



**MODERN NON-PROLIFERATION
AND DISARMAMENT:
DENMARK AND THE G8 GLOBAL
PARTNERSHIP**

Cindy Vestergaard

DIIS REPORT 2009:22

© Copenhagen 2009

Danish Institute for International Studies, DIIS

Strandgade 56, DK-1401 Copenhagen, Denmark

Ph: +45 32 69 87 87

Fax: +45 32 69 87 00

E-mail: diis@diis.dk

Web: www.diis.dk

Cover Design: Carsten Schiøler

Layout: Allan Lind Jørgensen

Cover Photo: Cindy Vestergaard

Printed in Denmark by Vesterkopi AS

ISBN 978-87-7605-346-8

Price: DKK 50.00 (VAT included)

DIIS publications can be downloaded
free of charge from www.diis.dk

Hardcopies can be ordered at www.diis.dk

Contents

Abstract	4
Ten policy recommendations	5
Abbreviations	6
1. Introduction	9
2. Destruction of Chemical Weapons	15
3. Dismantlement of Nuclear Submarines	20
4. Employment of Former Weapons Scientists	21
5. Disposition of Fissile Material/Nuclear Safety and Security	23
6. Biological Non-proliferation	27
7. Niche Assistance	32
8. Implementation and Conclusion	34
Annex I. Danish G8 GP Contributions to Date	36
References	37

Abstract

The *Global Partnership Against the Spread of Weapons and Materials of Mass Destruction* was established at the 2002 G8 Summit with a total financial commitment of up to US\$20 billion over ten years. Denmark's contributions to the initiative totalled over 18 million EUR, but no new commitments have been announced since 2004. Leading up to the 2010 G8 summit, Denmark has an opportunity to discuss its role in the newly expanded and extended Global Partnership (GP) and raise its international non-proliferation and disarmament profile. This report outlines how the history of non-proliferation and disarmament assistance has developed into its modern form, and the potential for future programming. It lays out the progress made in the GP's five priority project areas, contributions by donors, and the potential for Denmark to contribute to a global effort. The report makes ten recommendations for how Denmark can raise its non-proliferation profile and contribute to an expanded GP by tapping into areas where its unique and already-established expertise can be assembled into an effective niche assistance programme.

Ten policy recommendations for DK non-proliferation and disarmament assistance:

- 1 Fund Green Cross outreach offices in support of chemical weapons destruction projects in Russia.
- 2 Take the lead on a project to develop a chemical risk assessment methodology.
- 3 Since all decommissioned Russian submarines should be dismantled by 2010, this is not an area that DK should consider as a future priority.
- 4 Await results of the Global Partnership review and funding decisions by the members of the two science centers to discern the potential for long-term funding.
- 5 Take a 'wait and see' approach to determining whether additional funds will be required by project partners for the disposition of fissile material.
- 6 Partner through "piggybacking" with other countries in the area of nuclear safety and security projects in Russia.
- 7 Utilise the National Board of Health/National Institute of Radiation Protection expertise in creating databases for radioactive sources and export control drafting and implementation.
- 8 Include funding for the IAEA's Nuclear Security Fund as Global Partnership funding.
- 9 Establish a Danish 'nicher' programme in the area of biological non-proliferation.
- 10 Establish a small, targeted chemical and biological non-proliferation education programme.

Abbreviations

BTWC	<i>Biological and Toxin Weapons Convention</i>
BW	<i>Biological Weapons</i>
CBB	<i>Centre for Biosecurity and Biopreparedness</i>
CBM	<i>Confidence Building Measures</i>
CTR	<i>Cooperative Threat Reduction</i>
CW	<i>Chemical Weapons</i>
CWC	<i>Chemical Weapons Convention</i>
CWDF	<i>Chemical Weapons Destruction Facility</i>
DFAIT	<i>Department of Foreign Affairs and International Trade Canada</i>
DIIS	<i>Danish Institute for International Studies</i>
DOE	<i>US Department of Energy</i>
DOD	<i>US Department of Defense</i>
DOS	<i>US Department of State</i>
DTRA	<i>Defense Threat Reduction Agency</i>
EBRD	<i>European Bank for Reconstruction and Development</i>
ECDC	<i>European Center for Disease Prevention and Control</i>
EPIET	<i>European Programme for Intervention Epidemiology Training</i>
FCO	<i>Foreign Commonwealth Office</i>
FSU	<i>Former Soviet Union</i>
G8 GP	<i>G8 Global Partnership</i>
GPWG	<i>Global Partnership Working Group</i>
HEU	<i>Highly Enriched Uranium</i>
IAEA	<i>International Atomic Energy Agency</i>
IED	<i>Improvised Explosive Device</i>
ISTC	<i>International Science and Technology Centre</i>
MFA	<i>Ministry of Foreign Affairs</i>
MPDG	<i>Multilateral Plutonium Disposition Group</i>
MOD	<i>Ministry of Defence</i>
MPC&A	<i>Material Protection Control and Accounting</i>
MPDG	<i>Multilateral Plutonium Disposition Group</i>
NDEP	<i>Northern Dimension Environmental Programme</i>
NEFCO	<i>Nordic Environmental Finance Corporation</i>
NNSA	<i>US National Nuclear Security Administration</i>
NPP	<i>Nuclear Power Plant</i>
NPT	<i>Nuclear Non-proliferation Treaty</i>

OPCW	<i>Organisation for the Prohibition of Chemical Weapons</i>
OSD	<i>US Office of the Secretary of Defense</i>
RTGs	<i>Radioisotopic Thermoelectric Generators</i>
SIPRI	<i>Stockholm International Peace Research Institute</i>
SNF	<i>Spent Nuclear Fuel</i>
SSI	<i>Statens Serum Institute</i>
SSM	<i>Swedish Radiation Authority</i>
START	<i>Strategic Arms Reduction Talks</i>
STCU	<i>Science and Technology Centre in Ukraine</i>
WHO	<i>World Health Organisation</i>
WMD	<i>Weapons of Mass Destruction</i>

I. Introduction

Danish contributions to the Group of Eight (G8) *Global Partnership Against the Spread of Weapons and Materials of Mass Destruction* total more than 18 million EUR (see Annex 1). Part of a larger US\$20 billion financial commitment by the G8 (Canada, France, Germany, Italy, Japan, Russia, United Kingdom, and United States) in 2002 to address non-proliferation, disarmament, counter-terrorism and nuclear safety issues, Denmark joined the initiative with project contributions through international bodies such as the International Atomic Energy Agency (IAEA) and the European Bank for Reconstruction and Development (EBRD), or non-governmental organisations (NGOs) such as Green Cross and Bellona Foundation. The funding was primarily focused on nuclear safety and security issues, with small funding in support of chemical weapons destruction in Russia. Supporting the efforts of international organisations is appropriately vital to Danish policy; but by focusing non-proliferation assistance solely through third party organisations, Denmark inadvertently missed out on the benefits of direct bilateral non-proliferation assistance, a place at the table with large non-proliferation and disarmament donors, and the opportunity to provide assistance in areas where Danish expertise has a specific advantage. Bilateral assistance exposes the specific challenges that a particular country/region faces in relation to (non)proliferation, while working with G8 partners and large donors provides valuable insight into how particular elements of non-proliferation and disarmament negotiations and policy play out amongst larger states. By remaining on the sidelines, Denmark has not been able to acquire – or share – the hands-on experience that now marks modern disarmament and non-proliferation.

