

Key issues for UN uranium testing in Iraq

Implications of UNEP recommendations for Depleted Uranium studies in Iraq

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On 6 April the United Nations Environment Programme (UNEP) recommended studies into the use of Depleted Uranium weapons in Iraq. See UNEP Press Release in [Appendix 1](#). Their Post Conflict Assessment Unit (PCAU) started planning this Iraq project on 21 March, see earlier Press Release in [Appendix 2](#). Coalition forces may have used up to 2000 tons of uranium weapons - far more than in 1991. Fast, accurate UNEP assessments are essential.

But UN proposals for Uranium testing in Iraq raise a number of key issues if they are to be more rigorous than recent UNEP studies of Depleted Uranium in the Balkans. 5 conditions are essential if the proposed UNEP studies are to protect the people of Iraq:

- a) uranium testing must start without delay especially in urban areas
- b) targets must include known and suspected uranium weapons
- c) analysis must include all types of Uranium, depleted and undepleted
- d) the project will require powerful international support
- e) airborne radiation monitoring is required throughout the Gulf region.

In addition the World Health Organisation (WHO) needs to start an urgent investigation into levels of uranium contamination for sick and healthy people in Iraqi communities, including troops and civilian casualties and victims of any new epidemics for several years. Most of the Iraqi population is at risk so studies will need NGO support. Parallel studies by UNEP and WHO are required in Afghanistan for the health effects of similar weapons. Like previous UN studies these projects are vulnerable. They are liable to be compromised by military, political and commercial interests to conceal the proliferation, use and health effects of Uranium weapons. They will need massive support from UN member states, from medical and other scientific organisations and from the international media.

1. Political context

Like all UNEP reports the new Iraq proposals are written with great diplomacy. They give no indication of the severe pressures put on UN agencies from large countries, military and commercial organisations whose actions may be questioned by rigorous studies.

UNEP will need powerful support from UN member states, from medical and environmental research groups and from professional bodies in many countries to ensure the ethical and scientific integrity of the project. Without strong international support there is a serious risk that the project may be subverted to cover up of the use and proliferation of "conventional" radiological weapons by US, UK and possibly other coalition forces.

UNEP's three depleted uranium studies in the Balkans were seriously compromised by excluding bomb and missile targets. UNEP accepted NATO assurances that such weapons did not use Uranium components. The UNEP Post Conflict assessment for Afghanistan makes no reference to Uranium weapons at all, although they have been used by US forces in Iraq, Bosnia and the 1999 Balkans war. UNEP were first sent details of the suspected use of Uranium warheads in bombs and missiles in March 2001. Both UNEP and the Afghan Government were sent an analysis of suspected uranium weapons in April 2002 (<http://www.eoslifework.co.uk/du2012.htm>). They were also sent an updated report in October 2002. This included the discovery of US Patents with uranium options for warheads in the 2000 lb guided bomb, the upgraded Tomahawk missile and a cluster bomb, and with first reports of sick civilians with severe Uranium contamination in south eastern Afghanistan.

The proposed UNEP study should be supported by a majority of European Parliament representatives (MEP's). On 12 February they called for an investigation into the effects of cluster bombs and Uranium weapons, and a moratorium on their use, see 3C below.

2. Confirmed use of Uranium weapons in the current Iraq conflict

It is essential that UNEP can make start to assess Uranium contamination in Iraq at the earliest opportunity - within a week if possible. The US and UK Governments acknowledge that known depleted uranium munitions have been used in Iraq i.e. by the A10 Warthog tank buster aircraft (30 mm penetrators), the AC-130 gunship, Apache helicopter and Bradley fighting vehicles (25 mm) and US and UK anti-armor tank rounds (105-120 mm). It seems likely that current A10 attacks and anti-tank operations have used at least 150 tons of DU ammunition, compared to 300 tons used in 1991. But more of this has been in populated areas than in 1991. A comprehensive assessment of uranium weapons contamination is vital to protect civilians from continuing and cumulative internal radiation exposures.

