

Biological weapons: time to lay down the law

The 1972 Biological Weapons Convention (BWC) requires that states parties adopt national measures in order to meet their fundamental treaty obligations, a proviso that they have repeatedly reaffirmed their commitment to at successive BWC Review Conferences. At the resumed Fifth Review Conference in November 2002, they agreed, as part of a new process, to discuss 'common understandings' and to promote 'effective action' towards the adoption of necessary national measures, including penal legislation, to implement the treaty. This issue is to be the first of five agenda items to be discussed at annual Expert Meetings and Meetings of States Parties between 2003 and 2005.

The first Experts Meeting was held in Geneva, Switzerland, from 18–29 August 2003. VERTIC contributed to agenda item one by presenting the interim findings of its biological weapons (BW) national implementation legislation project in a report entitled *Time to lay down the law: the status of national laws to enforce the BWC*. (The document can be ordered from VERTIC or downloaded at www.vertic.org). Following further consultations with states parties and others on its interim findings and recommendations, VERTIC will publish a final report in time for the Meeting of States Parties in Geneva in November 2003, which will consider the outcome of the August Experts Meeting.

As of 6 August 2003, VERTIC had collected information, including that provided in questionnaires submitted by 31 states parties, on the status of national measures for 98 of the BWC's 150 states parties. This information is also available on VERTIC's website and will be updated regularly. VERTIC obtained the texts of national measures adopted by 69 states parties, which have been collated on its website under the title of 'Biological Weapons Convention: Collection of national implementation legislation' (www.vertic.org/datasets/bwlegislation.html). VERTIC's analysis of existing national implementation legislation has revealed key deficiencies that need to be rectified in these texts and avoided by those states that have yet to pass their own legislation.

Scope of prohibitions

Legislation approved to date has not been consistent in terms of scope. Few states have adopted comprehensive, stand-alone legislation. Some have banned the full range of activities not permitted under the treaty (production, development, stockpiling, acquisition, retention and transfer), while others have also forbidden use (which is covered by the 1925 Geneva Protocol). Some legislation prohibits the acquisition or retention of 'biological weapons' or illicit 'war materials' without defining them and/or without banning BW development or production. States have

In this issue . . .

Angela Woodward examines the legislation that states parties to the Biological Weapons Convention must adopt in order to meet their fundamental treaty obligations, while Trevor Findlay and Peter Gudritz assess monitoring challenges in Africa. 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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also not been consistent in replicating treaty terms for prohibited activity. For some states, this is due to a desire to proscribe more activities than are covered by the treaty. Others have simply used language that does not adequately cover the full range of prohibited activities. Whether or not treaty terms are used, it is important that all prohibited activity is effectively outlawed.

Enforcement powers

States parties should make provision in legislation for effective enforcement of their national measures, including powers of investigation and the right to search and seize documents, equipment and substances. Apart from legislation, there is also need for a wide range of other national measures, such as ensuring appropriate security of pathogens and facilitating cross-border co-operation by police and customs. Ten states parties have expressly included enforcement powers relating to BW offences in their legislation.

Export and import controls

In order to comply with the treaty stipulation not to acquire or possess materials or equipment for prohibited purposes, and to prevent others from procuring them, states must implement appropriate export and import controls. These objectives are best achieved by establishing a licensing system for the export or import of dual-use agents, equipment, intellectual property, materials, patents or technology. Licensing systems are usually adopted under primary legislation (such as an export and import control act), which provides for updated lists of prohibited items to be issued as secondary legislation. This secondary legislation can often be adopted more quickly than primary legislation, either in response to additional commitments that the state has taken on or as a result of new information coming to light on dangerous or banned items.

States must ensure that 'controlled goods lists' are adequate, that export or import licenses are not granted for prohibited goods, and that activities that violate control procedures are detected and that the perpetrators are punished. A number of BWC states parties have already issued controlled goods lists under existing export and import control legislation. Definitions of prohibited items are wide-ranging, including 'biological weapons', 'dual-use goods' and 'war materials'.

External territories and extraterritoriality

The treaty requires states parties to extend their national implementing measures to any external territories. VERTIC has not

been able to identify whether legislation adopted by all states parties with external territories has been so extended.

The Third BWC Review Conference in 1991 invited states parties to consider applying their national measures to actions undertaken by their nationals ('natural persons') outside of their territory (this is known as 'extraterritoriality'). States parties might also wish to consider applying their national measures to actions undertaken outside of their territory by 'legal persons', such as companies and other organisations, that are registered in their territory. States may also want to consider making offences enforceable under 'universal jurisdiction', so that they may prosecute foreign nationals suspected of violating their BW laws anywhere. Thirteen states parties are known to have made some provision for extraterritoriality or universal jurisdiction.

National focal point

To facilitate information sharing and other treaty implementation activities, states parties may choose to establish a national focal point. Its tasks might include liaising with stakeholders at the national level, with other states parties, and with the United Nations Department of Disarmament Affairs (UNDDA) in regard to annual reporting under the BWC's voluntary confidence-building measures (CBMs).

The budget and personnel required for establishing and maintaining a national focal point will depend on the extent of the requirements that the state must meet to ensure treaty compliance. For states without bio-defence research programmes, a civilian biotechnology or pharmaceutical industry, or relevant governmental or academic research activities, the resources and administration involved may be minimal.

