From Vision to Reality – Can we Overcome the Barriers to Nuclear Disarmament? by Alyn Ware

On 5 April 2009 US President Obama set forth a vision for a nuclear-weapons-free world stating “clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.” Obama noted that “as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act. We cannot succeed in this endeavour alone, but we can lead it, we can start it.”

With the leader of the most powerful country in the world demonstrating such commitment to nuclear disarmament, one would expect that achieving such a vision, at least within a moderate time-frame, would now be possible. Unfortunately President Obama has to overcome political obstacles which are very powerful – so much so that he has publicly expressed doubt as to whether the goal is achievable even in his lifetime.

The degree of opposition within the United States is evident in the positions being taken by US Republican senators, some of whom will have to support any nuclear disarmament treaty that the US negotiates, including the Comprehensive Test Ban Treaty (signed, but not yet ratified by the US), the START replacement treaty (currently being negotiated between the US and Russia) and a fissile materials treaty (which is about to be negotiated in the multilateral Conference on Disarmament). To date, no republican senator has confirmed support for the CTBT, and the Republican Senate caucus has indicated that they will only support the START replacement treaty if the President commits to a nuclear-weapons modernization program. The obstacles to progress are not just in the United States. The International Commission on Nuclear Non-proliferation and Disarmament has outlined a number of reasons why policy-makers and others within the nuclear-armed countries (and their allies) maintain current nuclear policies, including beliefs that:

- “Nuclear weapons have deterred, and will continue to deter, war between the major powers”
- “Nuclear weapons will deter any large scale conventional attacks”
- “Nuclear weapons will deter any chemical or biological weapons attack”
- “Nuclear weapons will deter terrorist attacks”
- “Extended nuclear deterrence is necessary to reassure allies”
- “Any major move toward disarmament is inherently destabilizing”
- “Nuclear weapons cannot be un-invented so there is no point trying to eliminate them”
- “Nuclear weapons cost less than conventional forces”

The Commission also notes that nuclear-armed countries maintain their nuclear-weapons policies, while fervently trying to deny others the same, because “Nuclear weapons confer unequalled status and prestige”. The Commission argues that some of these beliefs are no longer valid while the validity of others will diminish as nuclear disarmament steps are progressively achieved alongside the further enhancement of non-nuclear security. According to the Commission, the current grip these beliefs have on security doctrines will make progress slow – and prevent the rejection of nuclear deterrence and the abolition of nuclear weapons for at least two decades.

This could be depressing, unless one remembers previous significant changes in history, such as the fall of communism, the ending of apartheid, the granting of democracy to women, the ending of slavery or the banning of landmines. The key lessons from these events are that:

- a) political change does not rely solely on those with power privilege voluntarily giving it up – but is also influenced by those without such privilege using new forms of power to effect change, and
- b) once political change is initiated it can proceed towards radically new situations much faster than expected.

Thus, as we approach the 2010 NPT Review Conference we should set our sights higher than what the nuclear-weapon States and their allies appear ready to accept. There are some cracks in the ranks of nuclear
Sustained Survival and the Road to Nuclear Abolition

Editorial by Joachim Spangenberg and Jürgen Scheffran

Two decades after the end of the Cold War and almost 65 years after the devastation of Hiroshima and Nagasaki, the world is still facing the risk of annihilation by more than 20,000 nuclear weapons. 40 years after the nuclear Non-Proliferation Treaty (NPT) entered into force, its commitment to eliminate the nuclear arsenals has not been realized. Without a breakthrough at the May 2010 NPT Review Conference, the whole non-proliferation and disarmament regime is at stake. To prevent this danger, in August 2009 INES launched a campaign calling for concrete steps to the abolition of nuclear weapons (see page 19).

In the title story of this issue of Global Responsibility, Alm Ware describes a road to nuclear disarmament and the obstacles on that road. The increasing support for a Nuclear Weapons Convention (NWC) requires approaches for preparing and stimulating the negotiation process, as Jürgen Scheffran points out. The NPT conference provides a forum for simulating NWC negotiations (Christoph Reissfelder). INES chair David Krieger explains the expectations towards the NPT conference. While Stuart Parkinson assesses the recent political developments regarding nuclear disarmament and missile defence, Scilla Elworthy highlights the cultural dimensions of disarmament, preventing dangerous climate change is essential for the sustained survival of humankind.

Highlighting the wider context, we start a debate on "Which science for sustainability?" with a contribution by Joachim H. Spangenberg and Martin O’Connor. This goes back to the roots of INES, the organisation editing Global Responsibility. As a professional organisation of scientists and engineers, INES works in two directions: on the one hand it mobilises the knowledge and reputation of science to make a difference in two domains essential for a dignified survival of human civilizations: peace/disarmament and sustainable development/climate change. On the other hand, it dedicates efforts towards establishing a standard of responsible behaviour within the scientific and engineering communities.

Global Responsibility is an open access journal, and for INES members publishing in it is free of charge. Thus we encourage colleagues to contribute short (below 3000 words) but topical papers relevant to key challenges of our times. Trying to walk the talk, we strive for a maximum of transparency and accountability, and encourage controversial debates.

**Joachim H. Spangenberg**

**Jürgen Scheffran**

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The Negotiation Process for a Nuclear Weapons Convention

By Jürgen Scheffran

NWC Plenary in Atlanta, with (from left to right) Alyn Ware, Uta Zapf, Rebecca Johnson and Jürgen Scheffran. Photo: © Amelia H. Krales, MPI

Main Theses

1. The Nuclear Weapons Convention (NWC) serves as a legal framework to make the call for the abolition of nuclear weapons concrete and assemble the steps to achieve a nuclear-weapon-free world (NWFW) in an effective, reliable, irreversible and sustainable manner.

2. Umbrella negotiations on a Nuclear Weapons Convention could serve as an adaptive, multi-level process for assembling and coordinating the various elements and building blocks in the transformation to the NWFW, with the NWC as the integrative mechanism between ultimate goals and practical steps.

3. The political momentum for a NWFW needs to be built and used to prepare the conditions for getting NWC negotiations started. The Model NWC may serve as a tool to involve governments and civil society into a cooperative discussion and drafting process that could transform into real negotiations.

The Model Nuclear Weapons Convention

In 1995, the NWC working group of “Abolition 2000” has set the goal of drafting a model treaty for nuclear disarmament. In collaboration between IALANA, IPPNW and INESAP a committee was set up in 1996 which worked out a draft document at meetings in New York and Darmstadt, Germany. The Model Nuclear Weapons Convention (mNWC) was presented to the public at the NPT PrepCom in April 1997 and in the same year was submitted by Costa Rica to the United Nations as an official document. The full text is included in the 1999 book “Security and Survival” which explains the arguments for the NWC and discusses critical question on various crucial topics. After a lost decade of disarmament, at the NPT PrepCom in May 2007 and as part of the launch of the International Campaign for the Abolition of Nuclear Weapons (ICAN) an extended and updated version of the Model NWC and the book “Securing Our Survival” were presented. Costa Rica and Malaysia submitted the revised Model NWC as a UN document at the end of the year. It was positively received by many governments and non-governmental organizations. According to UN resolutions, the majority of States is ready to start negotiations on the NWC.

One purpose of the model NWC is to show that the abolition of nuclear weapons is possible and practically feasible. A complete ban has more public appeal than the limitation of certain forms and uses of weapons which would have to be distinguished and verified. The Model NWC is intended to promote an incremental-comprehensive solution to the nuclear risks of our times. It also aims to inspire discussions on possible strategies and steps towards comprehensive nuclear disarmament and to induce negotiations on a convention banning and eliminating nuclear weapons.

The current model convention comprises 19 Articles and 8 Annexes/Protocols. Article I contains general obligations not to “research, develop, test, produce, otherwise acquire, deploy, stockpile, maintain, retain or transfer nuclear weapons” as well as related nuclear materials, delivery systems and components, and not to use or threaten to use nuclear weapons. All existing nuclear weapons, their development and production facilities as well as delivery systems, command and control facilities are to be destroyed or converted. “Special materials” for nuclear weapons (highly-enriched uranium, uranium-233, plutonium, tritium) are to be placed under international safety controls. Other articles concern the implementation of these obligations, especially definitions and declarations; phases for implementation; verification; national implementation; rights and obligations of persons; the international agency; nuclear material, weapons, facilities, delivery vehicles; cooperation, compliance and dispute settlement; entry into force and ratification; financing; amendments. The annexes and protocols go into details, e.g. of verification, confidence building measures, nuclear activities, delivery vehicles and disposition of special nuclear materials. The Model NWC proposes a flexible series of coordinated phases for implementation. The suggested deadlines are offered as recommendations and are based on evaluations of feasibility, with the understanding that States would negotiate the actual deadlines. The Model NWC allows for extension of deadlines if a State Party is unable to complete obligations within the time allotted.

Rather than creating a final product that serves as the ultimate solution for nuclear abolition, the idea of the Model NWC was to launch a process that would involve participants on governmental and non-governmental levels and adapt to the changing circumstances, serving as a catalyst to transform the drafting process into a real negotiation process. The updated version of 2007 addresses the changing political conditions, e.g. by assessing the problem of nuclear terrorism and the renaissance of nuclear power. Different views should be no reason not to start the negotiation process that offers the opportunity and forum to express and talk about differences. Next steps could be more specific annexes on verification, fissile materials, delivery systems and other topics that deserve particular attention.

The NWC Negotiation Process

After the end of the Cold War a number of arms control and disarmament agreements have created favourable conditions for comprehensive disarmament negotiations. With the INF Treaty, the START Treaties, the Chemical Weapons Convention, the Comprehensive Test Ban Treaty, and new nuclear-weapon-free zones, important elements have been realized for the control of weapons of mass destruction. At the same time, various obstacles in the nuclear disarmament process have made clear that further progress would depend on responsiveness to the demands for comprehensive nuclear disarmament.

Umbrella negotiations on a Nuclear Weapons Convention could serve as a framework to focus, harmonize and integrate future non-proliferation and disarmament measures into a legal architecture, completing the current nuclear disarmament and non-proliferation regime. Within the umbrella negotiation framework, different individual measures could be negotiated and agreed upon in separate negotiation fora (NPT, CD, US-Russian, NPT nuclear weapon states, non-NPT NWS, non-NWS, states with nuclear power, etc.) and would be understood as building blocks of a comprehensive convention which could be realized step-by-step and in conjunction. Different negotiation paths could run in parallel and then be merged, adapting to progress and changing circumstances. Moratoria and temporary agreements, unilateral, bilateral, multilateral, could serve as intermediate steps in this process.