Recent press briefings from the Pentagon (e.g. 14 March) re-assured troops, politicians and the media that contamination from Uranium weapons presents minimal health hazards. So hopefully the Pentagon will have no objections to the UNEP study commencing without delay. Perhaps they can also confirm use of uranium components in bombs and missiles.

3. Essential requirements for the UNEP study

In view of difficulties for UNEP's previous Post Conflict Assessments in the Balkans and Afghanistan there are at least 5 essential requirements for their Iraq study to be a credible and complete project:

- A) **Uranium testing must start without delay, especially in urban areas** - within days, not months. Many Iraqi armoured vehicles have been destroyed with Uranium shells in urban areas. Photographs of civilians near wrecked tanks in Iraq indicate that they are unaware of Uranium contamination risks that were broadcast in the Balkans in 1999.

The speed, coverage and accuracy of this new UNEP study will also be vital to the health and safety of the 3,000+ staff who have been employed by UN agencies in Iraq. Co-operation with Coalition environmental monitoring teams could speed up initial surveys, though military equipment may be less sensitive than required for full analysis to UNEP and international scientific standards. The competing needs for very fast preliminary assessments and rigorous inspection of targets across the whole of Iraq implies needs for a two stage project - a very rapid pilot study and a much larger, long term project. Both will require substantially more funding than UN states have offered in the past. These projects must not be dependent on the US or UK for financial resources or they may be delayed for many months.

- B) **Targets must include known and suspected uranium weapons**. These include hard target guided bombs, guided missiles (cruise, air-to-ground and ground to ground) and sub-munitions (cluster bombs). 23 weapon systems are currently suspected, see Figure 1 and Table 1 in the summary of "*Hazards of Uranium weapons in the proposed war on Iraq*" at <http://www.eoslifework.co.uk/u23.htm>

- C) **Analysis must include all types of Uranium**: The scope of the study should include potential contamination by any kind of Uranium materials, alloys or components. It should not be restricted to Depleted Uranium weapons. It will need to differentiate natural uranium from previous military contamination in 1991 and suspected new weapons with normal (undepleted) or depleted uranium warheads. This wider scope was specifically included in the European Parliament resolution of 12 February 2003 that called for a moratorium on the use of "cluster bombs, depleted uranium ammunition and other uranium warheads". A copy of the resolution is available at <http://www.eoslifework.co.uk/pdfs/EUweaponsres12f03.pdf>

Undepleted uranium contamination will need new types of analysis to test whether it has formed by natural processes or as ceramic "aerosol" particles formed at extremely high temperatures in explosive weapons.

Articles 35 and 55 of the 1st Protocol of the Geneva Conventions outlaw weapons of indiscriminate effect. But the USA and other countries have been developing a range of CBRN (Chemical, Biological, Radiological and Nuclear) weapons. So UNEP post conflict assessments need to include any chemically toxic or radioactive substances used in armed conflict e.g. Uranium and Beryllium.

The hazards of Chemical, Biological and Nuclear weapons are already recognised by most governments and media. Radiological weapons act more slowly but can still cause fatal illnesses and crippling birth deformities. One way to cover-up the discovery of radioactive contamination is to spread rumours that the enemy has "Dirty Bombs" - as in the Afghan war in 2001. This may also be used in Iraq if contamination is found.

