinette Gatti and Stefano Montanari.

Depleted uranium contaminates the environment at every stage of its existence. Uranium mining and especially the toxic tailings it leaves behind, destroy the environment. In the southwest of the United States, Native Americans living near the mines have become ill. The enrichment process itself creates seven tons of DU for every ton of low-enriched uranium. Enrichment plants in the U.S. have drums of DU piled up outside. Typically the DU is in the form of DU hexafluoride, a volatile substance that is very corrosive – the drums will only last for decades. Leakage of hydrogen fluoride from the drums endangers the health of people nearby. There is also leakage of small amounts of radiation.

At Starmet (previously Nuclear Metals, Inc.) in Concord, Mass. in the U.S., where depleted uranium shells were manufactured for 25 years, there were fires and employees had to take showers every day; Geiger counters were used to ensure that the employees were radiation-free. Even so, employees very often carried dust home in their cars. Testing sites contaminate the range. The now defunct Jefferson Proving Grounds in Indiana in the U.S., now a wildlife reserve, is still radioactive.

Transportation of DU in trains, trucks and ships carries with it the possibility of explosion and fire. Although the U.S. Department of Transportation is phasing out its exemption, which permitted the transport of DU without signs indicating its explosive or pyrophoric nature, the situation has been such that in the event of a fire or explosion, first responders would not know that they were dealing with a very chemically toxic and radioactive substance. Such an explosion could contaminate the immediate environment.

Uranium weapons were used in the 1991 Gulf War, the wars in the Balkans and in the Iraq War of 2003 and possibly in Afghanistan since 2001. The UNEP Kosovo team found traces of uranium 236, an artificial isotope of uranium, and also transuranic elements such as plutonium and americium in four DU shells in trace amounts (an indication that these shells had been manufactured from reprocessed uranium). In these quantities UNEP stated they were not harmful but would this be different if there were a large number of shells in a small area?

Also in Kosovo, Danesi and colleagues discovered hundreds of thousands of DU particles in a small number of milligrams of contaminated soil. They termed this a ‘hot spot’. This discovery was made more than fifteen months after the conflict in Kosovo. Some sites in Kosovo were too dangerous to investigate because of landmines and cluster bombs. Other sites KFOR cleaned up prior to the UNEP team’s visit. Thus it is difficult to know the exact degree of environmental contamination by DU in Kosovo. The same is true in Iraq.

Using a Geiger counter, Scott Peterson of the Christian Science Monitor (*Remains of Toxic Bullets Litter Iraq*, May 15, 2003) found a number of spent DU shells in Baghdad after the 2003 Iraq War which tested at 1,000 times natural background radiation. In Iraq too, children looking for scrap metal take metal from destroyed tanks to sell for money for their families.

At the 3rd International Conference of the Coalition in August 2006, Dr. Khajak Vartanian, an environmental radiation specialist from southern Iraq, showed maps of sites in the Basra area that were contaminated by DU. His mapping demonstrated the proximity of these sites to urban areas in and around Basra.

The Royal Society in the UK and other respected scientific bodies, urged the international community to clean up environmental contamination by DU munitions in Iraq immediately after the Iraq War of 2003. Indeed, in 2003, Prof

Spratt of the Royal Society said: "There are few, if any, validated measurements of the exposures to DU from previous conflicts where DU munitions were used. It is highly unsatisfactory to deploy a large amount of a material that is weakly radioactive and chemically toxic without knowing how much soldiers and civilians have been exposed to it.

There has been concern in the international community about such contamination to the environment caused by the use of DU munitions since its first use in the Gulf War of 1991.

Health Assessments

The U.K. Lloyd Report (2005) and the Research Advisory Committee on Gulf War Veterans Illnesses of the Veterans Administration state that Gulf War Syndrome is composed of multi-symptom chronic illnesses. Both groups implicate DU as one of a number of possible causes of Gulf War illness.

Gulf War veterans in the U.S. have a higher incidence of ALS - Lou Gerig's Disease - than non- deployed veterans. Eight members of the New York National Guard are suing the U.S. Government because of exposure to depleted uranium during their deployment in Iraq. They were stationed for one and a half months in an abandoned train depot in Samawah, near a battlefield. They ate, drank and slept in the dust of numerous sandstorms (there were few intact windows in the train depot). Four members of the National Guard later tested positive for DU at a German laboratory, where testing was undertaken with highly sensitive equipment.