With the expectation that the 2010 G8 Summit in Canada (or the 2011 Summit in France) will lead to the extension of the G8 Partnership for another ten years (from 2012 to 2022; interview with Canadian official, 2008), probably along with a policy review and evaluation of the GP around 2010 (BERR, Fifth Annual report 2007, p. 23), the GP is viewed as a pivotal aspect of foreign policy aimed at fostering international peace and security. Leading up to the 2010 summit, Denmark has an opportunity to discuss its role in the newly expanded and extended partnership. This report considers Denmark's capacity for raising its non-proliferation and disarmament profile internationally. It first gives a short history of non-proliferation and disarmament assistance, addressing the weapons legacy of the Cold War to what today could be termed 'modern non-proliferation and disarmament' assistance. It then outlines the current and future programming plans of G8 and other donors in

the five GP priority programming areas, potential programming areas and recommendations regarding where a Danish contribution would make a difference. These relate particularly to areas of expertise where Denmark can offer to fill in gaps in G8 programming, such as biocontainment, disease surveillance, export control legislation and implementation, and education and awareness. The report concludes with a current case illustrating how a donor country with limited finances can develop a niche program that delivers far-reaching results, which could be a model for Denmark to raise its non-proliferation and disarmament profile and further enhance international security and stability.

History of Non-proliferation and Disarmament Assistance

The peaceful conclusion of the Cold War and dissolution of the Soviet Union brought an end to the threat of mutually assured (mass) destruction that had existed for decades between East and West – whether by nuclear, biological or chemical means. The break-up of the Soviet Bloc revealed an imposing legacy of weapons of mass destruction (WMD): an estimated 600 metric tons of highly enriched uranium (HEU) and weapons-grade plutonium (Bunn 2008); large quantities of nuclear weapons; over 200 retired and vulnerable nuclear-powered submarines; the world's largest declared chemical weapons stockpile of 40,000 tons; the largest biological weapons infrastructure; and tens of thousands of unemployed or underemployed former weapons scientists.

In the 1990s, some countries responded bilaterally and multilaterally to address the risks posed by Cold War weapons and infrastructure. In 1992, the European Community, Japan, the US and Russia established the International Science and Technology Centre (ISTC) in Moscow to focus efforts on scientists from the weapons complexes and re-orient them to civilian sciences. Canada, Norway and South Korea later joined as funding parties. The Science and Technology Centre in Ukraine (STCU) followed in 1993 within a framework of an intergovernmental agreement between the US, Canada, Sweden and Ukraine. The two centres employ former weapons scientists in the development of science for peaceful purposes and in other programmes which further integrate these scientists into global science and technology and industrial communities (ISTC 2009; STCU 2009).

The most notable bilateral programme was the US Cooperative Threat Reduction (CTR) Programme, or Nunn-Lugar Programme. From 1992 to March 2000, Congress authorised more than US\$4.7 billion for programmes aimed at reducing threats

posed by FSU WMD (US General Accounting Office Testimony 2000:1). Sponsored by Senators Sam Nunn and Richard Lugar, the Soviet Nuclear Threat Reduction Act was passed in March 1992. The 'Nunn-Lugar Programme' provided assistance for the transfer of Soviet nuclear weapons from Belarus, Kazakhstan and Ukraine, along with assistance to Russia for dismantlement of nuclear weapons, missiles, and delivery systems as required by the START I¹ Treaty, and for safe and secure storage of nuclear weapons (Hansell 2009: 4; Van Dassen 2007).

In the area of nuclear non-proliferation assistance, relatively few states were engaged. Other than the US, prominent programmes were those of France, Norway, Sweden and the UK. France assisted with nuclear warhead dismantlement and radiation protection and safety-related infrastructure; the UK provided vehicles and containers for the safe transportation of warheads; Norway focused on nuclear safety projects in Northwest Russia (Petersen 2003); and Sweden promoted national export control systems in the Baltic states and established systems for accountancy and control in Lithuania, Kazakhstan and Ukraine to prepare the three countries for entry into the International Atomic Energy Agency (IAEA) safeguards system once accession to the Nuclear Non-proliferation Treaty (NPT) and IAEA safeguards agreements were signed (Van Dassen 2007: 255).

The G8 Global Partnership

The September 11 terrorist attacks in the US served as a reminder of the urgency of preventing state and non-state proliferation of weapons and materials of mass destruction, and gave impetus to G8 members' launching the Global Partnership in 2002. The US committed US\$10 billion, with a further \$10 billion to be raised among G8 and other donors for disarmament projects, initially in Russia, over a ten-year period (also known as "10 plus 10 over 10"). G8 countries collectively pledged over US\$18 billion over a ten-year period. Over 160 million EUR have additionally been pledged by 13 additional countries² (GPWG Annual Report

¹ The Strategic Arms Reduction Treaty (START) was signed by the US and Russia in 1991. They agreed to limits on strategic nuclear warheads of no more than 6,000 and limited the number of delivery vehicles – such as bombers and land-based and submarine-based missiles – to up to 1,600 each. The treaty expires December 5, 2009. Entry-into-force was delayed due to the collapse of the USSR five months after signing the treaty, and it awaited an Annex that enforced the terms of the treaty in the newly independent states of Russia, Belarus, Kazakhstan and Ukraine. The latter three agreed to transport their nuclear arms to Russia for disposal and have thus disarmed since becoming independent nations.

² To date, 13 additional countries have joined the G8 Partnership: Australia, Belgium, Czech Republic, Denmark, Ireland, Finland, Netherlands, New Zealand, Norway, Poland, Republic of Korea, Sweden, and Switzerland.

2008), making for an overall total raised of US\$19 billion (Foreign Affairs and International Trade Canada, Global Partnership Program: 3). The GP's five priority areas are:

- the destruction of chemical weapons
- dismantlement of decommissioned nuclear submarines
- redirection of former weapons scientists
- disposition of fissile materials/nuclear safety and security
- biological non-proliferation

Recognising that proliferation of WMD was a global risk, G8 leaders agreed to expand the Global Partnership worldwide at the 2008 Summit in Hokkaido Toyako, Japan. Continuing to provide assistance to ongoing GP projects in Russia and other countries of the former Soviet Union (FSU), GP common principles would now also be implemented and realised around the globe. Partners agreed to work together to identify focal points of the expanded GP on a project-based and function-wise basis in relation to nuclear and radiological, chemical, and biological and other issues (GPWG Annual Report 2008). It is anticipated that the GP will be extended for another “ten plus ten over ten” at the 2010 G8 Summit in Canada (discussion with Canadian official 2008).

Engaging in Modern Non-proliferation and Disarmament

The initial focus of non-proliferation assistance programmes was mainly on nuclear weapons dismantlement as laid out in START I, and on ensuring the civilian engagement of former weapons scientists. There was an emphasis on universalising the NPT and IAEA safeguards. The 1990s also marked the successful completion of the two-decade long negotiations on banning chemical weapons and brought into force the Chemical Weapons Convention (CWC), with its intrusive inspection and destruction specifications. The Convention to Ban Landmines also came into existence. Programmes, initiatives and treaties of the 1990s emphasized disarmament.

During the first decade of the 21st Century, however, there was a diversion from disarmament in other areas, with moves towards qualitative development of nuclear weapons in the US, Russia, China and the UK, and towards bulging, opaque (and internationally unregulated) biodefence programmes that possess the dual-use potential for weapons purposes. And states such as Russia were even contemplating first use

of nuclear weapons.³ These new movements challenged aspects of non-proliferation assistance and some of the significant advances in trust and collective progress that were made amongst donors and recipients. It is “hard to separate the double helix of responsibility for *past activities* from responsibility for *current and future threats* (original italics). ... It is also hard to separate the relationship between non-proliferation and disarmament on the one hand and horizontal proliferation and vertical proliferation on the other” (Van Dassen 2008: 54).

