

Independent forestry monitoring: a growth industry

As global environmental awareness continues to expand, people in timber-producing regions and consumers of timber products are becoming more active in demanding legal and sustainable forestry operations. There has been a response from both the timber industry and governments. The industry response is based on voluntary action, covering environmental, labour, forest management, economic and legal aspects, all directed toward forest certification. Certification assures legality. Compliance with such schemes is verified by international standard-setting organizations, the best known of which is the Forest Stewardship Council (FSC). Crucially, certification depends on industry's willingness to provide the necessary investment, which in turn is dependent on a clear market benefit.

The response from governments in producer and consumer countries, with the assistance of international organizations, has favoured the negotiation of a series of bilateral agreements rather than an all-encompassing United Nations (UN) forests convention. In all there are at least 10 multilateral or bilateral agreements that can be utilized to improve legality. Legality is seen as a step towards certification, in which regulatory authorities clearly have a role. The most promising of the various bilateral efforts is the European Union (EU) Action Plan, agreed in response to the Forest Law Enforcement and Governance (FLEG) processes, inaugurated in 2001 by the Group of Eight (G8) industrialized countries' Action Programme on Forests. The EU plan, due to come into effect in 2005, will work through Voluntary Partnership Agreements (VPAs), supporting producer country efforts to suppress illegal logging through a licensing scheme.

The drawback of both industry's voluntary schemes and intergovernmental agreements is that negotiations and implementation take a great deal of time, in the interim granting impunity to illegal loggers. Thus there is a growing need for more action-orientated monitoring of activities in forests by independent organizations.

The environmental group Global Witness (GW) has developed a unique approach to this problem, known as Independent Observation or Independent Forest Monitoring (IMF). GW has been undertaking IMF in Cambodia (from 1999–2003) and Cameroon (from 2000 to the present) and is currently expanding this work into other countries where illegal logging is having a major impact on the economy and the environment. Other examples of independent monitoring exist in Canada, Ecuador, Indonesia and the Philippines.

In this issue . . .

David Young looks at a new way of independently monitoring forestry activities, while Erik Asplund considers the compromise deal on the application of nuclear safeguards in Brazil. Plus Verification Watch, Science and Technology Scan, Verification Quotes and VERTIC News and Events. A special feature, Election Monitor, replaces Peace Missions Monitor in this issue.

Trust & Verify

November–December 2004 • Issue Number 117 • ISSN 0966–9221

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Independent Observer activities in Cameroon

Joint planning and missions The Independent Observer (IO) assists the state forest law enforcement agency (*Unité Centrale de Control* (UCC)) in planning a systematic schedule of inspection missions to forest concessions. Once in the forest, Global Positioning System (GPS) location finders, photographs and other tools are used to document whether legal requirements are being respected. Law enforcement always remains the responsibility of the UCC. Each inspection is written up as a mission report.

Review and ownership All mission reports are reviewed and validated by a Reading Committee under the auspices of the minister for environment and forests. Once approved, the reports are made public. In addition, the minister periodically publishes updates of any legal proceedings for infractions. Reading Committee meetings may also trigger changes in policy or procedures for the UCC.

Independent channel and missions The IO provides a confidential channel to record, collate and verify information on forestry infractions and collusion. Testimonies from ministry officials, non-governmental organizations (NGOs) and communities are collected while protecting individual identities. These can prompt a field mission jointly executed by the IO and ministry officials, or independently by the IO.

What is IFM?

IFM involves an international, independent third party, which, with the agreement of state authorities, monitors the range of official processes relating to forest management. There might be monitoring, for example, of the initial allocation of logging concession permits, the management of these concessions and related logging activities, as well as the subsequent processing and trade in forest products. To date, the focus has been on observing official oversight and control of logging concessions and giving support to law enforcement agencies to help them develop strategies and procedures. The aim of IFM is to ensure the elimination of illegal logging and related corrupt practices, not the elimination of companies operating within the law.

Strategic position

The unique strength of IFM resides in the dynamics of the monitor's relationships with various players in the forest sector. Unlike a self-appointed civil society watchdog organization,

a monitor has a contract with the host government to provide a supportive monitoring service. This official role permits the monitor to have access to official information related to forest management, such as certificates and maps of valid and expired logging titles, statistics and tax collection documents. Efficient IFM needs a clear mandate to verify the activities of government officials and the implementation of logging concessions.

Monitors must use considerable diplomacy and be proactive in seeking and reporting the facts. The credibility of IFM rests on its ability to investigate politically sensitive situations and a commitment to adhere strictly to agreed protocols. Profit-driven organizations tend to make poor independent forest monitors if they place their shareholders' financial interests above the occasional need to be politically outspoken. An international organization enjoys greater protection from domestic partisan pressure. Funding from multiple sources (such as through a trust fund) increases accountability and minimizes accusations of bias.

The monitor must uphold the highest standards of independence and objectivity, which tends to mitigate against a close relationship with either the host government or local civil society groups. Thus the classic 'capacity-building' intervention in developing countries may not be appropriate in this case.

Results

IFM engenders a dynamic and a debate that stimulates information flows, while the political space it creates increases participation in issues related to forest sector governance.

Mandate of the Independent Observer in Cameroon: essential elements

The IO has right of access to relevant information held by the ministry, without the need for prior approval (subject to limitations for reasons of national security).

The IO has right of movement in any part of the country in order to carry out joint or independent inspections.

The IO has the right to publish its findings without prior validation by the Reading Committee if it has not met 30 days after a scheduled meeting date.

The Reading Committee acts as a buffer between the IO and stakeholders: once approved, the reports are the property of the host ministry.

