

The Congo conflict: monitoring complexity

Four years of constant war in the Democratic Republic of the Congo (DRC) has cost an estimated two million lives and involved multiple parties and external forces. During this time, several attempts have been made to end the fighting and to restore peace in the country. All of these initiatives have relied on some form of monitoring of compliance. Yet the monitoring and verification arrangements invariably mirror the conflict in terms of their complexity. They are unlikely to succeed in the absence of better integration, greater co-operation from the parties and more wholehearted support from the international community.

On 7 July 1999, the DRC, along with Angola, Namibia, Rwanda, Uganda and Zimbabwe and two rebel groups—the Movement for the Liberation of the Congo (MLC), backed by Uganda, and the Congolese Rally for Democracy (RCD), supported by Rwanda—signed the Lusaka Ceasefire Agreement. The accord established a Joint Military Commission (JMC), comprising two representatives of each party and a neutral chairman, to monitor compliance.

The parties asked the United Nations (UN) to deploy a peacekeeping mission also to help monitor compliance with the ceasefire, investigate alleged ceasefire breaches, verify the disengagement and redeployment of all forces, monitor human rights and facilitate the distribution of humanitarian aid. Extraordinarily, the accord requested that the force be given a Chapter VII enforcement mandate and that it ‘track down all armed groups in [the] DRC’. Although the UN Security Council authorised the creation of the United Nations Mission in the Congo (MONUC) in February 2000 with a Chapter VII mandate, it limited the application of force to the protection of UN personnel and others in ‘imminent danger’—it would not ‘track down’ guerrillas or otherwise forcefully intervene in the imbroglio.

So far, MONUC has successfully reported human rights abuses, attempted to calculate the number of Rwandan refugees in the DRC, and encouraged voluntary participation in the disarmament, demobilisation, repatriation and resettlement (DDRR) programme. Apart from the parties’ lack of co-operation and continued violations of their obligations, MONUC has faced problems arising from a shortage of military personnel and the physical characteristics of the country. As of 1 June 2002, MONUC’s military component numbered only 3,804, compared with the 5,537 authorised by the Security Council. Troop strength is crucial, as the DRC is a vast country (two-thirds the size of Western Europe), largely covered in equatorial rainforest, and with poor transportation and communication infrastructure. All of these factors make monitoring arduous. MONUC has, as a result, been unable to carry out all of its mandated programmes, such as DDRR, effectively. Nor has it been able to deter violence and give the public a sense of security through its presence. In August 2002, when renewed inter-ethnic

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Kristina Hinds assesses monitoring in the Congo, John Hart offers a timely book review on Iraq’s nuclear and biological weapons agenda, while Molly Anderson and Vanessa Chagas reflect on the Johannesburg summit. Plus Verification Watch, Science and Technology Scan, Verification Quotes and VERTIC News and Events.

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Pretoria MoU programme of implementation

Start date	End date	Activity and responsibility
30 July	30 July	Signing of Pretoria Agreement. Rwanda, DRC, Third Party
	30 July	Declaration of troop withdrawal. Rwanda
	13 August	Finalise MONUC deployment. MONUC
	Ongoing	Normalisation of relations. DRC, Rwanda
3 August	8 August	Submission of detailed plans/programme for troop withdrawal. Rwanda
	23 September	Establish/operationalise assembly points for ex-FAR/Interahamwe MONUC, JMC, Third Party
	12 October	Verify establishment/functionality of assembly points. Third Party
	27 October	Establish verification mechanism/implementation structure. Third Party
8 August	27 October	Communicate information to Third Party verification structure. DRC, Rwanda
	27 October	Verify that processing of information received has begun. Third Party
	27 October	Track down, disarm, dismantle ex-FAR/Interahamwe MONUC, DRC, JMC, Rwanda, Third Party
	27 October	Verify/monitor dismantling of, and cessation of support for, ex-FAR/Interahamwe MONUC, JMC, Third Party
13 August	27 October	Movement of ex-FAR/Interahamwe to assembly points. MONUC
28 August	27 October	Repatriation of ex-FAR/Interahamwe. Rwanda, JMC, MONUC
	27 October	Verify repatriation process. Third Party
12 September	27 October	Withdrawal of Rwandan forces. Rwanda
	27 October	Verify withdrawal process. MONUC, Third Party
27 October	26 December	Final verification process on completion of 90 days Programme of Action Third Party
	26 December	Submit final report. Third Party

fighting, also involving rebel groups, erupted in northeast DRC, it was Ugandan forces, rather than MONUC, which attempted to restore order. Fighting has been almost continuous in that region since the Lusaka accord was signed.

The Pretoria Agreement

To prevent the Lusaka process unravelling completely, DRC President Joseph Kabila and Rwandan President Paul Kagame on 30 July 2002 signed the Pretoria Memorandum of Understanding (MOU). This calls for the extradition to Rwanda of 'genocidaires' (those implicated in the 1994 Rwandan genocide) and the withdrawal of Rwandan troops (which control nearly one-third of the DRC) by 27 October 2002. The former include members of the old Rwandan Armed Forces (FAR) and the Interahamwe, a genocidal militia group. The 90-day time span is extremely ambitious considering the size of the DRC and the unknown numbers of troops and genocidaires involved. Implementation is already behind schedule.

In addition to the parties themselves, South African President Thabo Mbeki and UN Secretary-General Kofi Annan also signed the MOU as a 'Third Party', tasked with guaranteeing and verifying implementation. This novel arrangement may have been essential to secure agreement, but from a monitoring perspective it seems unnecessarily complicated. It means that the JMC, MONUC and the 'Third Party' will all be involved in monitoring and verifying different aspects of the peace process, sometimes collectively and sometimes alone. Close co-ordination and co-operation will be necessary to avoid duplication and 'turf wars'.