Disarmament is however reemerging into the forefront again. A discernable shift in thinking is occurring, starting with former high-level US officials such as Secretaries of State Henry Kissinger and George Shultz, former Secretary of Defense William Perry and former Senator Sam Nunn, who call for “setting the goal of a world free of nuclear weapons” in order to address the spread of nuclear weapons, expertise and materials that is leading to a ‘nuclear tipping point’ (Kissinger et al 2007). President Obama has also expressed his support for this vision, and the UK recently issued a six-step programme to create the conditions to rid the world of nuclear weapons (The Foreign and Commonwealth Office 2009). This shift is slowly but increasingly being echoed across Europe and the world. There now even exists a (cautiously) contemplated future when non-proliferation assistance may once again be able to address START reductions.⁴

Non-proliferation and disarmament are conjoined elements. Initially, CTR, and now the Global Partnership projects, have helped to secure hundreds of tons of weapons-usable nuclear material, destroy thousands of tons of chemical weapons and their munitions, eliminate or deactivate thousands of nuclear weapons systems in Russia and other countries of the former Soviet Union. The establishment of the G8 Global Partnership in 2002 created the framework for the non-proliferation assistance that states had been providing during the 1990s. Partner countries agree to subscribe to the GP’s six non-proliferation principles⁵

³ Out of the five states recognized as nuclear weapon states according to the NPT, China is the only country that has a non-first-use posture.

⁴ A START II treaty was concluded in 1993 and would have reduced US and Russian arsenals to 3,500 deployed strategic warheads by 2007. The new treaty never entered into force, however, largely due to disagreements over US national missile defense efforts.

⁵ The six non-proliferation principles are: promoting the adoption, universalization, implementation and strengthening of proliferation treaties, instruments and bodies; develop and maintain appropriate physical protection measures, effective border controls, law enforcement efforts and international cooperation to address illicit trafficking; develop and maintain effective national export and transshipment controls; adopt and strengthen efforts to manage and dispose of stocks of fissile materials surplus for defence purposes.

and nine guidelines⁶ for cooperation projects, which outline specific elements that must be included in project implementation. The GP has become a cooperative model for addressing international security and stability. In 2008, leaders highlighted that the thirteen “other nations who joined the GP as donors and who also contributed their specific experiences and know-how, underscor[e] the universal importance of our goals” (Global Partnership Review 2008). Non-proliferation assistance programmes have thus become staples and added credentials to the foreign policy of new donor states. The information and experience of each contributor creates a feedback loop to each donor of lessons learned, thereby promoting the collective responsibility of all – donors and recipients – to consider their role within facilitating international law and furthering international peace and security. Modern non-proliferation and disarmament have become about putting action into policy; about “actioning” international peace and security. Or more simply stated: it is about putting money, resources and expertise into policy. The G8 GP programming areas exemplify how this actioning impacts non-proliferation and disarmament.

⁶ The nine guidelines for cooperation projects state that projects must have effective monitoring, auditing and transparency measures; be implemented in environmentally sound manner with the highest appropriate level of safety; stipulate defined milestones; include tax exemptions, liability protections and appropriate privileges and immunities for donor countries; assurances of materials for peaceful purposes; and measures for ensuring effective protection of sensitive information and intellectual property.

2. Destruction of Chemical Weapons

International assistance to help Russia eliminate its stockpiles of chemical weapons was recognised as a key requirement at Kananaskis pursuant to Russia's obligations under the Chemical Weapons Convention (CWC) to eliminate its entire stockpile by April 2012. Russia has the world's largest declared arsenal of chemical warfare agents. Its 40,000 metric tons of agents are stored at seven facilities across Russia. Five of these sites hold deadly nerve agents (Organophosphorous agents), such as Sarin, Soman and VX, contained in more than 4 million munitions and other containers and making up 80% of Russia's total chemical weapons (CW) stockpile. Two other sites house blister agents such as mustard and lewisite and lewisite/mustard mixture (the remaining 20% of the total stockpile). International support for Russian CW destruction under the Global Partnership has helped Russia make major progress in meeting its CW destruction deadlines, as stipulated in the CWC, thereby further strengthening multilateral non-proliferation, arms control and disarmament efforts, as well as enhancing international security and safety by helping to prevent state and non-state actors from acquiring, developing or transferring chemical weapons and/or related materials, equipment and technology.

Progress to Date

Russia's first chemical weapons destruction facility (CWDF) to become operational was in late 2002 at Gorny, in the Saratov region. By April 2003, this plant had destroyed over 400 tons of mustard (1% of Russia's CW stocks), meeting Russia's first CWC destruction deadline.⁷ All stocks at Gorny (1,143 tons) were destroyed by December 2005 with significant assistance from Germany as well as the EU, Finland, the Netherlands, Poland and Russia (Report on the G8 Global Partnership 2008; BERR 2007, p. 88). Russia's 20% destruction deadline (8,000 tons) was announced by April 2007 with the destruction of agents at Kambarka and Maradykovskiy (Ria Novosti 2007). Germany played a key role in the construction of the facility at Kambarka, along with the EU, Finland, the Netherlands, Sweden and Switzerland. Russia has stated that the CWDFs at Kambarka and Maradykovskiy will serve in its effort to eliminate its 45% stockpile by 31 December 2009

⁷ Russia's 1% deadline was met after a three-year extension. Russia's 20% deadline was extended by five years to 2007 (which Russia met), and the 45% deadline was extended by more than five years to December 2009.

(OPCW News Release, Sept 8, 2006). The fourth CWDF became operational at Leonidovka in the Penza Oblast in June 2008. Holding about 17% of Russia's declared CW stockpile, the plant will carry out destruction of the site's 6,885 metric tons of VX, Sarin and Soman nerve agents stored as air bombs (International Herald Tribune 2008).

The CWDF at Shchuch'ye has received assistance from Belgium, the Czech Republic, the EU, France, Finland, Ireland, Italy, the Netherlands, New Zealand, Norway, Sweden, and Switzerland, with Canada, the UK, US and Russia as the largest donors (Report on the G8 Global Partnership 2008). It houses 5,440 tons of nerve agents Sarin, Soman and VX, which are stored in more than 1.9 million chemical munitions. The US pledged \$1.04 billion in funds to Shchuch'ye, with Canada contributing over \$100 million (CDN), and when finally completed, the UK will have contributed £23 million and other donors £14 million (BERR 2009). While the US does its funding through its own bilateral agreement with Russia, Canada contributes funds to the CWDF through the UK's bilateral agreement with Russia. Smaller donors are similarly 'piggy backing' through the UK agreement (BERR 2009: 37). Operation and destruction of Shchuch'ye stocks will begin this year. Construction continues at remaining CWDFs at Kizner and Pochev, with contributions from Germany and Switzerland at Pochev and Canada at Kizner. Russia's funding and commitment to CW destruction has increased since 2000, with Russia committing over \$1 billion (US) annually in recent years (BERR 2009: 36). In total, Russia has allocated \$7.18 billion from the federal budget for CW destruction (Ria Novosti 2008).

Beyond 2012

Funding for CW destruction in Russia will be winding down leading up to the 100% destruction deadline of April 2012 stipulated by the CWC. While it may not be that Russia will meet the 2012 deadline, the infrastructure and funding provided by Russia and its GP partners will allow this demand to be met within a year or two of the deadline. The only other potential considerations for expansion of CW destruction projects under the GP are if countries that are currently outside of the CWC join and declare programmes and stocks that have to be eliminated. Libya for example declared CW stocks in 2004, when it acceded to the CWC, but is working with the US or on its own to eliminate stocks. Iraq signed the CWC in 2007 and became the 186th State Party to the Convention in February 2009. Iraq's initial CWC declaration should be forthcoming soon. Iraq no longer possesses a CW stockpile due to the

inspection and dismantlement activities of UNSCOM and UNMOVIC,⁸ although approximately 500 chemical artillery shells have been discovered across the country between 2003 and 2006 (Pincus 2006). The weapons were in poor condition and not viable for military purposes; but it could mean that Iraq's initial CWC declaration may create a requirement for the construction of a dedicated CW storage and destruction facility as well as detailed plans for the elimination of declared items. Given that these weapons turn up unexpectedly, Iraq might be required to amend its initial declaration and CW destruction plans on a frequent basis.