Law enforcement enhanced by IFM can provide assurance that logging companies that comply with regulations are rewarded and state revenues are no longer diverted. Ultimately, rather than the forest being mined for short-term gain, the populations of the countries concerned benefit more equitably from the sustainable utilization of its natural resources. Otherwise monitoring risks becoming an academic exercise, simply explaining what has happened after the damage has been done.

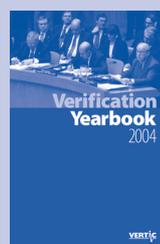
To date, IFM projects have been promoted by international donors in crisis situations where governance of the sector has completely broken down. This can result in a strained relationship between the monitor and the host government, one that needs to be actively mediated by donor representatives, for example in the Reading Committee. In Cambodia, where many key elements were not in place, when the monitor unearthed evidence of powerful political connections to illegal logging, and donors felt unable to intervene in support of this evidence, the government annulled the monitor's contract.

In future, IFM projects will operate in an environment of both increased market differentiation for legal timber and decreased willingness by donors to become involved in crisis situations. It is anticipated that producer country governments will then have a more open attitude to IFM. In any event the proposed EU VPAS will require a 'certificate of legal origin'. Governments should welcome independent verification of these certificates, as any doubt about their authenticity will have direct consequences in EU markets.

There is widespread agreement that an immediate positive result of IFM is a substantial increase in the quantity, quality and credibility of information on forest exploitation and control systems, benefit distribution and illegal activity. Findings of field missions are presented in summary reports which inform government, international donors and civil society and give them tools to assess the state of the forest sector.

IFM is an effective instrument for accurately gauging the real level of both political will and capacity in the forest law enforcement system. IFM thus provides firm evidence of the progress or otherwise of policy measures carried out by government and donors, so that future interventions are better focussed. IFM aims to improve the system, not just catch criminals. For example, the principle of joint responsibility in the Reading Committee allows a constructive approach towards increased transparency and accountability.

Authoritative accounts produced by monitoring have been used by a range of actors to advocate change: development



Verification Yearbook 2004

'An important tool'

Wolfgang Hoffmann, Executive Secretary Comprehensive Nuclear Test Ban Treaty Organization, Vienna

The *Verification Yearbook 2004* continues VERTIC's wide-ranging annual coverage of verification developments and trends in arms control and disarmament, the environment and other fields. With a preface by Rogelio Pffirter, Director General of the Organisation for the Prohibition of Chemical Weapons, this year's *Yearbook* contains 11 chapters.

Introduction: the state of play of verification Trevor Findlay
Effective CTBT verification: the evidence accumulates

David Hafemeister

Improving CWC implementation: the OPCW Action Plan

Lisa Tabassi and Scott Spence

The lessons of UNSCOM and UNMOVIC Trevor Findlay

Verifying Libya's nuclear disarmament Jack Boureston and Yana Feldman

Iran and nuclear safeguards: establishing the facts and seeking compliance Wyn Q. Bowen

Small arms: monitoring the UN action programme

Helen Hughes

Monitoring greenhouse gases Larry MacFaul

International systems for monitoring and verifying fisheries agreements Judith Swan

Intelligence, verification and Iraq's WMD Brian Jones

Monitoring human rights treaties Patricia Watt

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banks can, for instance, calculate the macroeconomic and social (poverty) costs of not taking action against infractions, while campaign organizations in consumer countries can obtain undisputed evidence of illegal activities undertaken by individual companies. The forest industry responds to vigilance in the sector by increasingly respecting the law; hence corruption loses ground.

Citizens in producer countries are the most important user group. The empowerment of local civil society will be more effective than outside pressure in achieving the long-term, active commitment of the forestry industry and governments of producer and consumer countries to sustainable resource management. Thus the role of the monitor should eventually be taken over by domestic governance structures that fully involve an empowered local civil society.

David Young currently manages independent monitoring projects for Global Witness, a London-based NGO working on human rights and environmental issues.

Brazil: enrichment safeguards, but no Additional Protocol

The International Atomic Energy Agency (IAEA) and Brazil, after several months of troubled negotiations, have finally reached agreement on the application of nuclear safeguards to the uranium enrichment facility at Resende, approximately 70 kilometres (43 miles) from Rio de Janeiro. IAEA Director General Mohamed ElBaradei announced on 25 November 2004 that: 'We've been able to reach an agreement . . . to verify the enrichment facility'. This will allow the plant to begin production of low enriched uranium. Negotiations had reached a deadlock when the IAEA was denied formal access to the facility in February and March 2004, raising suspicions in the international community that Brazil may have something to hide.

Brazil has traditionally been a strong advocate of universal nuclear disarmament, but it has been slow to join key arms control and disarmament treaties. For instance, while it signed the 1967 Treaty of Tlatelolco (establishing a nuclear weapon-free zone in Latin America) on 9 May 1967, it did not submit a waiver that would permit the treaty to enter into force for Brazil until 30 May 1994. It acceded to the 1968 Nuclear Non-Proliferation Treaty (NPT) on 18 September 1998, more than 30 years after the accord was opened for signature.

For many years Brazil, and its neighbour Argentina, were suspected of having nuclear weapon aspirations. Brazil ran a clandestine nuclear military programme, much of it based on secretly procured technology, before ending it in the 1980s. In 1991 Argentina and Brazil signed the Guadalajara Treaty, marking the end of their nuclear rivalry and establishing a bilateral verification body, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC). Today, Brazil's nuclear programme is no longer under military control, but that of the national executive and legislature, in addition to being verified bilaterally by ABACC as well as internationally by the IAEA.