Penal sanctions

There is currently no consistent approach among states parties to responding to BW offences with appropriate penalties. Some states have not enacted penal sanctions for the full range of activities prohibited by the BWC. Even where penalties are in place, states have applied a disparate range of sanctions. Jail terms, for instance, range from eight days in Belgium, up to ten years in New Zealand and Norway, and life imprisonment in Australia, the UK and the US. In some cases, offenders may also be fined. In Australia, natural persons may be fined A\$10,000 (US\$6,500), while corporations may be fined only A\$200,000 (US\$129,500). Some penal sanctions incurred for such offences are nominal and do not reflect the gravity of the offence. Belgium's maximum fine is only €2,500 (US\$3,000). The Czech Republic does not impose jail terms at all, and, while the maxi-

mum fine of CZK100 million (US\$3,550,000) is substantial, it seems insufficient for activities that could cause widespread suffering, death and economic damage. An additional punishment that might be invoked is to prohibit offenders from holding professional positions for a period of time, as is the case in France and Ukraine.

Adopting legislation urgently

Since dealing with the threat of BW is both a complex and increasingly urgent undertaking, it is essential that all states parties examine the effectiveness of their existing national implementation measures and adopt any necessary implementing legislation as soon as possible. This must be done whether states have a monist legal system, whereby a treaty may be automatically enforceable as domestic law once the state has ratified it ('self-executing'), or a dualist system, requiring implementing

legislation to incorporate treaty rights and obligations into domestic law. Without national legislation, state and non-state actors, government employees and private citizens, and companies and other organisations, may engage in outlawed activity with impunity.

While all states must pass, at a minimum, basic legislation to prevent and prohibit activity covered by the treaty, this may be all that is necessary for small states. One small island state, Saint Kitts and Nevis, has demonstrated that this goal may be achieved in legislation that runs to only two pages. The majority of states parties, however, will require more extensive measures. Furthermore, all states parties need not only to adopt legislation and other measures on paper, but also to ensure that they are implemented in practice.

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Peace Missions Monitor

Northern Ireland: monitoring commission members named

On 4 September the British, Irish and US governments named the members of a new monitoring body for Northern Ireland, the Independent Monitoring Commission. They are: Richard Kerr, former director of the Central Intelligence Agency (CIA); Joe Brosnan, former secretary-general of the Irish Department of Justice; John Grieve, former head of the London Metropolitan Police's anti-terrorism unit; and John Allardice, the speaker of the suspended Northern Ireland Assembly and the former leader of the Alliance Party. The commission will report every six months on paramilitary activities and any breaches of the 1998 Good Friday Agreement, which began the Northern Ireland peace process. The reports will be presented only to the British government, which will then decide what action, if any, should be taken.

European Union monitors criticise Rwandan elections

European Union (EU) election observers have concluded that Rwanda's first presidential election since the 1994 genocide, held on 25 August 2003, was not entirely 'free and fair'. The observers alleged that some ballot boxes might have been filled with false papers, that the government-run media favoured President Paul Kagame (who polled 95.05% of the vote), and that the authorities harassed supporters of the main opposition challenger, Faustin Twagiramungu. EU observers were not allowed to monitor the vote counting. Colette Flesch, the head EU election observer, noted that, despite the work 'still left to be done in terms of credibility, transparency and freedom of expression', the election was 'an important step in the democratic process'.

Solomons mission: from pacification to auditing

The Australian-led Regional Assistance Mission deployed to the Solomon Islands in July has been successful to date in restoring overall law and order. Critics claim, however, that one of the root causes of the country's problems, widespread corruption, has not been effectively tackled. The head of the mission, Australian diplomat Nick Warner, has said that an audit of government accounts by regional experts installed in key ministries has begun and that action would be taken if there has been any misappropriation of funds by public servants or parliamentarians. The question now is whether the military force of almost 2,000 troops, provided by Australia, Fiji, New Zealand, Papua New Guinea and Tonga, should be withdrawn or should remain to protect the regional police officers also sent to the Solomons as part of Operation Helping Friend.

Source 'Britain reveals details of Independent Monitoring Commission', Breaking News, 4 September, 2003, <http://breaking.tcm.ie>; 'Major progress on Independent Monitoring Commission', Northern Ireland Office Online, 4 September, 2003, www.nio.gov.uk; 'MONUC takes over from French-led force in Congo', UN Wire, 2 September 2003; Relief Web, www.reliefweb.int; 'Rwandan poll "not entirely fair"', BBC News, 27 August 2003, www.bbc.org; 'Kagame takes massive lead in Rwandan election', Breaking News, 26 August 2003; 'Solomons assistance mission urged to tackle corruption', Australian Broadcasting Corporation on Line, 1 October 2003, www.abc.net.au; John Kerin, 'Troops to stay in the Solomons', *The Australian*, 1 October 2003, www.theaustralian.news.com.au

Monitoring challenges in Africa

An unprecedented ten international missions are currently monitoring peace processes in Africa. Until relatively recently, the United Nations (UN) had a monopoly on such activities on the continent, although its operations often involved large African contingents. African organisations and nations are today playing an increasing role in monitoring. Mandating organisations include the African Union (formerly the Organisation of African Unity), the Inter-Governmental Authority on Development (IGAD) and the Economic Community of West African States (ECOWAS). Yet despite increasing 'Africanisation', monitoring in Africa still faces enormous challenges. Although monitoring in conflict zones is very difficult regardless of the location, Africa presents a unique set of problems, including: geographic and climatic conditions; endemic poverty; poor governance; decrepit infrastructure; corruption; pervasive ethnic, tribal and linguistic differences; and, perhaps most importantly, a lack of financial and other resources to permit and sustain effective monitoring.

