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Unofficial monitoring of compliance with arms control treaties: a survey

Richard Bruneau



Canadian Centre for
Treaty Compliance

This study aims to gauge the extent of unofficial monitoring of state compliance with multilateral treaties that deal with arms control, disarmament and nonproliferation. Specifically, it attempts to discover the degree to which unofficial monitoring is carried out to assess state party compliance with particular obligations in a given treaty.

The report reveals very few examples of such unofficial monitoring. There are numerous research projects that monitor, study and analyze weapons, weapons systems and weapons technology, or state behaviour and other developments with regard to treaties. This is especially evident in the area of weapons of mass destruction. But such efforts rarely seek to relate the information and analysis they produce to precise treaty requirements and none do so systematically for all treaties and treaty parties.

Landmine Monitor, which monitors compliance with the 1997 Mine Ban Treaty by states parties and signatories (and even states still outside the treaty altogether), is the only unofficial monitoring endeavour that is systematic and comprehensive. It has demonstrated, for the first time, both the feasibility of unofficial monitoring and its potential for mitigating the inadequacies of official treaty monitoring and verification. Similar projects are emerging for the 1972 Biological and Toxin Weapons Convention and in the sphere of small arms and light weapons (for which there are no multilateral disarmament or arms control treaties).

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Canadian Centre for
Treaty Compliance



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The Canadian Centre for Treaty Compliance, based at the Norman Paterson School of International Affairs at Carleton University, conducts policy-oriented research into the theory and practice of compliance in respect of international treaties, resolutions, agreements and arrangements. Its working assumption is that compliance is the bedrock of international law and that all states, from the most powerful to the most disadvantaged, are obliged to comply with their international legal obligations. The centre's research pays particular attention to the technical and other means by which compliance is monitored and verified and the effectiveness and efficiency of institutional arrangements for encouraging, facilitating, inducing and enforcing compliance. In addition to its research and publications, the centre also holds workshops and conferences, engages in various outreach activities and contributes to teaching and other scholarly endeavours at Carleton University and elsewhere.

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Foreword

This second issue of *Compliance Chronicles* explores the world of unofficial monitoring of state party compliance with key treaties dealing with arms control, disarmament and nonproliferation. It was inspired by the thought that, for the most part, there does not seem to be any systematic, comprehensive monitoring of such compliance by unofficial bodies in the sense of an article-by-article report card for all countries of the world.

Before starting the study, we were aware, naturally, of the path-breaking monitoring effort by Landmine Monitor in respect of the 1997 Mine Ban Treaty (Ottawa Convention). However, we were unsure to what degree non-governmental organizations, research institutes and academic bodies were tracking compliance with other major treaties in the highly technical armaments field, especially those dealing with weapons of mass destruction.

Canadian Centre for Treaty Compliance (CCTC) Researcher Richard Bruneau, a graduate student at the Norman Paterson School of International Affairs (NPSIA), presents our findings. While not surprising, they will help the CCTC in planning its future research agenda, and, we hope assist others similarly.

Richard Bruneau conducted most of the research for this study under a NPSIA research assistantship. The study was finalized under the Markland Program funded by the Markland Group, one of the CCTC's principal benefactors. The Markland Group also provided financial support for the editing, formatting, publication and distribution of this report.

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Acronyms

BWC Biological and Toxin Weapons Convention	IISS International Institute for Strategic Studies
BWPP BioWeapons Prevention Project	ISIS Institute for Science and International Studies
CBM confidence-building measure	NGO non-governmental organization
CITS Center for International Trade and Security	NPT Nuclear Nonproliferation Treaty
CNS Center for Nonproliferation Studies	NTM National Technical Means
CWC Chemical Weapons Convention	OPCW Organization for the Prohibition of Chemical Weapons
DRC Democratic Republic of the Congo	SALW small arms and light weapons
HSP Harvard Sussex Program on CBW Armament and Arms Limitation	SIPRI Stockholm International Peace Research Institute
IAEA International Atomic Energy Agency	UN United Nations
IANSAs International Action Network on Small Arms	VERTIC Verification Research Training and Information Centre
ICBL International Campaign to Ban Landmines	WMD Weapons of mass destruction

Introduction

Multilateral treaties have traditionally provided the conceptual and legal framework for state undertakings in relation to arms control,¹ disarmament and nonproliferation. Such treaties frequently include some form of official monitoring and verification of compliance. Verification is a tool for increasing confidence in treaty implementation, seeking to confirm compliance, detect non-compliance and deter would-be violators. In this paper, the term compliance refers to state behaviour when matched with the precise legally binding requirements of a treaty and is therefore only meaningful within the context of that agreement.

Aside from monitoring by official treaty verification bodies, there are two other types of compliance monitoring: that conducted by national governments using their own 'National Technical Means' (NTM);² and unofficial monitoring. The latter is defined here as that performed by actors outside of government or international treaty bodies, such as academia, non-governmental research bodies and non-governmental organizations (NGOs).

The aim of this report is to explore the extent of unofficial compliance monitoring of the four key multilateral arms control, disarmament and nonproliferation treaties:

- > the 1968 Nuclear Non-Proliferation Treaty (NPT);
- > the 1972 Biological and Toxin Weapons Convention (BWC);
- > the 1993 Chemical Weapons Convention (CWC); and
- > the 1997 Mine Ban Treaty (Ottawa Convention).