- D) **The project will require powerful international support:** The independence of this UNEP study must be supported rigorously by UN member states against interference in its field work, analysis and interpretation by military, political or commercial agencies. The "full co-operation" of NATO with UNEP's Balkans studies (see press release below) actually included a 16-month delay in release of target locations, misleading map information, exclusion from bomb, missile and cluster bomb targets and the fact that NATO allowed 10 other teams to visit or clean up sites before UNEP inspections started. In Afghanistan and Iraq military assistance is not needed to identify bomb or missile targets - they are obvious. But UNEP staff do need expert assistance from UXO (unexploded ordnance specialists) for safe inspection of all military target areas. These could be from the military or de-mining agencies.
- E) **Airborne radiation monitoring is required throughout the Gulf region:** Ongoing environmental sampling for airborne Uranium oxide dust will be needed in all parts of Iraq and in neighbouring countries for at least 12 months. Results should be published frequently - at least weekly - so that any large contaminated air mass (Radioactive smog or haze) can be identified and tracked across the Gulf region. Greece and Hungary reported contamination during the Balkans war. Public information is essential to enable pro-active regional safety responses to be planned if necessary,

Any interference from coalition countries in this essential environmental health assessment for post-conflict Iraq will jeopardise the health of many thousands of civilians and troops who have been exposed to Uranium contamination, or who may be assigned there for post-conflict support and re-construction. There is increasing international vigilance for attempts to subvert medical and other scientific research by political, military or corporate interests.

4. Need for linked WHO studies of Uranium contamination in humans

The proposed UNEP post-conflict environmental study needs to co-ordinated with a parallel study by the World Health Organisation to test Uranium contamination levels in the Iraqi population. Similar studies may be desirable for expatriates exposed to Uranium contamination during or since US military operations in Iraq or Afghanistan.

First results of independent tests of sick civilians in Afghanistan living near US bomb targets indicated 100 times higher than normal uranium contamination (<http://www.umrc.net>).

Toxic and radiological effects of Uranium contamination may include adverse effects on immune response to endemic health problems. Uranium testing must include victims killed or injured by US weapons and victims of any new epidemics that develop in the next weeks and months including Acute Respiratory conditions (pneumonia, flu-like symptoms, severe coughs), renal or gastrointestinal illnesses, haemorrhagic illnesses (e.g. CCHF - Crimean Congo Haemorrhagic Fever), increases in miscarriages and maternal mortality, and severe skin conditions (e.g. Leishmaniasis). Curiously the WHO contribution to the recent UNEP Bosnia study appeared to ignore the fatal CCHF epidemic "with renal syndrome" that developed several months after US bombing. Deaths associated with internal bleeding may be one symptom of the combined toxic and Alpha radiation effects of severe Uranium contamination. Suspected CCHF epidemics also occurred in Kosovo and Afghanistan several months after US bombing.

5. Re-evaluating the proliferation and hazards of Uranium weapons

Past WHO and UNEP statements and the latest UNEP press release suggest that they regard Uranium weapons contamination as a relatively low public health risk. However all studies and policy advice prior to 2002 have assumed radiological pollution from known Depleted Uranium ammunition (penetrators) ranging from 120 grams to 5 kilograms. No previous studies, except by Professor Theodore Liolios (1999 and 2002) and parts of the second Royal Society report on Depleted Uranium in 2002, have publicly acknowledged the potential risks of severe contamination from large, explosive bomb or missile warheads containing 250 to 1500 kg of a secret, very high density metal believed to be uranium.

Radiological contamination near, or downwind of, large uranium warheads of this size have only been publicly considered for Terrorist "Dirty Bomb" attack scenarios in Western cities. The possibility that democratic governments might develop or purchase and use radiological bombs in international peacekeeping operations (Balkans, Afghanistan and Iraq) has been a taboo subject. But UNEP will need to adapt these scenarios to US bomb and missile attacks on strategic "hard and deeply buried" Iraqi targets in Baghdad and other underground installations in many parts of the country.

Previous assumptions about potential Uranium contamination sources (weapons) used in previous UNEP and WHO studies will need to be questioned and widened at the outset of new studies in Iraq. These revised assumptions also need to be applied to further studies of health and environmental conditions in Afghanistan. The post conflict needs of the Afghan population, and of troops deployed in Afghanistan, risk being forgotten during the new Iraq conflict. But many of the hard target weapons used in Iraq recently were used or tested last year in Afghanistan. Unfolding post-conflict health conditions in Afghanistan over the last year, and next 5-10 years, may be important indicators of health problems likely to develop in Iraqi communities, and for coalition troops, 18 months later.

