Civil society monitoring: the BW case

Once it became clear that multilateral negotiations to produce a legally binding protocol to reinforce the 1972 Biological and Toxin Weapons Convention (BWC) were unlikely to succeed, several non-governmental organisations (NGOs) acted to support efforts to strengthen this central pillar of the biological weapons (BW) disarmament and nonproliferation regime. Concerned NGOs, including VERTIC, launched the BioWeapons Prevention Project (BWPP) in Geneva, Switzerland, on 11 November 2002 to increase transparency in all matters relating to BW and to reinforce international norms against the 'weaponisation' of disease.

Civil society organisations concerned with the threat posed by BW constitute the BWPP's membership. They come from the arms control and disarmament community, as well as from related fields, such as biological sciences and biotechnology, health and safety, the environment, and ethics. As of 9 July 2003, 24 organisations, largely based in Africa, Europe and North America, had joined the project. The BWPP actively seeks to expand its global network, and, where needed, is prepared to build capacity to achieve its objectives. It hopes soon to welcome new members from Asia, Central and South America, the Middle East and Oceania.

The BWPP monitors political, societal, scientific and technological developments with possible implications for the weaponisation of disease, the implementation of states parties' legal and political obligations under the BWC, the final declarations of BWC Review Conferences, and other relevant international agreements. The BWPP will also track other efforts to bolster norms against the use of disease as a weapon. Its global network of civil society organisations assists it in these tasks.

In its effort to increase transparency, the BWPP will publish its findings. Its principal publication, the *BioWeapons Monitor,* will report regularly and comprehensively on the compliance of governments and other bodies with obligations set out under the BWC and other relevant international treaties. Eventually, BWPP network members will be the primary source of information. The *Monitor* will also cover thematic issues like the monitoring and reporting of scientific and biotechnological activities with potential relevance to BW and suspicious outbreaks of disease. An editorial committee of leading BW experts will review the contents of each issue. Publication of the first issue is planned for April 2004 and will feature invited contributions. The aim of this edition is to publicise the project's goals and to inform readers of the scope of the issues that the BWPP covers.

In this issue . . .

Jean Pascal Zanders introduces the BioWeapons Prevention Project and highlights its objectives, while Ben Mines examines developments in the hunt for Iraq's weapons of mass destruction. Plus all of the usual features: Verification Watch, Science and Technology Scan, Peace Missions Monitor, Verification Quotes and VERTIC News and Events.

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Joining the BWPP

The BWPP welcomes new network members that wish to participate actively in, or to offer their support to, efforts to strengthen norms against the use of disease as a weapon. In applying for membership, interested organisations should provide a description of their institutional structure and goals, information on their main sources of funding, and a signed copy of the following BWPP mission statement:

'the BioWeapons Prevention Project is dedicated to reinforcing the norm against the weaponization of disease. It is a global civil society activity that tracks governmental and other behaviour under the treaties that codify the norm. It nurtures and is empowered by an international network and acts both through that network and its publications'.

For further information, contact the BWPP at Avenue de Sécheron 12, CH-1202, Geneva, Switzerland. Phone +41.022.908.58.36; fax +41.022.738.35.82; e-mail bwpp@bwpp.org; website www.bwpp.org

The BWPP will also publish occasional and issue papers. Occasional papers will present peer-reviewed academic articles exploring topics in depth; issue papers will provide background to a particular subject. All publications and up-to-date information for decision makers, the media and the general public will be made available on the BWPP website. In addition, the site will contain an electronic discussion forum, allowing users to exchange views on chemical and biological weapon issues.

Strengthening the global BW nonproliferation regime will require a determined effort by all concerned. The BWPP aims to be an important interlocutor on all matters connected to the prevention of the weaponisation of disease. It will interact with the diplomatic missions of states parties to the BWC in Geneva and with government representatives in their respective capitals, as well as with experts, international organisations, representatives of the scientific community and appropriate industry bodies, and the media. The BWPP will contribute to the formal, multilateral process of strengthening the BWC through its own independent analysis and that of its member organisations, and by arranging meetings on topics of concern. Only states can negotiate and implement strengthened BW disarmament and nonproliferation measures, but the BWPP will promote the objectives involved and facilitate efforts to attain them. Such support is crucial in the present international environment.

Jean Pascal Zanders, Director, BWPP

Verification Quotes

'Inspections by an impartial, credible third party have been a cornerstone of international nuclear arms control agreements for decades. Where the intent exists to develop a clandestine nuclear weapons program, inspections serve effectively as a means of both detection and deterrence'
Mohamed ElBaradei, 'Inspections are the key', *Washington Post,* 21 October 2002, p. A25.

'We went to a great many sites that were given to us by intelligence, and only in three cases did we find anything—and they did not relate to weapons of mass destruction. That shook me a bit, I must say'
Former UN chief weapons inspector Hans Blix, speaking on intelligence on Iraq provided by the US and the UK prior to the second Gulf War. Ewen MacAskill, Richard Norton-Taylor and Suzanne Goldenberg, 'I was shocked by poor weapons intelligence—Blix', *The Guardian,* 7 June 2003, www.guardian.co.uk

'It is not enough to distrust North Korea. It is not enough to verify North Korean behavior. You must also call North Korea to account when it violates its commitments'
Mitchell Reiss, 'Negotiating with North Korea', *Carnegie Non-Proliferation Project Proliferation Brief,* vol. 6, no. 2, 5 February 2003.

'Anecdotes are a good place to begin an investigation—which by themselves cannot verify a new species'
Michael Shermer, writing on the search for the Loch Ness monster and other legendary beasts. 'Show me the body', *Scientific American,* vol. 288, no. 5, May 2003, p. 27.

'. . . thorough, systematic and careful investigation—something that good scientists do very well—is likely to get the job done'
Kimothy Smith of Northern Arizona University, writing on inspecting Iraq. 'Written in the dust', *New Scientist,* vol. 176, 26 October 2002, p. 48.