Within the umbrella negotiations, steps could include, among others: taking nuclear forces off alert; removal of warheads from delivery vehicles; ending deployment of non-strategic nuclear weapons; negotiations to further reduce U.S. and Russian nuclear arsenals; a no-first use for nuclear weapons and further security guarantees, new nuclear-weapon-free zones, a deep reduction of the nuclear arsenals and delivery systems, a ban on nuclear-weapons materials, further restrictions on nuclear weapons development as well as the closure and conversion of nuclear weapons facilities. Each of them could be implemented as intermediate steps on the road to the NWC which would ultimately bind them together into a coherent legal framework. Such an approach would overcome the contradiction between step-by-step and comprehensive approaches to nuclear abolition. Concerns of states about asymmetries and disadvantages inherent in single steps could be balanced in the context of comprehensive disarmament negotiations. The increased transparency and trust between nuclear weapon states and non-nuclear weapon states would rather facilitate the realization of single steps.

The umbrella could serve as a model for the negotiation process and for the NWC itself. Umbrella negotiations would prepare and implement the different elements needed to achieve a nuclear-weapon-free world. Each element once in place already provides an important contribution to the NWFW and the process leading to it.
Middle Powers Initiative Atlanta Consultation III

The Middle Powers Initiative’s Atlanta Consultation III: Fulfilling the NPT explored the options for fulfilling the Non-Proliferation Treaty – both at the May Review Conference and beyond.

For the third time in the run-up to an NPT Review Conference, President Jimmy Carter and the Carter Center in Atlanta, Georgia, hosted this MPI consultation. It took place on January 20–22, 2010. Twenty middle power governments, as well as two nuclear weapon states – the United States and United Kingdom – participated in the Consultation, as well as senior officials from the United Nations, the Comprehensive Test Ban Treaty Organization (CTBTO) and the Carter Center.

Evaluating the Prospects of a Nuclear Weapons Free World.
INESAP’s Second Simulated Negotiations of the Nuclear Weapons Convention

By Christoph Reissfelder

After a first round of simulated negotiations of Article IV, Obligations, of the Model Nuclear Weapons Convention at the Non-Proliferation Treaty Preparatory Committee (NPT PrepCom) meeting 2008 in Geneva, the International Network of Engineers and Scientists Against Proliferation (INESAP), in cooperation with Technische Universität Darmstadt and the Carl Friedrich von Weizsäcker-Centre for Science and Peace Research (ZNF) of the University of Hamburg, continued its project of promoting and evaluating the prospects of a Nuclear Weapons Convention by organizing simulated negotiations of Article IV, Phases for Implementation, at the NPT PrepCom 2009 in New York.

The Model Nuclear Weapons Convention (mNWC) is a comprehensive legal framework that prohibits the use of nuclear weapons and includes a phased plan for complete nuclear disarmament. It was drafted in 1996 and presented in April 1997 by the International Association of Lawyers Against Nuclear Arms (IALANA), INESAP, and the International Physicians for the Prevention of Nuclear War (IPPNW). Costa Rica submitted the mNWC to the United Nations Secretary General in 1997 (UN Doc. A/C.1/52/7). In April 2007, the three organizations launched a revised version of the mNWC, which has been introduced to the United Nations General Assembly by Costa Rica and Malaysia (UN DOC A/62/650). Article IV, Phases for Implementation, is an integral part of the mNWC because it proposes a comprehensive timetable that can be understood as a phased approach that ultimately leads to complete nuclear disarmament after 15 years. In the light of the actual stance of the nuclear weapons states, such as the preference of the United States for a step by step approach, it is clear that the implementation of Article IV bears some problems.

Therefore, INESAP brought together 30 students from different fields and places to evaluate the feasibility of Article IV. The students simulated delegations of Brazil, China, Egypt, France, Germany, India, Iran, Israel, Libya, Malaysia, Russia, South Africa, and the United States. They attended the PrepCom, where they interviewed the real diplomats of the country they simulated about their commitment towards nuclear disarmament and were briefed by experts, such as mNWC co-author and Right Livelihood Award winner Alyn Ware, to make the simulated negotiations as realistic as possible. Likewise, the excellent chairing by Chilean ambassador Alfredo Labbé guaranteed the realism of the simulated negotiations. As a consequence the students showed much professionalism.

Therefore, the simulated negotiations were characterized by high levels of contention between the delegations, of which 16 proposals for amendments are proof. The main points of dispute were the beginning and duration of the specific phases, the role of the nuclear stockpiles of India, Israel, Pakistan, and North Korea in the disarmament process, the Middle East, and the use of highly enriched uranium for research purposes.

Nevertheless, the outcome of the simulated negotiations of Article IV showed that consent of all involved states parties on a comprehensive phased approach towards complete nuclear disarmament is achievable.

The simulated negotiations had considerable impact on the promotion of the mNWC, as members of the Italian and Russian delegations and several NGO representatives in the audience underlined. In particular, the request of the students to meet with the “real” country delegates and discuss the mNWC with them boosted knowledge about the mNWC among the country representatives. The mNWC simulation 2010 is held on the occasion of the NPT Review Conference from May 11–12 in New York City.

The PDF files of the updated mNWC (2007) can be downloaded at: http://www.inesap.org/publications/nuclear-weapons-convention

The ultimate goal would only be fully effective once all the components are integrated and the “NWC umbrella” would unfold its strength to effectively shield the world against all nuclear threats.

To get started with NWC negotiations as early as possible, the current political momentum for a NWFW needs to be used to prepare the conditions, building on the NPT Review Conference and other events in 2010 to conclude the negotiation process within this decade. Cooperation and communication among governments and NGOs is essential in creating the NWFW and improving the international system. Cooperation concerns integrated concepts for disarmament, the realization of single steps, disposal of nuclear materials, verification, building of security structures, and citizens’ involvement. Negotiations on the NWC could serve as a forum to organize the necessary communication among delegates, NGOs and the public. Progress in these negotiations could stimulate cooperation in other fields of the international system, including environment, development and democracy building.


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Global Responsibility | Issue 61 | April 2010
Nuclear Non-Proliferation and Disarmament: Shifting the Mindset

By David Krieger

The parties to the Non-Proliferation Treaty meet in May 2010 for the eighth NPT Review Conference. The meeting will occur soon after the 40th anniversary of the entry into force of the treaty and shortly before the 65th anniversary of the U.S. atomic bombings of Hiroshima and Nagasaki. The world cannot afford another failed NPT Review Conference such as occurred in 2005. Nor can it be complacent in the face of the threats that nuclear weapons continue to pose to all humanity.

Previous NPT Review Conferences focused far too much effort on minimalist steps that offer some superficial appearance of progress. They have failed to address the overarching problem of the persisting threat of annihilation that requires a comprehensive solution. This may be characterized as old and ineffective thinking, which in reality increases the possibility of nuclear proliferation and potential use.

A shift in mindset to a new way of thinking about the nuclear dilemma confronting humankind is needed. The specific steps that the parties to the treaty agree to at the 2010 NPT Review Conference will not be as important as the mindset they bring to their work. In preparing for this Review Conference, parties to the treaty are therefore urged to come together in a cooperative spirit for the benefit of humanity.

The Nuclear Proliferation Record

There are currently nine nuclear weapon states: the United States, Russia, United Kingdom, France, China, Israel, India, Pakistan and North Korea. The United States created nuclear weapons during World War II and used two of them on the Japanese cities of Hiroshima and Nagasaki in August 1945, killing over 200,000 people. Since then, the weapons have proliferated to many other countries. In addition to the nine nuclear weapon states, five European countries allow U.S. tactical nuclear weapons on their territory, which would be turned over to the host countries in a time of war. These countries are: Belgium, Germany, Italy, the Netherlands and Turkey. U.S. nuclear weapons were also kept in Canada until 1984, Greece until 1991 and the U.K. until 2008. U.S. nuclear weapons were also kept formerly in Japan and South Korea.

When the Soviet Union broke apart in the early 1990s, its arsenal was divided between Russia, Ukraine, Kazakhstan, and Belarus. The latter three countries possessed nuclear weapons for a short time and agreed to turn their arsenals over to Russia for dismantlement. Russian nuclear weapons were briefly introduced into Cuba in 1962. South Africa also developed an arsenal of six nuclear weapons, but dismantled their weapons by the early 1990s.

In total, 23 countries, as described above, are thought to have had nuclear weapons on their territory. Currently, 14 of these countries still do. Among the nine nuclear weapon states, six (all but India, Pakistan and North Korea) have the capability to launch some of their arsenals from submarines, and India is building a nuclear submarine for this purpose. Thus, the world’s oceans, the common heritage of humankind, are also home to nuclear weapons carried on submarines.

CTBT Tensions

The Comprehensive Test Ban Treaty (CTBT), which was opened for signatures in 1996, required that all nuclear-capable states sign and ratify the treaty in order for it to enter into force. At the time, 44 states were understood to have the technological capability to become nuclear weapon states. Although the CTBT has been signed by 182 states with 151 ratifications, there remain nine of the nuclear-capable states that have yet to ratify the treaty. India, Pakistan and North Korea have neither signed nor ratified the treaty. The U.S., China, Israel, Indonesia, Egypt and Iran have signed but have not ratified.

While the CTBT is promoted by the nuclear weapon states as an important disarmament measure to cut off further nuclear weapons development, the more technologically advanced nuclear weapon states have continued to test their weapons and develop new nuclear weapons with computer simulations coupled with “sub-critical” nuclear tests at underground test sites. In these tests, plutonium is blown up with chemicals without causing a chain reaction, allowing the testing states to argue that they are not performing nuclear tests. Thus, the nuclear weapon states continue to violate the spirit and purpose of the CTBT. Unless the nuclear test sites are closed and weapons research and development is halted at the nuclear laboratories, it is unlikely that the holdout countries will join the CTBT.

The Size of the Problem

Experts estimate the world’s nuclear arsenals to contain approximately 23,000 nuclear weapons, with some 95 percent of the total in the arsenals of the United States and Russia. Although their arsenals have decreased by two-thirds from some 70,000 nuclear weapons at the height of the Cold War, they still contain enough explosive power to destroy civilization and most complex forms of life on Earth. Some of the larger nuclear weapons have more explosive power than all the explosive force used during World War II, including the Hiroshima and Nagasaki bombs. The total power of all explosives detonated in World War II equaled three megatons, the equivalent explosive power of ten average size nuclear weapons. The largest nuclear weapon ever tested was the Tsar Bomba by the Soviet Union in 1961, with an explosive force estimated at around 50 megatons. The explosive power of the operational strategic nuclear weapons in current nuclear arsenals, 5,850 weapons, equals 2,225 megatons, more than 700 times greater than the total explosive force used in World War II.