The accord reiterates the Lusaka Agreement's appeal that MONUC be given a more interventionist role in implementing the peace plan, particularly in '[t]racking down, disarming and dismantling Interahamwe and ex-FAR'. The request will probably not be heeded. UN member states are unwilling to commit troops to a mission that risks being drawn into the Congolese conflict. UN Secretary-General Kofi Annan's report to the Security Council of 10 September 2002 on the future of

MONUC states that the DDR process will only occur on a 'voluntary basis' in areas where hostilities have ceased. The report recommends that MONUC acquire 3,163 more troops, in addition to the 5,537 already authorised, just to 'facilitate' DDR and to continue monitoring the withdrawal of foreign forces.

Although the Security Council has been slow to react to the Pretoria Agreement, it is expected to authorise soon the necessary changes to MONUC's mandate and composition. So far, South Africa is offering 1,500 troops, while the UK and the US are contemplating military and humanitarian assistance. Acquiring further troops, though, will undoubtedly prove difficult, as MONUC has not even managed to achieve its previously authorised strength.

Meanwhile, most of the foreign interventionist forces appear to have withdrawn as required, which should ease the monitoring task. Rwanda and Namibia have reportedly withdrawn completely, Angola has only a handful of troops left, Uganda has recalled all but 1,000 and Zimbabwe withdrew 2,000 on 4 October. These encouraging developments, however, remain insufficient if the complex endeavour of bringing peace to the Congo is to succeed. More co-ordinated action, including by the various entities charged with monitoring implementation, as well as the urgent allocation of greater international resources to the entire peace process, are essential.

Kristina Hinds, VERTIC Intern

Book Review Khidir Hamza (with Jeff Stein), *Saddam's Bombmaker, the Terrifying Inside Story of the Iraqi Nuclear and Biological Weapons Agenda* Scribner, London, 2000, pp. 352, £17.99, hardcover, ISBN 0-684-87386-9

As the international community continues to struggle with the question of how to secure the return of inspectors to Iraq, John Hart reviews a book by a key Iraqi defector, the former head of the Iraqi nuclear weapons programme.

In August 1995 Dr Khidir Hamza managed to escape to the West. His book, written with the assistance of former US intelligence analyst Jeff Stein, is a readable, first-hand account of the programme and Hamza's role in it. Hamza says that he was approached in 1972 about the technical feasibility of developing an Iraqi nuclear weapon and thereafter helped to draft a project proposal. According to Hamza, the Iraqi nuclear establishment's motivation for initiating the programme seemed to be to obtain increased funding for nuclear research. Ba'ath Party officials also seem to have played a major role in promoting the project for reasons of prestige and in response to information on Israel's nuclear weapon activities.

By the outbreak of the Gulf War in 1990, Hamza claims that Iraq had a prototype nuclear device, but lacked sufficient amounts of fissionable material for its core. Even if it had been completed, he states, the bomb was too large to be fitted on to a missile and may not have survived the physical stresses of the flight.

Hamza describes the interactions of numerous individuals and organisations involved in the programme. However, it is difficult for the general reader to judge the accuracy of his account. Personal recollections are not referenced, and there is no indication that the manuscript was reviewed by experts with experience of on-site inspections in Iraq or with other in-depth knowledge of the country's nuclear programme.

Since Hamza's expertise and experience is in the nuclear field, his account of the programme does have a ring of truth to it. By contrast, although the title of the book mentions biological weapons, the subject is barely touched on. Hamza simply recounts second-hand allegations about the testing of biological and chemical warfare agents on humans and the prevalence of Gulf War syndrome-type illnesses in some sections of the Iraqi population. These assertions are difficult to verify independently.

A key point made in the book is the importance of the 'human element' in the Iraqi nuclear weapons programme, while inspections by the UN Special Commission (UNSCOM), at least initially, were focused on equipment and materials. *Saddam's Bombmaker* also highlights the inadequacy of International Atomic Energy Agency (IAEA) inspections under traditional safeguards. Although Iraq continues to permit IAEA inspections of declared facilities under such safeguards, it has not signed or ratified an Additional Protocol or adopted other elements of the IAEA's Strengthened Safeguards System, which enhance the Agency's ability to detect and inspect non-declared facilities. Given Iraq's past activities under its current leadership, though, the effectiveness of any non-coercive multilateral arms control regime is questionable. A key outstanding question is what indigenous nuclear weapons expertise Iraq now has and what activities the country is capable of carrying out with the materials it has access to.

The book makes a useful addition to the growing literature on the authoritarian nature of Saddam's regime and the mentality of the people who live under and work for it. Any final assessment of the regime and its efforts to acquire nuclear weapons, however, cannot take place until Saddam has relinquished power and many other Iraqis are able to describe their own past without fear of imprisonment or death.

John Hart, Researcher, Chemical and Biological Warfare Project, Stockholm International Peace Research Institute (SIPRI)

Progress of sorts in Johannesburg

The World Summit on Sustainable Development (WSSD) took place in Johannesburg, South Africa, between 26 August and 4 September 2002. It was convened ten years after the Earth Summit in Rio de Janeiro, Brazil, at which world leaders signed Agenda 21, a comprehensive plan of action for sustainable development and environmental protection. The Johannesburg conference was supposed to reinvigorate the process by bringing together governments, civil society and business in order to set new targets and timetables. While the UN is officially hailing the WSSD a success, some UN officials and non-governmental organisations (NGOs) have been more downbeat. Klaus Topfer, Director of the United Nations Environment Programme, for example, rated the outcome as 'satisfactory', consoling himself with the fact that the four Preparatory Committee (PrepCom) meetings had predicted even less progress.