'The verification regime is the teeth of the Treaty, and the political significance is that the teeth are sharp and strong enough to bite anyone who conducts a nuclear test explosion'
Interview with Sergei A. Ordzhonikidze, Director-General, UN Office at Geneva, on verification of the 1996 Comprehensive Nuclear Test Ban Treaty (CTBT). *CTBTO Spectrum,* no. 1, December 2002, p. 9.

'I think the greatest thing about the OPCW has been its verification regime. It is vital to maintain it and even strengthen it further. Will it guarantee there are no chemical weapons? Of course not, but what it has done is to allow member states to get used to having international inspectors on their territory, visiting facilities and although it's not perfect, it makes it much more difficult for countries not to comply'
Ron Manley, former UNSCOM inspector and Director of Verification at the OPCW, in an interview with opendemocracy, 15 July 2003, www.opendemocracy.net

'There needs to be fully-fledged verification and monitoring of compliance. We need a robust presence on the ground. We need a team of trained monitors empowered to resolve disputes—a team that is professional, independent and impartial.'
Nomi Bar-Yaacov, Visiting Fellow, IISS, quoted in Richard Beeston, 'Envoy defies predictions', *The Times*, 1 July 2003, www.timesonline.co.uk

Iraq Survey Group takes up baton in hunt for WMD

With combat operations effectively ending in Iraq on 1 May 2003, the way seemed clear for the US-led coalition to uncover the supposedly substantial arsenal of weapons of mass destruction (WMD) that was the pretext for war. However, the first US military units to be tasked with finding Iraq's WMD have failed to unearth any significant evidence. Furthermore, coalition policy has increasingly changed its emphasis from discovering weapons to revealing the existence of weapon programmes. By the end of May, US military teams—principally the US Army's 75th Exploitation Task Force—had visited 230 key sites identified by US intelligence prior to the conflict, as well as many of the same locations visited by United Nations (UN) inspectors, without success. Most of the sites had either been so badly damaged by coalition air strikes or had been so extensively looted that any potential evidence was already gone. Additionally, inaccurate intelligence reports often resulted in teams being sent on fruitless searches. The failure of these initial teams may be due to the fact that planners were so confident of the intelligence that the teams were expected simply to turn up and find weapons rather than to investigate their whereabouts.

US fails to find convincing WMD evidence

Claims by the Central Intelligence Agency (CIA) and the Defense Intelligence Agency (DIA) that three mobile trailers were capable of producing biological agents have since been criticised by the US Department of State's Bureau of Intelligence and Research. Some US and UK analysts have similarly cast doubt on the evidence. Three teams examined the trailers, and, while two were convinced that they were designed to produce biological weapons, the third was not. The latter identified a number of inconsistencies in regard to the alleged purpose of the trailers, including lack of a steam sterilisation unit to prevent contamination, normally a prerequisite for any kind of biological production, and lack of an easy way to remove liquid from the processing tank. Intelligence officials replied that additional supply trucks would have supplemented the process, but these have not yet been found. Iraqi claims that they were used to produce hydrogen for artillery weather balloons have some credibility, as the trailers had a means of easily extracting gas.

Further discoveries of suspected WMD by military teams have similarly failed to develop into crucial evidence of Iraq's weapons programmes. Task Force 20, a US Special Forces unit with a mandate to 'seize, destroy, render safe, capture or recover WMD', conducted raids in Iraq ahead of the deployment of coalition forces, collecting hundreds of samples and apprehending half of the Iraqi scientists and Ba'ath Party officials now in custody. While failing to locate any significant evidence of WMD, they did discover landmines at a military base near Qaim in western Iraq, which US analysts allege were once loaded with botulinum toxin. However, the landmines had deteriorated to the point where their original contents were open to dispute.

US army hands over to Iraq Survey Group

On 7 June, the 75th Exploitation Task Force began handing over responsibility for the WMD hunt to the Iraq Survey Group (ISG). The transition, which was not expected to be complete until mid-July, establishes a large force of 1,300–1,400 personnel that will rely on new intelligence and detective work—rather than utilising the list of sites drawn up prior to the conflict—to uncover Iraq's WMD programmes (as well as gathering intelli-

gence on war crimes, prisoners of war and other activities of the previous Iraqi regime).

The ISG is headed by Major-General Keith Dayton, and is staffed by American, Australian and British military and intelligence experts; former UN weapons inspectors hold many of the senior positions. A former United Nations Special Commission (UNSCOM) chief nuclear weapons inspector, Dr David Kay, has been appointed Special Advisor for Strategy on Weapons of Mass Destruction, coordinating all appropriate agencies. The ISG is based at Baghdad International Airport, where data are collated and Iraqi scientists, detainees, and witnesses are questioned. An analytical centre and a 'media processing facility' for journalists will operate in Qatar, with offices in Washington, DC.

Kay claims that the ISG is not lacking in leads. It has already seized thousands of documents, computer records and reports, and a significant number of scientists have been captured, including Rinha Rashid Taha al-Azzawi al-Tikriti—nicknamed Dr Germ—and Huda Salih Mahdi Ammash—number 39 on the United States' most-wanted list. Plans for a gas centrifuge and components of a uranium enrichment system were found buried at the home of Iraqi scientist Mahdi Shukur Obeidi, who headed Iraq's centrifuge programme. However, the plans date back to the 1990–91 Gulf War and the scientist asserted that Iraq had not resurrected its nuclear programme. He also confirmed that aluminium tubes—previously suspected of being intended for uranium enrichment, but then cleared by experts—were designed for rockets, as claimed by Iraq during the inspections. US investigators also found documents related to the concealment of VX nerve agent and detailed instructions on how to hide materials and to deceive UN weapons inspectors. Another Iraqi scientist, Shakir al-Akidy, told investigators that Iraq stopped trying to make ricin in 1991, and was never successful in producing a highly concentrated form. US troops, though, discovered 300 sacks of castor beans—used to produce ricin—at a warehouse in al-Aziziyah. The sacks were labelled as fertiliser.