The detonation in a regional war of even 100 Hiroshima-size weapons on cities is predicted to have profound environmental consequences that could cause up to a billion people to die from nuclear famine. Nuclear firestorms would cause millions of tons of smoke to rise and form a stratospheric smoke layer, which would block warming sunlight from reaching the Earth’s surface and create the coldest average surface temperatures in the last 1,000 years. The protective ozone layer would be severely damaged, causing massive increases of harmful ultraviolet light. Long-term food shortages would
Recommended Steps for Consideration by the Parties to the 2010 Non-Proliferation Treaty Review Conference

A successful 2010 NPT Review Conference will require reclaiming the progress made in the 1995 and 2000 NPT Review Conferences. To do this, the parties to the treaty should reaffirm their commitment to both nuclear non-proliferation and nuclear disarmament by agreeing to take the following actions:

Reduce the Role of Nuclear Weapons in Military Policy
- Take nuclear weapons off high-alert status, and end policies of launch on warning.
- Pledge No First Use of nuclear weapons against other nuclear weapon states.
- Pledge No Use of nuclear weapons against non-nuclear weapon states.

Nuclear Disarmament
- Each nuclear weapon state provide an accurate public accounting of its nuclear arsenal, conduct a public environmental and human assessment of its potential use, and devise and make public a roadmap for going to zero nuclear weapons.
- The U.S. and Russia should negotiate major reductions in their nuclear arsenals to below 500 nuclear weapons, deployed and reserve, by the year 2015.
- Commence negotiations by the nuclear weapon states, as required by the NPT, for a Nuclear Weapons Convention for the phased, verifiable, irreversible and transparent elimination of nuclear weapons, and complete these negotiations by the year 2015. The opening session of these negotiations could be held in Hiroshima, the first city to have suffered nuclear devastation. The final session of these negotiations could be held in Nagasaki, the second and, hopefully, last city to have suffered atomic devastation.
- Reallocate the funds spent on nuclear weapons to meeting the United Nations Millennium Development Goals, including ending poverty and hunger and providing basic preventive health care and primary education to all of the world’s children.

Arms Control Measures
- Complete ratifications of the Comprehensive Test Ban Treaty (CTBT) so that it can enter into force.
- Negotiate a Fissile Material Cut-off Treaty (FMCT) to assure international control of all nuclear weapons materials.
- Negotiate Nuclear Weapon-Free Zones in the Middle East and Northeast Asia, and complete a Southern Hemisphere Nuclear Weapon-Free Zone.
- Negotiate a ban on space weaponization.
- Negotiate limits leading to a ban on long-range missiles.
- Negotiate limits on the deployment of missile defense systems.

Preventing Proliferation
- All enriched uranium and reprocessed plutonium — military and civilian — and their production facilities (including all uranium enrichment and plutonium separation technology) should be placed under strict and effective international safeguards.
- Universal adherence to the Additional Protocol, strengthening the safeguards agreement of the International Atomic Energy Agency with countries party to the NPT.
- Peacefully resolve the existing proliferation issues with North Korea and Iran.
- Take all necessary steps to assure that nuclear weapons are not obtained or used by non-state extremist groups.

Nuclear Power
- Conduct a global assessment by a United Nations Commission of Experts of the impact of the expansion of nuclear power generation on nuclear non-proliferation and disarmament efforts.
- All NPT signatory states should review Article IV of the NPT in light of the proliferation problems posed by nuclear electricity generation.
- Create an international fund in support of the International Renewable Energy Agency’s plans to help developing countries to use alternate sustainable energy forms rather than nuclear energy.

Conclusions
Many lists of needed actions to prevent nuclear proliferation and achieve nuclear disarmament have been created during the six and a half decades of the Nuclear Age. However, to achieve a world free of nuclear weapons, what is most needed is a change in mindset. We must recognize that, since Hiroshima and Nagasaki, the old ways of pursuing security no longer work — if they ever did. By threatening other countries with nuclear weapons, leaders create insecurity for their own people. We must therefore educate and empower a majority of citizens in the nuclear weapon states and their allies to shift their thinking across the nuclear spectrum to support nuclear weapons abolition. We must educate and empower the larger public, awakening them to the threat of nuclear omnicide and to the fact that better, safer ways to achieve security are available. This will require new ways of thinking and vision, leadership and persistence.

There are encouraging signs that the required shift in mindset has begun among some influential leaders. In addition to former high-level U.S. and European policy makers, UN Secretary-General Ban Ki-moon has shown courageous leadership. President Obama has stepped up, acknowledging that the U.S., as the only country to have used nuclear weapons, has a moral responsibility to lead and to act. He needs support for his vision, facing powerfully entrenched vested interests, and encouragement to approach the task with a far greater sense of urgency, taking into account the continuing threat of omnicide.

It is not sufficient to assure that nuclear weapons do not proliferate. It is also necessary to assure that existing nuclear weapons be dismantled and destroyed within years rather than decades or centuries. Mayors for Peace, a fast growing global network with more than 3,500
Global Responsibility | Issue 61 | April 2010

members, has launched its 2020 Vision Campaign for the elimination of nuclear weapons. With nuclear weapon threats to their cities in mind, this campaign calls for the elimination of nuclear weapons by 2020, a reasonable and feasible goal.

Some states, such as Iran and North Korea, have been designated as “states of concern” as proliferators. To dissuade them, incentives must be offered. In addition, all current nuclear weapon states, which are “states of concern” as obstacles to nuclear disarmament, must commit to dismantling their nuclear arsenals. Article VI of the NPT requires that states engage in “good faith” negotiations for nuclear disarmament. The commencement of these negotiations is essential.

In a recent review of the literature on the potential for climate change caused by nuclear war, Steven Starr concluded: “Nuclear weapons cannot ultimately provide ‘national security’ when a single failure of nuclear deterrence can end human history. Unless deterrence works perfectly forever, nuclear arsenals will eventually be used in conflict. We must abolish these arsenals — before they abolish us.” His last sentence echoes the humble and recurrent plea of the survivors of Hiroshima and Nagasaki, who have fought to assure that their past does not become our common future.

In the past, key parties to the NPT have come to the Review Conferences, held every five years, seeking some advantage, seeking to limit change to incremental measures, or seeking to point the finger at other states. Such mindsets will doom the treaty to failure and may doom humankind to annihilation.

Seeking a nuclear advantage is a recipe for disaster. Seeking to uphold the current double standards of nuclear haves and have-nots is another. In the end, humanity will either create a world that is just for all, or we will face the prospect of perishing together in a nuclear conflagration. We have the choice, but without concerted action prospects for the latter outcome are too great.

Article IV of the NPT, designating “peaceful” nuclear power as an “inalienable right,” also requires reassessment. The attempt to spread nuclear power while also seeking to control nuclear proliferation creates conflicting goals that endanger the possibility of obtaining a world free of nuclear weapons.

For the sake of our children and all future generations, we must cease to view one another as enemies. Our greatest enemies today are our own technologies that could destroy us. We can, and must, courageously render them harmless. For ourselves, for each other, and for future generations, we must seek justice and human dignity for all. In such a world, security will not be maintained by mutual threat, but rather by mutual respect. Such a world is possible. Nuclear weapons continue to pose a common threat to us all. However, they also present us with the opportunity to put new ways of thinking into action and thus stop the drift toward omnipresent catastrophe.

It has always been those with vision, leadership and persistence in the pursuit of a more just and secure future for humanity who have changed the world. The world is looking to the leaders of member states of the NPT to exercise sound judgment and act for the benefit of all humanity. The stakes could not be higher. The time to act is now.

This text is an excerpt of the briefing booklet for the 2010 Non-Proliferation Treaty Review Conference: “NUCLEAR NON-PROLIFERATION AND DISARMAMENT: SHIFTING THE MINDSET” published by the Nuclear Age Peace Foundation.


The Heart of Nuclear Weapons
By Scilla Elworthy

In 1942, the young Joseph Rotblat joined a team of eminent nuclear scientists on the US Manhattan Project, the sole aim of which was to build an atom bomb. When it was discovered that Germany was not developing a bomb, Rotblat was the only member to leave the project on moral grounds.

Twenty-six years later, in 1968, the Nuclear Non-Proliferation Treaty (NPT) was negotiated. Under its terms, among the total 189 signatories 184 non-nuclear countries have by now undertaken not to acquire nuclear weapons. Only four sovereign states are not parties to the treaty: India, Pakistan and North Korea have openly tested and declared that they possess nuclear weapons; Israel does not yet formally admit its arsenal. The five original nuclear weapon states – US, UK, France, Russia and China – have undertaken to get rid of their nuclear weapons, under Article VI of the Treaty. This commitment was reaffirmed as late as the year 2000, in “an unequivocal undertaking by the nuclear weapon states to accomplish the total elimination of their arsenals leading to nuclear disarmament to which all states parties are committed under Article VI.” They have neither done so, nor designed step-by-step plans to eliminate their arsenals.

In 2005, just before he died at the age of 97, Joseph Rotblat asked us to wake up to the reality that in this situation we are all in danger. He said: “There can be no peace and security in the world if the mightiest country does not conduct its affairs in accordance with the law.”

At heart of the NPT is the issue of Us versus Them

Nuclear weapons states continue to insist that other states should not acquire nuclear weapons, indicating that what is considered “good defense policy” for them does not apply to others. Thus a double standard is in operation. This perpetuates a dualistic approach to foreign policy, namely the separation between ‘Us’ and ‘Them’.
This approach means that:
- international negotiations are perceived as a zero-sum game, where suspicion is the norm and each offer is made only on the basis of getting something else in return;
- short-term national interest is paramount, measured by economic or political gain;
- states exist under the shadow of mutual threat and terror (termed euphemistically nuclear deterrence) that acts as a cancer corroding international collaboration.²

This dualism has been at the heart of our way of conducting international affairs for hundreds of years, and many people regard it as the norm. But we can no longer afford to compete for power, and use threats of annihilation. We know enough now about the global challenges to the continued survival of humans and animals on our planet, that it has become obvious that coordinated and collaborative responses are essential – if life is to be possible in even one hundred years’ time.