Another member of the New York National Guard who had transported destroyed and dirty equipment (including tanks) between Kuwait and Baghdad became ill and also tested positive for DU at the German laboratory; his daughter, conceived after his return from Iraq, was born with a limb reduction deficit (one hand is missing three fingers). The National Guardsman and his wife researched their family trees and found no evidence of birth defects in prior generations. It should be added that all these National Guardsmen have been ill.

Dr. Jawad Al-Ali, Head of the Department of Medicine at the Al Sadr Teaching Hospital and Director of its Cancer Treatment Centre in Basra has found a 1.4 times increase in the incidence rate of solid cancers over the past thirteen years. These figures were taken from their latest epidemiological data. He said that this increase might be due to the very considerable environmental damage resulting from the two Iraq Wars - of 1991 and 2003. Depleted uranium is certainly a definite contributor to this environmental destruction.

Several publications in 2005 stated that there is no level of radiation that does not carry risk of a fatal cancer. The first of these is the *BEIR VII Report*, published in the U.S. by the National Academy of Sciences. The other is: *Risk of Cancer After Low Doses of Ionising Radiation: Retrospective Cohort Study in 15 countries*, by Cardis and co-workers (British Medical Journal, 28 June 2005). There is evidence that the methodology of the ICRP in estimating radiation exposure may be faulty. With respect to depleted uranium, the ICRP only measures radioactivity as averaged over an organ or tissue. However, not all the cells in an organ are likely to be irradiated by DU, yet mutations caused by radiation in just a few cells may lead to cancer. Furthermore, the ICRP does not take into account the bystander effect where cells neighbouring cells targeted by radiation take on the pathological characteristics of the cells hit by radiation. Likewise, genomic instability or the passing on of mutations from cells targeted

by radiation to future generations is also not accounted for by ICRP methodology.

However it is important to remember that depleted uranium is a heavy metal and like nickel or even lead is highly chemically toxic. We would not permit children or adults to breathe in lead dust and the DU aerosol is certainly more deadly. Nickel is a known carcinogen and DU was found to be more carcinogenic than nickel in one cellular study. Research by D. Stearns and her Navajo students at Northern Arizona University published last year showed that DU forms a complex or adduct with DNA, which leads to mutations and potentially to cancer. In a cellular study, Wan et al. found that DU created changes in the immune system, which could potentially lead to cancer, auto- immune diseases and allergies. The T2 profile that DU creates has been found in ill veterans with Gulf War Syndrome (B. Wan et al., *In Vitro Immune Toxicity of Depleted Uranium: Effects on Murine Macrophages, CD4+T Cells, and Gene Expression Profiles*, Environmental Health Perspectives 114(1)(Jan. 2006), pp. 85-91). These effects, caused by exposure to DU, are due to DU's heavy metal chemical toxicity.

The epidemiologist, Dr. Rosalie Bertell in a recent paper, *Depleted Uranium: All the Questions About DU and Gulf War Syndrome Are Not Yet Answered*, International Journal of Health Sciences 36 (3), 2006, says that radiation effects cannot be separated out from the chemical toxicity of DU and that there are aspects of both that the ICRP methodology does not take into account. She says: "*The radiation dose-response methodology (of the ICRP) seems to work by masking the low-dose effects. It is not appropriate for understanding low-dose DU exposures, because radiation, heavy metals (of which DU is one), and other toxic chemicals can destroy the functionality of the cellular respiratory system (the mitochondria), disrupt the chemistry of enzymes and hormones, frustrate normal cellular detoxification and repair, and leave the person alive but chronically ill*," (pp. 506-507). She goes on to say that even at low doses of radiation there may be synergistic effects with other toxic substances, or significant confounding variables.

Although all the answers regarding the harmful effects of depleted uranium are not yet clear, there is definite cause for concern.

Immediate Action That Is Needed

The Coalition calls for the following:

- Full disclosure from the governments responsible of all locations where depleted uranium weapons have been used as well as the amounts of depleted uranium used;

- The release of a list of sites where depleted uranium munitions have been used in Iraq;

- The clean-up of all sites contaminated by depleted uranium weapons and compensation for all affected populations by the international community. Storage of all spent DU munitions and other contaminated scrap metal and soil in strictly controlled facilities for well over one billion years to prevent their diffusion into the environment.