Monitoring missions in Africa come in many guises, depending on what the authorising body mandates them to do or what is provided for in relevant peace agreements or peace processes. They also vary enormously in size as a result of a few critical factors, such as the size of the country or region being monitored, the type of conflict, the likely or actual level of co-operation, and, most significantly, the level of international support. Often a primary task will be to monitor a ceasefire, followed by the withdrawal, disarmament and/or demobilisation of military forces.

Mostly, however, the monitoring activities of African missions are a small part of a larger set of tasks entrusted to peacekeeping operations, including peacebuilding, peace enforcement, peace-making and/or nation building. The United Nations Organization Mission in the Democratic Republic of Congo (MONUC) is, for instance, involved in all such activities. The United Nations Mission for the Referendum in Western Sahara (MINURSO) is unique in having as its main task, along with the monitoring of a ceasefire, the organisation, conduct and monitoring of a referendum on the future of the territory. The proportion of monitors or observers involved in such large missions will be small compared to the thousands of troops and civilian personnel engaged in other jobs. Of the 17,500 personnel working with

the United Nations Mission in Sierra Leone (UNAMSIL), for example, only 260 are officially designated as observers. However, some of the smaller operations, like the IGAD missions in Somalia and Sudan, are solely engaged in monitoring and essentially comprise only observer staff.

At present, there are four missions in Africa, all UN-mandated, with more than 200 military observers each—the biggest being MONUC with around 500. The IGAD mission in Sudan, by contrast, consists of an 11-member Joint Monitoring Committee (JMC) and a 10–15 person International Monitoring Unit (IMU). The African Mission in Burundi (AMIB) comprises 43 observers from Ethiopia, Mozambique and South Africa. While the UN typically dispatches small missions when peace efforts are proceeding well and agreements are likely to be honoured, in Africa such diminutiveness often indicates a shortage of financial and material resources and trained personnel.

One of the main challenges facing African monitoring missions is, therefore, a lack of essential resources. Typically, UN missions are better equipped and better funded, although even they frequently struggle to attract support. Non-African countries

Current African monitoring missions or peace operations with a monitoring component

United Nations

United Nations Mission for the Referendum in Western Sahara (MINURSO) (April 1991)

United Nations Mission in Sierra Leone (UNAMSIL) (July 1999)

United Nations Mission in the Democratic Republic of Congo (MONUC) (November 1999)

United Nations Mission in Ethiopia and Eritrea (UNMEE) (July 2000)

United Nations Mission in Côte d'Ivoire (MINUCI) (May 2003)

United Nations Mission in Liberia (UNMIL) (September 2003)

Non-United Nations

Inter-Governmental Authority on Development mission in Sudan (January 2002)

African Mission in Burundi (AMIB) (December 2002)

Economic Community of West African States Monitoring Group (ECOMOG) in Côte d'Ivoire (January 2003)

Inter-Governmental Authority on Development mission in Somalia (February 2003)

are usually hesitant to send their nationals on African missions in dangerous areas, especially if they are not to be protected by accompanying military forces. Missions mandated by regional or sub-regional organisations are less well endowed, but, with more intimate knowledge of the terrain, language and culture, they may be better suited to their role. Various training programmes conducted by France, the UK and the US have been designed to remedy the shortage of trained African military observers and other types of peacekeeping personnel.

Along with personnel, missions in Africa are also restricted by lack of equipment. Shortages of matériel, such as communications, observation and protective hardware, are the norm. One solution is to involve militarily capable states, such as France, the UK and the US, and the regional superpower, South Africa. Since its ill-fated involvement in Somalia in 1993–94, the US has been more hesitant than ever to commit personnel to Africa, even in a monitoring capacity. This reluctance has been exacerbated in recent months by the burgeoning requirements of its operations in Afghanistan and Iraq.

Besides vast differences among and within African countries in regard to terrain and climate (ranging from desert in the case of the United Nations Mission in Ethiopia and Eritrea's theatre of deployment to the jungles of the Congo), the sheer size of some countries can cause problems for observers. While it is true that the observers are usually required only to monitor specific towns or areas or certain kinds of activity, such as unauthorised movements of military forces or infiltration across borders, even monitoring just part of a country like Sudan, for instance, which is roughly one-quarter the size of the continental United States, is difficult. MONUC, for example, has monitors stationed in Bunia and Kinshasa, which are approximately 1,800 kilometres apart.

While monitoring missions are by their very nature intended for conflict zones, where infrastructure may be damaged, disrupted or destroyed, successful monitoring is made even more difficult by the fact that Africa is home to some of the world's least developed countries. Lack of infrastructure, such as adequate roads, ports and airports, makes initial deployment and subsequent movement a major challenge. In the Congo, for instance, the UN has had to rely on air and river transport to make its monitoring presence felt.

Natural disasters and war have further degraded the continent's already poor deployment conditions. Since monitors are unable to rely on local supplies, providing small, far-flung monitoring teams with provisions requires expensive and complicated

Privatised peace monitoring in Sudan

In October 2002 a Civilian Protection Monitoring Team (CPMT) was established to monitor the compliance of the government of Sudan and the Sudan People's Liberation Movement (SPLM) with their March 2002 Agreement to Protect Civilians from Military Attack.

The CPMT is a unique monitoring mission: although funded by the US government it is run by a private US professional services company. The CPMT's Khartoum office provides incident reports to both the Sudanese government and the SPLM. After allowing a week for the parties to comment, it distributes its final report to them, as well as to the US government. Such reports are also posted on the team's website at www.cpmtsudan.org.