Questions remain about Iraq's WMD research, but thus far the evidence that has emerged does not point to the existence of large stocks of chemical or biological weapons, or to a reconstituted nuclear weapons programme. Kay expects to disclose his evidence within six months, claiming that there is enough to convince him that such programmes were in operation. He is careful not to leak any findings, asserting that such disclosures might tip off former regime officials about the investigation or its direction and compromise existing or potential informants. Although Dayton and Kay maintain that a significant case is being built from documents and interviews with Iraqi scientists and officials, it is becoming increasingly likely that Iraq did not possess the WMD that were purported by the US and UK to be an imminent threat.

The ISG faces significant problems in trying to uncover and verify the nature of Iraq's WMD programmes. Two decades of Iraqi efforts to deny and conceal WMD activities, coupled with continued instability and lack of security in the country, uncertainties about the status and whereabouts of ousted Iraqi President Saddam Hussein, and intimidation of ordinary Iraqis by former regime officials, means that a full and accurate picture of Iraq's WMD programmes may take several years to emerge. Whether the UN is to be given a role in this process remains to be seen.

IAEA inspectors return

Meanwhile, a team of International Atomic Energy Agency (IAEA) inspectors working under the auspices of Iraq's 1972 safeguards agreement with the IAEA were finally allowed to return to the Tuwaitha complex, the main site of Iraq's former nuclear programme, on 8 June 2003. US troops accompanied the inspectors and barred them from visiting all but one site in the complex. The inspection—to determine the extent of looting of radioactive materials and to secure any remaining stocks—revealed that at least ten kilogrammes of uranium compounds is missing. Although there is little chance of the latter being used to develop nuclear weapons, it is nevertheless alarming that such material is unaccounted for. It is now crucial that coalition authorities not only heed the IAEA's request to find the missing materials, but also that rapid steps are taken to ensure the security of Iraq's entire nuclear material inventory.

Although the US granted the IAEA access to the Tuwaitha facility, this was under the condition that it set no precedent for future UN involvement. Nearly five months after inspections ended, there is little indication that weapons inspectors, either from the IAEA or the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC), will be permitted to resume their work in Iraq. At the end of June, Dr Hans Blix, Executive Chairman of UNMOVIC, retired; he was replaced in the interim by former Deputy Executive Chairman Dr Demetrius Perricos. Whether or not a permanent head is to be appointed may be an indication of the future of UNMOVIC and, indeed, whether it will ever return to Iraq.

Ben Mines
Arms Control & Disarmament Researcher, VERTIC

Verification Watch

IAEA budget increase for verification

On 18 July 2003, the IAEA Board of Governors agreed to the first significant budget increase since the late 1980s. It approved a $15 million annual increase in the IAEA's current budget ($245m), which is expected to rise to $25m a year by 2007. Most of the additional money will be used to fund the Agency's verification programme. The Director General of the IAEA, Dr Mohamed ElBaradei, said in statement to the Board that: 'The bulk of the increase goes to the verification program, because that program has been experiencing the greatest demand for additional resources and . . . has for years been the most chronically underfunded and has relied extensively on extra-budgetary resources'.

The Board's decision follows extensive lobbying by the US government, which wanted to raise the IAEA budget by 25 percent. The strong support of US President George W. Bush's administration for the IAEA, which is in contrast to its position on almost every other international organisation, is a reflection of its concern about international terrorism and the proliferation of nuclear programmes in countries like Iran and North Korea. In recent years, the Agency has only managed to keep its safeguards programme running through supplementary funding, most of which has come from the US. Last year alone, this amounted to $19m. Additional funding provided by the US has, in the past, come with strings attached, such as requiring that it be used to buy US equipment or that it be earmarked for certain programmes. The IAEA is eager to secure additional funds from all of its 180 members for its safeguards programme. However, the IAEA General Conference, scheduled to take place in September, must approve the budget before it can enter into force.

Source Gillian Tett, 'Nuclear watchdog finds rare favour in Washington', *Financial Times,* 17 June 2003, http://news.ft.com/home/uk; 'International response: Washington seeking to boost IAEA budget', *Global Security Newswire,* 17 June 2003, www.nti.org; 'IAEA Board of Governors recommends landmark budget increase', *World Atom Press Release,* 18 July 2003, www.iaea.org; Dr Mohamed ElBaradei, 'Statement to the Board of Governors', 18 July 2003, www.iaea.org

UNGA adopts armed conflict resolution

On 3 July 2003, following three years of preparation and five months of negotiation, the UN General Assembly adopted by consensus a landmark resolution on the prevention of armed conflict. The resolution attempts to transform the UN's approach to armed conflicts, from one of reaction to one of prevention. It calls on member states to implement their obligations assumed as states parties to treaties in such areas as arms control, nonproliferation and disarmament, and to strengthen their international verification instruments. In addition, the resolution urges members to make the most effective use of existing and new procedures and methods for the peaceful settlement of disputes, including arbitration, mediation and treaty-based arrangements, and encourages states that have not already done so to consider becoming parties to arms control, nonproliferation and disarmament treaties. The adoption of the resolution highlights the important role that arms control and disarmament agreements and their attendant verification and monitoring mechanisms play in the prevention of conflict.

Source 'General Assembly by consensus adopts "landmark" resolution on prevention of armed conflict', UN General Assembly Press Release GA/10145, 3 July 2003, www.un.org; 'UN General Assembly adopts armed conflict resolution', *UN Wire,* 7 July 2003, www.unwire.org

Iran: pressed on the protocol

Efforts continue to address proliferation concerns raised by revelations of the scope and level of advancement of Iran's nuclear industry (see *Trust & Verify* no. 107, March–April 2003). The IAEA is leading the international drive to verify the legitimate peaceful orientation of Iran's nuclear industry and to secure Iranian acceptance of a higher standard of verification by convincing it to sign an Additional Protocol to its existing safeguards agreement. At the IAEA Board of Governors' meeting, which opened on 16 June, the Agency concluded that Iran had not lived up to its reporting requirements under its safeguards agreement, failing to report the import of uranium, actions related to the processing and use of this material, and the facilities involved in these activities. The IAEA stopped short of declaring Iran to be in non-compliance with its obligations under the 1968 Nuclear Non-proliferation Treaty (NPT), however, and called on it to provide 'all access necessary' to resolve uncertainties over its nuclear programme.