Negotiations between the 150 participating countries were difficult, given the range of topics on the agenda and the widely disparate national interests involved. However, the high level of attendance by heads of state was evidence of significant political interest, if not of political will to achieve tough action. The most notable absentee was US President George W. Bush, who dispatched Secretary of State Colin Powell to head the US delegation. Combined with the United States' controversial withdrawal from the Kyoto Protocol negotiations in 2001, Bush's apparent lack of interest set the tone for US involvement. Australia, Canada and Japan largely supported the intractable US stance, while friction within the European Union (EU) and the G77 group of developing countries prevented them from effectively promoting the ambitious targets and timeframes demanded by NGOs.

The summit nonetheless produced two key documents. The first is a four-page Political Declaration outlining the UN's leading role in promoting sustainable development. It commits governments to the second document, a 50-page Plan of Implementation (also referred to as the Plan of Action), as well as to regular monitoring of progress towards the achievement of sustainable development goals. The Plan sets out specific obligations in respect of water and sanitation, energy, health, agriculture and food security, and biodiversity.

Commitments range from expressions of general intention to what are referred to as Type I agreements, with quantitative targets, a timetable and earmarked funding. In the section on water and sanitation—considered one of the great achievements

of the conference—the Plan commits governments to halving by 2015 the proportion of the world's population without access to sanitation and safe drinking water. Type I commitments were also established for the management of fish stocks and protection of the marine environment. Countries agreed to restore depleted fish stocks to sustainable yields by 2015, and to set up by 2004 a regular UN process for assessing the state of the marine environment. In relation to the ozone layer, states agreed to replenish depleted funds for helping implement the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and to provide developing countries with access to environmentally sound alternatives to ozone depleting substances by 2010.

However, while the document acknowledges that biodiversity is being lost at an unprecedented rate due to human activity, it fails to set quantifiable targets for halting the loss of non-marine biodiversity, only asking states to slow the rate by 2010. It identifies the 1972 Convention on Biological Diversity (CBD) as the instrument for reversing the trend. Yet, although CBD parties have been slow to implement their obligations, the document makes no call for full compliance.

Kyoto Protocol nearing entry into force

The Johannesburg summit renewed hope that the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) will soon enter into force. The 14 ratifications announced at the summit include those of Bulgaria, Hungary, Poland and Slovenia, taking the number of developed parties to 25, which together produced 40 percent of industrialised country carbon dioxide emissions in 1990. For the protocol to enter into force, at least 55 states, responsible for 55 percent of industrialised countries' emissions in 1990, must ratify. Significantly, Canada and Russia used the WSSD to proclaim their intentions. Canadian Prime Minister Jean Chrétien said that he would present the issue to parliament before the end of 2002. Russian Prime Minister Mikhail Kasyanov reiterated his government's commitment to ratifying the protocol, which he hoped 'will occur in the very near future'. Russia's ratification alone would satisfy the protocol's criteria for entry into force. Developing countries Bhutan, Cambodia, Cameroon, Chile, China, India, Malaysia, Sri Lanka, Tanzania and Thailand also announced ratification, taking the total number of parties to the protocol to 93.

Perhaps the most acrimonious negotiations related to energy. At the fourth PrepCom in Bali, Indonesia, from 27 May–7 June 2002, two proposals were tabled for targets for cleaner energy supplies using renewable technologies. The EU proposed that countries generate 15 percent of global, primary energy from renewable sources by 2010. But its definition of ‘renewable’ included contributions from large hydroelectric power stations and biomass burning, which can have destructive impacts on the environment. A Brazilian proposal envisaged a 10 percent target, excluding large hydro projects and biomass burning. The WSSD final document fell well short of both options. The EU failed to build alliances with Brazil and other G77 countries, allowing the US, which opposes quantitative clean energy targets and timescales, to have its way. Consequently, the energy section of the Plan of Action is deliberately vague, asking countries ‘with a sense of urgency, [to] substantially increase the global share of renewable energy sources with the objective of increasing its contribution to total energy supply’.

Small glimmers of hope emerged from the summit in the form of a string of so-called Type II commitments. These are described as ‘partnership initiatives’, alliances of governments, the private sector and civil society that seek to help fulfil WSSD objectives. In the area of energy supply, the EU announced a \$700 million partnership programme in developing states and asked countries to sign up to its 15 percent proposal voluntarily. While such non-mandatory initiatives are seen as helping implement sustainable development, critics argue that they are no replacement for binding international agreements that permit state compliance to be assessed and non-compliance redressed. It is unclear how non-mandatory, often industry-managed, projects will be regulated, monitored and verified to ensure that they meet their aims and adhere to good environmental and sustainability standards. Importantly, this includes the setting of honest baselines, which clearly indicate that the project represents more than ‘business as usual’ coloured green by the WSSD process.

Overall, the WSSD did not produce an immediately apparent strategy for sustainable development. The concept is still nascent and contains many inconsistencies and tensions. The final WSSD documents are a ‘mixed bag’ of promises and initiatives and only time will tell if a significant enough number help achieve global change. The true test of the success of Johannesburg will be the action taken afterwards. As Kofi Annan noted: ‘This is not the end. It’s the beginning’.

Molly Anderson, VERTIC Environmental Researcher, and
Vanessa Chagas, VERTIC Environmental Research Assistant

Verification Quotes

Consult with the United Nations? George W. Bush's speech sounded more like a pistol-whipping. Either the wimpy, no-account folks in the glass palace on the East River get with his Iraq program or else.

Mary McGrory, ‘Time to talk’, op. ed., *Washington Post*, 15 September 2002, www.washingtonpost.com, on President Bush's speech to the UN urging action against Iraq.

It took three months of scrutiny for scholars to verify that [Sir Timothy] Clifford, the director of the National Galleries of Scotland, had discovered America's first Michaelangelo in 26 years when he stumbled upon it in the archives of New York City's Cooper–Hewitt National Design Museum.