The Coalition demands the following:

- A halt to the manufacture, testing, sale, stockpiling, financing, transport and export of depleted uranium weapons and the decommissioning of all existing stockpiles;

- Immediate medical assessment, treatment and long-term monitoring of all those who have been exposed to depleted uranium munitions.

- Financial support from organizations and individuals in order to provide independent medical and environmental investigations of countries affected by these various aspects of the lifecycle of depleted uranium weapons.

Lastly, the Coalition calls on governments to keep their troops from engaging in actions through alliances with any government that uses depleted uranium munitions.

On the occasion of UN International Day of November 6, 2006, we urge the United Nations to take immediate and concrete action to ban uranium weapons. We hope that the UN will commission health surveys of the victims of uranium weapons, as well as call for the undertaking of environmental surveys in all affected areas, and also seek ways of providing medical treatment and compensation for the victims.

Coalition Activities in the Last Two Years

For the past two years ICBUW has honoured the International Day of Action by collecting signatures for a petition calling for a ban on uranium weapons. At the closing session of the 3rd International ICBUW Conference on August 6, Prof. Nobuo Kazashi of the No DU Hiroshima Project presented Ms. Nasrrine Azimi, Director of the Hiroshima Office for Asia and the Pacific of the U.N. Institute, with a copy of some of the 200,000 signatories of the petition. The petition is ongoing and will continue until DU weapons have been banned. Until then, a sample of all the signatories will be presented on special occasions. Copies of signatories of the petition were given to the Secretary-General through the Under-Secretary-General for Disarmament Affairs in May 2005 and at the European Parliament in June of that year. Last November, copies were also handed over to Mr. Enrique Roman Morey, Deputy Secretary-General of the Conference on Disarmament.

Around the 6th of November in 2004 and 2005, national and regional branches of the Coalition organized demonstrations and other activities against the use of DU weapons; these activities included presenting our demands to the foreign affairs departments of different countries; holding vigils for the victims of DU weapons; forming picket-lines in front of manufacturing plants where DU munitions are made, and organizing debates on the legality or illegality of the use of DU weapons.

Legislation in Europe and the United States, whether passed or pending, indicates the great concern that many people have about depleted uranium weapons. A year ago this November, the European Parliament voted for a third time for a moratorium on the use of depleted uranium weapons, in a view to working towards a complete ban. There are currently four pieces of legislation on DU in the U.S. House of Representatives, while 18 states have legislation on testing National Guardsmen for DU exposure pending; two states have passed such legislation. In the U.S. House, H.R. 2410, the McDermott Bill stipulates the clean-up of DU manufacturing and testing sites as well as calling for studies on the health effects of DU. Grassroots Actions for Peace has supported the McDermott Bill as well as pending state legislature in Massachusetts.

In Belgium legislation regarding depleted uranium weapons was introduced in both the Senate and the Chamber of Deputies this year. This came about partly due to lobbying efforts by Coalition members. This fall there will be a hearing on the issue of DU weapons in the Belgian Parliament. Belgian Coalition members also met with the Vice President of the Committee on the Environment and Public Health of the European Parliament.

ICBUW members in Belgium were part of the campaign, ‘My Money, Clear Conscience?’ which through research, lobbying and direct action persuaded three of the five largest banks in Belgium to cease investing in companies that

produce DU munitions.

Contamination by depleted uranium weapons was one of the key topics dealt with at the 3rd International Conference of the Coalition in Hiroshima August 3-6, 2006. The conference was attended by more than 400 people, including 40 from countries outside of Japan. It received financial support from 70 different groups and over 600 individual donors. Mr. Tadatoshi Akiba, Mayor of Hiroshima and President of Mayors for Peace gave the welcoming talk. Ms. Mizuho Fukushima, President of Japan's Social Democratic Party and also a member of the Japanese House of Councillors was a presenter. Paramount to the conference was an on-going discussion about the global DU debate.

A seminar on DU in Finland this fall led to ICBUW members from Finland, Belgium and Japan discussing the DU issue with members of five different Finnish political parties. Members of the political parties signed a written question regarding Finland's possible actions at the UN towards a ban on DU munitions. The Finnish chair of the seminar gave this written question to the Chair of the Finnish Parliament.