The CPMT is also assisting IGAD in monitoring violations of the October 2002 ceasefire accord. Critics assert that the CPMT has made little progress, that it lacks personnel with knowledge and experience of the Sudanese people and their history, and, most importantly, that it has ignored extensive reports 'of forcible recruitment of southerners living in the city by a government militia leader'.

'Sudan: problems and progress with civilian protection', Integrated Regional Information Networks, 24 September 2003, www.irinnews.org; US Department of State website, www.state.gov

logistics. (Fortunately, South Africa can satisfy most requirements.) Insecurity due to a breakdown in law and order often means that monitors are accompanied by troops for protection, which increases the cost of the mission and adds to states' hesitation to supply personnel. Diseases, including cholera, the human immuno deficiency virus (HIV) and malaria, are also of great concern. As of August 2003, four of the UN missions in Africa had lost a total of 56 peacekeepers, 17 of them monitors, to illnesses contracted while on duty in the region.

While monitoring is an arduous task in any part of the world, in Africa it is particularly demanding. Unless greater international political, financial and material support is provided, especially from the most militarily capable countries, the UN and African regional and sub-regional organisations will continue to struggle precariously to monitor implementation of the agreements that are bringing the prospect of peace to large parts of the continent.

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UN body favours scrutiny of corporations

The UN Sub-Commission on the Promotion and Protection of Human Rights passed a resolution on 21 August calling on multinational corporations to comply with international treaties on human rights, labour laws and the environment. The resolution contained 'Draft Norms on the Responsibilities of Transnational Corporations and Other Business Enterprises with Regard to Human Rights', which will be forwarded to the UN Human Rights Commission for its consideration in March 2004. This is the first complete set of international human rights standards specifically aimed at transnational corporations and other businesses. It is proposed that transnationals be monitored periodically by the UN to assess their compliance. It remains unclear, though, what effective action the commission could take when non-compliance is discovered. Critics argue that any shift towards mandatory compliance would violate accepted international practices, while supporters of the resolution maintain that the norms would 'provide a clear road map to action that transcends the conflicting provisions of the various private codes of conduct'.

Source 'A question of answerability,' *Guardian Unlimited*, 1 September, 2003, www.guardian.co.uk; UN Wire, www.unwire.org.

No progress in Iraq WMD hunt

The Iraq Survey Group (ISG) continues to make slow progress in its search for Iraq's alleged weapons of mass destruction (WMD). Although David Kay, coordinator of the ISG's efforts, intends to publish a progress report in October, leaked findings suggest that it is unlikely to offer any substantial new evidence. The search is reportedly being hindered by the reticence of many Iraqi scientists to co-operate with the ISG due to fear of prosecution following the well-publicised arrests of WMD scientists. It has been suggested that, in the future, an amnesty might be granted to those who come forward with evidence.

Meanwhile, US analysts have contradicted claims made prior to the war that Iraqi unmanned aerial vehicles (UAVs) were designed to carry biological or chemical payloads. Additionally, a report by Mohamed ElBaradei, Director General of the International Atomic Energy Agency (IAEA), has concluded that there was no evidence to suggest that Iraq had resumed its former nuclear weapons programme.

These developments came as UN weapons inspectors announced that they were ready to resume inspections if requested by the UN Security Council. However, the 19 August terrorist attack

on UN headquarters in Baghdad left the main facility of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) damaged and potentially out of action for some time. Fortunately, most of the inspectors' equipment is safely stored in Cyprus, and with 354 individuals still on the roster of trained experts and available for deployment, UNMOVIC is ready to return to Iraq at short notice. With the ISG still carrying out its work, the UK and the US are likely to veto any move in the Security Council to return UNMOVIC to the fray.

Meanwhile, the Swedish government has established an Independent Commission on Weapons of Mass Destruction, chaired by former UNMOVIC Executive Chairman Hans Blix. Its aim is to give new impetus to disarmament and nonproliferation efforts in relation to WMD and missiles. The commission is expected to report in 2005.

Source 'Suspected Iraqi aircraft not designed for use in WMD attacks, US analysts say', *Global Security Newswire*, 2 September 2003, www.nti.org; 'UN weapons inspectors ready to return to Iraq if asked', *Global Security Newswire*, 4 September 2003, www.nti.org; 'WMD hunt slowed by uncooperative Iraqi scientists who fear prosecution, officials say', *Global Security Newswire*, 8 September 2003, www.nti.org; 'Rumsfeld avoids WMD discussion during Iraqi visit', *Global Security Newswire*, 9 September 2003, www.nti.org; 'Hans Blix to be chairman of international commission on weapons of mass destruction', *Swedish Ministry of Foreign Affairs Press Release*, 3 July 2003, <http://utrikes.regeringen.se/>.

3rd CTBT conference changes little

Article XIV of the 1996 Comprehensive Nuclear Test Ban Treaty (CTBT) states that if the convention has not entered into force after four years, conferences are to be held to examine ways to accelerate ratification by the remaining Annex 2 states whose ratification is essential for entry into force. Currently 12 of the 44 Annex 2 states have yet to sign and/or ratify. A Third Conference on Facilitating the Entry into Force of the CTBT was thus held, in Vienna, Austria, from 3–5 September 2003.

The US, a signatory, further indicated its unwillingness to ratify by failing to send a delegation for the second consecutive time (see *Trust & Verify*, no. 100, January–February 2002). This has heightened concern that the US will break its 11-year moratorium on nuclear tests in order to test new types of weapons, such as low-yield 'bunker-busters'. Two other non-signatory states, India and North Korea, also declined to send delegations, hinting that the conference would achieve little in hastening entry into

force of the CTBT. However, more positive signs came from China, another signatory, which assured the conference of its wish for early ratification, although it gave no precise indication of when the treaty might gain the approval of its National People's Congress.