Iraq has also experienced cases of crude efforts to use chemicals in mass impact terrorist attacks, which highlight chemical security as an additional element necessary to address in CW non-proliferation. In January and February 2007, Iraqi insurgents blew up trucks carrying chlorine on three separate occasions (Kratovac 2007) and employed a dozen vehicle-borne improvised explosive devices (IEDs) containing chlorine (WMD Insights 2007). Tactical adaptations by insurgents using 'improvised chemical devices' demonstrate an interest by terrorist organisations to use chemical agents; however, these are usually small-scale unconventional attacks (John Negroponte 2007). The 1995 Sarin attacks in the Toyko subway revealed chemical and biological research, development and production on a scale not previously identified with a non-state group. The attacks, which killed 12 people and sent thousands to hospital, continually remind us of the need to consider the degree of risk and whether preventive measures can be designed. The religious cult that carried out the attacks, Aum Shinrikyo, had unlimited funds (upwards of \$1bn in assets) and had built a small-scale facility for the development of Sarin and other nerve agents such as Soman, Tabun and VX (Global Proliferation of Weapons of Mass Destruction 1995). Over the years, security at CWDFs in Russia has been increased (Global Security Newswire 2009) and currently the US Congress' House Homeland Security Committee has passed a bill (paving the way for further review) to extend and expand the Homeland Security Department's authority to regulate chemical facilities across the country (Global Security Newswire b 2009). The First and Second Review Conferences of the CWC reaffirmed concerns that "chemical facilities may be subject to attacks or other incidents that could lead to the release or theft of toxic chemicals" (OPCW Second Review Conference report 2008). The Second Review Conference

⁸ The United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) was created through the adoption of UN Security Council resolution 1284 of 17 December 1999 to disarm Iraq of its WMD and operate a system of ongoing monitoring and verification of Iraq's compliance with its obligations not to reacquire these weapons. UNMOVIC replaced the former UN Special Commission on Iraq (UNSCOM) which was an inspection regime set up after the 1990 invasion of Kuwait to inspect Iraqi weapons facilities.

welcomed the fact that some state parties had taken measures to minimise such risks and encouraged them to exchange experiences and discuss related issues.

Danish Expertise

Donor countries have been supporting the efforts of Green Cross International to provide independent and objective information about Russia's CW destruction programme to the populations living in close proximity to Russia's CW storage and destruction facilities. Green Cross's programmes and outreach offices located at the facilities provide grassroots understanding and education about chemical disarmament and projects, and they address public concerns and anxieties about related health, environmental, economic and social issues. Canada, Denmark, Italy, Switzerland, UK and US have provided funding to Green Cross for facilitation of public involvement through the outreach offices. Denmark provided 255,000 EUR between 2002-2004 for three outreach offices in Maradykovsky (Kirov Oblast), Kambarka (Udmurtia), and Bryansk (Discussion with Paul Walker 2009). Green Cross is looking for donors for 2010 and beyond for its 12 Public Outreach and Information Offices at CW stockpile sites, plus making a new proposal for an "NGO Coalition" in support of the OPCW and CWC to promote universality and national implementation of the treaty regime, especially as a model inspection and verification regime for multilateral arms control and disarmament (Correspondence with Green Cross 2008).

Recommendation 1: Since major donors are now in the last two or three years of CW destruction funding in Russia, it is not recommended that Denmark begin destruction projects bilaterally or multilaterally in Russia. Funding for Green Cross outreach offices would however complement the projects currently in progress by the major donors at CWDFs. Committing additional funding for one or two outreach offices for 2010-2012 would also further complement past Danish funding.

In the area of chemical security, Denmark could consider taking the lead on a project to develop a method for classifying high-risk chemical agents and their potential for being used for malicious purposes, and assessing the vulnerability of facilities where such chemicals are produced, used or stored as well as the risks arising under transport. This risk assessment methodology could in turn be applied to specific situations, countries and facilities, and potentially lead to a cost-benefit study which would be the basis for a decision on how the issue of chemical security could be incorporated into the work of the Global Partnership after 2012. Results of the project could

also be introduced within the OPCW, adding to the knowledge among states on strengthening the implementation of Article X (Assistance and Protection against Chemical Weapons), state parties' national programmes for protective purposes, and the international cooperation and assistance programmes in accordance with Art. XI (Economic and Technological Development) of the CWC.

Recommendation 2: Take the lead on a project to develop chemical risk assessment methodology.

3. Dismantlement of Nuclear Submarines

Progress to Date

Substantial progress has also been made since 2002 in the dismantling of decommissioned nuclear submarines in both Northwest Russia and the Russian Far East. Along with substantial funding from Russia, financial support has also been provided by Australia, Canada, France, Italy, Germany, Japan, New Zealand, Norway, the Republic of Korea, Sweden, UK, US and EU (GP Annual Report 2008).

Along with the various bilateral agreements used by the parties for implementation of projects, the Framework Agreement on a Multilateral Nuclear Environment Programme in the Russian Federation (MNEPR) provides the basis for the implementation of multilateral and bilateral projects of the Northern Dimension Environmental Programme's (NDEP) "Nuclear Window", managed by the European Bank for Reconstruction and Development (EBRD). Operational in May 2003, the Nuclear Window provides funds for projects to address the legacy of Russian Northern Fleet nuclear-powered ships and submarines at different stages of decommissioning (NDEP 2009). Denmark provided over one million EUR to the NDEP nuclear window in 2004 (GPWG Annual Report 2008).

Beyond 2012

According to current dismantling rates by Russia and donors, all nuclear submarines decommissioned by the Russian Navy should be dismantled by 2009-2010 (BERR 2009). Large donors do not plan to focus on submarine dismantlement after 2012, although some will shift the focus to the safe removal of spent nuclear fuel. The UK's future priorities in Northwest Russia, for example, will fulfil the objectives of its projects funded at Andreeva Bay. As the retrieval of spent nuclear fuel (SNF) from Andreeva Bay is not scheduled to commence until 2014, the UK will continue to seek to ensure that Russia completes the agreed Long Term Plan for the safe removal of SNF to Mayak (BERR 2009: 54).

Recommendation 3: Given that all decommissioned submarines should be dismantled by 2010, this is not an area that should be considered a future priority for Denmark.

4. Employment of Former Weapons Scientists

Focusing on the human potential, Canada, EU, Japan, Sweden, US and other countries have funded close to 4,000 research projects through the ISTC in Moscow and the STCU in Kiev, reemploying former weapons scientists in peaceful sciences. The ISTC coordinates donor funding to former weapons scientists from Armenia, Belarus, Georgia, Kazakhstan, the Kyrgyz Republic, Russia and Tajikistan, providing opportunities to apply their expertise to civilian purposes while becoming engaged in the science and technology community internationally. The STCU does the same programming, except its focus is on different countries: Ukraine, Azerbaijan, Moldova, Uzbekistan and Georgia (which is a member of both centres). Funds for the research projects are transferred directly to the project participants.

Progress to Date

From the ISTC's creation to 2007, the total number of institutes involved in 2,600 funded projects was more than 980 with a total budget of \$786 million (ISTC 2007). In all, over 58,000 weapons scientists and engineers across the former Soviet Union have been engaged through the ISTC (ISTC 2009). The STCU states that 24,000 scientists, technicians and engineers formerly engaged in WMD development have participated in over 1,300 projects at 1,050 scientific and technical organisations (STCU Homepage).

Some officials from the large donor countries, when asked about continuing ISTC funding into an extended GP, suggested that new donors continue to go through EU funding instead of becoming a separate partner; others suggested that becoming a separate partner with either or both of the centres could be worth considering (discussion with American, British, Canadian and German officials 2008). The latter option allows for good visibility, with a seat on the Governing Board, which is the primary decision-making body deciding the policy for the respective centres in all areas.