Time, 22 July 2002.

Mr. Ibrahim's 'crime' was that his institute at the American University in Cairo was helping to teach Egyptians how to register to vote, how to fill out a ballot and how to monitor elections.

Thomas L. Friedman, ‘Bush's Shame’, op. ed., *New York Times*, 4 August 2002, p. 1.

I can't think of anything funnier than a handful of congressmen wandering around. You see the size of the country? They'd have to be there for the next 50 years! It's a joke.

US Secretary of Defense Donald Rumsfeld on Iraq's proposal for US Congressional representatives to visit to verify that it was not attempting to acquire weapons of mass destruction, quoted in Barbara Crossette and Alison Mitchell, ‘UN and Congress Rebuff Iraq's Inspection Invitation’, *New York Times*, 6 August 2002.

We have over 500 international and regional agreements, treaties and deals covering everything from the protection of the ozone layer to the conservation of the oceans and seas. Countries have national laws too but unless they are complied with, unless they are enforced, then they are little more than symbols, tokens, paper tigers.

Klaus Töpfer, Executive Director of the UN Environment Program, quoted in Paul Brown, ‘Judges pledge to champion the environment’, *The Guardian*, 28 August 2002, p. 13.

That the Israeli Defence Forces encountered heavy Palestinian resistance is not in question. Nor is the fact that Palestinian militants in the camp, as elsewhere, adopted methods which constitute breaches of international law.

Report of a UN fact-finding team on the battle for Jenin in April 2002 (Report of the Secretary-General prepared pursuant to General Assembly resolution ES-10/10, UN document A/ES-10/186, 30 July 2002), para. 53, p. 12.

They agreed to have inspectors. They threw the inspectors out. The inspectors are still out, now for a period of years. And they're still not allowed back in. What else can one say?

Secretary Rumsfeld, quoted in Thom Shanker, ‘Rumsfeld denounces Iraq for rejecting further arms inspections’, *New York Times*, 14 August, www.nytimes.com

American military commanders insist they take pains to ensure that civilians are spared, often verifying their targets with several sources of information.

Dexter Filkins, ‘Flaws in US air war left hundreds of civilians dead’, *New York Times*, 21 July 2002, p. 1, commenting on the US air war in Afghanistan.



Protocol to torture treaty agreed

On 24 July 2002 the UN Economic and Social Council (ECOSOC) adopted an Optional Protocol to the 1984 Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment. The UN General Assembly will vote on the protocol at the end of 2002: a majority vote in favour will enable it to be opened for signature. The protocol will enhance verification of the convention by establishing a system of regular visits to places of detention by an international body of experts, complemented by sustained regular visits by national visiting bodies. It will give a Sub-Committee on Prevention extensive powers of inspection within the territories of states parties. The sub-committee will be entitled to initiate visits without prior consent, obtain unrestricted access to detention centres and conduct private interviews without witnesses. Reports and inspections will remain strictly confidential in order to build trust and encourage co-operation between the sub-committee and states parties.

Claiming that the protocol creates unconstitutional obligations, the US urged that the text be re-opened and subject to further consultation, but was outvoted. The US proposed replacing the protocol's inspection system with regional inspection mechanisms, which it claimed were more accountable. Supporters of the protocol feared that this would weaken verification.

Source 'us balks at UN prison-access plan', *International Herald Tribune*, 25 July 2002, p. 3; 'us statement at the Working Group on an Optional Protocol to the Convention Against Torture', US Mission, Geneva, *Press Release*, 22 January 2002; 'us loses effort to stall protocol to convention', *UN Wire*, 25 July 2002, www.unwire.org; 'The draft Optional Protocol to the Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment', *Association for the Prevention of Torture Position Paper*, October 2001, www.apr.ch.

Green light for CDM procedures

The accreditation procedures for 'operational entities' under the Kyoto Protocol's Clean Development Mechanism (CDM) were launched on 20 August. Companies and organisations are now able to apply to an Executive Board—charged with overseeing the operation of the CDM—for accreditation, which would qualify them to validate, verify and audit emission reduction projects initiated under the scheme. The CDM, one of the three 'flexible mechanisms' established by the protocol to minimise implementation costs, allows developed countries—or other legal entities—to start projects in developing states in

return for 'credits' that can be traded or offset against domestic greenhouse gas reduction targets.

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) agreed to a 'prompt start' of the CDM at the Seventh Conference of the Parties (COP7) in Marrakech, Morocco, in October 2001. However, NGOs are becoming increasingly concerned that several CDM projects currently being proposed do not meet the agreed criteria and would fail to deliver on the CDM's twin goals of reducing emissions of greenhouse gases and promoting sustainable development. CDM Watch, a non-profit organisation based in Bali, Indonesia, in August launched a website (www.cdmwatch.org) to facilitate monitoring of the CDM by NGOs and other stakeholders and to apply pressure to project developers and the Executive Board to comply with the letter and spirit of the agreed standards.

Source 'Kyoto clean development mechanism goes live', 22 August 2002, www.environmentdaily.com.

Open Skies flights begin

Although many trial flights have been conducted since the Open Skies Treaty was signed in 1993, the first official flights began in August, following the agreement's entry into force on 1 January 2002 (see *Trust & Verify*, January–February 2002). The inaugural flight was conducted on 8 August when a Russian observation plane flew over the UK, marking the end of a six-month certification exercise, which checked that all participating countries' aircraft and sensors were in compliance with the accord. There are currently 26 parties to the treaty. Bosnia and Herzegovina, Croatia, Finland, Latvia and Sweden, all members of the Organisation for Security and Co-operation in Europe (OSCE), acceded in the six months after entry into force. While any country can now apply to join, they may be blocked by an existing member. Cyprus' membership has been opposed by Turkey because of the Cyprus conflict.