The Resende enrichment facility is owned and operated by *Indústrias Nucleares do Brasil* (INB), together with the Brazilian navy. INB, which is fully owned by the Brazilian government, says that the Resende facility's main role is to produce low

enriched uranium to fuel Brazil's two nuclear power plants, Angra I and Angra II. Resende is also seen as fulfilling Brazil's ambition to have a complete nuclear fuel cycle. This would reportedly save the state (a modest) US\$10–12 million a year. Brazil also hopes to become a major exporter of enriched uranium by 2010. In the longer term the plant is seen as providing fuel for the navy's nuclear-powered submarines which it aims to have afloat (probably unrealistically) by 2020.

Brazil's reluctance to agree to the IAEA's preferred level of access to Resende is consistent with its unwillingness to sign an Additional Protocol to its safeguards agreement. The protocol, which all NPT parties are encouraged to conclude, permits agency access to 'cradle to grave' information on a state's nuclear fuel cycle, as well as short-notice on-site inspections known as 'complementary access'. The IAEA model Additional Protocol emerged from concerns that the IAEA had failed to detect the nuclear weapon programmes of Iraq and North Korea. Many members of the Brazilian Congress and military are, however, deeply averse to further intrusive safeguards, arguing that Brazil is entitled to 'dignified and differential' treatment because of its track record as a peaceful regional power.

The main argument made by the Brazilians against intrusive inspections at Resende, however, is the fear that industrial espionage could compromise their anticipated competitive advantage in marketing what they claim is indigenous electromagnetic enrichment technology. Originally developed in the mid-1980s by the Brazilian Naval Technology Centre in Sao Paulo, allegedly at a cost of US\$1 billion, the new method is purportedly capable of decreasing friction in centrifuges, making them approximately 30 per cent more efficient and 25 per cent more cost effective than older models.

International concerns

While the Resende facility is estimated to have the capacity to make enough uranium to produce five or six warheads a year if geared towards producing high enriched uranium, the main concern of the international community is not that Brazil will attempt to resume its quest to acquire nuclear weapons,

but rather that safeguards exceptions made for Brazil will set a precedent that will be invoked by states like Iran and North Korea. Brazil's assertion of its right to enrich uranium itself comes at a bad time: both ElBaradei and President of the United States George W. Bush have suggested that no additional states be permitted to possess such a capability, but instead rely on international or regional production of fissionable material, under safeguards, as an anti-proliferation measure. Some experts argue that Brazil's claim that it is concerned about protecting its technology from industrial espionage is a ruse, especially considering that the IAEA has a long history of successfully protecting confidentiality. The real reason, observers contend, is that Brazil's new technology uses illicitly imported components that should have been declared and put under safeguards and/or that the technology is actually not novel at all.

The compromise reached by Brazil and the IAEA in November seems to satisfy the requirements for verification—ensuring that Resende is not producing weapons-grade, high enriched uranium or diverting uranium enriched to any level to sites that are not safeguarded—as well as protecting Brazilian secrets, however illusory. The agreement permits 'managed access' techniques to be used, allowing inspectors to see some parts of the centrifuges, while other parts would be hidden from view. Computer-generated diagrams will be provided to the IAEA to explain what its inspectors are not permitted to see. Safeguards also allow inspectors to account for all materials entering and exiting the facility, as well as permitting them access to the pipes and valves connected to the centrifuges. Any material produced by the plant will remain under safeguards.

Despite this site-specific agreement, there seems to be no immediate prospect of Brazil adopting an Additional Protocol. This is unfortunate given the country's not entirely unblemished past record and the fact that it was fully involved in, and supportive of, strengthened safeguards and the negotiation of the model Additional Protocol by the IAEA's Board of Governors. It also sets a poor example, especially as a senior, highly respected Brazilian, Sergio Duarte, has been elected chair of the 2005 NPT Review Conference. Finally, the stand of South America's largest and most industrialized country on the protocol damages its increasingly vocal call for permanent membership of the UN Security Council.

Erik Asplund
VERTIC Intern

Verification Quotes

'Negotiating with the Iranians is like buying a used car. You agree on the price, but when you take delivery you find there are only three wheels. There is always something that needs to be fixed.'

Unnamed diplomat commenting on Iran's negotiations with the IAEA on the suspension of its uranium enrichment programme, quoted in Richard Beeston, 'Iran stalls on nuclear agreement', *The Times*, 24 November 2004, p. 41.

'On the first flight, a Predator saw a security detail around a tall man in a white robe at Bin Ladin's Tarnak Farms compound outside Kandahar. After a second sighting of the "man in white" at the compound on September 28, intelligence community analysts determined that he was probably Bin Ladin.'

The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States, W.W. Norton & Company, New York and London, 2004, p. 190, reporting on the surveillance capabilities of the Predator unmanned aerial vehicle (UAV).

'We view the delegation's visit to Yongbyon as a way to help contribute to breaking the stalemate and opening up a bright future. We will not play games with you. We have invited you to go to Yongbyon. The primary reason for this is to ensure transparency. This will reduce the assumptions and errors . . . This visit can have great symbolic significance.'

Vice Minister Kim Gye Gwan on why North Korea wanted a private US delegation to visit its nuclear facility. Quote by Siegfried S. Hecker, Senior Fellow, Los Alamos National Laboratory, to the US Senate Foreign Relations Committee Hearing on 'Visit to the Yongbyon Nuclear Scientific Research Center in North Korea', Washington, DC, 21 January 2004, p. 2.

'The election process overall did not adequately reflect principles necessary for a healthy democratic election process.'

Julian Peel Yates, head of the Organization for Security and Co-operation in Europe (OSCE)/ Council of Europe observer mission commenting on the Russian presidential election in which Vladimir Putin was re-elected with 71.2 per cent of the vote, quoted in *The Times*, 16 March 2004, p. 41.

'This is a very, very difficult area to monitor and the obvious and sensible thing to do to take away the attraction to people smugglers is to excise those islands from the migration zone.'