The IAEA's attempts to verify the purpose of Iran's newly identified nuclear facilities at Arak, Kalaye and Natanz have met with some resistance, while generating some disturbing findings. Iran has allowed limited inspections of these establish-

ments, but it has rejected requests to carry out detailed on-site environmental sampling. The latter is all the more urgent given the detection of enriched uranium in samples that have been taken. Iran has sent conflicting signals about whether it will sign an Additional Protocol and accept the more intrusive verification regime that will result, but appears open to the idea. A final decision is not due until after Iranian officials meet with a delegation of IAEA legal experts in the first week of August. The Iranian authorities invited the delegation to visit the country and to clarify how Additional Protocols work.

Failure to gain Iranian acceptance of the verification standard embodied in the Additional Protocol will place more strain on the nuclear nonproliferation regime and will complicate efforts to extend the coverage of the strengthened safeguards system.

Source Miriam Rajkumar, 'Understanding the IAEA report on Iran', Carnegie Endowment for International Peace, 19 June 2003, www.ceip.org; 'Iran: Tehran admits secret uranium imports', *Global Security Newswire,* 9 June 2003, www.nti.org; 'Iran: Tehran continues to deny IAEA sampling at new facility', *Global Security Newswire,* 11 July 2003; 'Iran: inspectors discover enriched uranium in samples', *Global Security Newswire,* 18 July 2003; 'Iran: Tehran will make additional protocol decision after experts visit', *Global Security Newswire,* 30 July 2003; Miranda Eeles, 'UN nuclear team visits Iran', *BBC News,* 4 August 2003, http://news.bbc.co.uk

Whaling Commission: from regulation to conservation

The International Whaling Commission (IWC) voted to establish a Conservation Committee responsible for monitoring threats to cetaceans (whales, dolphins and porpoises) at its fifty-fifth annual meeting in Berlin, Germany, on 16–19 June. The 'Berlin initiative' represents a significant shift in the original mandate of the 1946 International Convention for the Regulation of Whaling (ICRW) from regulation to conservation. This transformation is proving uncomfortable for pro-whaling Iceland, Japan and Norway. During the negotiations, Japan went so far as to threaten to withdraw from the IWC and to resume whaling unilaterally. Even though a worldwide moratorium on commercial whaling was introduced in 1986, limited captures of certain species are allowed for 'research' purposes. Under this provision, Japan is responsible for killing 600–700 whales annually in Antarctica and the north Pacific—an activity that threatens to be incompatible with the new spirit of the convention.

Source 'Japan threatens whaling walkout', *BBC News,* 16 June 2003, www.bbc.co.uk; 'Whaling Commission approves conservation measure', *UN Wire,* 17 June 2003, www.unwire.org; 'Conservation agenda dominates IWC meeting', *UN Wire,* 20 June 2003; 'Whaling group backs conservation', *Nature,* 19 June 2003, vol. 423, p. 789; 'Defining moment for saving whales', *New Scientist,* 21 June 2003, vol. 179, p. 7.

OAS strengthens CSBMs

The Organization of American (OAS) states held a Meeting of Experts on Confidence and Security Building Measures (CSBMs) in Miami, Florida, in February 2003. The objective was to evaluate implementation of CSBMs and to consider steps to strengthen mutual confidence between OAS members.

One outcome of the meeting was the 'Consensus of Miami—Declaration By the Experts on Confidence- and Security-Building Measures: Recommendations of the Summit-Mandated Special Conference on Security'. The declaration suggests a variety of measures to increase confidence, including the establishment of a Forum for Confidence and Security Building Measures, which will review and evaluate existing CSBMs, as well as discuss, consider and propose new ones. Participants also agreed on a list of 53 CSBMs, covering military matters, information exchanges, education and verification. The Special Conference on Security will take up the issue of CSBMs when it meets from 27–28 October 2003 in Mexico City, Mexico.

Source 'Address by the Assistant Secretary General of the Organization of American States, Luigi R. Einaudi', 3 February 2003, www.oas.org; 'Summit-mandated meeting of experts on confidence and security building measures', *Summits of the Americas Bulletin,* vol. 2, April 2003; 'Consensus of Miami: declaration by the experts on CSBMs: recommendations to the summit-mandated special conference on Security', 11 February 2003, www.oas.org; 'Illustrative list of confidence and security building measures', 11 February 2003, www.oas.org

NATO monitoring South Caucasian Rivers

The North Atlantic Treaty Organisation (NATO), in collaboration with the Organisation for Security and Co-operation in Europe (OSCE), the University of New Mexico (UNM) and other partners, has launched the South Caucasus River Monitoring Programme for the Kura-Araks basin in the southern Caucasus. The Kura and Araks Rivers originate in Turkey and flow through Georgia and Armenia to Azerbaijan. Developing a proper water monitoring and management system is vital to guaranteeing economic and political stability in the region. The project is the first by NATO to focus on environmental problems that threaten peace and security and increase regional instability. Since the collapse of the Soviet Union, regional data-keeping has been poor. The scheme follows in the footsteps of recent United Nations Environment Program (UNEP) projects on environmental security and monitoring in a number of different areas, notably Afghanistan and Gaza and the West Bank.

One of the project's goals is to create a model for sustainable water resource management and monitoring in the region, which might contribute to a future agreement on water

allocation and water quality monitoring between the four countries. The NATO Science for Peace (SfP) programme is providing €430,000 in financing for the project, which will see the establishment of a river management monitoring system at over 30 sites in Armenia, Azerbaijan and Georgia. Activities will include training, laboratory analysis and data collection and management. The project will involve government officials and scientists in the area; there will be annual meetings of project staff of different countries and more frequent national project meetings. The collected data will eventually be made available on a website run by the UNM.