Source 'Open Skies flights begin', *Arms Control Today*, vol. 32, no. 7, September 2002, www.armscontrol.org.

US funds released, but Russian BW facilities remain closed

On 7 August, President Bush signed a one-month waiver, on 'national security grounds', to free more than \$450m in Department of Defense funding and \$70m of Department of State funding for dismantling and securing weapons of mass destruc-

tion in the former Soviet Union. The funds have been tied up for the past ten months, after the Bush administration refused to certify that Russia was in compliance with the 1972 Biological Weapons Convention (BWC) and the 1993 Chemical Weapons Convention (CWC). The decision marked the first time that the US has not certified Russian compliance since 1991, when Cooperative Threat Reduction (CTR) programmes began. Congress is still debating whether to extend the waiver beyond September.

In other developments, US Senator Richard Lugar returned from leading a congressional delegation to Russia to observe operation of CTR programmes. The delegation had hoped to be granted access to one of four military biological facilities. Russia's continued refusal to allow the US access to such areas has fuelled suspicion that it continues to engage in offensive biological weapons research in violation of the BWC, despite previous assurances to the contrary. Until these matters are resolved, the US administration will be reluctant to certify that Russia is in compliance with its arms control and disarmament commitments.

Source Kerry Boyd, 'Bush signs waiver, freeing threat reduction funding', *Arms Control Today*, vol. 32, no. 7, September 2002, www.armscontrol.org; 'US response: Bush frees funds to reduce Russian WMD threat', *Global Security Newswire*, 9 August, www.nti.org; Bryan Bender, 'US-Russia: Lugar pushes to visit closed Russian facility', *Global Security Newswire*, 19 August 2002, www.nti.org; 'Russia: bureaucrats continue to block US access', *Global Security Newswire*, 9 September 2002, www.nti.org; Joby Warrick, 'Russia denies US access to bioweapons', *Washington Post*, 8 September 2002, p. A25.

US scientists endorse CTBT

On 31 July the US National Academy of Sciences released its long-awaited study, *Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty*. A 19-member scientific committee, chaired by John Holdren of Harvard University, and including former nuclear weapon scientists, nuclear weapon laboratory directors and military officers, wrote the report. The group evaluated the US ability to maintain safe and reliable nuclear weapons without testing, the capability of the Comprehensive Nuclear Test Ban Treaty (CTBT)'s verification system, and the potential impact of clandestine nuclear testing on US security. On all three issues the report thoroughly rebutted arguments of CTBT critics. Regarding verification, it concluded that, 'in the absence of special efforts at evasion, nuclear explosions with a yield of one kiloton or more can be detected and identified with high confidence in all environments'. It noted that the CTBT's International Monitoring System can reliably detect underground explosions down to 0.1 kilotons in many regions. In areas of interest, such as former test sites, detectability can go as low as

ten tons. The scientists identified just two plausible evasion scenarios, but they concluded that, besides the US, only China and Russia have the technical capability to attempt them. Neither country, they added, would be likely to gain military benefit from doing so and would, therefore, be unlikely to try.

Source *Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty*, Committee on Technical Issues Related to Ratification of the Comprehensive Nuclear Test Ban Treaty, National Academy of Sciences, Washington, DC, September 2002. Available from www.books.nap.edu.

Serbia's HEU spirited away

In August 48 kilogrammes of Highly Enriched Uranium (HEU) were removed from the Vinca Institute of Nuclear Sciences in Belgrade, Serbia, to the Ulyanovsk Nuclear Processing Plant in Dmitrovgrad, Russia, where it will be blended down into low-grade fuel. The US has been concerned about lack of security at the Vinca reactor since it was decommissioned in 1984, fearing that it would be vulnerable to theft or terrorist attack. The operation, which had the approval of the Yugoslav government, involved the US, Russia, Serbia and the International Atomic Energy Agency (IAEA). An unprecedented aspect was the financing of part of the project by the Nuclear Threat Initiative (NTI), a private foundation. The operation is likely to be repeated in future, with US officials indicating that they are eager to remove poorly secured weapons grade material from 24 sites in 16 states.

Source Paul Kerr, 'International operation removes uranium from Serbia', *Arms Control Today*, vol. 32, no. 7, September 2002, www.armscontrol.org; 'NTI commits \$5 million to help secure vulnerable nuclear weapons material', *Nuclear Threat Initiative Press Release*, 23 August 2002, www.nti.org; Robert Schlesinger, '24 sites eyed for uranium seizure', *Boston Globe*, 24 August 2002, www.boston.com.

New anti-terrorist shipping regulations

The International Maritime Organisation (IMO) is negotiating a new regulatory regime to prevent terrorists from attacking ships, using them to transport terrorist weapons or employing ships themselves as weapons. William O'Neil, Secretary-General of the IMO, expressed hope that the organisation's Diplomatic Conference on Maritime Security will approve the new measures in London in December 2002. The most important measure envisaged is an International Ship and Port Facility Security Code, which is to be implemented through an amendment to the 1974 Safety of Life at Sea Convention (SOLAS). This could provide for far-reaching and intrusive verification and monitoring, including the right to board ships and use monitoring equipment. The negotiations seek a compromise between security against terrorism and ensuring the unfettered movement

of shipping. One possibility is a system for assessing the vulnerability of ships and their cargo, based on the type of load, destination, and origin of the ship and its consignment. The most vulnerable ships and freights would be subject to more stringent monitoring and verification.

Source 'International response: shipping body considers new security measures', *Global Security Newswire*, 11 September 2002, www.nti.org; 'Maritime security: UN agency head outlines new proposals', *UN Wire*, 11 September 2002, www.unfoundation.org; personal communication with IMO Press Officer, 13 September 2002.