A statement on behalf of 97 non-governmental organisations (NGOs), which VERTIC helped draft, called on all states to join the treaty and reaffirmed that a strengthened network of NGOs, governments, international organisations and media organisations would continue to promote early entry into force and exert pressure on the 12 'hold-outs'. Following the signature of Palau in August, Afghanistan signed and ratified the CTBT on 24 September, becoming the one-hundred-and-sixty-ninth signatory and the one-hundred-and-fifth ratifier.

VERTIC contributed to the conference by holding a lunchtime seminar on the first day, in co-operation with the Preparatory Commission for the CTBTO (PrepCom), to permit informal discussion of verification and related issues. Some 50 delegates and NGO representatives attended it. VERTIC Executive Director Trevor Findlay expressed the Centre's support for the early establishment of the complete verification system and noted the considerable progress made by the PrepCom and the Provisional Technical Secretariat (PTS) in setting up an International Monitoring System (IMS) and an International Data Centre (IDC), which collects, collates, distributes and processes the information. The first speaker at the seminar, Raymond J. Willemann, Director of the International Seismological Centre (ISC), discussed the role of non-IMS seismic stations in monitoring. He was followed by Robert Gough, Chief of the Methodology Section, On-site Inspections, in the PTS, who reported on the 2002 on-site inspection field experiment conducted in Kazakhstan. Finally, Rebecca Johnson, Executive Director of the Acronym Institute for Disarmament Diplomacy, delivered a paper on the idea of provisional application of the treaty pending entry into force. A lively question and answer period followed.

Source Joe Fiorill, 'CTBTO holds out hope for US test ban ratification', *Global Security Newswire*, 18 September 2003, www.nti.org; Christine Kucia, 'For second year running, US a no-show at CTBT conference', *Arms Control Today*, vol. 33, no. 7, September/October 2003, www.armscontrol.org; 'China appears ready to ratify CTBT, conference official says', *Global Security Newswire*, 4 September 2003, www.nti.org.

Cartagena and POPs in force

The Cartagena Protocol on Biosafety entered into force on 11 September 2003 after Palau became the fiftieth state to ratify it. The Conference of Parties to the 1992 Convention on Biological Diversity (CBD) adopted the protocol in January 2000. It

aims to protect biological diversity from the potential risks posed by living modified organisms (LMOs) resulting from modern biotechnology. It attempts to do this by ensuring an adequate level of safety in regard to the transfer, handling and use of LMOs. Any party transporting LMOs for the first time must give prior notification to the importing country and provide a sufficient amount of information about them to enable the latter to make an informed decision. All LMO shipments are required to carry the documentation required by the protocol. The protocol states that ecosystems and habitats, species and communities, described genomes and genes of importance should be identified and monitored by all of the contracting parties. The CBD's 2002 Strategic Plan calls for better methods for evaluating objectively progress in the implementation of the convention. CBD Executive Secretary Hamdallah Zedan has also urged all parties to adopt appropriate legal, administrative and other measures to implement the protocol domestically.

The 1998 Protocol on Persistent Organic Pollutants (POPs) will also enter into force, on 23 October 2003, following the ratification of France. One of the eight protocols to the 1979 Convention on Long-range Transboundary Air Pollution, POPs concentrates on 16 substances: 11 pesticides, two industrial chemicals and three by-products/contaminants. The ultimate objective of the protocol is to eliminate any discharges, emissions and losses of POPs. The protocol contains provisions obliging parties to carry out monitoring of a range of activities. The parties must report information on the levels of emissions of POPs and of the measures that they are taking to implement the protocol. The parties will review this information at sessions of the executive bodies. The Implementation Committee will regularly review parties' compliance with protocol commitments.

Source 'Pacific island tips balance in favour of biosafety protocol', *Nature*, vol. 423, 19 June 2003; see www.biodiv.org for information on the CBD; 'Persistent Organic Pollutants protocol to enter into force', *UN Wire*, 5 August 2003, www.unfoundation.org; Europa: the EU online, 8 July 2003, www.europa.eu.int; United Nations Economic Commission for Europe, Environment and Human Settlements Division, www.unece.org, 17 September 2003.

Kyoto Protocol: CDM methodologies approved

At its June 2003 meeting the Clean Development Mechanism (CDM) Executive Board declined to approve the greenhouse gas (GHG) baseline and monitoring methodologies for any of the first 14 projects proposed under the mechanism. At its 23 July meeting, however, it finally approved two. These relate to a landfill project in Brazil and a hydrofluorocarbons (HFCs) decomposition project in South Korea. One of the so-called

flexible mechanisms of the 1997 Kyoto Protocol to the 1992 United Nations Framework Convention on Climate Change (UNFCCC), the CDM allows developed countries to implement projects in developing countries in return for certified emissions reductions (CERS). The methodologies are meant to demonstrate how a 'business-as-usual' baseline, against which emissions reductions are to be measured, will be established. Parties need to demonstrate that a project is 'additional' before approval is granted. The methodologies should also show how reductions would be monitored. Referring to the approval of the two methodologies, Abyd Karmali, the Director of European Climate Change Services at ICF Consulting, said that: 'The Board has set higher standards of environmental integrity than some expected—but that is a positive development'. Thirteen new projects have now been submitted to the Executive Board for review.

Meanwhile, the Russian Duma has decided to postpone any immediate decision on ratification of the Kyoto Protocol and, instead, to approach the issue gradually. Russian President Vladimir Putin will now have to use his political influence over the lower house to achieve Russian ratification, which is vital for entry into force of the protocol.