Beyond 2012

The long-term viability of the centres remains in question, however, as situations for scientists overall are increasing for the better, and former weapons scientists are retiring. Some voices within EU countries would like to see more funding from Russia itself, if EU funding is to be continued for the centres. It should nevertheless

be noted that while resources within Russia have been increasing, and salaries for scientists generally improving, this is less applicable in member countries outside Russia, especially for the biological sciences institutes. Another challenge is that while EU funding goes through TACIS (up until 2006) and the Instrument for Stability (GPWG 2008: 10), it is lumped together with the Science and Technology envelope. This means that the funds are primarily looked upon with a science and technology lens and not a non-proliferation, safety and security lens, which has a different set of objectives. While both EU and US funding for the centres are decreasing year by year, others are becoming more involved, for example Switzerland with its current process of joining the ISTC.

The STCU may be in a more solid position, given political factors that make Ukraine of interest. The centres do provide good logistical, administrative support for workshops, sustainability, commercialisation and research projects that facilitate non-proliferation funding directly to the scientists, institutes or wherever the donor wants the funding to go. It is likely that a review of funding for the centres will occur as part of an overall GP review that is expected in 2010 (Discussion with British, Canadian, German and American officials 2008). Denmark can consider partnering with the EU on some projects, funnelling funding through the European Commission's support for the centres or joining the Governing Board of one (or both) of the centres as a separate partner. The best strategy in part depends on the results of the 2010 GP review and future funding decisions by other members.

Recommendation 4: Denmark should consider the results of the GP review and funding decisions by the Governing Board members of the two centres to discern the potential for long-term funding, and whether it should be bilateral or go through the European Commission.

5. Disposition of Fissile Material/Nuclear Safety and Security

Fissile Material

The Multilateral Plutonium Disposition Group (MPDG) was set up in 2002 as a G8 working group to decide on the conditions for carrying out the Russian weapons-grade plutonium disposal programme. In September 2000, the US and Russia concluded an agreement declaring that each had 34 tons of surplus weapons-grade plutonium that was unsuitable for nuclear weapons and should be destroyed in Russia and the US over a 17-year period. The Russian section of this programme was decided to be financed internationally as part of the GP. Negotiations regarding the project's terms have been ongoing for years however and have not yet reached a conclusion.

Recommendation 5: To take a 'wait and see' approach in order to discern whether additional funds will be required by project partners, when MPDG negotiations have been successfully concluded.

Nuclear Safety and Security – Progress to Date

As noted earlier, the US CTR programme began with a focus on the dismantlement of the FSU WMD and related infrastructure, an objective that CTR still pursues today in the destruction of strategic weapons delivery systems in accordance with START provisions, including the START Conversion or Elimination Protocol (CTR Annual report to Congress 2009). Since 1991, the US Department of Energy's (DOE) weapons and materials security programmes focused principally on security upgrade efforts in Russia, with a view to long-term sustainability of the systems and procedures in place. Canada is now also engaged in the upgrading of physical security of Russian nuclear facilities (DFAIT GP Webpage 2009).

Canada, EU, Germany, Italy, Norway, Sweden, Republic of Korea, UK and US have established programmes with Russia and Ukraine to upgrade the physical protection and accountancy of nuclear materials (Report on the G8 Global Partnership 2008). Many of these countries are also assisting with the development of accountability measures and increased border controls to increase the ability of governments to monitor nuclear and radioactive material and to prevent illicit trafficking.

Countries including Canada, Denmark, France, Finland, Norway and US, and the Nordic Environmental Finance Corporation (NEFCO) are supporting dismantling, storage and replacement of approximately 700 highly radioisotopic thermoelectric generators (RTGs) which have been used to power Russian lighthouses. Canada assisted Russia in completing a “RTG Master Plan”, and efforts are underway to increase coordination among participating countries (Report on the G8 Global Partnership 2008).

Beyond 2012

With the global expansion of the GP, the focus in the nuclear area remains on Russia. With over half of the sites in Russia still requiring nuclear safety and security upgrades, and with the Kola peninsula alone having at least 100 storage sites where nuclear and radioactive material lack the required material accountancy, the G8 focus will remain primarily on Russia (and countries of the FSU; countries in South and Southeast Asia are increasingly being considered for future expanded funding). Outside of the FSU, the IAEA’s Nuclear Security Fund (NSF) provides a unique avenue for funding security projects with a global reach. The NSF provides advisory services to states wishing to establish the essential infrastructure “to protect nuclear and other radioactive materials from theft, protect nuclear installations and transport against sabotage and other malicious acts, and to combat illicit trafficking in nuclear and other radioactive materials” (IAEA Nuclear Security Home 2009). The Fund helps states in their efforts to detect and respond to these activities if they occur, along with risk assessments of sites. The agency also assists states with the development of an infrastructure plan for implementing nuclear security at major public events (sports, political or religious gatherings).

Danish Expertise

Denmark contributed 7 million DKK to the IAEA NSF in 2007-08. These funds were earmarked to NSF’s activities in Asian developing countries. In addition, Denmark has allocated 3 million DKK in 2009 to the NSF to be spent on NSF-activities in Asia, including Pakistan and South Asia (discussion with IAEA official 2009). Denmark lists these funds outside its GP funding, whereas GP donors such as Canada, Germany, UK and US list NSF funding as GP funding. For Denmark to do the same would not require any additional resources: it would only entail funding input to G8 Summits, which would then be reflected in annual GP country funding lists. If Denmark is to seriously consider a GP programme, the inclusion of NSF funding would benefit

overall programming. Without an overarching framework, the funding would risk losing its coordinated function.

Given that Denmark is not a nuclear energy state, it does not have the domestic human resources and capacity required for bilaterally engaging in nuclear safety or security projects in Russia. This does not mean that Denmark cannot provide critical support to nuclear safety and security assistance, as it can begin “piggybacking” with other countries such as Canada, Sweden or the UK, which have already been engaged in such assistance projects for five to ten years. This allows for the implementation of projects by the other donor partner on behalf of Denmark while providing Denmark an increased role and experience in nuclear safety and security programming (i.e. identifying and prioritising projects, sitting at the table with trilateral partners etc.).

Outside of Russia, in other FSU states and beyond, a potential niche area for Danish assistance lies in its creation of a national radioactive sources database and the Danish export control system. The Danish National Institute of Radiation Protection (*Statens Institut for Strålebeskyttelse*) has unique expertise in creating a national database for monitoring and tracking the some 11,000 radioactive sources in Denmark. This resource is of potential use for other small countries in the FSU and globally. Many small states with similarly small or no nuclear and radiological sectors need registries of the small amounts of nuclear materials that are used, stored or transferred through their territories (such as Kyrgyz Republic and Tajikistan, smaller countries in Africa and Asia etc.). The Institute of Radiation Protection is also responsible for national legislation and could play a role in assisting other countries in the drafting and implementation of radiation legislation and export controls. Denmark’s export control system has also always placed great emphasis on dialogue and cooperation with industry, which is increasingly being recognised as indispensable to efficient export control enforcement. Denmark’s distinctive edge in government/industry export control cooperation could be further developed into an export control industry outreach ‘module’ that could be offered and adapted in the framework of existing export control assistance programmes (such as those in Canada, UK, Germany etc.).

Recommendation 6: Should Denmark desire a hands-on approach to nuclear non-proliferation assistance in Russia, it is recommended that Denmark think trilaterally or quadrilaterally and partner through “piggybacking” with another country.

Recommendation 7: Whether bilaterally or multilaterally, a potential niche area for Danish assistance lies in the Danish National Institute of Radiation Protection's expertise in creating databases for radioactive sources and in export control drafting and implementation.

Recommendation 8: Categorise funding for the IAEA NSF as GP funding.