Ottawa Convention nears crucial deadline

The Fourth Meeting of States Parties to the 1997 Ottawa Convention—held from 16–20 September in Geneva, Switzerland—focused on assisting states parties to implement the ban on anti-personnel landmines. Compliance with the treaty will become an increasingly vexed issue in coming months for countries that joined the treaty when it was opened for signature, as they are required to destroy their stockpiles of landmines by March 2003. Many are experiencing difficulties doing so. There is also concern that, because of the long lead-times involved in effectively clearing mined areas, many states parties will not be able to comply with the treaty's deadline for completing de-mining, even though it does not fall until March 2009. The meeting considered how to mobilise sufficient resources for these tasks and recognised the need to reach a common understanding on the definition of an anti-personnel landmine contained in Article 2 of the convention, so that states parties could review their stocks and ensure compliance.

VERTIC's Executive Director, Trevor Findlay, presented a draft of the centre's *Guide to fact-finding missions under the Ottawa Convention* to the meeting and, along with Angela Woodward, held consultations with participants on the document. VERTIC welcomes further comment on the paper, which is available on the websites of VERTIC (www.vertic.org) and the Geneva International Centre for Humanitarian Demining (www.gichd.org). A final version will be published in November 2002 and distributed to states and interested organisations. It will be formally presented to the Intersessional Standing Committee meetings in February 2003.

SORT/START developments

During hearings of the Senate Foreign Relations Committee in July, Republican and Democrat Senators signalled their support for ratification of the Strategic Offensive Reductions Treaty (SORT) signed by Russia and the US on 24 May 2002. This is despite flaws in the agreement, including lack of verification

provisions. Russian Deputy Foreign Minister Georgy Mamedov has said that SORT will be submitted to the Russian Duma and the Federation Council before the end of September 2002; voting is expected to take place in October. Meanwhile, Russia has said it plans to retain one division of rail-based SS-24 inter-continental ballistic missiles with 150 warheads, and 144 silo-based SS-18 missiles that will be upgraded and refurbished to keep them fully operational until 2014. Both systems were due to be scrapped by 2007 under the 1993 second Strategic Arms Reduction Treaty (START II). Russia has said that it no longer considers itself bound by START II, because there is no likelihood of it entering into force.

Source Wade Boese, 'Senate reviews US–Russian nuclear reductions treaty', *Arms Control Today*, vol. 32, no. 7, September 2002, www.armscontrol.org; Wade Boese, 'New nuclear accord submitted to US, Russian lawmakers', *Arms Control Today*, vol. 32, no. 6, July/August 2002, www.armscontrol.org; James Dao, 'Senators question Powell on arms-cut treaty', *New York Times*, 10 July 2002, www.nytimes.com; 'US–Russia: Duma likely to ratify arms treaty', *Global Security Newswire*, 13 September 2002, www.nti.org; 'Russia: strategic forces will keep rail-based ICBMs', *Global Security Newswire*, 12 August 2002, www.nti.org; 'US–Russia: Russia discards START II treaty', *Global Security Newswire*, 14 June 2002, www.nti.org; Nikolai Novichkov, 'Russia to retain MIRVs beyond START II deadline', *Jane's Defence Weekly*, 28 August 2002, p. 3; Nick Paton Walsh, 'Moscow extends life of 144 cold war ballistic missiles', *The Guardian*, 20 August 2002, www.guardian.co.uk.

NATO partly accepts Russian compliance with CFE treaty

The North Atlantic Treaty Organisation (NATO) has accepted that Russia is in compliance with the weapons limits established by the 1999 Adapted Treaty on Conventional Armed Forces in Europe (CFE), but has urged Russia to fulfil its other CFE-related commitments. The accord, designed to replace the Cold War block and zone limits of the 1992 CFE treaty with national and territorial ceilings, has not yet entered into force as NATO members have conditioned ratification on Russia fulfilling its terms. While Russia declared at the end of 2001 that it had met the revised limits, the Alliance did not immediately accept the claim and set out to verify it. NATO now wants Russia to fulfil its pledges, made in November 1999, to withdraw its conventional armaments and forces from Georgia and Moldova. As Russia is experiencing problems extricating itself from both countries, it seems unlikely that the adapted CFE treaty will be ratified and enter into force in the near future.

Source Wade Boese, 'NATO accepts Russian CFE compliance, but wants more', *Arms Control Today*, vol. 32, no. 7, September 2002; 'Letter from Leonid A. Skotnikov to the Conference on Disarmament on Russian compliance with its obligations under the Treaty on Conventional Armed Forces in Europe', UN document CD/1656, 31 December 2001.



CW detection: wasps and UAVs

The US military continues to explore the use of wasps to detect chemical weapon attacks. These small predatory insects are able to 'smell' chemical agents in concentrations a hundred thousand times less than can the electronic devices currently available. Wasps are trained by exposing them to very weak, non-toxic amounts of specific chemicals and rewarding them with sugar water. Once trained, the wasps head towards the target chemical in the belief that they will be rewarded. Wasps have already been used to detect a range of neurotoxins and explosives. The research team is now trying to incorporate wasps into handheld units. Air samples, sucked into cartridges inside the appliance, would be exposed to them. If they moved towards the cartridge, an alarm would sound to indicate the presence of chemical agents. This type of portable detection device could be used for on-site inspections and as a warning appliance in the field.

The US Defense Threat Reduction Agency, meanwhile, will soon test a new unmanned aerial vehicle (UAV) designed to detect the presence of chemical and biological agents in the air. The Flight-Inserted Detection Expendable for Reconnaissance (FINDER) vehicle has already been flown successfully four times when launched from the larger Predator UAV. However, the planned flight will be the first time that it has been used to detect chemical agents. The Predator, which is fitted with less sophisticated detection instruments, will pinpoint the best spot to release FINDER, which will then take samples from the chemical cloud and analyse them. FINDER will also collect data on the cloud's path and speed, which will be used to predict the impact of the chemical attack and to provide warnings.