Source 'Green light for Kyoto Protocol programmes', OneWorld, 7 August 2003, www.oneworld.net; 'Further proposals for CDM methodologies submitted', Netinform Newsletter, 19 September 2003, www.netinform.net; 'First CDM methodologies approved' p. 4 and 'Has the Executive Board killed the CDM?', pp. 16–17, *Environmental Finance*, September 2003; 'Caring for the climate: a new guide to the Convention and Kyoto Protocol', 23 September 2003, www.unfccc.int; 'Russian legislators put off approving Kyoto Protocol', UN Wire, www.unfoundation.org, 19 September 2003.

North Korea and Iran: nuclear concerns rise

North Korea has upped the ante in its flaunting of nuclear nonproliferation norms by declaring that it already possesses nuclear weapons and intends to conduct a nuclear test. The announcement was made during six-way talks between China, Japan, North Korea, Russia, South Korea and the US from 27–29 August in Beijing, China. Although the talks produced little in the way of results, the six parties have agreed, in principal, to hold a second round of discussions in early November in Beijing.

US intelligence, meanwhile, has alleged the existence of a second North Korean nuclear reactor, concealed in mountains, which is producing plutonium for nuclear weapons. Yet North Korea has also reportedly stopped activity at its Yongbyon nuclear facility, where 8,000 reprocessed fuel rods could potentially be used to produce at least six nuclear warheads. Whether this reflects a change in North Korean policy or difficulty experien-

ced in restarting the plant after so many years of shutdown is unclear.

Concerns about Iran's nuclear programme also continue to rise. At its meeting in Vienna in September the IAEA Board of Governors set a deadline of 31 October 2003 for the country to 'remedy all failures identified by the agency and cooperate fully with the agency to ensure verification of compliance with Iran's safeguards agreement' and to sign an Additional Protocol. The resolution, which makes no mention of what action will be taken if Iran fails to comply, also asks for unrestricted access to Iranian facilities, including for the purpose of environmental sampling.

The IAEA first raised concerns in June 2003 when Iran failed to report certain nuclear activities and materials in accordance with its obligations under the 1968 Nuclear Non-Proliferation Treaty (NPT). A report by IAEA Director General ElBaradei noted inconsistencies between Iran's claims and those of IAEA experts, particularly Iran's denial that it had used nuclear material in centrifuge tests in disregard of an agency request not to do so. IAEA inspectors found traces of highly enriched uranium in a centrifuge enrichment facility at Natanz. Iran subsequently claimed that this was the result of contamination by imported equipment and not evidence of illegal enrichment. The IAEA has since found evidence of enriched uranium at a second site, the Kalaye Electric Company near Tehran, to which IAEA inspectors had previously been denied access. Although the Iranian delegation walked out in protest after the board meeting and some Iranian officials urged withdrawal from the NPT, Iran has since sent mixed messages about whether it will comply or not.

Meanwhile, on 18 September 2003, Cuba signed a comprehensive safeguards agreement and an Additional Protocol. This brings the total number of states that have signed an Additional Protocol to 76. Only 36 have ratified, however.

Source Richard Lloyd Parry and Tim Reid, 'North Korea "has second nuclear plant"', *The Times*, 21 July 2003; Yuri Kageyama, 'North Korea makes bold nuclear claim', *Washington Post*, 28 August 2003, www.washingtonpost.com; 'Formal IAEA talks on Iran delayed again as negotiators mull Oct. 31 deadline', Global Security Newswire, 11 September 2003, www.nti.org; 'North Korea suspends activity at Yongbyon', Global Security Newswire, 11 September 2003, www.nti.org; 'UN nuclear watchdog gives Iran until 31 October to provide full nuclear details', UN News Service, 12 September 2003, www.un.org/news; 'UN nuclear watchdog calls on DPR of Korea to dismantle any nuclear weapons', UN News Service, 19 September 2003, www.un.org/news; 'IAEA detects uranium at second Iranian site', Global Security Newswire, 25 September 2003, www.nti.org; 'Cuba signs IAEA safeguards agreement, Additional Protocol', Global Security Newswire, 19 September 2003, www.nti.org.



Glowing zebrafish detect CBW . . .

Scientists at the University of Wisconsin-Milwaukee's Center for Water Security in the US have been investigating the use of transgenic zebrafish as biomonitors for chemical contaminants and BW agents. Researchers from Japan had previously genetically modified zebrafish with jellyfish genes to allow them to fluoresce, but new research allows the fish to glow only in the presence of specific chemical agents, such as parathion and paraoxon—chemical relatives of the chemical weapon agent sarin—or biological pathogens like bacteria. Although more work remains to be done, the fish could be used to test water supplies for signs of intentional contamination, or to verify run-off from biological or chemical factories for evidence of weapons production or research. The scientists' next goal is to produce fish that can pass fluorescence on to the next generation to allow long-term monitoring of sites.

. . . while cats and dogs could warn of BW

A US veterinarian and epidemiologist is testing a new surveillance system using household pets that could provide early warning of a BW attack. The system monitors the health records of some 60,000 cats and dogs that are treated every week at a US chain of pet hospitals. These records could reveal the presence of BW agents, such as anthrax or plague. Although human health records are also being considered for a similar role, this system has the advantage of standardised records and the fact that symptoms from exposure to biological agents may show up earlier in animals.