Only two of these treaties, the NPT and the CWC, have standing verification bodies that continuously monitor and verify compliance: the International Atomic Energy Agency (IAEA) and the Organization for the Prohibition of Chemical Weapons (OPCW) respectively. The OPCW verifies compliance with all of the obligations contained in the CWC, while the IAEA focuses on monitoring and verifying compliance with safeguards agreements under Article III of the NPT. The only form of official compliance monitoring for the BWC is in the shape of so-called confidence-building measures (CBMs), under which states parties voluntarily submit annual declarations on certain pertinent activities to each other via the United Nations (UN) Secretary-General. However, these declarations are not made public and are not scrutinized systematically by the treaty parties. While the Mine Ban Treaty parties do not have a standing verification body, they do intensively examine state party compliance at their annual meetings, intersessional gatherings and treaty review conferences.

Purposes of unofficial monitoring

Inherent in unofficial compliance monitoring is an implicit assumption that official verification mechanisms may not be sufficient for ensuring credible and transparent monitoring of state party compliance. The official monitoring and verification provisions for arms control treaties are a product of compromises between, on the one hand, the desire for effective, cooperative verification and the requisite degree of intrusiveness and, on the other, the requirements of national security and commercial confidentiality. Hence, official monitoring systems are subject to political compromises and their design may not be optimal for achieving effective verification of compliance.

Additionally, many official treaty verification mechanisms lack transparency: they do not allow public access to the information they gather, much less to their analysis of compliance and non-compliance. This is usually because of strict confidentiality requirements imposed by states in the negotiation process. It can also be due, though, to the need for discretion in handling non-compliance cases. In some cases, matters may be satisfactorily resolved away from the glare of publicity: humiliating an alleged violator may simply drive the culprit into a corner. Secrecy also has a tendency to grow and perpetuate itself in international bureaucracies, just as it does in national ones, especially when releasing too much information is perceived as potentially more damaging to an organization's reputation than withholding it.

Furthermore, national governments are reluctant to release the results of their own efforts to

monitor the treaty compliance of other states. When they do issue information, it will be for a political purpose and must therefore be treated as either partial or incomplete or even deliberately distorted and misleading. The case of Iraq has exemplified the dangers of relying on NTM.

Unfortunately, confidentiality, for whatever reason it is invoked, impairs public scrutiny of state behaviour. Unofficial monitoring seeks to fill this gap by publicly tracking state behaviour. It aims to strengthen states' commitment to implementation by holding them publicly accountable. It can also be designed to 'verify the verifiers', to ensure that official monitoring is being effectively carried out.

Sometimes non-official mechanisms assume a monitoring role because of the absence of systematic official monitoring, as with the BioWeapons Prevention Project (BWPP) in respect of the BWC, which lacks its own verification system.

Some unofficial organizations, rather than seeking to make compliance judgements themselves, attempt to serve as a source of information for others looking to do so, including researchers, NGOs and governments. The Verification Research, Training and Information Centre (VERTIC) is one such organization. Its 2003 survey of compliance of BWC states parties with the obligation to adopt national implementation measures³ was of assistance to governments, international organizations and other NGOs. Activist organizations may utilize such sources of information in their campaigning, a synergy that allows the information provider to maintain its non-partisan reputation while others enter the political fray.

The survey

To discern the extent of unofficial monitoring in the arms control, disarmament and nonproliferation field, a survey was carried out in early 2006 of all the major research institutes, NGOs and other bodies in the English-speaking world that deal with such topics or with related weapons issues. Searches of Spanish and French institutes also took place.

The goal, as outlined above, was to determine if any dedicated work was occurring to compare systematically state behaviour with treaty obligations in an article-by-article manner in respect of the four key multilateral arms control, disarmament and nonproliferation treaties. The bodies with the most relevant current research projects are described briefly in Annex A, and pertinent publications produced by these entities are highlighted.

The survey revealed, not surprisingly, that an immense amount of information and analysis is being produced on weapons-related subjects, particularly weapons of mass destruction (WMD), at a large number of institutes worldwide. The work is, however, being done for a variety of purposes, not all relevant to treaty compliance assessments. For example, the Stockholm International Peace Research Institute (SIPRI) methodically monitors developments in weaponry, the arms trade and military budgets and follows treaty developments generally, while the Acronym Institute for Disarmament Diplomacy concentrates on analyzing diplomatic interactions and negotiations, and the Institute for Science and International Studies (ISIS) specializes in evaluating satellite imagery of nuclear facilities in certain states of concern. Others, such as the Center for Nonproliferation Studies (CNS) at the Monterey Institute of International Studies, assess proliferation concerns in relation to a specific country, material or weapon system.

Focusing on weapons and related technology

Many research efforts focus on monitoring weapons, delivery systems, technologies, materials (including dual-use materials) or activities, whether controlled or banned or not. The thinking behind them appears to be that monitoring for its own sake is a public good. It increases transparency and permits others, including the general public and activist organizations, to use the information as they wish.

Some of the work is systematic and encyclopaedic in scope. SIPRI and the International Institute for Strategic Studies (IISS), which produce yearbooks, the *SIPRI Yearbook: Armaments, Disarmament and International Security* and *The Military Balance*, respectively, have for many years, comprehensively monitored arms transfers, budgets and arsenals, assembling huge amounts of data. Another example is the examination of nuclear arsenals carried out by the Natural Resources Defense Council in Washington, DC, the results of which are periodically published in the *Bulletin of the Atomic Scientists*.