Therefore the question of nuclear weapons proliferation is of immediate concern to us, because it is a potent symbol of the choices that we all — each and every human being — must now begin to make.

What could be done?

Humans have to agree on a series of interwoven plans to preserve life on the planet. Since we can no longer afford the luxury of competition, we are obliged — perhaps for the first time in human history — to learn how to co-operate on a national, international and global scale.

We have a choice here. We can regard this as a blessing and an opportunity, or we can resist. Regarding it as a blessing means that we can solve humanity’s main problems using the phenomenal advances in technology and communications that allow us to see and hear and get to know people living in entirely different cultures. Regarding it as an opportunity means that we can pool resources, talent and employment to ensure a better standard of life for everyone. Resistance, on the other hand, means that we risk the destruction of life as we know it, and that our responsibility to children and grandchildren is abandoned.

Who has already understood this?

Scientists know, and have known since before Einstein, that planetary forces — as well as the tiniest of cells — act as a global holistic system. This knowledge has accelerated and become widespread since James Lovelock, in his Gaia hypothesis² showed that living organisms and inorganic material are part of a dynamic system that shapes the Earth’s biosphere, and maintains the Earth as a fit environment for life. Other scientists have shown that the Earth itself is an organism with self-regulatory functions. This is why scientists — working alongside civil society in worldwide campaigns — are leading the way toward change in environmental policies.

In fact, any one of us can know the reality of these theories in an instant. All we have to do is observe our own body. Doing so, we witness a vast intelligence system at work: billions of cells — in the brain, the nervous system, bones, tissue, organs, skin and blood — working in unison to grow, to repair, to refuse, to re-design, to respond, to reproduce and to transmit hundreds of thousands of messages per second. Each of us lives inside an absolute wonder of synchronized co-operation. Yet our unconsciousness — so far at least — has us behaving as if we are not part of any larger system.

Spiritual traditions also know about co-operation with all living systems, and have done for millennia. The wise masters of the Taoist tradition never lost the understanding that relationship with nature was the key to staying in touch with the source of life. The essence of Buddhism is compassion for every living thing, based on the fundamental understanding that we are all interconnected. Over a period of at least four thousand years, sages in India have repeatedly said that there is an underlying unity of all that exists, including everything we call animate or inanimate, and that the cultivation of wisdom consists in the realization of this truth. Ubuntu — the ancient code of conduct emanating from southern Africa — echoes the basic principles of interdependence found at the heart of the belief systems of most traditional peoples.

This greater intelligence could be applied to politics

At heart, every human being longs for connection, warmth of human contact, affection, and peace. Politicians are no different. But sometimes they have to be reminded that the people they represent want them to lead in more skillful ways.

So our task is to approach the individuals responsible for major decisions that affect our lives, to ask them to act wisely, and to show them that they will receive a great deal of public support if they do.

The timing is right, for three reasons. First, governments are desperate to save money in the wake of the disruption to national economies in the recent financial crisis; nuclear weapons programs are extremely costly, and cutting them would generate substantial savings. Second, since terrorism is the main threat we apparently face, the public does not see the point of nuclear weapons any more, because they are useless against a terrorist. Third, opinion polls show the public to be ahead of governments in policy proposals, and increasingly impatient of their slow-moving pace relative to perceptions of global crisis.

The 3rd Review Conference on the Treaty on the Non-proliferation of Nuclear Weapons — where substantial changes in the treaty could be made — will be held from May 3rd-30th in New York. The numbers of people worldwide who are responsible for preparing this crucial Conference are in fact very few. We can get in touch with them, go to see them individually, and engage them in the kind of policy changes that would now make sense. These changes can then be proposed to the political leadership.

The new policy could include the design of step-by-step plans for nuclear weapons states to eliminate their arsenals, including the following:

- de-alerting the weapons currently on high-alert status,
- pledging No First Use of nuclear weapons,
- convening the nine nuclear weapons states to begin negotiations on a treaty for the phased, verifiable, irreversible and transparent elimination of nuclear weapons by the year 2020
- the money saved by the cancellation of new nuclear programs could be invested in a multi-lateral fund to oversee the security of the fissile materials resulting from dismantling weapons.

The people at the heart of NPT policy are:

In the UK:
Mrs. Mariot LESLIE Director General, Defence and Intelligence Foreign and Commonwealth Office Email: Mariot.leslie@fco.gov.uk; www.fco.gov.uk
H.E Mr. John DUNCAN, Ambassador, Permanent Representative United Kingdom Permanent Mission to the Conference on Disarmament, Email: John.Duncan@fco.gov.uk : www.ukunarmscontrol.fco.gov.uk/en/

In the USA:
Ellen Tauscher, Under Secretary of State for Arms Control and International Security at the State Department. Her assistant is Simon Limage (limages@state.gov).
Ambassador Susan BURK, Special Representative of the President for Nuclear Non-Proliferation, U.S. Department of State, Bureau of International Security and Nonproliferation, Email: burksf@state.gov

In France:
Mr. Martin BRIENS Director, Nuclear Non-Proliferation and Disarmament, Ministry of Foreign and European Affairs, Email: martin.briens@diplomatie.gouv.fr; www.diplomatie.gouv.fr

H.E Mr. Libran CABACTULAN Ambassador Ministry of Foreign Affairs, The Philippines, Email: libuae@yahoo.com

The Chair of the Review Conference is:
H.E. Mr. Libran CABACTULAN Ambassador Ministry of Foreign Affairs, The Philippines, Email: libuae@yahoo.com

Leaders could also be encouraged to recognize, as did Albert Einstein and Joseph Rotblat, that the challenges we now face demand not only the abolition of nuclear weapons, but the abolition of war. For too long, countries have sought to prevent war by preparing for it. World military expenditure in 2008 is estimated to have reached $1.464 trillion in current dollars. This represents a 4 per cent increase in real terms since 2007 and a 45 per cent increase over the 10-year period since 1999. This corresponds to 2.4 per cent of world gross domestic product or $217 for each person in the world. By contrast the United Nations and all its agencies and funds spend about $27 billion each year, or about $4 for each of the world’s inhabitants².

Now the time has come to prevent war by preparing for peace. Cultures of peace can be, and are being, built — the first examples are Costa Rica, which has abolished its armed forces, and Ghana and Kenya — countries that are building Infrastructures for Peace².
Global Responsibility | Issue 61 | April 2010

9

Global Nuclear Disarmament
Slowly Gathers Pace

By Stuart Parkinson

President Obama’s speech1 in Prague last April raised hopes of new momentum on the issue of global nuclear disarmament. He gave a commitment to “seek the peace and security of a world without nuclear weapons”. Since then, there have been positive developments including proposals for a new US-Russia disarmament treaty and cancellation of some proposed US Missile Defence installations. However, it is early days and many questions remain about the appetite for nuclear disarmament within the US and other nuclear powers.

or methodical means of preventing violent conflict and educating for peace.

In conclusion, we can see that nuclear disarmament demands deep cultural changes, and this is where spiritual and religious groups can have most impact. They can do this by highlighting the ancient wisdoms that have relevance to the deep transformations required, and by engaging with officials and others in a spirit of love and understanding. This means working with the deep-seated fear and cynicism that pervade official negotiations, and helping people overcome them in favour of cooperation and mutual respect.

“The crisis of our times is not only an ecological and political crisis but a spiritual crisis. The answers we seek cannot come from the limited left-hemispheric consciousness which currently rules the world but could grow from a deeper understanding born of the union of mind and soul, helping us to see that all life is one, that each one of us participates in the life of a cosmic entity of immeasurable dimensions. The urgent need for this psychic balance, this deeper intelligence and insight, this wholeness, could help us to recover a perspective on life that has been increasingly lost until we have come to live without it—and without even noticing it has gone—recognizing the existence of no dimension of reality beyond the parameters set by the human mind. It is a dangerous time because it involves transforming entrenched belief systems and archaic survival habits of behavior that are rooted in fear and ignorance, as well as the greed and desire for power that are born of these. But it is also an immense opportunity for evolutionary advance, if only we can understand what is happening and why.”

References

1 Professor Sir Joseph Rotblat, The Nuclear Threat Is As Real As Ever, March 2003, Updated August 2005
2 See the Nuclear Age peace Foundation website: http://www.wagingpeace.org/
4 Take for example the organization AVAAZ: Their petitions, fundraisers, rallies, and lobbying campaigns are able to rapidly and effectively mobilize people power all over the world to support the greatest needs and concerns of all human beings. In less than three years, they have grown to over 3.6 million engaged citizens in every country of the world—operating in 14 languages—and have begun to make a real impact on global politics. The Economist writes that Avaaz is poised to deliver “a deafening wake up call” to world leaders, the Indian Express welcomes “the biggest web campaigner across the world” and Nobel Prize winner Al Gore says “Aavaaz is inspiring, and has already begun to make a difference.”

With thanks to Paul Ingram, British American Security Information Council. www.basicint.org/
6 www.friendsofeurope.org/.../P_van_Tongeren_Infrastructures_for_Peace_Sep_2009.pdf
7 Anne Baring, article for the Scientific and Medical Network. See http://www.annebaring.com

Prague’s promise

Obama’s speech made a range of important commitments, including:

• Reduction of the role of nuclear weapons in US national security strategy, while urging other nuclear powers to do the same;
• Reduction of nuclear warheads and stockpiles, mainly through the negotiation of a new Strategic Arms Reduction Treaty with the Russians;
• US ratification of the Comprehensive Test Ban Treaty and pursuit of a new treaty that ends the production of fissile materials intended for use in state nuclear weapons;
• Pursuit of a strengthened Nuclear Non-Proliferation Treaty (NPT); and
• A new international effort to secure all vulnerable nuclear material around the world within four years.

However, these positive promises were tempered by commitments that raise many concerns, including maintaining a strong nuclear ‘deterrent’ until global nuclear disarmament has been achieved, retaining a Missile Defence system to deal with Iran, and continuing the push for new nuclear power, despite worries over its contribution to nuclear weapons proliferation.