Australian Immigration Minister Amanda Vanstone explaining her decision to remove retrospectively Christmas Island from Australia's 'migration zone' to prevent a boatload of Kurds who landed there from claiming asylum, quoted in Roger Maynard, 'Kurds spark Australian immigration row', *The Times*, 6 November 2003, p. 14.

'I jokingly suggested that he [Israeli National Security Advisor David Ivry] invite the US to send an inspection team to Israel to do "anywhere, anytime" checking to see if any of the Patriots were missing or had been tampered with. I knew it was a silly idea. Israel would never give another country that kind of unfettered access. Ivry did not think the idea was silly. Again he went to the Cabinet for me. The ensuing US Army inspection concluded that there was no reason to believe that Israel had tampered with or transferred any Patriot missile, software, designs or associated material.'

Richard Clarke, *Against All Enemies: Inside America's War on Terror*, Free Press, New York, 2004, pp. 46–47.



Kyoto Protocol to enter into force

The fate of the 1997 Kyoto Protocol has finally been decided: it will live after all thanks to Russia. UN Secretary-General Kofi Annan accepted Russia's instrument of ratification on 18 November 2004 during the special UN Security Council meeting in Nairobi, Kenya. To enter into force the protocol had to be ratified by 55 Annex 1 (developed country) parties to the 1992 United Nations Framework Convention on Climate Change (UNFCCC), accounting for at least 55 per cent of that group's total carbon dioxide emissions in 1990. After the US declared that it would not ratify, only Russia could satisfy the entry into force requirement.

As the protocol stipulates that it will enter into force 90 days after that requirement is met, the accord will become legally binding for its parties on 16 February 2005. Certain processes and mechanisms provided for under the protocol will also be triggered by that date. For instance, the compliance bodies can begin their preparatory work for the first commitment period (2008–2012) and the Clean Development Mechanism (through which Annex 1 parties can gain emissions credits for implementing sustainable development projects in non-Annex 1 parties) will become fully operational.

Source UNFCCC website, www.unfccc.int.

Iran satisfies the IAEA—for now

On 18 September 2004 the IAEA Board of Governors agreed that it would decide at its November 2004 session whether further steps should be taken to ensure Iran's compliance with its nuclear safeguards and NPT obligations. In a report of 11 November 2004, Director General ElBaradei stated that it was clear Iran had failed in a number of instances over an extended period to meet its safeguards obligations with respect to reporting nuclear material, its processing and use and, in the declaration of facilities where such material has been processed and stored. ElBaradei highlighted Iran's refusal on many occasions to co-operate with the agency, as evidenced by extensive concealment and non-disclosure activities.

On 15 November 2004 the so-called EU-3 (France, Germany and the United Kingdom) managed to broker a deal with Iran. The agreement calls for, among other things, the suspension of all uranium enrichment activity, including testing. IAEA

inspectors will verify and monitor the suspension. Iran has stressed, however, that it regards this as a voluntary confidence-building measure that cannot be interpreted as a surrender of its legal right to develop a complete nuclear fuel cycle.

The EU-3 agreement also calls for negotiations on a long-term agreement on Iran's nuclear aspirations. To that end, working groups have been established on political and security issues, technological and economic cooperation, and nuclear issues. These are to report to a steering committee before mid-March 2005. The long-term agreement is meant to provide 'objective guarantees' that Iran's nuclear programme is exclusively for peaceful purposes, as well as containing firm commitments on all the issues being considered by the working groups. A last-minute hitch was resolved after Iran agreed to stop using 25 centrifuges that it wished to keep operational for 'research' purposes.

On 29 November 2004 the board adopted a resolution noting ElBaradei's assessment that past Iranian practices had resulted in many breaches of Iran's obligations to comply with its safeguards agreement, but also that good progress had been made to correct them. The resolution contains no decisions, but calls on ElBaradei to report on remaining outstanding issues where appropriate. The board acknowledged the EU 3–Iran agreement and stated that it was particularly satisfied that Iran, pursuant to the accord, had invited the IAEA to be involved in its verification. It also recognized that the suspension was a voluntary confidence-building measure and not a legal obligation.

It is very likely that the Iranian dossier will resurface at the board's next meeting on 28 February 2005. The Bush administration, clearly sceptical of European efforts, is watching the situation with a jaundiced eye, ready, supposedly, to report Iran to the UN Security Council at the slightest indication that Tehran is renegeing.

Sources 'Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran', IAEA/GOV/2004/83, 15 November 2004, www.iaea.org; 'Iran–EU agreement on nuclear programme' (as reported on 14 November 2004 by Mehr News Agency), www.iaea.org; 'Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran', IAEA/GOV/2004/90, 29 November 2004, www.iaea.org.

CITES expands its reach

The thirteenth Conference of Parties to the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) took place in Bangkok, Thailand, from 2–14 October. A number of species were added to the CITES Appendices: the Irrawaddy dolphin was added to Appendix I, which includes species that are highly threatened and in which there should be no trade except in extraordinary cases; and the hump-head wrasse, great white shark and ramin were added to Appendix II, which includes species that may be traded under regulation, involving quotas and permits.

The conference also considered progress in fulfilling the provisions of the 2000 CITES Strategic Vision and Action Plan, which set seven goals and called for the establishment of measurable performance indicators. TRAFFIC, the wildlife trade monitoring network, and the World Wide Fund for Nature (WWF) noted that, to date, there had been no systematic assessment of action taken or results achieved and called for a more serious approach to monitoring the performance of the convention. TRAFFIC and WWF recommended early adoption of basic targets and indicators as well as the allocation of resources for ongoing evaluation to ensure the treaty's long-term success.