Such research may analyze weapons-related data in terms of global, regional and national trends and generate valuable information that can facilitate compliance monitoring by others, but these organizations make no attempt to do such monitoring themselves on a treaty-by-treaty basis. In essence, they stop at Article 1 of each treaty (which commonly deals with what is banned); they do not attempt to match activity patterns with specific treaty requirements.

One reason is that most organizations working in the arms control, disarmament and nonproliferation field take a much broader view of international security challenges than treaty compliance. The Carnegie Endowment for International Peace's *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*⁴ expertly evaluates the threat

posed by nuclear weapons or other state activity in the nuclear field. Yet the particular legal obligations that may or may not have been violated are treated as just one part of the wider strategic picture. Even its lauded *Universal Compliance: A Strategy for Nuclear Security* was less an appraisal of individual state compliance and non-compliance (although these issues were raised) than an overall account of the challenges to compliance in the nuclear field, along with potential solutions.

The fact that three nuclear weapon possessors—India, Israel and Pakistan—remain outside of the NPT and one state, North Korea, has arguably withdrawn from it, is likely one explanation for the broader focus of unofficial monitoring in the nuclear field. Another may be that the nuclear disarmament article of the NPT, Article VI, is both vague and contested by some of the nuclear weapon states, making precise compliance monitoring problematic compared with the more well-honed obligations imposed on non-nuclear weapon states. Thus, the Carnegie Endowment and many others perceive nuclear weapons as threatening to international security—quite apart from their legal status—and therefore deserving of broader attention beyond the NPT.

Of course, a number of states remain outside of the CWC and BWC, but none is as critical in terms of the health of the treaty as the NPT ‘holdouts’. The Mine Ban Treaty has several important holdouts, most notably China, Russia and the United States, but none threatens the integrity of the treaty and all have their compliance monitored, despite their treaty status, by Landmine Monitor.

Another possibility is the highly technical nature of WMD. Credible allegations of treaty violations do not simply require statements like ‘country x has nuclear weapons’, but, as has been seen with Iran, warrant detailed understanding of the weapon production process and the materials and technologies involved. Moreover, compliance assessments involve careful consideration of the differences between legally permitted peaceful applications and weapons-related use. Researching and assessing these details can necessitate teams of experts.

Focusing on specific countries

Many institutes produce national case studies, with an emphasis on the most problematic countries, the ‘rogue states’ or ‘hard’ cases. However, these are usually framed much more broadly than treaty compliance, encompassing the totality of the security situation and the international relationships of the state concerned. State rhetoric and its behaviour towards its regional neighbours and the international community, as well as military preparations and acquisitions, whether legal or not, are usually monitored.

The current focus on Iran, for example, largely does not entail systematic tracking of its non-compliance with its nuclear safeguards. Rather, attention is on evaluating the future intentions of the Iranian government, the implications for regional and international security of its stand-off with the IAEA, and whether incentives or sanctions, or failing that, deterrence, are likely to have the greatest impact on Iranian nuclear behaviour.

The two organizations that do seek explicit evidence of non-compliance using technical means are ISIS and Globalsecurity.org. They specialize in the use of commercial satellite imagery, although they both concentrate on the ‘problem’ states (Iran, Iraq and North Korea) and then not only on specific treaty violations but also on threatening weapons-related developments, including those involving ballistic missiles, which are not banned under a multilateral treaty.

Preparation for treaty review conferences

There is often a flurry of activity in the year immediately preceding a treaty review conference to assess compliance since the previous review. NGOs such as the Acronym Institute for Disarmament Diplomacy produce reports timed specifically for review conferences that detail problems with signature, ratification and/or compliance and propose measures to overcome them. This has been especially true for conferences at which significant decisions are to be made, such as the NPT Review Conference in 1995. The ‘Reaching

Critical Will' project of the Women's International League for Peace and Freedom has attempted, as far as possible, to produce comprehensive compliance assessments of both nuclear weapon states and non-nuclear weapon states prior to such conferences.⁵ Again, this 'monitoring' of compliance is episodic, rather than systematic and sustained.

None of the many organizations that research WMD issues, though, currently track treaty compliance as we are considering it here. As most unofficial 'monitoring' is carried out in organizations with broad foci on international peace and

security, it is no surprise that decisions on what to monitor are taken within a larger peace and security paradigm. While monitoring weapon arsenals or a particular state's overall behaviour on weapons issues can be useful for inferring compliance or non-compliance, compliance monitoring necessitates an explicit comparison to treaty requirements. Compliance and non-compliance may be deduced from current research, but explicit, systematic comparison with treaty requirements in an article-by-article fashion is rare.

Our survey reveals that there is only one clear example: Landmine Monitor.

Landmine Monitor: the great exception

The Mine Ban Treaty does not call for the establishment of a standing body to monitor compliance of all states parties with their treaty obligations. However, states are required to report annually on their anti-personnel landmine activities to the UN Secretary-General. The UN Department for Disarmament Affairs compiles and distributes such reports,⁶ but there is no body charged with officially dissecting or verifying the content or with monitoring compliance by other means. Any requests for clarification on suspected non-compliance must be made to the states parties collectively rather than to a standing verification body, as with the OPCW.⁷

An organization called Landmine Monitor, established by a group of NGOs led by the International Campaign to Ban Landmines (ICBL), supports these official processes by carrying out a complete, public, annual, state-by-state review of compliance with treaty requirements. It does this through a global network of non-governmental researchers using a consistent methodology for information gathering. Its researchers are periodically assembled for training and to discuss methodological collection challenges.