Source 'US response: scientists studying use of fish to detect biological, chemical agents', Global Security Newswire, 4 August 2003, www.nti.org; 'Fluorescent fish give the green light to GM pets', *The Observer*, 15 June 2003, www.guardian.co.uk; Barbara Wimpee, Stacy Kaltenbach and Michael J. Carvan, 'Transgenic zebrafish: sentinels for water security', www.uwm.edu/Dept/GLWI/cws; 'Poorly pets to provide early warning in war on bioterror', *Nature*, vol. 421, 27 February 2003, p. 882.

Forensics to fight rhino poaching

Organisations attempting to prevent illegal trade in poached rhinoceros horn now have two new forensic tests to help them. The tests can identify genetic or chemical signatures of rhino horn in products like Asian medicines or Yemeni daggers. The Secretariat of the 1975 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has said

that these two tests will aid efforts to detect and penalise the illegal trade in rhinoceros. Using these tests, it is possible to match rhino products to a particular species and place of origin, and to pinpoint poaching sites and illegal trade routes. One test detects rhino DNA in various products, while the other chemically 'fingerprints' confiscated samples of raw rhino horn, identifying the species and the game reserve from which it came. TRAFFIC International, which monitors trade in wildlife, says that these tests would provide clues that could help to disrupt supply sources and trade chains. The IUCN/World Conservation Union has cautioned that the tests would not yet be permissible as evidence in court, as more samples are required to give results a higher level of statistical certainty. Its African Rhino Specialist Group is attempting to improve the chemical test.

Source 'Forensic test fingers rhino poachers', *New Scientist*, vol. 2411, 6 September 2003, p. 9.

Monitoring for accidental nuclear launches

Scientists at the Kurchatov Institute in Moscow, Russia, have proposed that a co-operative monitoring system originally designed by them and Sandia National Laboratories in the US for monitoring stored nuclear materials from dismantled weapons be adopted for monitoring the status of ICBMs. The proposed missile monitoring system would detect a missile launch by registering the accompanying physical signs, such as vibrations, using seismic sensors, and hot engine gases and exhaust, using heat sensors. Infrared and motion detectors would be added to prevent tampering with the other sensors. All of the sensors would be installed during joint inspections. Tampering with silo doors could be detected by installing fibre-optic seals, similar to those employed by the IAEA.

Source Walter Pincus, 'Nunn urges US, Russia to ease hair-trigger nuclear alerts', *Washington Post*, 22 May 2003, p. A23, www.washingtonpost.com; David Ruppe, 'US-Russia I: RAND report says accidental launch threat growing', Global Security Newswire, www.nti.org; 'Nunn urges presidents Bush and Putin to address nuclear dangers: new RAND report warns of accidental or unauthorised nuclear weapons launch and recommends further actions to enhance nuclear safety', Nuclear Threat Initiative Press Release, 21 May 2003, www.nti.org; David E. Mosher, Lowell H. Schwartz, David R. Howell and Lynn E. Davis, 'Beyond the nuclear shadow: a phased approach for improving nuclear safety and US-Russian relations', 21 March 2003, RAND National Security Research Division, www.rand.org/publications.

Iraq inspections database launched

In October VERTIC will launch its database detailing each of the inspections conducted by the IAEA and UNMOVIC in Iraq between 27 November 2002 and 17 March 2003 (the date when the inspectors were withdrawn from the country). The database features a comprehensive search facility, including names and kinds of sites visited, locations, number of inspectors, purposes and types of inspection, and dates. The database provides an historical record that will allow researchers to conduct quantitative and qualitative analyses of the inspections regime.

New interns

Two new interns joined VERTIC in September for three-month internships. Jennifer Kinzler joined as part of the US-based Educational Programs Abroad (EPA) scheme, and will work on arms control and peace agreement issues. An undergraduate honours student at the College of Charleston, South Carolina, Jennifer is doing a double major in Political Science and French with a minor in German. Larry McFaul joined VERTIC as an intern in September for three months to work on environmental verification issues. Larry has a Master's degree in Environmental Assessment and Evaluation from the London School of Economics and Political Science and a BA in Classics from

Oxford University. Larry is examining recent developments in relation to the Kyoto Protocol.

Staff changes

John Russell left VERTIC in early September after more than two-and-a-half years at the Centre. Having initially joined VERTIC as an intern, John became its Arms Control and Disarmament Research Assistant in 2001. He worked on the joint VERTIC/United Nations Institute for Disarmament Research (UNIDIR) publication, *Coming to Terms with Security: A Handbook on Verification and Compliance*, helped to produce the *Guide to Verification For Arms Control and Disarmament* in co-operation with the United Nations Association of Great Britain and Northern Ireland and participated in VERTIC's Middle East project. He also took on many of the duties of the Networker & Information Officer when the post was vacant. VERTIC thanks John for his commendable service and wishes him well in future.

Staff news

TREVOR FINDLAY attended the BWC Experts Meeting in Geneva from 20–21 August, as well as participating in the Biological Weapons Prevention Project (BWPP)'s Board meeting. On 2

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New VERTIC website

Visit www.vertic.org to learn more about VERTIC's current programmes in the fields of arms control and disarmament, the environment and peace agreements. The new datasets section features VERTIC's collection of national implementation legislation for the Biological Weapons Convention and a searchable database logging the UNMOVIC and IAEA weapons inspections in Iraq from November 2002 to March 2003. The Verification Organisations Directory will be online from November 2003. The site also includes a complete list of VERTIC's publications, many of which are accessible online.