Sources 'CITES-13 final', *Earth Negotiations Bulletin*, vol. 21, no. 45, 18 October 2004, www.iisd.ca; 'A CITES priority: looking to the future: a call for attention to the CITES Strategic Vision and Action Plan and some suggestions for its future development', TRAFFIC and WWF briefing document, September 2004, www.traffic.org/cop13/documents/Strategic_plan.pdf.

CW destruction down, not up

Delays continue to hamper US and Russian efforts to complete the destruction of their chemical weapon (CW) stockpiles in accordance with the 1993 Chemical Weapons Convention (CWC) by the extended deadline of 2012 (see *Trust & Verify* no. 115). In September the Pentagon froze design work on a pilot chemical weapons destruction facility (CWDF) at Pueblo, California, that will use neutralization technologies, ordering the plant's construction and operation to be carried out more cheaply. The delay at Pueblo will have a knock-on effect on completion of the neutralization facility planned for Blue Grass, Kentucky. Construction of two further neutralization CWDFs at Edgewood, Maryland, and Newport, Indiana, and an incineration facility at Pine Bluff Arsenal, Arkansas, are also delayed due to technical problems. Meanwhile, the Organisation for the Prohibition of Chemical Weapons (OPCW) recently verified the destruction of a former binary CW production facility at Pine Bluff Arsenal.

Russia recently unveiled its schedule for the total elimination of its CW stockpile by the 2012 deadline, involving the construction of six new facilities. As the first of the plants will not begin destruction activities until 2005 and each is required to destroy between 5,400 and 7,500 metric tons of chemical agent, some analysts have described the Russian plan as overly optimistic.

However Russia has signalled its commitment by doubling its domestic funding for CW destruction activities in 2005 to US\$390 million. In response to suggestions that the tight schedule may necessitate shortcuts, Russian officials are reported as emphasizing the importance of conducting destruction safely, rather than focussing on completing destruction within the treaty deadlines.

Sources 'Chemical weapons disposal behind schedule', *USA Today*, 2 November 2004, www.usatoday.com; 'Battle continues over chemical weapons incineration', Global Security Newswire, 9 November 2004, www.nti.org; 'Funding cut delays destruction of toxic gas', *The Gazette*, 22 November 2004, www.gazette.com; 'US army completes major chemical production facilities demolition at Pine Bluff Arsenal', Global Security Newswire, 3 November 2004, www.nti.org; 'Russian official outlines detailed schedule to eliminate chemical weapons arsenal by 2012', Global Security Newswire, 19 November 2004, www.nti.org.

BW: US withdraws Cuban non-compliance allegations

The US has revisited its intelligence assessment of Cuba's biological weapons (BW) capability using new standards adopted after its assessments of Iraq's weapons of mass destruction (WMD) capabilities proved inaccurate. A 1999 National Intelligence Assessment had claimed Cuba was engaging in 'limited offensive biological warfare research and development'. A revised appraisal, due to be released in 2005, takes a different approach to the treatment of sources, evidence and analysis. It is expected to conclude that Cuba merely possesses the technical capability to pursue an offensive BW programme, based on the dual-use potential of its biopharmaceutical industry. It shares this technical capability with all states that have a biotechnology industry or bio-defence programme.

Sources 'In stricter study, US scales back claim on Cuba arms', *New York Times*, 18 September 2004, www.nytimes.com.

Season's greetings

VERTIC wishes everyone a merry Christmas and a happy and peaceful New Year

Election Monitor

United States: above board this time

A preliminary report on the 2 November US elections by the Organization for Security and Co-operation in Europe (OSCE), which sent 92 election observers to 11 states at the invitation of the US Department of State, was published soon after the result was announced. The report noted that the polls were 'conducted in an environment that reflects a long democratic tradition, including institutions governed by rule of law, free and professional media and civil society involved in all aspects of the election process'. Previous fears of electoral fraud and voter suppression in some states, particularly aimed at disenfranchising minorities, were largely unrealized, as 'relatively few voters were challenged at the polling stations to confirm their eligibility to vote'. In the absence of the 'hanging chads' and 'butterfly ballots' that haunted the 2000 election, the democratic process in the US appears to be back on track.

Sources 'US vote "mostly free and fair"', BBC News, 5 November 2004, www.news.bbc.co.uk; Organization for Security and Co-operation in Europe Election Observation Mission, United States of America—2 November 2004 Elections, 'Statement of Preliminary Findings', Washington, DC, 4 November 2004; www.osce.org; 'A clear victory this time', *The Economist*, 3 November 2004, www.economist.com.

Kosovo: monitored, verified, boycotted but approved

For the United Nations Interim Administration Mission in Kosovo (UNMIK) and its designated election specialists, the Council of Europe Election Observation Mission in Kosovo (CEEOM IV), the OSCE Mission in Kosovo's Department of Elections and the independent Central Election Commission (CEC), the Kosovo Assembly election on 23 October will be remembered as a job well done. A preliminary statement by CEEOM IV praised Kosovans for an election that was 'generally conducted in accordance with Council of Europe principles and international standards for democratic elections, albeit still in a difficult social and political environment'. Jens Modvig, deputy head of the OSCE Mission in Kosovo and acting chair of the CEC, reported that the 'results do reflect the will of the voters'. For most of the 120 CEEOM IV observers, as well as some 13,000 domestic observers, the overwhelming impression was that the election day passed peacefully with only a few, minor voting irregularities.

Nevertheless, international press coverage of the election told a different story. For many, the result was marred by a mass boycott by the province's Serb minority. Although more than 99 percent of Kosovo's approximately 200,000-strong ethnic Serb minority did not vote, it remains unclear how many would have had they not been subjected to intimidation by their own people. One Serb in the divided city of Mitrovica, when asked if he would vote, replied: 'Are you joking? They'd knee-cap me'. UNMIK chief Soren Janssen-Peterson lamented that some Serbs had had 'their democratic right to vote hijacked'.