Satellites improve land use monitoring . . .

Scientists at the University of Boston have constructed a global map using a new satellite database, providing the most detailed and accurate picture yet of the earth's ecosystems and land use patterns. The map, which has a spatial resolution of one kilometre, will help scientists monitor carbon dioxide emissions in the atmosphere and the proportions being soaked up by carbon 'sinks', such as forests and oceans. Accurate greenhouse gas inventories, which quantify the levels of emissions from man-made sources and removals by 'sinks', are required under the United Nations Framework Convention on Climate Change. The map is based on information collected between

November 2000 and October 2001 by the Moderate Resolution Imaging Spectroradiometer (MODIS) instrument on the Terra satellite operated by the US National Aeronautical and Space Administration (NASA). It will be updated annually, making it possible to chart land use changes over time.

. . . while radar tracks loggers

Brazil is launching a \$1.4 billion radar system to detect illegal loggers, miners and drug runners operating under the cover of the Amazon rainforest. The System for Vigilance of the Amazon (SIVAM) project, which will include a network of control towers and aircraft, can help catalogue the diversity of plant and animal life in the forest. Critics of the system allege it is simply a response to US pressure on Brazil to control drug trafficking. They believe that lack of enforcement measures and funding for local environment agencies will mean that even if illegal activities are detected they cannot be dealt with.

Source David Whitehouse, 'How earth's land is used', *BBC News*, 22 August 2002, www.bbc.co.uk; 'NASA's Terra satellite refines map of global land cover', *NASA Press Release no. 02-126*, 13 August 2002; 'Brazil spies on Amazon loggers', *BBC News*, 25 July 2002, www.bbc.co.uk.

Getting Verification Right

Enhancing implementation of the Chemical Weapons Convention

This new 24-page report from VERTIC examines key areas of the performance of the Organisation for the Prohibition of Chemical Weapons (OPCW), as well as that of states parties to the 1993 Chemical Weapons Convention (CWC).

The OPCW has major achievements to its credit, but it has recently run into difficulties in fulfilling its mandate. For their part, states parties have not always fulfilled their legal obligations to support and comply with the accord.

The report is intended to stimulate thinking among states parties and in the organisation's Secretariat prior to and during the review process that will culminate in the treaty's First Review Conference in 2003. It is available free from VERTIC or can be downloaded from www.vertic.org.

VERTIC report on OPCW reform

VERTIC has released its report on implementation of the CWC and performance of the Organisation for the Prohibition of Chemical Weapons (OPCW) in time for the Conference of States Parties from 7–10 October 2002. Prepared for VERTIC by consultant Joan Link, *Getting verification right: proposals for enhancing implementation of the Chemical Weapons Convention* makes recommendations on the treaty's verification system, the OPCW's governance, management and finance, and the role of confidentiality and transparency. The hope is that states parties will consider such matters well in advance of the first CWC Review Conference in April–May 2003. Free copies of the report are available from VERTIC or it may be downloaded from the VERTIC website at www.vertic.org.

VERTIC climate change workshop

On 13 September representatives of 17 governments, seven NGOs and the Secretariat of the UNFCCC attended VERTIC's one-day workshop entitled 'Getting on with it: overcoming obstacles to early implementation of reporting and review under the Kyoto Protocol'. The workshop was designed to provide practical guidance to countries implementing their Articles 5, 7 and 8 commitments. While many of these are not mandatory until 2007, most observers acknowledge that early planning and implementation will be essential for getting the verification regime off to a smooth and effective start. Rocio Lichte of the UNFCCC Secretariat outlined the timetable for submitting information under the protocol and the process of expert review. She also summarised the lessons from a UNFCCC reporting and review trial. This was followed by presentations by Jim Penman of the UK Department of Environment, Food and Rural Affairs (DEFRA) and Audun Rosland of the Norwegian Pollution Control Authority, who discussed the challenges of establishing national systems for preparing greenhouse gas inventories and for navigating the expert review process.

The final session consisted of four case studies, designed to share parties' experiences—good and bad—in dealing with the legislative, administrative and technical aspects of implementing national systems. Presentations were given by Andre Jol of the European Environment Agency, Gonçalo Cavalheiro of the Portuguese NGO, EURONATURA, Krzysztof Olendrzynski of the Polish Institute of Environmental Protection, and Vladimir Berdin of the Russian National Pollution Abatement Facility.

It became clear that planning is still rudimentary for most parties and that it is hampered, particularly in countries with economies in transition, by a lack of human and financial resources. Despite the fact that Canada, Germany and the UK have already established reasonably effective systems, they stressed the need to formalise them, given the binding nature of Kyoto requirements. These countries alone displayed confidence that they would be able to meet their obligations by 2005, when a report on 'demonstrable progress' is due. All participants agreed that there is a need for further workshops, under UNFCCC auspices or otherwise, to help countries plan for early implementation. Further information on the workshop, including summaries of the presentations and a participant list, is available on the VERTIC website.

VERTIC response to UK BWC Green Paper

VERTIC has made a submission to the Foreign and Commonwealth Office in response to the UK's Green Paper of April 2002 on strengthening the BWC. VERTIC made several tactical and substantive suggestions in the light of US opposition to the proposed BWC verification protocol. VERTIC's paper may be found on its website.

Staff changes

Oliver Meier, VERTIC's Senior Arms Control and Disarmament Researcher, concluded his time with the centre on 13 September after three years. As of October he will be the international representative of the US Arms Control Association in Berlin, Germany. Oliver made an enormous contribution to raising the profile of VERTIC in several areas of arms control and disarmament, including nuclear safeguards, the CTBT, biological weapons control and the role of NGOs in disarmament. He was co-editor of *Verification Yearbook 2001* (and will be for the 2002 edition) and was briefly editor of *Trust & Verify*. VERTIC wishes Oliver well in his future undertakings.