Uranium health and environmental testing in Iraq will also be an opportunity for WHO and the IAEA to take into account the latest ECRR (European Committee on Radiation Risk) 2003 recommendations on re-assessing hazards of cumulative internal low level radiation, see <http://www.euradcom.org/2003/ecrr2003.htm>.

The UNEP press statement points out that the three Balkans studies concluded that **"while radiation can be detected at DU sites, the levels are so low that they do not pose a threat to human health and the environment"**. This comment serves the Pentagon's agenda to minimise public vigilance about non-nuclear radiological weapons, restated on 14 March.

Health and environmental analysts and journalists will be aware of rising concern about the health effects of Uranium weapons among independent researchers in several countries - especially increasing fatalities among Balkans veterans in Italy and Spain from lymphomas and leukaemias.

Distorted mortality statistics from Italy in 2001 re-assured European governments and media that these fatality levels were normal. But when Dr Chris Busby re-analysed the data veteran fatalities from lymphomas and leukaemia's were actually 7.9 times higher than expected for healthy workers. See <http://www.llrc.org/du/subtopic/italrept.pdf>.

UNEP's immediate task is to establish facts for urgent health and safety risk analysis in Iraq and the Gulf region. Depending on preliminary findings this may provide a valuable basis for wider international analysis and debate about the full extent of uranium weapons used since 1985 and long term health and environmental effects. There are obvious legal implications for the use of large radiological weapons in conflicts to date and for future arms control agreements. These implications are probably outside UNEP and WHO terms of reference but are important considerations in their studies in Iraq.

6. Strategic importance of UN Uranium weapons studies in Iraq

The points above are intended to turn criticisms of recent UNEP and WHO studies of uranium weapons hazards into positive ways of strengthening their new tasks in Iraq. Their post conflict assessments in Iraq need and deserve the fullest international support. Their integrity will be vital for the health of coalition troops and their families as well as for the population of Iraq and neighbouring countries. Their welfare should be of national concern in the US and UK.

The early conclusions of these assessments will be essential to planning UN and other international aid operations. These may include potential evacuation of civilians from seriously contaminated areas including possibly parts of Baghdad to minimise risks of cumulative internal radiation to whole communities. The potential implications for refugee migrations and for commercial post-conflict reconstruction projects may be vast.

These strategic consequences of the suspected widespread use of Uranium weapons will create great pressures on UNEP and WHO to minimise the existence of uranium contamination in Iraq, as in the Balkans and Afghanistan, and for the WHO to trivialise its health risks. This may be a severe challenge to these important UN agencies. It may also be a major opportunity for UN member states to support and affirm the integrity of UN agency operations.

UN studies are not the only precautions needed as a result of the use of uranium weapons in Iraq and other recent conflicts. Voluntary disclosure, or international identification and inspection of suspected Uranium weapons used by US, UK and any other coalition forces in Iraq is an immediate priority so that areas and people at risk can be identified rapidly. This could save a lot of UNEP resources and precious time for detecting and controlling serious public health hazards.

An international investigation into uranium weapons was called for by the European Parliament in February. This is likely to be opposed by military and arms industry interests. Self-regulated investigations by elected representatives i.e. by Senate and Congress in the USA and by the UK Parliament, backed by public concern through the media, may be the most dignified way of opening up investigation of secret radiological weapons development that has been kept from democratic accountability since 1985. Many other governments that have supplied troops or civilian support to back up US and UK military operations since 1991 may also wish to know about the hazards their citizens have been exposed to. Media and aid organisations may have similar concerns for their personnel.