Sources 'Kosovo elections: preliminary statement of the observation mission', Council of Europe Election Observation Mission in Kosovo, 26 November 2004, www.coe.int; 'Central Election Commission approves final results of Kosovo Assembly election', OSCE Mission in Kosovo, Press Release, 3 November 2004, www.osce.org; 'Pyrrhic victory', *The Economist*, 28 October 2004, www.economist.com; 'Kosovo's president declares victory in election', Reuters, 26 October 2004, www.alertnet.org; 'Kosovo election marred by Serb boycott', *The Guardian*, 25 October 2004, www.guardian.co.uk; 'Serbs boycott Kosovo vote, raising fears for the future', *New York Times*, 25 October 2004, www.nytimes.com.

Afghanistan: a clear result but patchy monitoring and technical problems

Despite the highly publicized rows over the indelible ink intended to prevent multiple voting, the greatest surprise with regard to Afghanistan's presidential election on 9 October was its apparent success. In response to numerous protests by candidates and as many as 661 different allegations of irregularities on polling day, a UN-nominated Impartial Panel of Election Experts concluded that irregularities could not have affected the final result, which was a resounding victory for the incumbent transitional president Hamid Karzai. With millions of Afghans, including a substantial number of women, turning out to vote, the panel said that Afghanistan had conducted 'a commendable election, particularly given the very challenging circumstances'.

Human Rights Watch reported 'technical problems with the voting process, poor planning and lack of preparation by the joint UN and Afghan election authorities, and insufficient international monitoring'. A mere 300 foreign observers, grouped in so-called democracy support teams, were tasked with monitoring voting at over 21,000 polling stations across 647,500 square kilometres (slightly smaller than Texas). Outside the relative safety of Kabul, 'monitoring and verification', such as it was, fell to warlords and drugs barons, most of whom stood as candidates. Nevertheless an exit poll by the International Republican Institute found that 97 per cent of the election's true observers—the Afghan electorate—did not expect irregularities to affect the result.

Sources 'Election Day in Afghanistan: a photo essay', Human Rights Watch, www.hrw.org; 'Afghanistan's future', BBC News In Depth, www.news.bbc.co.uk; 'Final report of Impartial Panel of Election Experts concerning Afghanistan presidential election', 1 November 2004, www.elections-afghanistan.org.af; 'Voting in warlord country', *The Economist*, 7 October 2004, www.economist.com; 'America's boy done good', *The Economist*, 30 October 2004, www.economist.com.

Andy Piner, VERTIC Intern



Nuclear test signatures found in UK soil

Minute amounts of plutonium in soil samples collected by the world's oldest continually-running field experiment have left a signature of past nuclear tests. The experiment, located at Rothamsted in Hertfordshire, was started in 1843 to monitor the effect of different agricultural methods on crop yield and soil health. By calculating the ratios of caesium, radium and plutonium and comparing them with records of nuclear tests, scientists have been able to identify fallout from nuclear tests and nuclear accidents, such as the 1986 Chernobyl reactor meltdown. Researchers at Southampton University are currently using the data to compile a complete record of nuclear fallout in the UK. The Rothamsted soil archive can also be used to trace other chemical changes in the soil, including the decline in lead levels when lead-free petrol was introduced and changes in the amount of the pollutant Polychlorinated Biphenyl (PCB) in the atmosphere. The archive can thus also be used to monitor air pollution levels and track climate change.

Sources Paul Rincon, 'Plutonium traced in British soil', BBC News, 6 September 2004, <http://news.bbc.co.uk/1/hi/sci/tech/3630284.stm>; 'Geoscience at the BA: growth of the soil', Geological Society, 6 September 2004, www.geolsoc.org.uk/template.cfm?name=BA200401.

On-the-spot forensics

Scientists at Purdue University in the US have brought on-the-spot forensics a step closer to reality with their Desorption Electrospray Ionisation (DESI) technique. Ionization (where a neutral sample is made to carry charge without altering its composition) is necessary for analyzing chemicals. The DESI method uses a fine spray of water that contains reactive chemicals to ionize target molecules. The whole kit only weighs around 18 kilograms and the same nozzle that delivers the spray also sucks up the ionized residue for on-site analysis. DESI is safe to use on living tissue and sensitive enough to identify on skin a pharmaceutical compound ingested 40 minutes earlier. This method could be used to test people for exposure to chemical and biological agents and to detect residue on the hands of someone who has recently handled explosives.

Sources Zoltán Takáts, Justin M. Wiseman, Bogdan Gologan and R. Graham Cooks, 'Mass spectrometry sampling under ambient conditions with desorption electrospray ionisation', *Science*, vol. 306, 2004, p. 471; James Randerson, 'On-the-spot forensics comes a step closer', *New Scientist*, 23 October 2004, p. 25.

DNA and elephant ivory

On 27 September officials from the International Fund for Animal Welfare (IFAW) announced that, for the first time, DNA testing of elephant ivory would become a tool in the fight against illicit trade (see *Trust & Verify* no. 110 for details of DNA testing of rhino product). Scientists at the University of Washington in the US have pioneered a technique that pinpoints the geographical origin of elephant ivory with unprecedented accuracy. They have created a distribution map that can successfully place any ivory sample to within a few hundred kilometres of its origin. This technique is currently helping the Lusaka Agreement Task Force (LATF) identify the origin of 6.5 metric tons of ivory seized in Singapore in 2002, the largest illegal ivory cache ever found. The Convention on International Trade in Endangered Species of Wild Flora and Fauna allows limited trade in elephant ivory from Southern Africa, but there are concerns that poachers may be bringing illegal ivory in, in order to sell it on. This method could confirm whether ivory being traded is legitimate, as well as informing future policy decisions on ivory sales.