References

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Progress in the US and Russia

A key plank of Obama’s agenda is a new treaty with Russia to succeed the START and Moscow treaties. Negotiations between the two governments have led to a proposal for the US and Russia each to reduce their number of strategic warheads to a maximum of 1,675 by 2016. Limits are also proposed for delivery vehicles. However, the limit on warheads is 525 below the maximum allowed by the Moscow treaty—which is not very ambitious compared with previous efforts. For example, in the seven year period from 2001, the US took 3,800 warheads off active deployment and Russia also removed large numbers. A further problem is that, while the numbers of warheads on active deployment have been markedly reduced, the totals in the US and Russian stockpiles are still huge—so redeployment of these remains a risk. Recent data suggest that the US arsenal totals 9,400 warheads while the Russian is 13,000.

However, the biggest problem is that continuing disagreement between the two governments has meant that even the modest proposals on offer have yet to be turned into a formal treaty. This disagreement can be summed up in two words: Missile Defence. In September, the US made a very welcome announcement that the proposal US Missile Defence installations in Poland and Czech Republic were to be cancelled. Although these installations had long been claimed to be for tackling an Iranian nuclear missile threat, the Russians had seen them as a threat to their national security, and this had stalled disarmament talks. The September announcement allowed further progress to be made, but the US insistence that a revised Missile Defence system should still be deployed (albeit one closer to Iran) has continued to make the Russians suspicious.

Uncertainty in the UK

Meanwhile, uncertainty has been the order of the day concerning nuclear weapons in the UK. Although a 2008 investigation by the Federation of American Scientists concluded that the last US nuclear bombs stationed in Britain had probably been removed, there has still been no official confirmation of this. To compound the confusion, the widely expected announcement—due last September—that the Trident replacement programme would move to its next phase of development—known as the ‘initial gate’ decision—failed to occur. However, one announcement that Gordon Brown did make was that his government would seriously consider reducing the number of new submarines built to carry nuclear missiles from four to three—although this really only repeated existing government policy.

Progress and setbacks elsewhere

Two very positive developments during 2009 were the entry into force of two new Nuclear Weapons Free Zones in Central Asia and Africa. This means that more than half of the world’s land area now falls within one of these zones.

Meanwhile, Germany, Belgium and the Netherlands called for all remaining US nuclear weapons to be removed from Europe, and for NATO to downgrade the importance of nuclear weapons in its security stance. Support for such ideas has also come from other voices in Europe.

However, other events have been a source of serious concern. North Korea’s explosion of a small nuclear device last April threatened to upset Obama’s Prague speech. Iran’s admission that it has a secret enrichment facility drew widespread condemnation. The Taliban insurgency in Pakistan has led to fears over the security of their nuclear weapons. And one should not forget the continuing silence among officials over Israel’s nuclear arsenal.

On the road to the NPT review conference

With the next NPT review conference to be held in May, it is critical that the disarmament momentum is continued. At the very least, the US and Russia need to agree the proposed new treaty and declare a major downgrading of nuclear weapons in their security architectures. There also needs to be a commitment by the US to remove its nuclear weapons from Europe. The UK and France need to come forward with major disarmament proposals. And we need the other nuclear powers to come forward with commen surate proposals.

Action

• Please sign the following online petitions:
  • INES petition: ‘Scientists for a nuclear weapons-free world’ at http://www.inesglobal.com/campaigns/pline.html
  • CND petition: ‘No Trident Replacement—Yes to a Nuclear Weapons Convention’ at http://www.iparl.com/petition-cnd/

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References


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Start to Begin Negotiations to Eliminate Nuclear Weapons Worldwide Now!

An international network of more than 250 organizations publicly launched a campaign to press US President Barack Obama and other world leaders to initiate negotiations to abolish nuclear weapons worldwide. The coalition, organizing under the banner “For Peace and Human Needs: Disarmament Now!” calls for negotiations on ridding the planet of the scourge of nuclear weapons to begin at or before the Nuclear Non-Proliferation Treaty Review Conference (NPT RevCon) at the United Nations in New York City.

“Representatives of the world’s governments will gather at the UN for nearly a month, to strengthen the global non-proliferation regime;” said Dr. Joseph Gerson of the American Friends Service Committee (AFSC).

“Some 2,000 Japanese citizens, including more than 100 Hibakusha [A- and H-bomb survivors] will come to N.Y. to join the US citizens in action” said Hiroshi Taka, General Secretary of the Japan Council against A- and H-Bombs (Gensuiyoku). “Having lived with agonies in both mind and body, the Hibakusha carry a message to Government leaders and the citizens the world over, that there should never be another Hiroshima or Nagasaki anywhere on earth, and that nuclear weapons should be totally banned and abolished.”

Speaking for German and European movements, Reiner Braun of INES said “We must demand that the nuclear powers fulfill their NPT Article VI obligation to commence negotiations to completely eliminate their nuclear arsenals. The time is now to start negotiations to ban nuclear weapons, and to turn away from militarism and toward human and environmental security.”

“An international petition campaign calling for the abolition of nuclear weapons, initiated by Japanese peace groups in August 2008, will pick up steam between now and the NPT RevCon;” said Judith LeBlanc of Peace Action Education Fund. Activists from across the world will deliver millions of petition signatures to world leaders during the first week of the NPT RevCon, which convenes May 3, and will be delivering the U.S. petitions to the White House before the RevCon begins.”

To read and sign the call and see the list of the over 250 organizations please visit: http://peaceandjusticenow.org/wordpress/call-to-action/disarm-now

Global Responsibility | Issue 61 | April 2010
Global Responsibility | Issue 61 | April 2010

Nuclear Energy for Climate Mitigation?
No Convincing Evidence
By Martin B. Kalinowski

Large parts of the civil society have long been convinced that nuclear energy is not a responsible contribution to responsible ways to energy generation with respect to human development and climate protection. However, advocates of nuclear energy continue to repeat the myth of a carbon free technology with a virtually unlimited potential for safe, clean and cheap supply of electric power. In this paper the major assumptions supporting the claim that nuclear power could be an effective means of greenhouse gas emission reductions are challenged and a number of further arguments against the use of nuclear energy is summarized.

Impact of nuclear power on national carbon intensities

The typical claim of proponents of nuclear energy is that for every 1 Giga Watt electrical power (GWe) reactor, about 5 or 6 million tons of CO₂ emissions are saved per year of operation. This accumulates to impressive numbers for the globally installed 357 GWe of nuclear power. The Nuclear Energy Agency (NEA) of the OECD published a scenario including a three-fold increase of the current nuclear capacity by the year 2050 to follow the current phase of stagnation (Nuclear Energy Agency (1998): Nuclear Power and Climate Change). According to the NEA this scenario would save the planet Earth from 6.3 Mt CO₂ per year at that time. This compares favourably to the total annual emission of greenhouse gases of 28 Mt CO₂ in 2006. However, this argumentation in favour of nuclear power is based on the assumption that nuclear reactors would replace coal burning power plants with a comparatively high carbon factor of 800 gCO₂/kWh. The question under review here is whether this holds true: for that reason, based on empirical data, the real impact of nuclear energy on carbon emissions will be analysed.

In order to make various primary energy sources comparable and to calculate consistent carbon emission rates for different countries, the combination of electricity and heat generation needs to be taken into account. This is because many plants co-generate electricity and heat for industrial processes or domestic heating. For every country the average CO₂ emission factor (carbon intensity) is determined from the total energy mix and measured in grams of carbon dioxide released per MWh of energy produced.

Fig. 1 shows the carbon intensity plotted against the share of nuclear power for 30 countries with, and for twelve reference countries without nuclear power, based on data for 2005. Ordered by increasing carbon intensity, these are Iceland (1 gCO₂/kWh), Norway, Namibia, Latvia, Ghana, Chile, Thailand, Malaysia, Saudi Arabia, Australia, Cuba and Kazakhstan (1138 g CO₂/kWh). The world record held by Botswana (at 1848 g CO₂/kWh) is not shown in the plot. The country on the utmost right hand side of the graph, indicating the largest share of nuclear power, is France (79%). In addition, Fig. 1 shows the development of the carbon intensity/nuclear relation for the years 1997 to 2005 (the green lines) for eight countries. From left to right these are China, Argentina, Spain, Germany, Switzerland, Armenia, Slovakia and Lithuania.

The data in the plot are taken from two sources. The nuclear power share data are from the World Nuclear Association homepage (http://www.world-nuclear.org/info/nshare.html), the carbon intensities from fuel combustion for the years 1997 to 2005 are found in the report “CO₂ emissions from fuel combustion 1971-2005” (2007 edition) of the OECD International Energy Agency.

At first glance, the positive impact of nuclear energy on the reduction of carbon emissions appears striking. With increasing share of nuclear energy, the upper limit of the countries’ carbon intensities is linearly declining towards zero at 100% nuclear energy. This is not surprising.

At a second look, however, the lesson to be learned from this plot is that irrespective of the nuclear capacity installed, the whole range of carbon intensities from zero to maximum is possible. The spread of country entries under the above mentioned upper limit line fills the whole area with almost even distribution.

This is in particular true for countries without any nuclear power generation. The country with the lowest carbon intensities are found in this group of nuclear abstinence states (Island and Norway), both having a very high share of hydro-power. Also Sweden and Switzerland achieve a very low carbon intensity both due to hydro-power and nuclear energy. They have an average carbon emission factor that is only half respectively one third of France, the state with the highest share of nuclear power.

Fig. 1 allows to study how the carbon intensity changed during times of increasing or decreasing operational nuclear capacity. Between 1997 and 2007, the two countries increasing their share of nuclear energy (Armenia, Slovakia) were able to reduce their carbon intensities as expected. However, contrary to expectation, in none of the four countries reducing the share of nuclear energy this led to an increase in carbon intensity. For Spain and Switzerland the carbon emission factor remained constant, Armenia and Lithuania even achieved a reduction. Obviously, nuclear power was replaced by energy sources that have an as low or even lower carbon emission factor. During the years 1997 to 2005, Germany achieved for the same reason a drastic reduction of average carbon intensity in electric power generation from 517 gCO₂/kWh down to 349 gCO₂/kWh, although during the same period the share of nuclear power remained constant at 31%. The carbon intensity reduction was mainly achieved by the installation of wind power.

Photo © Joachim Spangenberg

Fig.1: Carbon emission intensity versus share of nuclear energy (thanks to Almut Pingel, ZNE)
These empirical data falsify the standard assumption that nuclear reactors would massively replace fossil fuel burning power plants. The real potential for climate change mitigation offered by nuclear power could only be assessed, if we were exactly known which other source it replaces. Without this, a reasonable approximation can be made by taking the average carbon intensity of the whole electricity generation mix of the country of concern. The best solution for reducing greenhouse gas emissions can be identified by comparing the carbon emissions of nuclear energy with alternative energy sources of a low carbon intensity.