Source Co-operative Monitoring Centre (CMC), 'Transboundary watershed management in the Caucasus', www.cmc.sandia.gov/caucasus/; Gianluca Rampolla, 'New projects to strengthen link between security and environment', *OSCE Newsletter,* December 2002, vol. 9, no. 11, p. 8; UNM, South Caucasus River Monitoring Project, www.unm.edu/~wrp/caucasus.htm

Diamond certification losing its lustre

The First Plenary Meeting of the Kimberley Process Certification Scheme took place in Johannesburg, South Africa, from 28–30 April 2003, but NGOs came away disappointed after no agreement was reached on implementation of a system of regular monitoring to prevent potential abuses of the scheme. Launched on 1 January 2003, with a deadline for full implementation of 31 July 2003, the Kimberley Process is designed to stop illicit trade in conflict diamonds via a certification scheme. Conflict diamonds are rough diamonds used by rebel movements or their allies to finance violence aimed at undermining or overthrowing legitimate governments. The Kimberley Process issues certificates to identify the origin of legal diamonds, thereby boosting the confidence of consumers and traders. However, the process requires an independent monitoring mechanism and government enforcement to be effective. Although the participants in the plenary meeting agreed to strengthen a number of elements of the process, they failed to take any action on the critical issue of implementation and monitoring, agreeing only to postpone the matter until the next plenary meeting in October 2003. NGOs argued that further delays could have serious implications for the scheme's future success.

Future efforts to curb the illegal sale of diamonds have been given a boost by Belgian scientists. They have developed a means of determining the origin of individual diamonds: using a laser, a tiny hole can be drilled in the gem to determine its chemical composition. As each diamond has a chemical make-up specific to an individual mine, its origin could be deduced by comparing its composition with data from existing mines. The technology is still a long way from implementation, though, as no such database exists. Furthermore, it would be difficult to establish that many diamonds originated in conflict countries, since they are often 'alluvial'—washed many thousands of miles downstream from their place of origin.

Source 'Diamond code hits the rocks', *ThirdSector,* 7 May 2003, p. 1; 'NGO statement on the Kimberley Process', 30 April 2003, www.actionaid.org; 'Diamond origin "can be determined"', *BBC News,* 25 July 2003, www.bbc.co.uk

SB-18: a step forward for Kyoto compliance

In preparation for entry into force of the 1997 Kyoto Protocol, delegates at the eighteenth sessions of the Subsidiary Bodies (SB-18) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC), held from 4–13 June 2003, in Bonn, Germany, advanced the protocol's compliance regime by reaching draft decisions on methodologies for estimating greenhouse gas emissions and processes for reviewing states parties' national inventories. These decisions, prepared by the Subsidiary Body for Scientific and Technological Advice (SBSTA), are expected to be adopted at the ninth session of the Conference of the Parties (COP9) to be held in Milan, Italy, in December 2003 and should contribute to raising the profile of the protocol's verification system. Specific proposals include: a technical guide on procedures and methods used in the calculation of adjustments under Article 5.2; a training programme for members of Expert Review Teams (ERTs) participating in the initial review process under Article 8; criteria for selecting lead reviewers; and the request for a code of practice for the treatment of confidential information by the ERTs.

Source 'SB-18 Final Report', *Earth Negotiations Bulletin,* 16 June 2003, vol. 12, www.iisd.ca; 'Methodological issues relating to articles 5, 7 and 8 of the Kyoto Protocol', *FCCC/SBSTA/2003/L.6,* http://unfccc.int

In memoriam: David Kelly 1944–2003

As a scientist, on-site inspector and seeker of the unvarnished truth, Dr David Kelly was one of the global verification community's greatest assets. A leading authority on biological weapons, he played a vital role in efforts by the UK and the US to expose BW activities in the former Soviet Union and was later instrumental in the unmasking of Iraq's BW programme by UNSCOM. He was a supporter of VERTIC over many years, culminating in a fine chapter for its *Verification Yearbook 2002*. His untimely demise leaves us all the poorer.

Science & Technology Scan

Shreds of evidence

The combined use of new high-resolution scanners and software tools are making it easer to reconstruct documents that have been shredded. This can now be done at a faster pace and with a higher degree of accuracy than was previously possible, making reconstruction a more viable option. Attempting to reconstruct shredded documents is not new, however. Following the takeover of the US Embassy in Tehran in 1979, the Iranians employed local carpet weavers to reconstruct documents by hand.

A number of companies are bidding for a contract to reconstruct the contents of 16,000 bags of documents or 33 million pages that the East German government and its secret police shredded prior to the collapse of the Berlin Wall. Fraunhofer IPK of Berlin claims that it can piece together the materials using scanners with interactive software systems that will look for possible matches and then make suggestions that trained human operators can accept or reject. The company contends that its systems have an accuracy rate of approximately 80 percent and can recover 70 percent of the contents. It stresses, though, that the aim is to retrieve blocks of information rather that to reconstruct the original document. These blocks of information can be checked against other available sources. Other companies bidding for the contract use systems that combine scanners with software that concentrates on shape, colour, contours of the shreds, and/or handwriting.

These commercially available technologies provide a powerful tool in the verification armoury. Document reconstruction techniques can assist inspectors conducting challenge inspections who discover shredded documents that may cast light on suspected non-compliance. Nevertheless, there are other practices that can ensure that the contents remain secret forever, such as pulping, chemical destruction, and simply setting them alight.