There is no doubt that US and UK forces are using uranium weapons in Iraq during the current conflict. The question is not if, but how much Uranium contamination has been caused in Iraq and where. Who has already suffered internal contamination? Who else will be at risk if they enter, or stay in contaminated areas? And how far and quickly will airborne Uranium dust spread to neighbouring countries?

The debate about whether Uranium contamination is harmless - mainstream propaganda published by the US and UK military - is irrelevant to immediate health and safety assessments in Iraq and troops, expatriates and refugees moving to other countries after being contaminated. Uranium weapons cause radioactive contamination. On the precautionary principle employers may have major legal liabilities for the health consequences for people exposed to this contamination. The US and UK Government may have substantial legal liabilities for decontaminating Uranium polluted areas, or for the permanent relocation of displaced communities. Uranium cleanup has proved uneconomic in military testing areas in the USA. Rapid and rigorous assessments are essential to minimise these risks and to mitigate liabilities.

These issues indicate that UNEP and WHO studies into the effects of known and suspected US radiological weapons in Iraq will be even more important as the UN weapons inspectors' recent search for Iraqi weapons of mass destruction. Known and suspected Uranium weapons have been used in Iraq. Detailed information about them has been sent to UNEP, WHO and other UN agencies. But will they be allowed to use it to widen their investigations?

The UN suffers severe criticism from countries and industries whose inhumane or illegal activities may be exposed or curtailed by UN investigations. Fair minded countries have to give maximum support - financial and political - to enable UN agencies to operate quickly and effectively in Iraq. Uranium testing is one of the most immediate tasks with strategic implications for refugee movements and health programmes.

If UN studies are delayed then neighbouring Gulf states would be wise to conduct their own health and environmental monitoring programmes for radiological contamination, as Kuwait is doing, for at least a year. International aid, media and commercial organisations sending international staff to Iraq in the next year would be wise to include uranium testing in their risk assessments and occupational health programmes. Long term health effects of new low level radiation exposures in Iraq will need to be monitored for at least 10 years like the UN Chernobyl study.

The personal commitment of all heads of state to support and safeguard these UN studies would be a vital contribution to the health and safety of the people of Iraq, and of thousands of expatriates who may be involved in aid, peacekeeping and reconstruction projects over the next 5-10 years.

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Sources

These comments are based on investigations into known and suspected uranium weapons summarised in two Eos studies published in 2002 and additional briefings sent to the UK Government, EU MEPs, several UN agencies and UN Security Council members.

Depleted Uranium weapons 2001-2002 - Mystery Metal Nightmare in Afghanistan?
(January 2002) can be downloaded from <http://www.eoslifework.co.uk/du2012.htm>

Uranium weapons 2001-2003 - Hazards of Uranium weapons for Afghanistan and Iraq
(October 2002) is available at <http://www.eoslifework.co.uk/u232.htm> . A summary is at a <http://www.eoslifework.co.uk/u23.htm> .

The US "**shock and awe**" bombing plan was implemented over 2 weeks instead of 2 days but with the same quantity of weapons. Suspected uranium weapons are listed in the presentation "**Last chance to question US Dirty Bombs for Iraq?**" at <http://www.eoslifework.co.uk/Uhaz7feb03/index.htm>

APPENDIX 1

UNEP press release sent: Monday, April 07, 2003 7:41 AM

<http://www.unep.org/Documents/Default.asp?DocumentID=309&ArticleID=3952>

UNEP Recommends Studies of Depleted Uranium in Iraq

Amman/Nairobi, 6 April 2003 The United Nations Environment Programme (UNEP) is recommending that a scientific assessment of sites targeted with weapons containing depleted uranium (DU) be conducted in Iraq as soon as conditions permit.

UNEP-led field studies of sites struck by DU ordnance in the Balkans during the conflicts in Bosnia and Kosovo in the 1990s were the first international field assessments of how DU behaves in the environment.