The annual report, also called *Landmine Monitor*, first published in 1999, has proved an invaluable resource for researchers around the world as well as for states parties to the Mine Ban Treaty. It is presented at annual meetings of states parties by the ICBL, which has official status at such meetings, including an accredited delegation and nameplate. It has a major impact at such meetings as delegations scramble on its release to discover what the publication has to say about their country. It is taken so seriously as to engender official rebuttals if information is deemed incorrect or assessments held to be unfair.

Sometimes it has procured enough information to be able to make substantiated allegations of

serious non-compliance. Both *Landmine Monitor Report 2000* and *Landmine Monitor Report 2001* alleged that Ugandan forces had used anti-personnel landmines during fighting around Kisangani in the Democratic Republic of the Congo (DRC) in June 2000.⁸ Instead of attempting to impugn the credibility of Landmine Monitor, which would often be the reaction of governments to non-governmental allegations, Uganda's national authorities chose to respond. This in itself is a demonstration of the perceived legitimacy and credibility enjoyed by Landmine Monitor. While the Ugandan government explicitly denied using landmines, it also supported ICBL's call for a full investigation and included the landmine issue in the mandate of a joint Uganda–Rwanda commission investigating the conduct of fighting in the DRC.⁹

When the investigation was completed, however, Uganda refused to make the commission's report public, on the grounds of seeking to ease tensions and to support the healing process in the region.¹⁰ While an independent follow-up investigation is possible under Article 8 of the Mine Ban Treaty, no state party has been willing to press Landmine Monitor's allegations to their logical conclusion.

The Ugandan case demonstrates the legitimacy of Landmine Monitor's unofficial treaty compliance monitoring, its ability to scrutinize state behaviour in detail and to fill much of the lacuna left by the absence of an official verification body for the Mine Ban Treaty. It also highlights the distinction between NGOs and states in terms of the level of political risk they are willing to bear in addressing potential non-compliance. Landmine Monitor was willing to bring up the matter of Uganda's behaviour in an official meeting, while states were not, preferring to deal with it bilaterally, if at all. This case also reveals the limits of non-official monitoring in initiating official investiga-

tions or convincing states parties to pursue matters further. Landmine Monitor successfully raised the issue, and stimulated a response from Uganda and other states parties, but not a multilateral investigation.

Nonetheless, Landmine Monitor has become the model par excellence for unofficial monitoring efforts that are beginning to emerge in other weapons-related spheres. As Landmine Monitor states in its reports:¹¹

... Landmine Monitor is not a technical verification system or a formal inspection regime. It is an effort by civil society to hold governments accountable to the obligations that they have taken on with regard to antipersonnel mines; this is done through extensive collection, analysis and distribution of information that is publicly available. Landmine Monitor is meant to complement the states parties reporting required under Article 7 of the Mine

Ban Treaty. It was created in the spirit of Article 7 and reflects the shared view that transparency and cooperation are essential elements to the successful elimination of antipersonnel mines. But it is also a recognition that there is a need for independent reporting and evaluation.

Landmine Monitor provides insights into what unofficial compliance monitoring can offer the rest of the arms control world. However, this model may not be reproducible in other fields. For a start, Landmine Monitor is not completely unofficial, but rather quasi-official. Research and publication of the *Landmine Monitor* are funded by supportive governments, all of them Western and all of them in compliance with the Mine Ban Treaty.¹² ICBL itself has quasi-official status in states parties meetings. This situation is unlikely to be possible in the various WMD fields where security and confidentiality concerns are pervasive and opposition to NGO involvement stronger.

Emerging unofficial monitoring efforts

Conventional weapons

Although there is no broadly accepted, legally binding treaty restricting small arms and light weapons (SALW),¹³ a number of unofficial efforts are under way to monitor relevant developments along similar lines to Landmine Monitor. These include the Small Arms Survey, the International Action Network on Small Arms (IANSA), a coalition of NGOs involved in the issue, and, specifically the Biting the Bullet project of International Alert, Saferworld and the University of Bradford. All monitor relevant state activity in the field, including implementation of the 2001 UN Programme of Action on Small Arms and Light Weapons.

SIPRI has, for decades, tracked, increasingly systematically and comprehensively, global military expenditure and arms production as well as transfers of major conventional weapons. But this monitoring is done in the absence of multilateral treaties that impose limitations on such weapons activity. SIPRI annually surveys implementation of the 1990 Conventional Armed Forces in Europe Treaty, including compliance difficulties, but this agreement is restricted to Europe and the country-by-country compliance monitoring simply reproduces the official data.¹⁴

Biological weapons

The Hamburg Centre for Biological Arms Control seeks to monitor comprehensively and systematically compliance with the CBMs that states parties to the BWC have inaugurated.¹⁵ However, compliance is voluntary, the annual returns that states make to the UN Secretary-General are officially

considered to be confidential and the CBMs form only one small aspect of BWC compliance.

The BWPP is in the process of creating a project to monitor overall compliance with the BWC. It is a global civil society endeavour set up in 2002 in part to report on implementation of and compliance with biological weapons treaties and agreements, one of the only such projects in the WMD realm. It sees its role as helping to fill the gap left by the lack of monitoring and verification provisions in the BWC.