Information on these and other activities, news, and documents can be found on ICBUW's website: www.bandepleteduranium.org

Health and Epidemiological Studies

The IAEA, WHO and UNEP have all stated that more research is needed with respect to the immediate and/or long-term health or environmental effects of DU munitions.

The Coalition (ICBUW) is currently supporting two scientific studies. The first is an epidemiological study of cancer patients based in Basra, Iraq. The other is the Iraqi Children's Tooth Project, which entails the comparison of teeth from children living in areas of Iraq thought to be contaminated by DU with Iraqi children living in areas considered not to be contaminated, as well as with children living in Canada and the U.S.

Physicians from Basra working on the city's epidemiological survey have reported increases in the incidence of cancers and birth defects since the mid-1990's. Their suspicion is that environmental pollution - including DU contamination - caused by conflicts in the area since 1991, are possibly responsible for these increases. Their project is headed by Dr. Jawad Al-Ali, Head of the Department of Medicine at Al Sadr Teaching Hospital and Director of its Cancer Treatment Centre. Physicians and researchers working on this project have met twice with European epidemiologists and other specialists at 'Summer Schools' arranged by IPPNW-Germany. In the past year, the physicians have set up a reliable and carefully designed cancer registry.

The Iraqi Children's Tooth Project is sponsored by the Mt. Sinai School of Medicine and is co-sponsored by the New York chapter of Physicians for Social Responsibility. The teeth from 52 Iraqi children who are from or near areas where DU contamination exists, are suspected to contain uranium from micron- or nano-sized particles of DU uranium oxide dust particles. The teeth of the children from contaminated areas will not only be compared with teeth from uncontaminated Iraqi, U.S. and Canadian children but also with 'archaeological teeth' from people who died years before the beginning of the nuclear age. State of the art mass spectrometry will be used to measure the uranium isotopes in the teeth. Results of the study will be published in a peer-reviewed international medical journal.

The Coalition's Strategy Towards the Prohibition of Uranium Weapons

The initial objective of the Coalition is the dissemination of a Draft Convention calling for a ban on uranium weapons, with the 80 organizations within ICBUW coordinating a worldwide effort for ratification. At present, our network is seeking a suitable country (a sponsor), which would agree to promote the Draft Convention within the framework of the UN, along with other countries (co-sponsors) that would be interested in supporting this initiative.

An Executive Summary of the Draft Convention as well as the Draft Convention in its entirety is on the ICBUW website (www.bandepleteduranium.org). It deals with the 'philosophy' as well as the ultimate goal of the Coalition's campaign to ban uranium weapons.

We believe that arriving at a treaty banning uranium weapons would constitute the best solution for affirming the existing illegality of the use of these weapons. A treaty of this kind would ban DU weapons, prohibit their manufacture, destroy DU stockpiles, decontaminate areas contaminated by DU munitions and compensate the victims.

The Coalition's strategy - above and beyond striving for the ultimate goal of a conventional ban - consists of a number of different options and scenarios, which may be worked on at the same time. They consist of:

- Designing the Draft Convention
- Discussion and debate in the UN General Assembly;
- Reactivating the UN General Assembly First Committee on the issue;
- Presenting and discussing a new Draft protocol to the Conventional Weapons Convention;
- Synthesizing IHL, Human Rights and environmental law arguments, as in the case of the precautionary principle, to form a customary law substance which could be implemented;
- Putting DU weapons under the review procedure of Art. 36 Additional Protocol I of the Geneva Conventions (compatibility test of new weapons with IHL);
- Striving for the (full) implementation of the EP/EU moratorium on DU weaponry;
- Collecting, analysing and disseminating information about all kinds of domestic 'anti-DU' activities (cases, laws, parliamentarian actions,

divestment schemes etc.);

- Working with groups in individual nation states to work on draft model laws and model cases.

We want to emphasize that these processes cannot be achieved without the support and cooperation of people around the world. Accordingly, the Coalition is calling on the solidarity of people in many different movements. In addition to those in the anti-DU movement, we call on those in peace and anti-war movements, as well as those who are protesting against weapons of mass destruction or indiscriminate effect, and also those in the anti-nuclear, environmental protection and human rights movements, to give support and cooperation in moving towards the goal of a global ban on uranium weapons.

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