Sources 'Researchers use DNA to track illegal ivory trade', *Scientific American*, 28 September 2004, www.sciam.com/article.cfm?articleID=00059EFO-78DD-1158-B8DD83414BS7F0000; Samuel K. Wasser, Andrew M. Shedlock, Kenine Comstock, Elaine A. Ostrander, Benezeth Mutayoba and Matthew Stephens, 'Assigning African elephant DNA to geographic region of origin: applications for the ivory trade', *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, vol. 101, no. 41, 2004, p. 14847.

Multi-skilled digital cameras

The next generation of high-resolution digital cameras may use liquid rather than glass lenses. Applying a voltage across a liquid droplet can morph it into the shape of a lens with the desired focal length. This technique is inexpensive and the liquid lenses are much smaller and lightweight. Bruno Berge, founder of Varioptic, which is developing liquid lenses for Samsung, believes that these cameras, coupled with increased image processing power, may soon be used as smart scanners or as biometric devices that can recognize fingerprints. It may also be possible to combine several shots to build up a three-dimensional image inside the camera. There are clearly potential verification applications for the new technology.

Source Justin Mullins, 'The next generation', *New Scientist*, 16 October 2004, p. 25.

VERTIC Science Fellow

Malika Goonasekera has been appointed VERTIC's inaugural Science Fellow. A graduate student in quantum physics at University College London, Malika is researching technical aspects of verification of the proposed Fissile Material Cut-off Treaty (FMCT). Malika was previously a policy officer at NEXUS, the student wing of the Institute of Physics. VERTIC's Science Fellowship was established to bring young scientists to the centre to gain experience in the non-governmental sector and to apply their scientific training and background to the international and public policy aspects of arms control and disarmament. The scheme is funded by the Polden-Puckham Charitable Trust.

New interns

Andrew Piner joined VERTIC in October, having recently completed his MSc. (Econ) in critical security studies at the University of Wales Aberystwyth. At VERTIC he is researching verification options for a future Israel–Palestine peace agreement. He is also helping to reorganize VERTIC's library and compile the Verification Organizations Directory (VOD).

Samir Puri joined VERTIC in November. He attained his Masters Degree in War Studies from King's College London in 2003 and holds a BA (Hons) in history and politics from Warwick University. He is writing an article on monitoring of the October–November 2004 Ukrainian presidential election, having been an electoral monitor there himself.

FMCT seminar

VERTIC held a seminar on 8 December to discuss verification of the FMCT in light of the US announcement that it supports negotiation of such a treaty but without verification. The seminar will inform a VERTIC Brief by Malika Goonasekera to be distributed at the January 2005 session of the Conference on Disarmament in Geneva. Seminar participants were drawn from academia, government, other NGOs and the London diplomatic community.

WMD awareness programme

VERTIC has joined 13 other NGOs in a project to provide timely and accurate information on WMD to the public. Projects include the 'Come Clean' website (www.comeclean.org.uk),

offering a specifically commissioned series of six lesson plans to fit the UK Citizenship Curriculum for schools. Aimed at pupils aged between 14 and 16 years, the lessons not only cover WMD issues, but also provide guidelines for evaluating media coverage and participating in debates on current affairs. Launched in September 2004 by former Soviet President Mikhail Gorbachev and Professor Joseph Rotblat, the programme will organize regular VIP (very important person) events to promote public awareness and to draw attention to the need for WMD transparency.

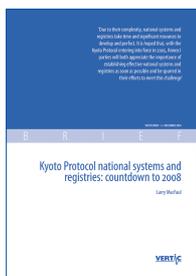
VERTIC submits studies to WMD Commission

VERTIC has produced two reports for the Stockholm-based Weapons of Mass Destruction Commission (the Blix Commission). In October VERTIC submitted a report on 'WMD Verification and Compliance: The State of Play' to Foreign Affairs Canada for inclusion in a Canadian research report to the Commission. The study covered the principal WMD agreements and the status of their monitoring, verification and compliance arrangements.

In November VERTIC submitted its report, 'Enhancing BWC Implementation: a Modular Approach' to the Commission at its meeting in Vancouver, Canada. The study sets out a range of possible mechanisms that could be established or enhanced to fulfil BW verification and implementation tasks. The two VERTIC contributions will be published in hard copy by the Commission as reports 19 and 23 respectively. They are available on the WMD Commission website (www.wmdcommission.org) and on VERTIC's website (www.vertic.org).

Seminar launch of Verification Yearbook 2004

VERTIC will launch its *Verification Yearbook 2004* at a lunchtime seminar on 15 December. Brian Jones will discuss his chapter 'Intelligence, verification and Iraq's WMD', while Wyn Bowen will focus on 'Iran and nuclear safeguards: establishing the facts and seeking compliance'. The launch will be held at Development House, VERTIC's new headquarters. See the *Verification Yearbook 2004* advertisement in this issue for a full list of contents and ordering information.



New VERTIC Brief on Kyoto Protocol

VERTIC has released its fifth Brief, 'Kyoto Protocol national systems and registries: countdown to 2008' by Larry MacFaul, in time for the Tenth Session of the Conference of Parties to the United Nations Framework Convention on Climate

Change being held in Buenos Aires, Argentina, from 6–17 December. Order from VERTIC now!

Staff news

TREVOR FINDLAY was interviewed by Jim Giles of *Nature* magazine on 22 September on nuclear nonproliferation issues and met with Jack Boureston of FirstWatch International on 28 September. He attended a talk given by Iraqi Prime Minister Iyad Allawi at the International Institute for Strategic Studies (IISS) on 30 September. From 11–12 October he participated in a conference on UN Security Council resolution 1540 at Chatham House in London and from 14–15 October in a workshop on verification and compliance run by Foreign Affairs Canada, in Ottawa, Canada. He met with Dr John Gee, a member of VERTIC's International Verification Consultants Network and a consultant to the Office of National Assessments, Canberra, Australia, on 1 November.