Like the Landmine Monitor and the Small Arms Survey, it utilizes a network of non-governmental researchers around the world to compile information, and it is attempting to compare systematically state behaviour on specific treaty requirements. Its more than 30 institutional partners around the world help in accumulating local information on implementation as well as on relevant industry and research developments. The BWPP puts its reports in the public domain via the *BioWeapons Monitor* and an online searchable database. Significant trends in the *BioWeapons Monitor* are evaluated in a yearly *BioWeapons Report*. In 2004, it had a budget of approximately US\$280,000, four mostly part-time staff and four interns.

The BWPP is steadily becoming more widely recognized, and is now regularly invited to attend scientific and diplomatic meetings. As yet, though, it remains far from achieving the comprehensive coverage and broadly accepted legitimacy of Landmine Monitor, partly because of the dearth of information in the public domain about BWC-related activity, which is due in turn to commercial confidentiality and state secrecy. This is a challenge that will affect all attempts at unofficial compliance monitoring in the WMD realm.

Gaps in current coverage

The NPT

Despite the wealth of information on and analysis of nuclear weapons technologies, proliferation, non-proliferation and arms control and disarmament questions, the nuclear weapons area lacks comprehensive unofficial treaty-oriented monitoring that would compare state behaviour to all aspects of treaty, export regime and IAEA safeguard obligations. As previously mentioned, Reaching Critical Will has made an attempt to do this in preparation for NPT Review Conferences. However, this effort is naturally episodic and, to date, has not been comprehensive, nor has it covered all states.

Major pieces of the information needed to instigate such a project are available: the IAEA makes a significant amount of information public, and the research institutes reviewed here report on many individual issues and countries. The task is to bring all of these segments together to paint a comprehensive picture of compliance with specific state obligations.

The CWC

The Harvard Sussex Program on CBW Armament and Arms Limitation (HSP) provides ample news, background and comment on chemical and biological weapons issues. Particularly useful is its encyclopaedic news chronology of relevant events. Yet the program, along with others that track chemical weapons developments, such as SIPRI's Chemical and Biological Warfare Program, does not purport to undertake systematic, comprehensive non-official compliance monitoring. This may be partly explained by the fact that the OPCW makes much of its extensive monitoring work public through its website and annual reports. One limitation of the OPCW is that confidentiality restrains it from making the entire range of its data

and analysis publicly available. Nor can it release details of suspicions of non-compliance or public assessments of each state party's performance.¹⁶

This weakness could be mitigated by non-official monitoring, which would allow the public to follow compliance concerns better. The work of the HSP, SIPRI and the CNS constitutes a strong foundation,¹⁷ although what is needed now is comprehensive tracking of compliance with all treaty obligations by all states parties and signatories since ratification.

National implementation measures

One particular type of legal obligation that has until recently received the least attention in terms of unofficial (or indeed official) compliance monitoring is the requirement that states parties adopt national implementation measures, including legislation. The BWPP is starting to compile and report this information for biological weapons, as is VERTIC. The Landmine Monitor does so for anti-personnel landmines, and the Center for International Trade and Security (CITS) and SIPRI have done some tracking of implementation of export controls. Official mechanisms, such as the OPCW and the UN Security Council committee set up to monitor implementation of Resolution 1540, of April 2004, obliging states to adopt measures to prevent non-state actors acquiring WMD, are also publicly compiling national implementation legislation. Thus, this work does not need to be duplicated. However, beyond amassing relevant legislation for each country lies a further, more complicated monitoring task: tracking the extent to which such legislation is implemented, through secondary legislation and regulation and in practice. As of mid-2006, this had not occurred at an official level; unofficial monitoring would therefore fill a gap.

Conclusions

This report has shown that unofficial, systematic treaty compliance monitoring is a small, albeit emerging field. The Ottawa Convention is the only treaty currently being comprehensively monitored, while other areas, such as biological weapons, are just starting to be addressed. Future monitoring efforts can learn from the successes, challenges and limitations of Landmine Monitor, and further documentation on the lessons that it has learned would make a valuable contribution to the discipline.

Synthesizing compliance monitoring data across all arms control treaties is no longer as difficult as it once seemed. With so many groups doing ground-work, and with so much information available on the internet, such an effort may entail mostly

meta-analysis and data sorting rather than basic data gathering.¹⁸ Although much information relating to WMD remains necessarily confidential and unofficial monitors would be foolish to acquire and release anything that might jeopardize national or international security, including nonproliferation efforts, the real problem is not information scarcity but information overload. Nonetheless, while there are still critical gaps in monitoring specific areas and challenges to data acquisition and handling, the many projects presently researching the myriad aspects of disarmament, arms control and nonproliferation comprise a solid foundation for constructing systematic evaluations of state compliance in the future.

Annex A: survey results

Below are summaries of efforts by various non-official bodies that most closely relate to monitoring of state compliance with arms control, disarmament and nonproliferation treaties. Beyond discovering whether or not systematic unofficial treaty compliance monitoring was occurring, the survey of related activity was intended to be indicative rather than comprehensive. The summaries are in alphabetical order, and are not meant to reflect the full extent of the work of these organizations, but rather to highlight relevant publications and projects. Website addresses are provided to facilitate access to more information.

Acronym Institute for Disarmament Diplomacy

www.acronym.org.uk

The London-based Acronym Institute for Disarmament Diplomacy is unique in its in-depth reporting of diplomatic interactions related to treaties. This includes analysis, in its *Disarmament Diplomacy* publication, of the various review conferences of the NPT, CWC and BWC. It also monitors statements and resolutions related to specific countries, such as Iran and North Korea. Its focus is, however, on diplomatic interactions, not expressly on implementation of treaties.