"Although our assessments to date, under conditions prevailing in the Balkans, have concluded that DU contamination does not pose any immediate risks to human health or the environment, the fact remains that depleted uranium is still an issue of great concern for the general public," said UNEP Executive Director Klaus Toepfer.

"An early study in Iraq could either lay these fears to rest or confirm that there are indeed potential risks, which could then be addressed through immediate action."

"Based on its experience and expertise, UNEP stands ready to conduct DU assessments in Iraq in cooperation with the World Health Organization, the International Atomic Energy Agency and other partners," he said.

UNEP's Post-Conflict Assessment Unit has published assessments of DU impacts in Kosovo (2001), Serbia and Montenegro (2002) and Bosnia and Herzegovina (2003).

The assessments were conducted with the participation of leading experts and laboratories, the collaboration of IAEA and WHO and the full cooperation of the North Atlantic Treaty Organization (NATO).

The three studies concluded that, while radiation can be detected at DU sites, the levels are so low that they do not pose a threat to human health and the environment.

At the same time, the studies identified a number of remaining scientific uncertainties that should be further explored. These include the extent to which DU on the ground can filter through the soil and eventually contaminate groundwater, and the possibility that DU dust could later be re-suspended in the air by wind or human activity, with the risk that it could be breathed in.

The Balkans assessments were made two to seven years after the use of DU weapons. An early study in Iraq would add enormously to our understanding of how DU behaves in the environment. It could also show if there are any risks remaining from the period of the 1991 Gulf War.

Mr Toepfer added that UNEP stands ready to conduct early environmental field studies in Iraq: "Given the overall environmental concerns during the conflict, and the fact that the environment of Iraq was already a cause for serious concern prior to the current war, UNEP believes early field studies should be carried out. This is especially important to protect human health in a post-conflict situation".

By end-April, UNEP will publish a "desk study" on the Iraq environment that will provide the necessary background information for conducting field research. This research will examine risks to groundwater, surface water, drinking water sources, waste-management and other environment-related infrastructure, factories and other potential sources of toxic chemicals, and biodiversity.

In addition to its work in the Balkans, UNEP has recently published post-conflict assessments on Afghanistan and the Occupied Palestinian Territories.

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See also www.unep.org for an extensive collection of environmental data and documents on conflict and environment in the region, and postconflict.unep.ch for UNEP's DU and other post-conflict assessment report.

APPENDIX 2

UNEP Press Release 2003 15, <http://postconflict.unep.ch/high2.htm>

UNEP's Post-Conflict Assessment Unit Initiates Study of Environment in Iraq

Nairobi/Geneva, 21 March 2003 - The United Nations Environment Programme (UNEP) today announced that its Post Conflict Assessment Unit (PCAU) has initiated a desk study of the environment in Iraq.

The study, requested by UNEP Executive Director Klaus Toepfer, will be financially supported by the Government of Switzerland. It is aimed at providing a rapid and timely overview of key environmental issues in the context of the current conflict and is in line with the mandate for UNEP's post-conflict activities set by its Governing Council.

Drawing on information available from multiple sources, including current media, government and NGO reports on the unfolding conflict, UNEP will prepare a preliminary assessment of the most pressing environmental challenges facing those involved in the post-conflict humanitarian relief and reconstruction effort.

The report will include recommendations for avoiding, minimizing or mitigating risks to the environment and human health, and is likely to identify priorities related to the management of freshwater and waste, as well as means of preventing further ecosystem degradation in Iraq. It will also identify and suggest possible responses to environmental hazards arising directly from the ongoing military conflict.

UNEP has also made available on its website (www.unep.org) a comprehensive set of information on "Conflict and the Environment in West Asia (Iraq, Kuwait and the Gulf Region)". The website includes various statistics and assessments conducted after the 1991 Gulf War, as well as other relevant documentation. Additional information on the most recent conflict-related environmental concerns is also available by clicking [here](#).

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