6. Biological Non-Proliferation

Progress to Date

Biological Non-proliferation assistance has become a fifth priority of the GP over the years, with significant funding and resources committed particularly by the US and Canada. Previously, the US DOD was the only donor supporting a variety of biological activities (beginning in 1992-3). Since 1997, these activities have been carried out by DTRA and funding significantly ramped up. Between 1998 and 2007, the US spent \$430 million on dismantling former biological weapons and testing facilities; biological facility upgrades and training; and laboratory upgrades and research projects (National Research Council 2007: 1). With biological non-proliferation becoming a fifth priority, donors such as Canada, EU and the UK focused efforts on developing biological assistance programmes. Canada significantly increased its assistance and is prepared to provide up to CDN\$40 million for Biological Non-proliferation Programming for its Comprehensive Biosecurity and Biosafety Programme for the Kyrgyz Republic (DFAIT 2008). Canada is also doing scoping for future biological assistance programming (Discussion with Canadian official 2008). The UK program has been relatively small in comparison, but consistently active with small projects in Georgia, support for Tajik scientists, engagement with Iraqi and Libyan scientists, and promotion of international and regional biosafety/biosecurity initiatives. It is important to note that the UK coordinates with the US and Canada to ensure that British efforts complement their larger programmes (Discussion with UK Official 2008).

Danish Expertise

It is in the area of biological non-proliferation assistance that Denmark truly can provide a specialised niche to complement the work of the larger donors (Canada, UK and US), particularly in the area of disease surveillance by developing biosafety/biosecurity and export control legislation and regulatory processes, training, and non-proliferation education. Danish funding should be focused on countries where large donors are already focusing efforts on infrastructure and laboratory capacity and thereby provide an already existing skeleton of administration on which to build. It is recommended that discussions with Canada, the UK and US help to further identify specific areas of collaboration with a view to Denmark establishing its own 'niched' programme in the area of biological non-proliferation, particularly assistance with disease surveillance (human and animal), drafting and implement-

ing export control legislation for smaller countries, biocontainment training for industrial biological applications, assistance with confidence building measures (CBMs) and chemical and biological non-proliferation education.

Disease Surveillance

Denmark's *Statens Serum Institute* (SSI) has unique expertise in epidemiology and laboratory capacity given its mandate for national disease surveillance. SSI is currently working to link the institute with laboratories and field sites across Denmark to a shared national database. By linking all the microbiology laboratories in Denmark, the shared database will allow laboratories to directly input information into a common server, eliminating the need for reporting through SSI and providing for timelier reporting of disease outbreaks. The results of the pilot project have been successful, and it is anticipated that the database will be fully operational by the end of 2009 (Discussion with SSI officials 2008).

SSI's expertise in disease surveillance has also led to a three-year project coordinated by SSI and co-funded by the European Commission, Directorate General for Health and Consumers. With the objective of developing and operating a public health mortality monitoring system with real-time detection and measurements, the project will develop a common statistical tool to enable countries to monitor mortality data almost in real-time with the excess number of deaths related to influenza or possible other public health threats across European countries (EURO-MOMO 2009).

SSI also participates in the European Programme for Intervention Epidemiology Training (EPIET), which is hosted at the European Centre for Disease Prevention and Control (ECDC) in Stockholm. EPIET provides training and practical experience in intervention epidemiology for surveillance and control of communicable diseases. SSI has a three-member staff trained in the programme, which has responded and collaborated in the international arena: in Niger, with rapid assessment of measles, and in the aftermath of the earthquake in Pakistan. SSI has hosted two outside trainees for two years and has capacity for additional trainees from FSU countries if additional funds can be provided. The programme provides capacity-building that provides sustainable effects in partner countries (Discussion with SSI official).

SSI also participates in "EpiSouth", which aims to create a framework of collaboration on epidemiological issues in order to improve communicable disease sur-

veillance, communication and training across the countries of the Mediterranean and Balkans. SSI's current development of laboratory diagnosis with capacity to respond in the field is also of interest to other small countries. SSI has various collaborations with other organisations and initiatives, such as the World Health Organisation (WHO). Since Denmark's epidemiological systems are developed on the European level, neighbouring European and Eastern European countries could be interested in being linked in.

Denmark also has a unique proficiency in animal disease surveillance and animal health. Denmark is especially known for its transparent process of full disclosure: within an hour of a confirmed case of disease, the information is posted on the website of the Danish Food and Veterinary Administration (FVST). This transparency builds on over a 100-year tradition between industry and government on reporting, preventing, responding and eradicating the spread of a disease (unlike other European countries, Danish industry covers the majority of costs for disease surveillance). While Denmark is a highly industrialised agricultural society and many of the developing countries in the FSU are not, Danish expertise has the ability to adapt to local approaches and assist other small countries in developing their veterinary administration and laboratory capacity. It is this development of capacity that low-income countries require to be able to meet the basic provisions of the World Organisation for Animal Health (OIE), where countries are expected to report disease outbreaks within 24 hours. Without laboratories and diagnostic tools, however, these countries cannot meet this basic provision (Discussion with FVST official 2009).

Export Controls, Biosafety/Biosecurity and Training

SSI's Centre for Biosecurity and Biopreparedness (CBB, *Center for Biosikring og Beredskab*) is a leader in biosecurity and emergency response (for human pathogens) in Denmark and EU. CBB is the pen and coordinator for Denmark's annual Confidence Building Measures (CBMs) submissions in accordance with the Biological and Toxin Weapons Convention (BTWC), the Danish representative to the Australia Group, and the focal point in Denmark for biosecurity and specific threats/response (preparedness). One of the centre's officials commented that "increasingly developing countries are coming into focus for biological agents. And we regard this as our responsibility if these countries were to seek advice or training" (Interview with CBB Director 2008). Danish expertise will be able to give a detailed impression of legislation/guidelines requirements while also scaling them down for small countries with limited resources (Interview with CBB

Director 2008). CBB confirmed that it has the capacity and the interest to assist developing countries with advice and training in the area of biosecurity, assistance with drafting CBMs and preparedness, should the Danish government make the commitment.

A truly specialised expertise within SSI involves the containment of large-scale (industrial) spills. While much focus with regard to biosafety and biosecurity is on the small-scale (i.e. spills of five ml), such guidelines are not plausible when responding to a large spill of 5,000 litres. SSI has an expertise in drafting such legislation, providing courses and training in large-scale spill drills and cleaning validation, as well as biorisk management (Discussion with SSI official). This expertise is vital when thinking ahead to sustainable vaccine production and other industrial biological applications in countries of the FSU.

Recommendation 9: Develop a DK ‘niched’ programme in the area of biological non-proliferation, particularly in assistance with disease surveillance (human and animal), drafting and implementing export control legislation for smaller countries, biocontainment training for industrial biological applications, and assistance with CBMs.

Chemical and Biological Non-proliferation Education

Denmark has the potential to develop its expertise into a small niched chemical and biological weapons non-proliferation education programme which would complement large donor biological assistance, as well as the smaller nuclear non-proliferation awareness programme in Sweden. There is the potential to gain and develop the expertise required for such a focus at the Danish Institute for International Studies (DIIS). Examples of awareness and education projects include hosting one or two 6-month Masters and/or PhD internships from the FSU on non-proliferation and disarmament research at DIIS and devising (with the relevant national authorities) programmes and teaching tools to be included as part of a national curriculum on educating scientists, engineers, technicians as well as students of political science, law etc. on their obligations under the CWC and BTWC inside and outside Denmark. Not all chemists and biologists are aware of these two conventions, and thus there is a need to inform them about the treaties, their responsibilities and the choices they may have to face in their careers. The issue of ‘codes of conduct’ for scientists is one discussed by state parties to the BTWC during its intersessional process (Meeting of Experts 2008), and this type of niched programme will help to further serve Denmark’s BTWC obligations.

Recommendation 10: To expand on Denmark's expertise in the Biological Weapons Convention, Chemical Weapons Convention, UNSCR1540 and their obligations to provide for a small, targeted Chemical and Biological Non-proliferation Education Programme for a country of the FSU, along with a nationally-oriented curriculum focused on students in Danish universities and laboratories.