BioWeapons Prevention Project

www.bwpp.org

The BWPP is a global civil society initiative formed in 2002 to track, inter alia, compliance with biological weapons treaties and agreements, one of the only such projects in the WMD realm. It sees its role as helping fill the space left by the lack of monitoring and verification provisions in the BWC. Its global network of more than 30 institutional partners helps in compiling local information on implementation as well as on relevant industry and research developments. The BWPP puts its reports in the public domain via the *BioWeapons*

Monitor and an online searchable database. Significant trends in the *BioWeapons Monitor* are evaluated in a yearly *BioWeapons Report*. In 2004, it had a budget of approximately US\$280,000, four mostly part-time staff and four interns. The BWPP is steadily becoming more widely recognized, and is now regularly invited to attend scientific and diplomatic meetings.

Carnegie Endowment for International Peace, Nonproliferation Program

www.carnegieendowment.org/npp/

One of the major players in the US peace research field, the Washington, DC-based Carnegie Endowment for International Peace has been operating its Nonproliferation Program since 1995. The program focuses on specific countries of concern, such as Iran and Iraq, and different weapons systems, including nuclear and biological. A key publication is *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, updated in 2005, which provides analysis on current proliferation dangers and enforcement efforts.¹⁹ *Universal Compliance: A Strategy for Nuclear Security* is another recent publication that assesses nuclear proliferation concerns and proposes strategies for mitigating them. Its analysis deals with treaty compliance, but on a quite general level.²⁰ Treaty-specific analysis can be gleaned from Carnegie publications, but the organization rarely carries out article-by-article comparisons.

Center for International Trade and Security

www.uga.edu/cits/programs/export_control.htm

Based at the University of Georgia in the US, CITS monitors implementation of nonproliferation export controls. Among other things, it evaluates national export controls, US industry activities and export control regimes. The institute maintains a large database of relevant documents. It covers

states of concern and the major arms and technology exporters, such as China, India, Japan, and the US, as well as several Eastern European and Central Asian countries.

Global Security.org

www.globalsecurity.org

Globalsecurity.org is an immense source of background information and news articles on all aspects of global security. A private company formed in 2000 and based in Alexandria, Virginia, it has become especially well-known for its satellite image analysis called 'Public Eye'. This scrutinizes many different sites around the world, many of which are directly relevant to treaty compliance monitoring. A Baseline Campaign conducts preliminary characterizations of sites and allows tracking of changes, while a Priority Campaign looks at countries such as China, India, Iran, Israel, North Korea and Pakistan.

Harvard Sussex Program on Chemical and Biological Weapons

www.niad.susx.ac.uk/Units/spru/hsp/Harvard-Sussex-Program-welcome.htm

This inter-university research and training program began in 1990. Among its many publications on chemical and biological weapons issues is its small periodical, *The CBW Conventions Bulletin* (formerly the *Chemical Weapons Convention Bulletin*), which presents timely research, a chronology of chemical and biological weapons news, and a bibliography of recent publications from around the world.

Henry L. Stimson Center

www.stimson.org

The Washington, DC-based Henry L. Stimson Center has a small but active Chemical and Biological Weapons Nonproliferation project. It publishes a report, the *CBW Chronicle*, twice a year, as well as occasional publications like its 2004 handbook, *Inching Away from Armageddon: Destroying the U.S. Chemical Weapons Stockpile*. As with the Monterey Institute of International Studies (described below), it also lists on its website the chemical weapon declaration amounts of several countries and notes some concerns regarding compliance.

Institute for Science and International Security

www.isis-online.org

ISIS, based in Washington, DC, provides analysis of the nuclear-related behaviour of states of concern, including Iran, Iraq and North Korea. Its presentation and analysis of satellite imagery of nuclear facilities make a unique and valuable contribution to the global monitoring effort. It also produces analysis of other areas, such as export controls and fissile material control.

International Institute for Strategic Studies

www.iiss.org

Although the focus of the IISS is much broader than arms control treaties, this London-based organization conducts many valuable compliance-related studies. These include *The Military Balance*, an annual assessment of the military capabilities and defence economics of 169 countries, articles in *Survival*, its quarterly journal, the *Adelphi Papers* monograph series and online *Strategic Comments*. The closest it has come to treaty compliance assessment are its *Iraq WMD Dossier* (2002) and *Iran's Strategic Weapons Programmes* (2005), but these relate, of course, only to two countries. The Washington, DC-based Natural Resources Defense Council produces the nuclear arsenal data for *The Military Balance*.²¹

Landmine Monitor

www.icbl.org/lm/

Landmine Monitor, hosted by the ICBL, is the quintessential example of a non-governmental treaty compliance monitoring mechanism. A global network of non-governmental researchers puts together the yearly *Landmine Monitor*, resulting in a publication usually of more than 1,000 pages. It tracks all aspects of anti-personnel landmines, including production, stockpiling, trade, use, humanitarian impacts, mine clearance, mine risk education and victim/survivor assistance. It tracks compliance not just by treaty parties and signatories but also by non-signatory states and non-state actors. The *Landmine Monitor*, which is tabled at the annual conference of states parties to the Mine Ban Treaty, has sparked significant debate by naming alleged violators, including a state party (Uganda) and six signatories

(Angola, Burundi, Eritrea, Ethiopia, Rwanda and Sudan) in 2000 and 2001.²² In 2005 it accused several states not party to the treaty of using landmines, including Georgia, Myanmar (Burma), Nepal and Russia.²³ There was no evidence or even serious allegation, it said, of use of anti-personnel landmines by states parties or signatories.²⁴