The carbon emissions of nuclear power

The often quoted assertion is that nuclear power is carbon free. This is not entirely true if the whole life-cycle of electricity production is analysed. It includes all emissions caused by the construction of the reactor, mining, milling and processing of the uranium ore, uranium enrichment, production of fuel elements, interim storage and final disposal of spent fuel as well as all transports required between these activities. If these emissions are all accounted for, the carbon emissions of nuclear energy are still small as compared to coal burning power plants, but not zero. The German Öko-Institut established the GEMIS (Global Emission Model for Integrated Systems) database for life-cycle analyses and finds a value of 31 gCO₂/kWh plus two grams CO₂-eq. equivalent for the other greenhouse gases. This applies to German reactors with a mixed source of uranium. Depending on the source of enriched uranium, for other countries a range from the German level to three times as high emission factors are possible. As a result, for a full year operation, a 1 GW nuclear power reactor plant in Germany causes indirect emissions of 200,000 tonnes of CO₂.

This non-zero life-cycle carbon intensity of nuclear energy has to be compared to solar energies and the most efficient fossil fuel usage strategies. The finding is that nuclear energy is not the best option for climate change mitigation.

Alternatives for low-carbon energy generation

Nuclear power plants in general produce electricity with an efficiency of 33%. The two other thirds of the energy are wasted heat released into the environment. Only very few nuclear power plants e.g. in Russia are used for co-generation. But the most efficient fossil fuel usage is co-generating electricity and heat. For a reasonable comparison of carbon emission of various energy sources one can either add a carbon emission value related to the heat production to those energy sources that generate only electric power. The alternative applied here gives credit for the co-generated heat by subtracting the carbon emissions that are saved by substituting heat production from fossil fuels. The results found by Fritsche (2006) are summarized in Fig. 2. Accordingly, nuclear energy has a life-cycle greenhouse gas intensity similar to hydro power with the ecologically friendly run-of-river (ROR) scheme and even lower than that of photovoltaic (PV). However it is higher than for wind (onshore and offshore) and for improved efficiency of electricity generation and use.

Most surprising is the fact that even a fossil fuel process can be better than nuclear power. This is the case for gas-fired internal combustion engines (ICE) efficiently co-generating electricity and heat. By far the best option is bio-gas fired ICE co-generation. It has even a negative carbon intensity due to a credit for avoided oil based heat generation. The fossil gas turbine can still achieve a carbon intensity as low as photovoltaic, if the power plant includes a combined cycle (CC) with the exhaust heat from a combustion turbine producing steam to power a steam turbine. For reference, a conventional plant burning hard coal (ST) for combined heat and power production is shown at the bottom of Fig. 2.

The conclusion from this comparison is that nuclear power is not needed for the reduction of greenhouse gas emissions. Instead, it could very effectively be achieved by multiple alternative means.

Reasons against nuclear energy

After having demonstrated that nuclear energy is not really a means for carbon-free energy production, the low potential and the negative side-effects of using this energy form are gaining ever more importance when choosing an energy policy that can effectively mitigate climate change.

1. Nuclear Energy is not commercially competitive. Even though external costs are still not internalised into the market price paid for nuclear power, new capacities can currently only be installed if they are heavily subsidized by governments. This is made evident by state subsidies from Finland, France, Germany and Sweden for the first new construction of a nuclear reactor in Western Europe since the Chernobyl accident. The construction of the Oikiluoto-3 reactor in Finland began in 2006 and will be at least 50% more expensive than planned. Its start of operation has been postponed from 2009 to 2012.

2. The “nuclear renaissance” required for a significant impact is not happening. Due to the increasing age of the existing power plants, it will be difficult to even balance the rate of shut-downs with new constructions. Accordingly, the OECD World Energy Outlook predicts in its reference scenario that the installed capacity of nuclear power will remain almost constant by the year 2030 and its share will fall to about 4.5%.

3. Even if a massive expansion of nuclear energy is not taking place, the uranium resources will be fully consumed within the next 50 years, unless a more risky and more expensive and less proliferation resistant nuclear reactor technology based on plutonium is established within the next ten years. The current thermal reactors with light or heavy water as moderator basically run on uranium-235. This isotope makes up only 0.7% of the natural uranium. In order to make use of the rest, uranium-238, plutonium has to be bred from it as fuel to generate energy. Most countries have abandoned their fast breeder experimental programs or continue to suffer from severe safety problems.

4. If the breeder technology would be mastered and nuclear energy use expanded beyond the currently only 30 countries that use nuclear power, this would significantly enhance the proliferation risk of nuclear weapons. In the past, every third country using nuclear power has built nuclear weapons, and only one (South Africa) gave up on them again. According to the MIT study on “The Future of Nuclear Power” (2003), with a four-fold increase of the world nuclear capacity by 2050 the number of countries using this form of energy would almost double.

5. The nuclear waste problems are still unsolved. More than half a century after the first commercial nuclear power plant went into operation, not a single final disposal site for spent fuels is operating worldwide. Planning and licensing procedures are continuously being prolonged and postponed. Earlier this year, the German Federal Office for Radiation Protection decided that due to safety issues it would be the
The cleaning and restoration operation of the whole area, following the closure of the mine, is still not completed and already caused costs of more than six billion Euro.

**Conclusion**

Considering all these problems of nuclear power, and its limited contribution to mitigating greenhouse gas emissions compared to several alternatives, it is advisable not to count too much on nuclear energy. Since it is very likely that the more expensive and more risky breeder technology will never take off, nuclear power will historically appear as a transition energy that probably has already reached its peak and will phase out in about 50 years — it would not be wise to further invest into it. Instead, funding should be poured into renewable energies as well as in efficiency and sufficiency strategies.

**Sustainability Science: A New Mode of Science. Another Step in the Evolution of Science Paradigms**

By Joachim H. Spangenberg and Martin O’Connor

There is a perceptible trend towards a further fragmentation of research concerning sustainability issues: Whereas environmentally minded expert communities exhibit a strong tendency of constructing environmental issues as the core subject matter of sustainability considerations, mainstream economic thinking tends to picture financial sustainability issues as the all-encompassing concern of policy in the last instance. Scientific communities are in part constituted by an ‘imperialist’ reaching out of existing disciplinary paradigms, like in the debate of ‘strong’ vs. ‘weak’ sustainability which is starting from the problematic of mainstream economics, with its underlying assumptions about optimising rationality.

**Towards a new concept: the evolution of science**

The promotion of science for sustainable development or sustainability science requires procedures for evaluating science and technology contributions against criteria for sustainability. However, assessing the results is not enough: For all domains of science and engineering, sustainability science requires procedures for evaluating safety standards, probabilistic risk-benefit assessment and regulation seems now much lower than 20 years ago. Despite the fact that this is part of a normalisation process as compared to the technological enthusiasm of the 1960s and 1970, there is a serious risk of overshoot, reflected in the decreasing number of young people willing to study for scientific or engineering professions all over Europe. Although the doubts are not always expressed in ways that are scientifically sophisticated, the point is that, if they deepen to a broad and chronic mistrust, they can contribute to a falsification of any vision of a key role for science in a ‘knowledge based society’.

One reason for this dissatisfaction is the experience with politics legitimising itself by way of reference to regulatory procedures based on expert evaluations (such as Cost-Benefit Analysis CBA, scientifically-based safety standards, probabilistic risk-benefit assessments, etc.). No matter how well conducted, they are insufficient for robust public and private decision-making of issues involving high risk and irreversibilities, and the public is aware of this — this inadequacy is by now demonstrated by the historical record (O’Connor 2005). A satisfactory explanation of this insufficiency is not found in assertions of the irrationality of the members of society. Governance challenges for science and technology deployments are characterised by several features that prevent a simple ‘science guides policy’ equation:
Scientific facts are unproblematic to define, employed perfectibility.

1. The initial ‘modern’ model (perfection/perfectibility)
   Scientific facts are neither fully certain in themselves, nor conclusive information (as well as outside of) the science profession who expressed dissent with this model.

2. The Precautionary Model (uncertain and inconclusive information)
   In real policy processes, it is discovered that the scientific facts, the power that is exercised is effective.

3. The Model of Framing (arbitrariness of choice and possible misuse)
   In the absence of conclusive facts, scientific information becomes one among many inputs to a policy process, functioning as evidence in the arguments. Debate is known to be necessary, as each stakeholder has his/her own perspective and values which shape the arguments. Moreover, all such processes involve complex issues, where the situation has a plurality of phases (causes, effects, prevention, remediation, etc.), each phase being treated with its own theoretical constructions of reality (which may not be fully reconciled). There are no simple facts that resolve issues in all these phases and aspects. Hence the framing of the relevant scientific problem to be investigated, even the choice of the scientific discipline to which it belongs becomes a prior policy decision. It can therefore become part of the debate among stakeholders. Different scientific disciplines themselves become competing stakeholders; whoever ‘owns’ the research problem will make the greatest contribution and will enjoy the greatest benefits. However, an incorrect framing of the problem (e.g., due to error, ignorance, poor judgement, and not necessarily wilful) amounts to a misuse of the tool of scientific investigation. However, because there is no conclusive scientific basis for the choice of framework, it has to be admitted that, to some extent the choice is arbitrary (or social). Acceptance of the principle of framing entails an acceptance of the arbitrariness of choice, hence of the possible misuse of science in the policy context and, moreover, of the difficulty of deciding whether or not a misuse has occurred (the judgement will itself be influenced by framing). This can lead towards ‘post-modern’ and ‘relativist’ positions. Acquisitions about the easy or even inevitable misuse of scientific forms and discourses (through ignorance, false consciousness or ‘interests’ of various sorts) can even motivate a rejection of science as a reference point for establishing quality and legitimacy in decisions (see also the ‘demarcation’ model, in the next paragraph).