VERTIC's new Senior Arms Control and Disarmament Researcher, will be Ken Boutin, who is currently a Research Associate at the York Centre for Asian Research at York University, Toronto, Canada. Dr Boutin will be joining the centre in mid-October.

Also departing VERTIC is Vanessa Chagas, who began as an intern and for the past several weeks has been Environmental Research Assistant. She has helped VERTIC follow verification-

related developments arising related to the WSSD and provided vital assistance in organising the centre's climate change workshop in September. Intern Marie Fagerström has also ended her three-month term at VERTIC after assisting with the BW national implementation legislation project. VERTIC wishes both Vanessa and Marie well in their future careers.

Staff news

TREVOR FINDLAY met with Merav Datan of the New York office of the Women's International League for Peace and Freedom (WILPF) on 10 July and with Professor John Ziman, representing the Network for Social Change, on 11 July. On 30 July he met with representatives of the British American Security Information Council (BASIC), the International Security Information Service (ISIS) and Saferworld to discuss mutual co-operation. On 10 and 11 September he represented VERTIC at a meeting of the Interim Steering Committee for the Biological Weapons Prevention Project (BWPP) in Geneva. He was interviewed on 12 and 24 September for the BBC's *Nightline* programme and

on 30 September by the Australian Broadcasting Corporation's *Four Corners* programme on the subject of inspections in Iraq. On 30 September he was interviewed by *The Guardian* and on 1 October by *The Engineer* on the same subject. On 13 September he participated in VERTIC's climate change workshop. He participated in a one-day seminar on nuclear issues in St Petersburg, Russia on 27 September organised by the London School of Economics and Political Science. During the reporting period he worked with Joan Link on VERTIC's CWC report, continued to work with contributors to the *Verification Yearbook 2002* and managed the process of selecting VERTIC's new Senior Researcher for Arms Control and Disarmament Verification.

MOLLY ANDERSON prepared a submission to the UNFCCC Secretariat on handling confidential information under the Kyoto Protocol. She also ran and participated in VERTIC's climate change workshop on 13 September and hosted the workshop dinner the previous evening. She attended Climate Action Network Europe's strategy meeting in Brussels, Belgium, on 16–17 September, in preparation for the eighth Conference of the Parties to the UNFCCC in New Delhi, India, in October–November 2002. She gave a presentation on reporting and accounting issues relating to geological sequestration. Molly is continuing to work on the environmental chapters of the *Verification Yearbook 2002*.

VANESSA CHAGAS assisted in organising VERTIC's climate change workshop in September. She also undertook research into the monitoring of smuggling under the Montreal Protocol, and helped with general administrative tasks.

BEN HANDLEY continued to handle VERTIC's administration. On 16 September he attended an advanced course on Microsoft Outlook 2000 to help him upgrade the centre's contacts database. Ben also helped with administrative arrangements for VERTIC's climate change workshop on 13 September.

KRISTINA HINDS has been conducting research on the monitoring of peace agreements in the DRC. She also assisted with other research tasks and general office duties.

MARIE FAGERSTRÖM continued to assist with the project on national measures for implementing the BWC. She helped distribute and follow up on a questionnaire sent to state parties. In addition, she analysed various UN documents and legal sources to gather and assess state parties' national legislation.

Verification Yearbook 2002

VERTIC's annual survey of global verification developments, featuring:

- arms control and disarmament
- the environment
- election monitoring
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With a preface by Joke Waller-Hunter, Executive Secretary of the UN Framework Convention on Climate Change.

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Hartwig Spitzer and Ernst Britting The Open Skies Treaty

Molly Anderson Verifying the Kyoto Protocol

Bill Gray and Therese Laneela Election monitoring

David Kelly The Trilateral Initiative on Biological Weapons

Release date: 20 December 2002. For an advance copy at a 15% discount see the order form at www.vertic.org.

'An essential resource'

Michael Krepon, President Emeritus

Henry L. Stimson Center, Washington, DC

OLIVER MEIER participated in a Geneva Forum workshop concerning the Fifth BWC Review Conference on 12–13 September in Glion, Switzerland, where he spoke on possible lessons from the Kyoto Protocol process for making progress in strengthening the BWC. He drafted VERTIC's response to the UK Green Paper on biological weapons and worked on his chapters for the *Verification Yearbook 2002*, as well as helping co-edit the volume.

JOHN RUSSELL promoted and distributed the VERTIC/United Nations Association *Guide to verification for arms control and disarmament* and began similar work for VERTIC's CWC report. In addition, he drafted a project proposal on the role of verification in ensuring human security during intra-state conflicts. On 2 September John attended a meeting of the UK Nuclear Issues Working Group and on 13 September, along with Angela Woodward, represented VERTIC at the bi-annual Mountbatten

Centre/Foreign and Commonwealth Office Non-Proliferation Study Group meeting.

ANGELA WOODWARD, along with John Russell, attended the All-Parliamentary Group on Global Security and Non-Proliferation meeting on 9 July, where the Indian Ambassador to the Conference on Disarmament, Rakesh Sood, spoke on 'India, nuclear weapons and arms control'. Along with Trevor Findlay and Oliver Meier, she met with Professor Barry Kellman of the International Weapons Control Center at DePaul University, Chicago, on 24 July, to discuss legal initiatives to strengthen the norm against the use of biological weapons. Together with Trevor Findlay, Angela participated in the Fourth Meeting of States Parties to the Ottawa Convention in Geneva from 16–20 September. She consulted delegations at the meeting on the draft *Guide to fact-finding missions under the Ottawa Convention*.



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.

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