**Monterey Institute of International Studies,
Center for Nonproliferation Studies**
cns.miis.edu

The CNS is currently the largest non-governmental organization in the US that exclusively researches WMD nonproliferation. Operating since 1989, its research outputs have served as a key resource for many other NGOs as well as for governments and official treaty organizations like the IAEA and the OPCW.²⁵ Its products include four large databases, a peer-reviewed journal called the *Non-proliferation Review*, an occasional paper series, and several newsletters. One item especially valuable for treaty compliance monitoring is its chart on chemical and biological weapon possession and treaty ratification status.²⁶

Nuclear Threat Initiative
www.nti.org

The Nuclear Threat Initiative is a private US foundation, created by former US Senator Sam Nunn and the founder of the Cable News Network, Ted Turner, which has been carrying out research on WMD nonproliferation since 2001. Its 'Country Profiles' offer in-depth analyses of the nuclear, biological and chemical weapons programs of many countries, but not specifically of treaty compliance. It also publishes longer occasional papers. Its website also hosts the nonproliferation databases of the CNS.

**Reaching Critical Will
Women's International League for Peace and Freedom**
www.reachingcriticalwill.org

The Women's International League for Peace and Freedom began the Reaching Critical Will project in 1999 to provide analysis of nuclear disarmament issues before the 2000 NPT Review Conference. It has continued to be a valuable source of primary documents and analysis related to UN disarmament fora.

Stockholm International Peace Research Institute
www.sipri.org

SIPRI has been monitoring armaments for nearly 40 years, most prominently in its highly respected yearly publication, the *SIPRI Yearbook: Armaments, Disarmament and International Security*. The annual is primarily a source of data, with some chapters also examining nonproliferation, arms control and disarmament trends and developments. However, it does not systematically compare the behaviour of states parties in relation to their treaty obligations. SIPRI's various online databases serve a similar purpose to the *Yearbook*, although they also branch into the realm of export controls, for instance, and offer profiles of countries of proliferation concern. SIPRI's longest running research project is on chemical and biological warfare. One current activity in this area is on technology transfers under Article X of the BWC and Article XI of the CWC, and their role in proliferation and in promoting adherence to the treaties. A relevant publication is 'Non-Compliance with the Chemical Weapons Convention: Lessons from and for Iraq', a 2003 policy paper.²⁷

Verification Research, Training and Information Centre
www.vertic.org

While most of VERTIC's work pertains to analyzing and contributing to the development of the practice of verification, it also provides information on state party compliance. This includes a database collection of BWC national implementation legislation, and articles in its *Trust & Verify* periodical and the *Verification Yearbook*. VERTIC researchers Vipin Gupta and Philip McNab broke significant ground in non-official monitoring when, using publicly available LANDSAT-4 satellite imagery and the seismic sensor network of the US National Earthquake Information Service in Colorado, they successfully predicted and publicly announced the detection of Chinese nuclear tests between 1992 and 1995.²⁸ This was, however, before the opening for signature of the Comprehensive Nuclear Test Ban Treaty (CTBT) in 1999, so the question of treaty compliance did not arise.