4. The Model of Science/Policy Demarcation (possibility of abuse of science)
   The scientific information and advice that are used in the policy process are created by people working in institutions with their own agendas. Experience shows that this context can affect the contents of what is offered, through the selection and shaping of data and conclusions. Although they are expressed in scientific terms, the information and advice cannot be guaranteed to be objective and neutral. Moreover, science practitioners and their funders have their own interests and values. In this view, science can (and probably will) be abused when used as evidence in the policy process. As a response to this problem, a clear demarcation between the institutions (and individuals) who provide the science, and those where it is used, is advocated as a means of protecting science from the ‘political’ interference that would threaten its integrity. This demarcation is meant to ensure that political accountability rests with policy makers and is not shifted, inappropriately, to the scientists. Designing the right form of demarcation of science and policy is therefore one of the urgent tasks of governance. This is not easy; too great a separation can result in the scientific institutions pursuing their own, internal goals, and the work becoming irrelevant to the needs of the policy process. Too little a separation can aggravate rather than resolve the risks of ‘political interference’ in science. One contemporary solution — the so-called ‘economic model’ — is to promote the mobilisation of the interests of scientists as ‘suppliers’ of knowledge, responding explicitly to the ‘demands’ of the funding marketplace (private sector, public programmes, NGO research, etc.). This reinforces the role of context in framing interests and purposes, and introduces the well-known problem of possible ‘market failure’ (viz., the coordination effectuated by the marketplace might not correspond with the social demand, and, the ‘social demand’ — whatever this is — might depend in a dynamic way on the ways that knowledge is produced and used in society, etc.). In this regard, the discipline of economics has attempted to institute the science/policy demarcation model via the distinction, explicit since the first part of the 20th century, between ‘positive’ and ‘normative’ analysis. However, this attempted demarcation has always rebounded because it turns out to be very difficult — purely theoretically — to keep separate the two domains while still carrying out ‘policy relevant’ economic analysis.

5. The Model of Extended Participation (working deliberatively within imperfections)
   Given these acknowledged complications, and ‘imperfections’ in the deployment of science in the policy process, it becomes ever more difficult to defend a monopoly of accredited expertise for the provision of scientific information and advice. ‘Science’ (understood as the activity of specialised ‘technical experts’) is henceforth to be included as (only) one part of the ‘relevant knowledge’ that is (or may be) brought in as evidence to a decision or policy process — complementing knowledge created by scientists on an equal footing. The ideal of rigorous scientific demonstration is replaced by that of open public dialogue. Citizens (as well as scientists) become both critics and creators, providers and recipients in the...
Choosing a model

Reflexively, we can consider the latter four models as a progression from the initial ‘modern’ model with its assumption of the perfect adequateness of science in the policy process. Precursors to these models can be found many decades ago, sometimes even in the 19th century. Notions of precaution, framing and demarcation came to be advocated and debated publicly during the 1970s, when ‘progress’ as expressed in productivity (e.g., chemically intensive agriculture, fossil and nuclear energy) and exponential economic growth started to come into question, and when the ‘social responsibility’ of scientists and engineers started to be advocated as a value position to be assumed rather than as a corollary of science itself (e.g. Bessell 1978). They received a boost from the international peace movement in the 1980s (e.g. INES 1991), and have visibly emerged into the policy domain notably with the proclamation of ‘precaution’ at Rio 1992 (United Nations 1993).

Each model in the sequence is designed to resolve a particular type of problem. In any real situation they may co-exist, and (depending on the type of problem addressed) may be complementary or in conflict. Rather than a clear divide, an example is the insistence on ‘science based policy’ and (even more ambiguous) ‘knowledge based society’ (European Commission 2002). Advocacy of a science based policy process (etc.) is correlated with the spread of doubt about the adequacy or even the possibility of grounding policy in science. It is perhaps a question of ‘saving science’; but from what danger (and, hence, what model of science/policy/society is put forward as a basis for the salvage job?). Unfortunately, the first two models still dominate the academic education of future researchers and decision makers in Europe, thus posing a threat not only to future RTD capabilities and effectiveness, but also to the adequate and effective use of science by politics and business.

Concerning the first three models, the ‘imperfections’ can be seen to form a sequence of increasing severity, admitting incompleteness, misuse and abuse. There is still the desire, in each case, that the link between science and policy remain, once appropriate precautions are taken, direct and unmediated. In the successive models, we see that (1) policy is modified by precaution, (2) problems are framed by stakeholders, and (3) scientists are protected from political interference. But the core activity of the modern model, the experts’ (desire for) “truth speaking to the politicians” (need for) power, is unchanged.

By comparison, the final model — that of quality assurance through extended participation — proposes a fundamental change to the status accorded to science in relation to other forms of wisdom and, as such, to the form of societal governance that is envisaged. This corresponds to the perspective of a ‘post-normal science’ as defined and described by Silvio Funtowicz and Jerome Ravetz (Funtowicz, Ravetz 1993). This is also the kind of science needed for most of the new challenges emerging from problems of sustainable development, as argued in the following section.

In the modern tradition, the search for effective solutions on a technical plane was conceived as a separate task from the political and social aspects of decision and implementation. The proposal of ‘post-normal science’ is to adopt a more pluralistic, participatory and democratic view of the knowledge base for policy actions. Dealing with contemporary knowledge problems requires opening the analytical and formal decision-making processes to broader categories of facts and actors than those traditionally legitimated.

On the one hand, the old distinction between hard facts and soft values is being replaced by a ‘soft facts/hard values’ framework — admitting the complexity of emergent system properties (and hence uncertainties, etc.) and admitting the plurality of quality and legitimacy criteria (e.g., there are different definitions of the problem, different ways of selecting and conceiving its relevant aspects, as well as different goal definitions, depending on cultural factors and not only on conflict of interests).

On the other hand, the distinction between experts and non-experts is losing its classical status. In a sense, when facing a ‘post-normal’ problem, all stakeholders are experts — in different ways, from different points of view, and with regard to different aspects of the problem. So, it is necessary to extend the number and type of actors, both individual and collective, legitimated to intervene in the definition of the problems as well as the selection and implementation of the connected policies. This extension does not just fulfil the requirements of democratic decision making; it also improves the quality of decisions. The way of conducting a decision process influences dramatically its results. The dialogue between different actors is essential for quality, credibility, legitimacy and hence prospects of success of policy implementation.

Implementing this deliberative model emerges, for those persuaded of the weight of the foregoing arguments, as a great challenge of our time; for without this, it seems highly plausible that ‘the consent of the governed’ (and hence social cohesion) in science-related policy issues will not be maintained. But of course, this ‘post-normal science’ model makes its own distinctive propositions about knowledge, nature and political processes. It therefore has its own distinctive points of weakness, contradictions and pitfalls, whose study — as a reflexive move — becomes an equally urgent task.

The extended peer community as a key constituency in the process of knowledge generation is not a development specific to the scientific system, but rather a reflection of overall societal trends in this subsystem (as always, expressed in terms and categories of the subsystem). The larger societal question of the constituent agency underlying the transformations of modernity as the societal equivalent to knowledge generation in the science system has disappeared in its old, incurably naive form of asking for a subject of historical transformation. Instead it has reappeared in the form of the postulate of applying the discourse of modernity to itself, envisaging a historical process by which subjects of critical praxis could be constituted. This approach has been formalised in the category of reflexivity introduced by Giddens and Beck — which has, however, tended to disregard the concrete specificities of historical interest constructions and interest conflicts (a temptation some innovative approaches in science have not escaped as well, and for similar reasons). This has made clear that reflexivity (Beck 1996, Giddens 1996) is not so much an answer to the problems of historical agency, but a new, extended way of asking the question, in science as in society at large: Opening it for the diversity of perspectives and constructions, while continuing to enquire into the material specifics of conflicts and compromise in all areas touched by sustainability strategies.
Back from the Copenhagen COP15

By Mathis Wackernagel

While it was a thrill and privilege to participate, it also made evident how far we still have to go to meaningfully address climate change and resource degradation.

I was touched to see the buzz and interest of 40,000 participants engaging at the official conference, and of many more participating in side events and demonstrations. Most paid their own way to Copenhagen, showing incredible commitment to making this world work for all, now and later. There is tremendous public will to make a difference, beyond the 193 country delegations, and possibly over 130 heads of state.

But much about the Climate Talks was quiet puzzling as well:

- Most delegations seem to be unaware of the link between climate change and resource constraints. Why would Europe propose to reduce emissions by x, and to reduce even more if everybody participates? If they fully realized resource constraints, and recognized that without a strong Copenhagen regime the world will get volatile more quickly, their proposition would look differently: They would suggest to reduce emissions by x, and if NOBODY participates, would propose to reduce European resource use even more to get Europe ready for a wild and rapidly resource-constrained future.

- Informed negotiators would arrive to Copenhagen with the mind-frame of “we have a big incentive to make this deal work, because without the deal, we will have to work harder,” rather than “I will not reduce if you don’t”.

- Perhaps these Climate Talks should not be called negotiations (which connotes: “How much am I willing to give?”). A better name would reflect designing a new framework for cooperation (“How do we need to work with each other in order not to sink the planet?”). It was particularly stunning to see how addicted we still are to outdated terms like “developing and developed countries”. These terms embody the linear development that is not only becoming physically impossible, but is also the one that got us into the climate problem in the first place. What we need is green prosperity, or green development, that works with, rather than against the budget of nature.

- The obvious was missing: If we are to meet the 20 intention of keeping climate change within 2 °C, we’d need to follow the IPCC reduction path of at least minus 80% from 1990 levels by 2050. This essentially means moving out of fossil fuel. But hardly anybody admits this mathematical truth. If we accept the G-20 intention and its mathematical consequences, then consider this: Why is it that we haggle so much about access rights to emissions? It would essentially mean negotiating access to zero emissions (after 2050). Why are we putting so much effort into trying to negotiate access rights to zero carbon?

- Perhaps most striking is that the great majority of leaders ignore their nation’s self-interest. Possibly the most notable exceptions were Arnold Schwarzenegger and many of our partner countries like UAE or Ecuador. Others ignore that preparing aggressively for a resource-constrained future is in their most immediate national self-interest. After all, it takes decades to prepare countries, cities and economies for a resource-constrained future. For most countries it is in their self-interest to go beyond the most hopeful Copenhagen targets. Waiting for a global consensus would hurt their own ability to operate in the future.

But there were also quite a few achievements:

- Many local initiatives – cities, pro-active businesses, regions - are already moving ahead even without global agreements. The United Arab Emirates’ Masdar City is a prominent example

- REDD+ (United Nations’ collaborative programme on Reducing Emissions from Deforestation and Forest Degradation) represents a solid recognition, that land-use and bio capacity are keys to the global carbon cycle. Many solutions to climate change will come from carefully managing our use of ecosystem services.

- Delegations showed their level of commitment, negotiating through the night and working tirelessly towards solutions – all encouraging signs that we are at a historical crossroads. Sustainability is certainly no longer a sideshow.