7. Niche Assistance

Some donors have been able to carve out small but highly specialised GP programmes that have become essential to comprehensive global threat reduction. Therefore, in order to develop a niche biological non-proliferation GP programme, Denmark can model from others in developing an efficient, complementary, and focused approach. Sweden's non-proliferation assistance in the nuclear area provides an example of how a small niche programme can complement and fill in some of the gaps that the larger donors are unable to fully address. Committing approximately 7 million EUR a year for nuclear non-proliferation, nuclear waste management, reactor safety, and radiation protection through the Swedish Radiation Authority (SSM), Sweden's aim is to enhance the safety at nuclear power plants in the region and improve radiation protection. Nuclear non-proliferation alone receives approximately 1.6 million EUR of the total annual funding. The authority also notably engages in education and awareness programmes for strengthening control of nuclear non-proliferation in the region.

Sweden's contribution to the nuclear field began before its official participation in the Global Partnership in June 2003. Immediately after the break-up of the USSR, Sweden engaged in nuclear safety and security projects at nuclear power plants (especially Ignalina Nuclear Power Plant in Lithuania) and introduced nuclear materials accountancy to key countries with large nuclear resources, specifically Kazakhstan and Ukraine. The overall aim was to enhance safety in the Baltic region and prevent proliferation of nuclear weapons, materials and technology. The immediate objective was to assist these states in becoming signatories to the Nuclear Non-proliferation Treaty (NPT) and support their membership of the IAEA. Before 1995, Sweden's efforts were mainly focused on these three countries plus Estonia and Latvia. After 1995, cooperation with Russia was also initiated (PIR Centre 2009). Sweden's focus today is on projects in Russia (approximately 5 million EUR annually), Ukraine (1.8 million EUR annually), Georgia and Armenia (300,000 EUR annually) and Belarus (150,000 EUR annually; Interview with Van Dassen 2009).

In the area of non-proliferation education, Sweden's programme is unmatched in its scope, impact and results. In cooperation with the James Martin Centre for Non-proliferation Studies of the Monterey Institute of International Studies, the Swedish Radiation Authority has been promoting nuclear non-proliferation education at Tomsk State University and Tomsk Polytechnical University. At a funding cost of

approximately 120,000 EUR/year, SSM is able to fund one-week summer schools, conferences, sponsor teachers, and provide MPC&A (materials protection, control and accountancy) training (Interview with Van Dassen 2009). This funding currently includes the sponsorship of four PhD candidates in Russia (Tomsk). After September 2009, sponsorship for PhDs in Russia will increase to six. SSM also covers half the salary for a researcher at the Stockholm International Peace Research Institute (SIPRI) to assist in programme implementation. Education and training are not only emphasized in SSM's non-proliferation education programming; in every nuclear non-proliferation assistance project SSM carries out, education and training are given priority in order to facilitate knowledge transfer to people in leading positions in nuclear authorities, parliaments, ministries and nuclear facilities (Jonter 2004). Such niched assistance by smaller donors allows larger donors to focus on other areas, such as weapons dismantlement, perimeter security, and building new biological laboratories. Together with international partners, they are able to complement the work on the long-term requirements for global threat reduction.

8. Implementation and Conclusion

The ten recommendations listed are suggestions for Denmark to consider in advance of the 2010 G8 Summit, when G8 leaders may announce an extension of the Global Partnership with another “ten plus ten over ten” commitment. With an orientation on expanding and exporting Danish expertise in non-proliferation and materials safety and security, the recommendations for Danish GP participation would create a nationally coordinated programme that would allow Denmark to become a significant partner to current and expanding G8 programming.

Funding for a more focused Danish GP programme does not translate into large sums of funding. On the contrary, Denmark would be able to follow through with each of the recommendations above if a contribution of 18 million EUR (similar to Denmark’s previous GP contributions up to 2004) were to be made over a 5-year period (i.e. 3.6 million EUR per year). This funding would provide for a niched biological non-proliferation assistance programme that would also coordinate and monitor funds for chemical and nuclear non-proliferation assistance to ensure a frame and unified development and implementation of non-proliferation and disarmament assistance policy. A small unit within the Danish Ministry of Foreign Affairs (MFA) – tasked for example to lead overall management, coordination, oversight and development of such a programme – would require two persons to work closely with other ministries and agencies in DK (such the Ministry of Defence, Ministry of Health, SSI, DIIS) and external partners in the implementation. The MFA would be responsible for drafting bilateral/trilateral agreements, financial and programme overview, risk analysis and risk mitigating, and work with other partners to develop Denmark’s programme.

The programme does not have to build everything from scratch. G8 partners have rich experience from lessons learned in Russia and countries of the FSU, which they are readily willing to share with new partners. A “model agreement” proposed by the UK, put forward for example at the 2008 G8 Summit, was noted as a reference that could be helpful for new partners to enable projects to be put in place with minimum delay (the model agreement was provided by the UK to DIIS and is available upon request). Looking ahead to the G8 Summit of 2010 and an expanded and extended Global Partnership, Denmark has an opportunity to put forward a niched non-proliferation assistance programme. Utilising its current know-how in export controls, database development, skills in disease surveillance, biosafety/biosecurity

and training, and incorporating support for CW destruction outreach and IAEA project funding, Denmark can build a small effective programme that addresses global WMD proliferation risks, and thus become an active actor in modern non-proliferation and disarmament.

Annex I

Danish G8 GP Contributions to Date

<i>Country of Project</i>	<i>Project Description</i>	<i>Funds Committed in '000s EUR</i>	<i>Funds * Expended in '000s EUR</i>
Russia	Nuclear Safety, radiation protection and emergency planning (Leningrad Nuclear Power Plant)	(2000-2001) €1.770	€1.770
Russia	Bellona Report: Security Nuclear Waste in Northwest Russia	(2001) €67	€67
Russia	Green Cross chemical weapons public outreach programme in Russia	(2002-2004) €255	€255
Various	European Bank for Reconstruction and Development (EBRD) Northern Dimension Environmental Programme (NDEP) – Danish contribution to the Fund	(2002-) €10.000	€10.000
Ukraine	Contribution to the EBRD Chernobyl Decommissioning Fund	(2001) €2.480	€2.480
Lithuania	Contribution to the EBRD Ignalina Decommissioning Fund**	(2001) €2.680	€2.680
	2004-contribution to the EBRD NDEP Fund nuclear window (after joining G8 GP)	(2004-) €1.000	€1.000
<i>Total</i>		€18.252	€18.252

* All commitments are assumed expended, but only commitments, not expenditures, are included in the Danish database.