September he met with Owen Price of the Atomic Weapons Establishment (AWE) Aldermaston to discuss a possible contribution to the *Verification Yearbook 2003*. From 3–4 September, along with Ben Mines, he attended the CTBT Article XIV Conference in Vienna, chairing VERTIC's lunchtime Verification Seminar on 3 September. That afternoon he met with Ambassador Wolfgang Hoffmann, Executive Secretary of the Preparatory Committee of the CTBTO to discuss CTBT verification issues.

On 9 and 10 September he attended the British Association's Festival of Science at Salford University, where he gave a presentation on the history of biological weapons control to an evening seminar on 'Biological weapons: where is the threat now?' organised by the Science & Society Trust. Prior to the meeting he participated in a press conference on BW. The following morning he joined panellists and other academics and researchers in a closed workshop to examine BW issues in greater depth and to consider possible future initiatives. On 11 September Trevor met with the trustees of the Esmée Fairbairn Foundation to discuss possible funding for VERTIC's climate change project. From 18–21 September he attended the tenth annual Castiglioncello Conference, in Castiglioncello, Italy, organised by the Unione Scienziati Per Il Disarmo (USPID) in association with the Interdepartmental Department for Peace Research, University of Bari. Trevor gave a presentation on the current state of arms control and disarmament verification.

JANE AWFORD continued to work on VERTIC's forthcoming online datasets: the UNMOVIC/IAEA weapons inspection log and the Verification Organisations Directory. Co-ordinating with other staff members, she is also bringing VERTIC's contact database up to date. On 12 September she participated in an Institute of Public Relations workshop on 'Managing the online press office'. Jane and Ben Handley are now responsible for managing the new VERTIC website in-house.

BEN HANDLEY continues to manage the daily administration of the office, along with producing financial statements for VERTIC's Board of Directors. He has spent considerable time fine-tuning and upgrading the Centre's computer system, including setting up a Virtual Private Network and Outlook Web Access. He has also designed and built a VERTIC Intranet site.

BEN MINES attended, on 6 September, an experts meeting on Civil and Scientific Applications of CTBT Verification Technologies (seismic and radionuclide) in Sopron, Hungary. He acted as VERTIC's representative at the fourth IAEA General Conference

Verification Quotes

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-Jaacov, International Institute for Strategic Studies, quoted in Richard Beeston, 'Envoy defies predictions', *The Times*, 1 July 2003, on implementation of the Middle East roadmap

But the story of the Prime Minister's wife storming Europe's nightclubs proved difficult to verify

'Cherie's club "hit" finally aired', BBC News, 13 August 2003, concerning a Cypriot DJ's dance remix of Cherie Blair's impromptu rendition of John Lennon and Paul McCartney's 1967 song 'When I'm Sixty-Four' during a visit to Beijing in July

As a casus belli, upholding the principle of verification is obviously a much harder sell than the threat of an immediate gas attack. It also demands that any inspections are allowed to run their course. But neither of these awkward realities could justify lying about the evidence when lives are at stake

Editorial, *New Scientist*, 7 June 2003, p. 3

Who?'

President George W. Bush, at a meeting with his top Iraq commanders at a US base outside Doha, Qatar, when told that Stephen Cambone, Under Secretary of Defense for Intelligence, was in charge of finding Iraqi weapons of mass destruction. Quoted in Massimo Calabresi and Timothy Burger, 'Who lost the WMD?', *Time*, 7 July 2003, www.time.com

The weapons you are currently looking for are unavailable. The country might be experiencing technical difficulties, or you may need to adjust your weapons inspectors mandate

Satirical alert to users of www.google.com who type in the words 'weapons of mass destruction' and then click on the box 'I'm feeling lucky', quoted in *Time*, 14 July 2003, p. 17

It was my experience in Africa that led me to play a small role in the effort to verify information about Africa's suspected link to Iraq's nonconventional weapons programs. Those news stories about that unnamed former envoy who went to Niger? That's me

Joseph C. Wilson 4th, 'What I didn't find in Africa', *New York Times*, op. ed., 6 July 2003, www.nytimes.com

in Vienna on 15–18 September. Ben continued to make preparations for the launch of the UNMOVIC inspections dataset on the VERTIC website and worked on his chapter on UNMOVIC for the *Verification Yearbook 2003*.

ANGELA WOODWARD met with Marie Chevrier of the University of Texas at Dallas to discuss their respective BWC projects on 13 August. Between 18 and 22 August she observed the BWC Experts Meeting in Geneva. On 19 August she delivered VERTIC's statement to the meeting. The next day, during a BWPP seminar, she launched VERTIC's interim report on BWC

national implementation legislation, entitled *Time to lay down the law: the status of laws to enforce the BWC*. On 8 August, she was interviewed by Global Security Newswire on the interim report and on the launch of VERTIC's BWC national implementation legislation dataset. She was also interviewed about the project on 15 August by the German newspaper, *junge Welt*.

Angela continued her research on BWC national implementation measures and on verifying multilateral arms embargoes. She participated in the Fifth Meeting of States Parties to the Ottawa Convention on 15–19 September and in the International Campaign to Ban Landmines (ICBL)'s General Meeting on 20–21 September, both in Bangkok, Thailand. She finished her chapter on national implementation legislation for arms

control and disarmament treaties for the *Verification Yearbook 2003*. Angela also completed her studies for a Master of Laws (LL.L., Public International Law) at the University of London in August.

PATRICIA WATT continued to provide research assistance on VERTIC's BWC project on national implementation legislation and contributed to the interim report, *Time to lay down the law: the status of laws to enforce the BWC*. She observed the BWC Experts Meeting on 20–21 August, and participated in lobbying and promotional activities. Patricia also prepared a review of human rights verification organisations and activities before completing her internship on 22 August.

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.

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