Endnotes

- 1 In this paper, 'arms control treaties' refer to treaties dealing with arms control, disarmament and nonproliferation.
- 2 National Technical Means, a term that originated in bilateral arms control treaties between the Soviet Union and the United States, is a euphemism for intelligence collection by individual states. It includes satellite imagery, signals intelligence, electronic intelligence and human intelligence.
- 3 Verification Research, Training and Information Centre (VERTIC), *Time to lay down the law: national legislation to enforce the BWC*, VERTIC, London, 2003.
- 4 Joseph Cirincione, Jon B. Wolfsthal and Miriam Rajkumar, *Deadly Arsenal: Nuclear, Biological, and Chemical Threats*, 2nd ed., Carnegie Endowment for International Peace, Washington, DC, 2005.
- 5 See its website, www.reachingcriticalwill.org.
- 6 See the department's landmine report database at <http://disarmament2.un.org/MineBan.nsf>.
- 7 See Trevor Findlay, 'Verification of the Ottawa Convention: workable hybrid or fatal compromise?', *Disarmament Forum*, no. 4, United Nations Institute for Disarmament Research, Geneva, 1999.
- 8 *Landmine Monitor Report 1999*, Human Rights Watch, Washington, DC, 2001, p. 165.
- 9 'Statement by Uganda Head of Delegation, Lt. Col. Ramandhan Kyamulesire, Ministry of Defense, to the Third Meeting of States Parties', Managua, Nicaragua, 19 September 2001; 'Statement by Captain Kagoro A. Asingura of the Uganda Delegation, to the Standing Committee on the General Status and Operation of the Convention', Geneva, 1 February 2002; 'Statement by Captain Kagoro of the Uganda Delegation to the Standing Committee on General Status and Operation', Geneva, 31 May 2002. All quoted in International Campaign to Ban Landmines, 'Uganda', *Landmine Monitor Report 2002*, Human Rights Watch, New York, NY, 2002, www.icbl.org/lm/2002/uganda.html.
- 10 'Statement entitled "Right of reply" by Capt. Asingura Kagoro, Fifth Meeting of States Parties, Bangkok, Thailand, 18 September 2003', quoted in International Campaign to Ban Landmines, 'Uganda', *Landmine Monitor Report 2004*, Human Rights Watch, New York, NY, 2004, www.icbl.org/lm/2004/uganda.
- 11 International Campaign to Ban Landmines, *Landmine Monitor Report 1999*, Human Rights Watch, Washington, DC, 1999, www.icbl.org/lm/1999/english/exec/Execweb1.htm.
- 12 In 2005, these were Australia, Austria, Belgium, Canada, Cyprus, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, New Zealand, Norway, Sweden, Switzerland, Turkey, the United Kingdom and the Holy See, as well as the European Commission and the United Nations Children's Fund.
- 13 There is one legally binding treaty for small arms: the 2001 Protocol Against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, supplementing the 2000 United Nations Convention against Transnational Organized Crime (Firearms Protocol). This is not a disarmament or arms control treaty and it does not address SALW comprehensively, but rather is part of the effort to combat organized crime. See 'United Nations Firearms Protocol Enters into Force', United Nations Information Service, 6 July 2005, www.unis.unvienna.org/unis/pressrels/2005/unispcp517.html.
- 14 See, for example, *SIPRI Yearbook 2004: Armaments, Disarmament and International Security*, Oxford University Press, Oxford, 2004, p. 714.
- 15 See www.biological-arms-control.org/projects/CBM_en.htm.
- 16 For example, it issued an apology for allegations made by authors in its periodical 'Synthesis' concerning Iranian chemical weapon stockpiles (see John Gee (Deputy Director-General), 'Apology by the Secretariat', Organisation for the Prohibition of Chemical Weapons, April 2001, www.opcw.org/synthesis/html/s5/apologyprt.html).
- 17 'Chemical and biological weapons: possession and programs past and present', Center for Nonproliferation Studies, Monterey Institute of International Studies, Monterey, CA, 2002, <http://cns.miis.edu/research/cbw/possess.htm>.
- 18 SIPRI's 'Facts on International Relations and Security Trends' (FIRST) online database is currently the best model of a meta-analysis database for managing and presenting treaty compliance information systematically. It generates individual or multiple country profiles from a wide array of databases containing statistics and reports related to international security. For instance, it can produce arms transfer and treaty membership data from SIPRI's databases, export control information from CITS, and economic indicators from the UN Statistics Division, among many other possibilities. This model could be applied to the various armaments treaties, emitting information on treaty membership, specific requirements and compliance information from reports of organizations specializing in each area (see <http://first.sipri.org/>).
- 19 Joseph Cirincione, Jon Wolfsthal and Miriam Rajkumar, *Deadly Arsenal: Nuclear, Biological, and Chemical Threats*, 2nd ed., Carnegie Endowment for International Peace, Washington, DC, 2005.
- 20 George Perkovich, Jessica Tuchman Mathews, Joseph Cirincione, Rose Gottemoeller and Jon Wolfsthal, *Universal Compliance: A Strategy for Nuclear Security*, Carnegie Endowment for International Peace, Washington, DC, 2005, www.carnegieendowment.org/files/UC2.FINAL3.pdf.

- 21 The Natural Resources Defense Council published the first volume of its *Nuclear Weapons Databook* in 1984 and began producing the *Nuclear Notebook* section of the *Bulletin of the Atomic Scientists* in 1987. See 'Archive of Nuclear Data from NRDC's Nuclear Program', Natural Resources Defense Council, Washington, DC, www.nrdc.org/nuclear/nudb/ndabout.asp.
- 22 Oliver Meier and Clare Tenner, 'Non-governmental monitoring of international agreements', in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2001*, Verification Research, Training and Information Centre, London, 2001, p. 211.
- 23 *Landmine Monitor Report 2005: Toward a Mine-Free World*, Mines Action Canada, Ottawa, 2005, p. 11.
- 24 *Landmine Monitor Report 2005: Toward a Mine-Free World*, Mines Action Canada, Ottawa, 2005, p. 14.
- 25 The IAEA uses information from these databases and other open sources to supplement its own data from states' declarations and on-site activities. Inconsistencies between official data and open sources can trigger further verification activities. See Anita Nilsson, 'Information review and evaluation in the framework of the Strengthened Safeguards System', in Carlo Foggi (ed), *Proceedings of a Seminar on Modern Verification Regimes: Similarities, Synergies and Challenges*, European Safeguards Research and Development Association, Helsinki, Finland, 12–14 May 1998, pp. 163–166.
- 26 'Chemical and biological weapons: possession and programs past and present', Centre for Nonproliferation Studies, Monterey Institute of International Studies, Monterey, CA, 2002, <http://cns.miis.edu/research/cbw/possess.htm>.
- 27 Jean Pascal Zanders, John Hart, Frida Kuhlau and Richard Guthrie, 'Non-compliance with the Chemical Weapons Convention: lessons from and for Iraq', *Policy Paper*, no. 5, Stockholm International Peace Research Institute, Stockholm, 2003.
- 28 See: Vipin Gupta and Philip McNab, 'Tracking down a Chinese nuclear test', in J.B. Poole and R. Guthrie (eds), *Verification 1994: Arms Control, Peacekeeping and the Environment*, Verification Technology Information Centre, London, 1994, pp. 45–50; Vipin Gupta, 'Future Chinese nuclear tests on the horizon', *Trust & Verify*, no. 30, July–August 1992, p. 3; and Vipin Gupta, 'Assessment of the Chinese nuclear test site near Lop Nor', *Jane's Intelligence Review*, vol. 5, no. 8, August 1993, pp. 378–381.