** Denmark has allocated an additional DKK 80,000,000 to the closure of Ignalina.

Source: GPWG Annual Report 2008 Consolidated Report Data: Annex A

References

- Bunn, Matthew, 2008. Securing the Bomb 2008, Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard Kennedy School, Harvard University, Commissioned by the Nuclear Threat Initiative: www.nti.org/securingthebomb
- A Changing World. 2003. The Government's Vision for New Priorities in Denmark's Foreign Policy. Royal Danish Ministry of Foreign Affairs. Online: <http://www.um.dk/Publikationer/UM/English/AChangingWorld/index.htm>
- Chlorine as a Terrorist Weapon in Iraq. 2007. WMD Insights. www.wmdinsights.com.
- Correspondence with Paul Walker, Global Green. 2008.
- Department of British Enterprise and Regulatory Reform, Foreign Commonwealth Office, and Ministry of Defence. 2007. *Global Threat Reduction Programme: Fifth Annual Report 2007*. Online: <http://www.berr.gov.uk/whatwedo/energy/non-proliferation/global-threat-reduction/index.html>
- Department of British Enterprise and Regulatory Reform (BERR), Foreign Commonwealth Office and Ministry of Defence. 2009. *Global Threat Reduction Programme: Sixth Annual Report 2008*. Online: <http://www.berr.gov.uk/energy/non-proliferation/global-threat-reduction/ar-english/page40802.html>
- EURO-MOMO. 2009. Online: <http://www.euromomo.eu/>
- Foreign Affairs and International Trade Canada. 2008. Report on the G8 Global Partnership, July 8, 2008, p. 3, <http://www.g8.gc.ca/2008-G8SummitGlobalPartnership-en.asp>
- Foreign Affairs and International Trade Canada. February 4, 2008. *Global Partnership Program: A Tangible Canadian Contribution to Reducing the Threat of Weapons of Mass Destruction*. http://www.international.gc.ca/gpp-ppm/assets/pdfs/GPX_AnnualReport_07-en.pdf
- Foreign Affairs and International Trade Canada. 2008. Global Partnership Program: Comprehensive Canada-Kyrgyz Biosecurity, Biocontainment & Biosafety. Presented at the BTWC Meeting of Experts, August 19, 2008. Online: [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/BF19E3E024190495C12574B200351844/\\$file/BWC_MSP_2008_MX-Presentation-Canada-080819-AM.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/BF19E3E024190495C12574B200351844/$file/BWC_MSP_2008_MX-Presentation-Canada-080819-AM.pdf)
- Global Partnership Review. 2008. Online: http://www.canadainternational.gc.ca/g8/summit-sommet/2007/global_partnership_review-examen_partenariat_mondial.aspx?lang=eng

- Global Proliferation of Weapons of Mass Destruction: A Case Study on the Aum Shinriyko. 1995. Senate Government Affairs Permanent Subcommittee on Investigations
- Global Security Newswire. 2009. Russia Boosts Security at Chemical Weapons Sites. 29 June 2009.
- Global Security Newswire b. 2009. House Panel Advances Chemical Security Bill. 24 June 2009.
- GPWG Annual Report 2008. July 8, 2008. Report on the G8 Global Partnership, Annex A. Online: http://www.mofa.go.jp/policy/economy/summit/2008/doc/pdf/0708_12_02_en.pdf
- Hansell, Cristina. 2009. Internationalizing Nunn-Lugar: Lessons for Future Multilateral Cooperative Threat Reduction Projects. Available online: http://www.icnnd.org/research_papers/Hansell_InternationalizingNunnLugar.doc
- International Herald Tribune. 2008. Russia Opens 4th Chemical Weapons Destruction Plant. June 17, 2008. Online: <http://www.ihf.com/articles/ap/2008/06/17/europe/EU-GEN-Russia-Chemical-Weapons.php>
- Interview with Canadian Official. 2008.
- Interview with CBB Director, November 2008.
- Interview with British Official. 2008.
- Interview with German Official. 2008.
- Interview with Lars Van Dassen, Swedish Radiation Safety Authority, April 2009.
- ISTC. 2007. Annual Report 2007 International Science and Technology Center: Nonproliferation Through Science Cooperation. Online: [http://www.istc.ru/istc/istc.nsf/va_webresources/Annual_Reports/\\$file/annual_report2007.pdf](http://www.istc.ru/istc/istc.nsf/va_webresources/Annual_Reports/$file/annual_report2007.pdf)
- ISTC 2009. "Who We Are" Institute for Science and Technology in Moscow Webpage. Online: http://www.istc.ru/istc/istc.nsf/va_WebPages/WhoweareEng
- The Foreign and Commonwealth Office 2009. Lifting the Nuclear Shadow: Creating the Conditions for Abolishing Nuclear Weapons. Online: <http://www.fco.gov.uk/resources/en/pdf/pdf1/nuclear-paper>
- Jonter, Thomas. 2004. "Swedish Nuclear Non-Proliferation Assistance Programme in Russia and Latvia". Swedish International Development Cooperation Agency (SIDA) Evaluation, Department for Europe.
- Kissinger, Henry A., George P. Shultz, Perry and Nunn. 2007. "A World Free of Nuclear Weapons," *The Wall Street Journal*, January 4, 2007, p. A15.
- Kratovac, Katarina. 2007. Iraq Chlorine Attacks Raise New Concerns. 2007. USA Today

- Meeting of Experts. 2008. "Bringing Biologists on Board," United Nations Office in Geneva, 18-22 August 2008: [http://www.unog.ch/80256EE600585943/\(httpPages\)/8C24E93C19BDC8C4C12574F60031809F?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/8C24E93C19BDC8C4C12574F60031809F?OpenDocument)
- National Research Council. 2007. *The Biological Threat Reduction Program of the Department of Defense: From Foreign Assistance to Sustainable Partnerships*. Committee on Prevention of Proliferation of Biological Weapons, Office for Central Europe and Eurasia.
- NDEP Nuclear Window. 2009. EBRD Webpage: <http://www.ebrd.com/country/sector/nuclear/overview/funds/ndep.htm>
- Negroponte, John. 2006. "Annual Threat Assessment of the Director of National Intelligence for the Senate Armed Services Committee," February 28, 2006.
- Nuclear Security Home. 2009. "Nuclear Security", International Atomic Energy Agency Nuclear Security Home: <http://www-ns.iaea.org/security/>
- Organisation for the Prohibition of Chemical Weapons. 8 September 2008. Russian Federation Officially Begins Chemical Weapons Destruction at New Site in Maradykovsky. Online: <http://www.opcw.org/news/news/article/russian-federation-officially-begins-chemical-weapons-destruction-at-new-site-in-maradykovsky/>
2008. Report of the Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (Second Review Conference), 7-18 April 2008. Paragraph 9.94
- Petersen, Jan. 2003. "Introductory Remarks by Foreign Minister Jan Petersen: Nuclear Safety in Northwestern Russia – Next steps towards realising the G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction, Washington D.C, 4 April 2003. Online: <http://www.pircenter.org/data/gp/odin.pdf>
- PIR Center. 2009. "Sweden and the Global Partnership." PIR Center's Global Partnership Guidebook. Accessed March 26, 2009: http://www.pircenter.org/data/gp/1/sweden_eng_s.pdf
- Pincus, Walter, "Munitions Found in Iraq Renew Debate: Panel Is Divided Over Whether Troops Uncovered Weapons of Mass Destruction," *The Washington Post*, July 1, 2006.
- Ria Novosti. 2007. "Russia destroys chemical weapons on schedule", March 26, 2007.<http://en.rian.ru/analysis/20070326/62606742.html>
- Ria Novosti. 2008. "Russian chemical plan completes destruction of nerve agent," 1 December 2008. <http://en.rian.ru/russia/20081201/118632753.html>
- Statement by G8 Leaders. 2002. The Global Partnership Program Against the Spread of Materials and Weapons of Mass Destruction, June 27, 2002, G8 Kananaskis Summit: <http://www.g8.gc.ca/2002Kananaskis/globpart-en.asp>

- STCU Homepage. 2009. Online: <http://www.stcu.int/>
- STCU. 2009. "Who We Are", The Science and Technology Center in Ukraine Webpage. <http://www.stcu.int/weare/index.php>
- United States General Accounting Office. March 6, 2000. Testimony Before the Subcommittee on Emerging Threats and Capabilities, Committee on Armed Services, U.S. Senate, Weapons of Mass Destruction: U.S. Efforts to Reduce Threats from the Former Soviet Union, Statement of Harold J. Johnson, Associate Director, International Relations and Trade Issues, National Security and International Affairs Division.
- Van Dassen, Lars. 2007. "Non-proliferation Assistance Across Borders," Nuclear Proliferation and International Security. Morten Bremer Mærli and Sverre Lodgaard, eds. P 252-266.
- Van Dassen, Lars. 2008. "The Clash of Nuclear Dynamics," Tuning Priorities in Nuclear Arms Control and Non-Proliferation: Comparing Approaches of Russia and the West. Alexander Nikitin and Morten Bremer Mærli eds.