Source Douglas Heingartner, 'Picking up the pieces', *New York Times,* 17 July 2003, www.nytimes.com

Ballistic verification

Scientists at the Institute for Advanced Technology in Austin, Texas, have developed a projectile that can penetrate several metres of high-strength concrete, using a novel design that allows it to maintain a straight course through the target while minimising its degradation. The researchers note that the projectile could deliver sensors undamaged into reinforced underground bunkers or factories, which, potentially, could be used to detect and 'beam back' confirmation of the presence of nuclear, biological or chemical (NBC) materials. While the technology has military applications in terms of locating and destroying hidden NBC stocks, it could also aid verification regimes conducting inspections in hazardous or inaccessible environments. These might include facilities deemed too dangerous for inspectors to enter, such as the Chernobyl reactor.

While it is unclear whether NBC sensors could be built to survive the high impact forces generated, the concept also raises serious questions about attempting verification without the permission or cooperation of the party to be inspected. The use of such projectiles could be interpreted as an act of war. Furthermore, there remains a high risk of projectiles claiming the lives of site occupants or inadvertently releasing the very materials that they were meant to detect.

Source 'Hunt for WMDs goes ballistic', *New Scientist,* vol. 2402, 5 July 2003, p. 7; Mehmet Erengil, Steve Kornguth and James Valdes, 'Novel projectile concept for high-speed penetration of concrete targets', paper presented to twenty-third Army Science Conference, Orlando, Florida, 2–5 December 2002, www.asc2002.com

DNA test helps to detect wildlife offences

The Centre for Cellular and Molecular Biology in Hyderabad, India, is using DNA fingerprinting technology to identify poached animal carcasses. In future, this may strengthen the verification system of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) by helping to establish more easily and with greater precision whether seized 'goods' belong to species listed under the convention.

After two years of research, the Indian team successfully identified proteins unique to each species' DNA, serving as molecular animal 'signatures'. After isolating these proteins from a sample—a piece of flesh, a strand of hair, a tooth or a nail—scientists were able to identify the animal from which the sample derived by comparing it with some 2,000 genetic signatures in a database. At present, wildlife crime inspectors have to rely on the morphological features of animals in order to identify carcasses—a process that is not always easy, considering that most of them are in an advanced state of decomposition when found.

Source: 'Indian genetic test helps combat wildlife crimes', *Science and Development Network,* 5 June 2003, www.scidev.net; 'Was it a leopard or panther slinking by?', *The Christian Science Monitor,* 12 June 2003, www.csmonitor.com

Satellite sensors could detect buried objects

Israeli scientists have used new radar sensors successfully to detect buried objects. These airborne P-band microwave sensors have revealed aluminium plates concealed up to 40 centimetres below the sand in the Negev Desert, although operational sensors added to satellites may be able to identify objects as deep as nine metres. While this research has archaeological and geological applications, it could also be used in monitoring or inspection programmes to expose underground buildings, hidden weapons or even mass graves. The only drawback is that liquid water absorbs microwave radiation, restricting the use of the sensors to dry areas—only 15 percent of the earth's surface is dry enough for the technology to work effectively.

Source 'Satellites hunt for buried treasure'. *New Scientist,* vol. 2403, 12 July 2003, pp. 12–13; 'Satellites could spot ancient remains', *BBC News,* 9 July 2003, www.bbc.co.uk

Peace Missions Monitor

New monitoring body for Northern Ireland

An independent monitoring body is to be set up under plans contained in the Joint Declaration issued by the British and Irish governments in April 2003 to foster progress in the Northern Ireland peace process. The body will consist of four members: two appointed by London (including one from Northern Ireland); one by Dublin; and one by Washington. It is designed to promote public confidence by ensuring that any serious act of non-compliance is identified and reported. The body will monitor and report on activities like paramilitary involvement in attacks on security forces, sectarian violence and punishment beatings. It will assess implementation by the UK government of security normalisation measures, and examine allegations by any party in the Northern Ireland Assembly that another party is in breach of its obligations. The body will publish reports at least every six months. The initiative has met with concern on both sides of the sectarian divide. Unionists fear that it would give the Irish government a say in Northern Ireland's affairs, while republicans fear that it will be used to impose sanctions on them. Although arrangements for the body are in place, no appointments have been announced. The new body supplements the Independent International Commission on Decommissioning, which has been operating since September 1997.

Source 'Monitoring body has "vital" role', *BBC News World Edition,* 29 June 2003, http://news.bbc.co.uk; *Joint Declaration: By the British and Irish Governments,* April 2003, www.nio.gov.uk/pdf/joint2003.pdf; *Agreement between the British and Irish Governments: Monitoring and Compliance,* April 2003, www.nio.gov.uk/pdf/monitori.pdf; Northern Ireland Office, London.

Congo Commission on prevention and verification established

Rival armed groups in the northeast of the Democratic Republic of the Congo (DRC) have set up a Commission of Prevention and Verification. The 18-member body, chaired by the United Nations Organisation Mission in the Democratic Republic of the Congo (MONUC), consists of joint teams made up of representatives of all of the armed groups. It is mandated to examine the causes of the conflict, establish measures to prevent any escalation, and to engage the groups in a dialogue. In addition, it will investigate allegations of ceasefire violations, establish teams to investigate who was responsible for them, and submit the results and recommendations to a 32-member power-sharing regional provisional assembly.

Meanwhile, the UN Security Council unanimously passed resolution 1493 on 28 July 2003, allowing MONUC to use force to fulfil its mission, and to protect UN personnel and accompanying observers. The resolution extends MONUC's mandate until the end of July 2004, increases its troop strength to 10,800, and imposes an arms embargo on all Congolese and foreign armed forces in the northeast of the country. No monitoring or verification mechanism has been put in place to ensure compliance with the embargo.

Source 'Security Council extends, expands mission mandate', *UN Wire,* 28 July 2003, www.unwire.org; Evelyn Leopold, 'UN increases troops in Congo, strengthens mandate', *Reuters AlertNet*, 28 July 2003, www.alertnet.org ; 'Yulu Kabamba, MONUC briefing note', *ReliefWeb*, 26 July 2003, www.reliefweb.int; 'DRC: Ituri militias agree to disarm, verify ceasefire', *ReliefWeb,* 24 July 2003; UN Security Council resolution 1493, 28 July 2003, www.un.org

UNIKOM to close

The UN Security Council voted unanimously on 3 July 2003 to accept UN Secretary-General Kofi Annan's recommendation of 17 June 2003 to terminate the United Nations Iraq–Kuwait Observer Mission (UNIKOM) on 6 October 2003. Resolution 1490 also abolished the demilitarised zone set up between Iraq and Kuwait on 6 October 1991. UNIKOM was established to monitor the demilitarised zone and to deter Iraqi forces from attempting another invasion of Kuwait.