In Vancouver, Canada, from 8–10 November he was involved in various activities in connection with the meeting there of the Blix Commission. He gave a presentation on verification at a public seminar at the Liu Centre, University of British Columbia, helped to present to the Commission a submission by the International Security Research and Outreach Program (ISROP) of Foreign Affairs Canada, and presented a VERTIC paper on BW verification options to the Commission. The following week he had meetings in Washington, DC, with officials at the Henry L. Stimson Center and the Nuclear Threat Initiative and participated in a meeting on 18 November on the future of the CTBT at the Arms Control Association. On 29 November, also in Washington, DC, he presented a paper on WMD to a conference at the Social Sciences Research Council on 'Multilateralism under challenge?', for a book project on the subject in co-operation with the United Nations University (UNU) in Tokyo, Japan. Trevor also contributed a chapter on 'The lessons of UNSCOM and UNMOVIC' for another book project sponsored by UNU (this time in co-operation with the International Peace Academy in New York) on the subject of 'The Iraq crisis and world order'. In addition he contributed

the introduction and a chapter on UNSCOM and UNMOVIC to VERTIC's *Verification Yearbook 2004*.

JANE AWFORD attended a nuclear issues seminar at the British American Security Information Council (BASIC) on 13 October, along with Malika Goonasekera, Andreas Persbo and Andy Piner. She met with Julie Andreshak-Behrman, the new Programme Director of Educational Programmes Abroad (EPA), on 18 October to discuss VERTIC's continuing interest in hosting EPA interns. On 26 October she and Andreas Persbo called on Anne Penketh, Diplomatic Editor of *The Independent*. Jane represented VERTIC at the first 'volunteering and internships' fair held by the School of Oriental and African Studies (SOAS), University of London, on 27 October, and attended a steering committee meeting of the WMD Awareness Programme on 15 November. She helped to organize VERTIC's FMCT seminar held on 8 December and is preparing for the lunchtime seminar on 15 December to launch VERTIC's *Verification Yearbook 2004*. She is continuing to work on the launch of the VOD.

BEN HANDLEY produced financial reports for the VERTIC Board meeting on 22 October, and put together the 2004–2005 Expected Income and Expenditure Budget. He also prepared financial statements for the Esmée Fairbairn Foundation. On 9 November he attended a course on 'The partnership between the Chief Executive and the Personal Assistant' organized by the Directory for Social Change. He has also worked to resolve outstanding issues related to VERTIC's move to new premises in October.

LARRY MACFAUL attended the Stakeholder Forum for a Sustainable Future meeting on 'Nuclear Power: the answer to climate change?' in London on 17 November. He wrote VERTIC Brief no. 5, 'National systems and registries: countdown to 2008', for distribution at the Tenth Session of the Conference of Parties to the UNFCCC being held in Buenos Aires, Argentina, from 6–17 December. Larry also contributed a chapter entitled 'Monitoring greenhouse gases' to the *Verification Yearbook 2004*.

ANDREAS PERSBO attended the Mountbatten Centre for International Studies/Foreign and Commonwealth Office (FCO) nuclear study group meeting at the FCO on 15 October. On 1–3 November he observed a challenge fact-finding mission exercise for the 1997 Ottawa Landmine Convention held by

the UK's Joint Arms Control Implementation Group. On 6–7 November he attended a citizen's inquiry into the UK *Trident* nuclear submarine replacement, chaired by former International Court of Justice (ICJ) Vice-President Christopher Weeramantry. He subsequently assisted Larry MacFaul in drafting a contribution on the Kyoto Protocol to the judge's speech to Doughty Chambers on 10 November on US policy after the November elections. On 11 November he met with Dr Christer Ahlström, deputy director of the Stockholm International Peace Research Institute (SIPRI) to discuss the Proliferation Security Initiative (PSI). Andreas is working with Malika Goonasekera on verification options for the FMCT and on national WMD implementation legislation with Angela Woodward.

ANGELA WOODWARD participated in the Royal Society meeting entitled 'Do no harm: reducing the potential for the misuse of life science research' on 7 October. She gave a presentation on 'The role of transparency in preventing biological weapons'

at a BioWeapons Prevention Project (BWPP) workshop in Cape Town, South Africa, on 12 October. On 20 October she met at VERTIC with Chris Harland of the International Committee of the Red Cross (ICRC) Legal Advisory Service to prepare a model law to prohibit biological and toxin weapons. Angela met with Amy Smithson and Darby Parliament of the Washington-based Center for Strategic and International Studies (CSIS) on 25 October during their visit to London, to discuss their respective BW projects. She presented a paper on 'Challenges for monitoring non-state actors' implementation of a ban on anti-personnel mines' at the Swiss Federal Department of Foreign Affairs' workshop on 'The role of states in the universal abolition of anti-personnel landmines in the context of intra-state conflict', held in Montreux, Switzerland, from 29–30 October. Angela co-wrote, with Trevor Findlay, VERTIC's paper on 'Enhancing BWC Implementation: a Modular Approach' for the Blix Commission. She also wrote a paper on the status of legislation in African states to prevent BW proliferation for the March 2005 edition of *African Security Review*.

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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CURRENT FUNDERS Weapons of Mass Destruction Commission, Esmée Fairbairn Foundation, Foreign Affairs Canada, Global Opportunities Fund of the UK Foreign and Commonwealth Office, John D. and Catherine T. MacArthur Foundation, Joseph Rowntree Charitable Trust, Ploughshares Fund, Polden-Puckham Charitable Trust.

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