Source Robin Hughes, 'UN set to end border mission to Iraq, Kuwait', *Jane's Defence Weekly,* 23 July 2003, p. 17; 'Report of the Secretary-General on the activities of the United Nations Iraq–Kuwait observer mission, for the period 22 March to 15 June 2003', United Nations document S/2003/656, 17 June 2003, www.un.org; 'Security Council continues mandate of UN Iraq–Kuwait observer mission until 6 October: resolution 1490 (2003) adopted unanimously', UN Press Release SC/7808, 3 July 2003, www.un.org

VERTIC News & Events

Middle East workshop

The third workshop in a series organised by the Israel–Palestine Center for Research and Information (IPCRI) and involving VERTIC and the Lester B. Pearson International Peacekeeping Training Centre was held in Istanbul, Turkey, from 3–6 July 2003. Representatives of three members of the 'Quartet' that proposed the roadmap for Middle East peace addressed the meeting: the European Union, Russia and the UN. As a contribution to the peace process, the workshop produced an interim report on monitoring, verification, dispute resolution, and compliance measures for part one of the roadmap. Two more workshops are planned before the group produces a final report.

New network member

VERTIC is pleased to announce that Jayantha Dhanapala, former Sri Lankan diplomat and most recently Under-Secretary-General for Disarmament Affairs at the UN, has joined VERTIC's International Verification Consultants Network.

Staff changes

VERTIC regrets to announce that Dr Kenneth Boutin, Senior Arms Control and Disarmament Researcher, is leaving VERTIC at the end of August to take up a position with the Centre for International and Security Studies, York University, Toronto, Canada. We are grateful to Kenneth for his contribution to VERTIC in the year that he has been with us, especially as editor of *Trust & Verify* and co-editor of the *Verification Yearbook 2003*. We wish him well in his new position.

Dr Ben Mines, who has been appointed Arms Control and Disarmament Researcher, will replace Kenneth. Ben was previously a VERTIC intern.

Vanessa Chagas rejoined the organisation as an Environment Research Assistant for two months (June and July). She completed work on a *Guide to verification for environmental agreements,* which is contained in this issue of *Trust & Verify,* and maintained a watching brief on environmental issues. VERTIC is grateful for her contribution.

Book Review *Arms Control: The New Guide to Negotiations and Agreements* (2nd edition)

Jozef Goldblat, Sage Publications, London, 2002, pp. 400, plus CD-ROM, £25.00 (soft cover), ISBN 0-7619-4016-2

On 23 April 2003, Ambassador Linton Brooks, then Acting Administrator of the US Department of Energy's National Nuclear Security Administration, opened the annual international security conference at Sandia National Laboratories in Albuquerque, New Mexico, by stating bluntly that 'arms control is largely the agenda of the past'. In line with the views of many members of the Bush administration, Brooks declared that 'arms control was a hallmark of the Cold War and the Cold War is over'.

Arms Control: The New Guide to Negotiations and Agreements is the fully revised and updated version of the author's 1994 guide to arms control. The book consists of two parts. Part one is an analytical survey of existing arms control agreements. Goldblat explains basic concepts and summarises arms control developments and regimes in different issue areas. The chapter on verification and compliance describes the function and process of verification, as well as different instruments and implementing institutions. Few experts would be able to give such a comprehensive assessment without getting lost in detail; Goldblat does an excellent job. Locating information is facilitated by a glossary, a table that lists the membership of major multilateral agreements, a bibliography and an extensive index.

Part two of the book is a CD-ROM that reproduces major arms control agreements and related documents, such as protocols, guidelines and letters of intent. Eight hundred pages of treaty texts, in PDF format, provide a valuable research tool.

Among arms controllers, the first edition of Goldblat's book had already become the unofficial 'Bible'. The second edition confirms this judgement. *Arms Control: The New Guide to Negotiations and Agreements* is an essential and objective reference for all those working on, or interested in, arms control. In describing the successes and shortcomings of arms control, Goldblat also develops an agenda for improving arms control regimes. The book concludes by acknowledging that implementation of that agenda is governed by politics. It is to be hoped that Brooks and his equals will read Goldblat's book and reconsider the choices that they have made.

Dr Oliver Meier is on the staff of Uta Zapf, MP, Chair of the Subcommittee on Arms Control, Disarmament and Nonproliferation in the German Bundestag.

Staff news

TREVOR FINDLAY attended several seminars at the International Institute for Strategic Studies (IISS): Professor Schlomo Avineri of the Hebrew University, Jerusalem, on 'Democracy and security in the Middle East in the wake of the Iraq War' (15 May); Michael Krepon of the Henry L. Stimson Center on 'The nuclear future' (19 May); and Masabumi Sato, a IISS Visiting Fellow, and Jane Marriott of the UK Foreign and Commonwealth Office (FCO), on the 'The CTBT: achievements, issues, prospects' (20 May). On 29 May he attended a planning meeting at Saferworld for the 'Future of Multilateralism' project being run by VERTIC, Saferworld, the British American Security Information Council (BASIC) and the International Security Information Service (ISIS).

On 10 June he was interviewed for *The Business* and gave a presentation on the Chemical Weapons Convention (CWC) review process to the All-Party Parliamentary Group on Global Security and Non-Proliferation at Parliament House in London. From 12–14 June he attended the Annual General Meeting of the Academic Council on the United Nations System (ACUNS) in New York, during which time he also met with current and prospective funders. At IISS on 26 June he attended an address by US National Security Advisor Dr Condoleezza Rice on US security policy.

On 1 July he gave a presentation on VERTIC's project on BW national implementation legislation to a one-day meeting organised by the Geneva Forum on 'The BTWC work programme (2003–2004): what does it mean and what can it achieve?', held at the Palais des Nations in Geneva. His presentation can be found at www.vertic.org. From 3–6 July he participated in the third IPCRI workshop in Istanbul, where he helped to draft the group's interim report. On 18 July, he met with the French defence expert, Alexandra Novosseloff, formerly of the New York-based International Peace Academy, to discuss possible cooperation. On 28 July, along with Angela Woodward, he attended a one-day meeting at the FCO (held in coordination with the Universities of Bradford and Nottingham) on 'Managing the threat from biological weapons: science, society and secrecy'.

JANE AWFORD has been working closely with Richard Jones, VERTIC's designer, to develop a new website for launch in mid-August. She also set out the specifications for two of VERTIC's forthcoming online databases, the UNMOVIC/IAEA weapons inspection log and the Verification Organisations Directory, and coordinated the commissioning of an outside firm to develop the databases. Working with VERTIC intern Peter Gudritz, she reviewed links on the existing website to see that VERTIC is mentioned where appropriate.

KENNETH BOUTIN, along with Trevor Findlay, attended the IISS seminar on the CTBT on 20 May. On 23 May, in Brussels, Belgium, he participated in discussions with NATO and Belgian Foreign Ministry officials, along with a delegation from the International Physicians for the Prevention of Nuclear War, on nuclear weapons in Europe and verification. From 19–20 June, Kenneth represented VERTIC at a roundtable on 'Transparency with accountability: reporting by states parties to the NPT' in Ottawa, Canada. It examined progress made in promoting the development of reporting mechanisms for the NPT and considered possible approaches for the next meeting of the Preparatory Committee for the 2005 NPT Review Conference and for the Review Conference itself. He has also been editing the *Verification Yearbook 2003* and writing a VERTIC *Brief* on development of the IAEA's strengthened safeguards system.

VANESSA CHAGAS finished work on VERTIC's *Guide to verification of environmental agreements*—a project started by Marita Kivilahti under the supervision of Molly Anderson. On 17 July Vanessa met with Raymond Purdy, a Senior Research Fellow at University College London, to discuss cooperation on satellite remote sensing monitoring projects. On 18 July she attended a discussion meeting on climate change at the Royal Institute of International Affairs.

PETER GUDRITZ researched peacekeeping operations in Africa under Trevor Findlay's supervision as part of his Educational Programs Abroad (EPA) internship at VERTIC. He also worked with Jane Awford to review VERTIC's web links and began research on the Verification Organisations Directory.

BEN HANDLEY continued to manage VERTIC's administration. In early July he oversaw the upgrading of VERTIC's computer system, providing the organisation with a networked database and simpler and more robust back-up procedures. Ben has also been working closely with Jane Awford on the new website and the online databases. He prepared a financial report for the VERTIC Board of Directors' meeting on 30 May.

BEN MINES completed the UNMOVIC inspections database and prepared a searchable version for inclusion on the VERTIC website. Ben gave a presentation on inspections in Iraq—entitled 'UNMOVIC: playing hide and seek in Iraq'—to the UN General Assembly Link UK Annual General Meeting at the Quaker International Centre, London, on 5 July.

JOHN RUSSELL drafted a verification and monitoring 'Toolbox' presented to the IPCRI working group at its meeting in Istanbul on 3–6 July. On 3 July, he attended a Landmine Action members meeting. John helped Angela Woodward with her research on arms embargoes for a chapter to be published in the *Small Arms Survey* and assisted Jane Awford in promoting and distributing the *Handbook on Verification and Compliance*. Along with Trevor Findlay, he attended a IISS seminar on 15 July by Nomi Bar-Yaacov on 'Israel–Palestine: a call for international intervention'.

PATRICIA WATT assisted Angela Woodward with VERTIC's BWC project on national legislation implementation measures, preparing a report comparing implementation measures undertaken by state parties. As part of this project she has been contacting state parties, analysing legislation received and scanning documents in anticipation of the collection being made available on VERTIC's website in mid-August. Along with Angela Woodward, she attended a discussion group hosted by Professor Barry Kellman and Dr Orley Lindgren at the Royal Horseguards Hotel, London, to assess the 18–29 August BWC meeting of experts.

ANGELA WOODWARD attended a seminar on the proposed International Audit Scheme for the maritime safety and anti-pollution conventions at the International Maritime Organisation in London on 27 May. On 9 July, along with Trevor Findlay, she met with Orley Lindgren of Entropy Limited to discuss their respective projects in support of the BWC. Along with Trevor Findlay, on 15 July, she met with Rita Grossman, a consultant with TDV Global from Ottawa, Canada, to discuss their respective BWC projects. On 25 July, along with Trevor Findlay, she met with Richard Lloyd of Landmine Action to discuss potential funding opportunities for projects on the Ottawa Convention's compliance system. Angela continued her research on national BWC implementation measures and on verifying multilateral arms embargoes.

building trust through verification

VERTIC is the Verification Research, Training and Information Centre, an independent, non-profit making, non-governmental organisation. Its mission is to promote effective and efficient verification as a means of ensuring confidence in the implementation of international agreements and intra-national agreements with international involvement. VERTIC aims to achieve its mission through research, training, dissemination of information, and interaction with the relevant political, diplomatic, technical, scientific and non-governmental communities.

PERSONNEL Dr Trevor Findlay, *Executive Director;* Jane Awford, *Information Officer/ Networker;* Dr Kenneth Boutin, *Senior Arms Control & Disarmament Researcher;* Ben Handley, *Administrator;* Ben Mines, *Arms Control & Disarmament Researcher;* John Russell, MSC ECON, *Arms Control & Disarmament Research Assistant;* Patricia Watt, *Intern;* Angela Woodward BA (HONS), LL.B., *Legal Researcher.*

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