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Dr. Mathis Wackernagel is the President of the Global Footprint Network. This letter was first published in the Footprint Network Newsletter, to be subscribed free of charge from network’s homepage: www.footprintnetwork.org/ 

Photo: ©Mark Knudsen

References


Statement of INES on the occasion of the Afghanistan Conference in London, January 28th 2010

Afghanistan: War is not the Answer — More Troops Mean More War

President Obama’s recent decision to send 30,000 additional US troops to Afghanistan is part of a larger trend of escalating violence in a country renowned for being a graveyard of empires. Additional NATO troops are also being sent. The pressure on “not yet willing” NATO states has increased dramatically — especially on Germany which is supposed to increase its troops by 50 percent.

The president’s decision to add nearly 50 percent more US troops to the occupation of Afghanistan will, together with troops from other NATO countries, bring total troop levels to around 150,000 — approximately the same number of troops deployed by the Soviet Union in their failed war in the 1980s. The US invasion and occupation of Iraq and the NATO war in Afghanistan have shown that true stability and democracy cannot be imposed through violence. Instead the war will be expanded to neighbouring countries, above all Pakistan.

Sending more US and NATO troops to Afghanistan will lead to more US/NATO casualties. The war in Afghanistan has already claimed the lives of nearly 1,000 US troops and more than 500 soldiers from other NATO countries and has severely impacted the lives of countless others through repeated deployments, serious injuries and post traumatic stress disorder.

Sending more US/NATO troops to Afghanistan will create more casualties among the Afghan people. Civilian deaths in Afghanistan since the 2001 invasion are estimated at between 12,000 and 32,000. More than 200,000 Afghan people have been displaced. Increased US troop numbers in Afghanistan are likely to result in increased civilian deaths, injuries and displacements.

Sending more US troops to Afghanistan will breed more extremists. A US intelligence report in early 2009 showed that only one-tenth of enemy fighters in Afghanistan are ideologically-motivated Taliban; the vast majority are fighting against foreign occupiers or for personal economic gain. The continued war in Afghanistan will perpetuate conditions conducive to recruiting by al Qaeda and other extremist groups. Civilian casualties, indefinite detentions and destruction of property only create more extremists. The continuation of the war and especially the drastically increasing numbers of civilian victims will lead to more hate and violence.

Sending more US/NATO troops to Afghanistan will lead to increased financial burden. It is estimated that it will cost an additional $1 million per year for each individual troop sent to Afghanistan. According to the National Priorities Project, total US costs for the war in Afghanistan in 2010 are estimated at $325 billion. Especially at a time of high unemployment, economic hardship and a massive federal budget deficit in the US, this spending is not responsible. Europe is also struggling with the economic crisis; financial resources are desperately needed for securing jobs and economic growth.

Sending more US/NATO troops to Afghanistan means an increase of militarization of society, a decrease of democracy in the participating countries, and a strengthening of authoritarian potential in many countries.

Conclusion and Recommendations

War does not solve any problem. Only the withdrawal of NATO and US troops will bring peace closer. Foreign troops are a part of the problem — not part of the solution. They do not bring peace, but exacerbate problems. The military is the wrong tool for solving the problems in Afghanistan. It is akin to using a chainsaw for surgery rather than a scalpel. The most effective ways to deal with extremist groups, such as al Qaeda, are through international cooperation in intelligence gathering and law enforcement. Only the overcoming of hunger, poverty, and exploitation, along with the creation of just structures, will deprive the terrorists of their societal support. A recent study by the RAND Corporation shows that only seven percent of terrorist groups were defeated by military force in the past 40 years.

For the reasons set forth above, we urge the Congress of the US and the parliaments of all NATO countries not to fund additional troops in Afghanistan.

The conference in London should decide on a withdrawal of all foreign troops.

Instead of investing in war, the US Congress and European parliaments should help in funding the rebuilding of Afghanistan’s infrastructure and support the Afghan people in building institutions of social justice such as schools, courts and health care clinics. Respect for the US and NATO governments in Afghanistan and around the world would increase significantly by providing 50 percent of the resources currently being spent on the war in Afghanistan for these constructive purposes. The money should be given to decentralised and regional democratically legitimated structures and should be given only after new elections bring a government that recognizes its responsibility to the people and not to the warlords. Non-governmental organisations should support this process.

We request that the United Nations agree on a new and peaceful mandate under Chapter VI of the United Nations Charter.

The Afghanistan Conference is a turning point in the preparations of this event; closely connected is the war-network “No to war in Afghanistan” is involved and the Afghanistan Conference is an obvious addition to this network. The focus of critique remains on NATO’s politics of war and its new strategy based on a self-defined right to military interventions and the threat of a first strike with nuclear weapons.

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The new NATO strategy will be launched in Portugal this year. Recently published documents of Madeleine Albright and former NATO General Klaus Naumann call for the global expansion of intervention capabilities and for the further expansion of NATO towards the borders of China. Furthermore, modernization of nuclear weapons is demanded. The impact of NATO’s expansion towards Russia and the destabilizing effect of this kind of politics is most obvious in Georgia: The war in this region requires a civil conflict solution for many interconnected problems.

The war and the conflicts in the Caucasus region are the main themes of an International Conference in Tbilisi from 11.-13. June 2010 prepared by the “No to war- no to NATO” network and groups of the women’s-, peace- and human rights movements.

An International (and worldwide) Day of Action Against the War in Afghanistan is being prepared for 7 October 2010. The international anti-war-network “No to war in Afghanistan” is involved in the preparations of this event; closely connected to and collaborating with the “No to war — No to NATO” network.

Further information is available from the INES homepage or from the INES Program Director Reiner Braun: reiner.braun@inesglobal.com

Workshop on „Preparing students in science and engineering for social responsibility“, Delft University of Technology / Delft, Netherlands, 13.-15. October 2010

See tentative website: ethicsandtechnology.eu/socialresponsibility/

The 16th Conference of the Parties under the United Nations Climate Change Convention (COP16) is expected to be held in Cancún/Mexico from 29 November to 10 December 2010.

www.cop16.mx/
Global Responsibility | Issue 61 | April 2010

**Reports From Recent Events**


Successful conference on the role of scientists and engineers for social responsibility in developing countries, organised by INES, the Indian Institute for Peace, Disarmament & Environmental Protection, the Indian Campaign to Ban Landmines & Cluster Munitions and IPPNW.

82 participants from all parts of India attended the conference. Participants included various high ranking scientists, engineers, researchers, policy makers, intellectuals, legal experts, social workers and young scientists.

**Keynote speakers were:**

Admiral Ramdas (Ret.), former Chief of the Indian Navy
Mr. G.S. Saini, Director, National Civil Defence College, Ministry of Home Affairs, Government of India
Dr. Tapan Chakrabarty, Director, National Environmental Engineering Research Institute (NEERI), Ministry of Science & Technology, Government of India
Dr. Ramesh Thakre, Vice-Chairman Bharat Krishak Samaj, former Chief of the Indian Navy
Dr. S. M. Taley, Professor of Agriculture Engineering and Director of the Agro-ecology and Environmental Centre, A.D. Agriculture University

To find the report by Dr. Balkrishna Kurvey please visit: [http://www.inesglobal.com/download.php?f=269fc1125916f57409d2a309075e2b98](http://www.inesglobal.com/download.php?f=269fc1125916f57409d2a309075e2b98)

**INESAP**

INESAP is the International Network of Engineers and Scientists Against Proliferation and was founded in 1993. It is an INES affiliated, non-profit, non-governmental network organization with participants from all over the world. INESAP’s central objective is to promote non-proliferation and disarmament of all kinds of weapons of mass destruction and relevant delivery systems. In particular the goals are to extend and tighten existing arms control and non-proliferation regimes and to devise and promote the implementation of new approaches.

INESAP promotes critical analyses of technical, scientific and political issues associated with nuclear and other weapons of mass destruction. It also works to develop disarmament concepts. In particular, its members contribute their scientific expertise to efforts aimed at transforming the currently inadequate arms control and non-proliferation regimes into a nuclear-weapon-free and eventually into a weapons-of-mass-destruction-free world. Further, the network contributes to exploring alternatives to ballistic missile defence and weapons in space. INESAP seeks to accomplish these objectives through a program that combines research, networking and activities aimed at influencing national and international policies.

INESAP is currently represented by INESAP Assistant Christoph Reissfelder

[www.inesap.org](http://www.inesap.org)

**What is INES?**

The International Network of Engineers and Scientists for Global Responsibility (INES) is an independent non-profit organisation committed to influencing the role and the impact that science and technology have on society.

INES efforts focus on disarmament and international peace; ethics in science; responsibilities of scientists and the responsible use of science and technology; just and sustainable development.

INES was founded in 1991 in Berlin at the international congress “Challenges - Science and Peace in a Rapidly Changing Environment” and has become a network of over 200 organisations and individual members.

**Challenges for Scientists and Engineers**

Rapid changes in our environment and our societies are forcing us to become more conscious of our role in the world. Science and technology are employed in a worldwide competition for military and economic power. The impacts of this competition have global implications. We have entered a phase in which global developments are in conflict with basic requirements for human survival. Large stocks of weapons of mass destruction, the overexploitation of limited common resources, and a heavily unbalanced world economy provide fundamental challenges to human civilisation and may even threaten its existence.

Engineers and scientists play a key role, both in developing new knowledge that might threaten international security and in providing positive solutions for the future. They are as much a part of the problem as they can be a part of the solution.

**Innovative Reorganisation**

A thorough reorientation of science and technology is necessarily based on integrated system approaches and the acceptance that science cannot provide by itself solutions to today’s challenges. Only through innovative reorganisation and public accountability can the scientific and engineering communities meet their obligation to contribute to a sustainable future.

**INES Goals**

- Abolition of nuclear weapons
- Promoting the responsible and sustainable use of science and technology
- Implementing ethical principles in the education of scientists and engineers

**What you can do: get involved!**

- Become a member! Join a strong and growing network.
- Make a donation and support the network’s effort for a sustainable future! Your donation will help us educate and inspire people throughout the world.
- Bank account at ABN Amro in Amsterdam/Netherlands. INES IBAN: NL23ABNA0568896998 BIC: ABNANL2

[www.inesglobal.com](http://www.inesglobal.com)
Scientists and engineers bear a heavy burden of responsibility to society for the creation of nuclear weapons.

The immense destructive power of these weapons was demonstrated on the Japanese cities of Hiroshima and Nagasaki, and in over 2,000 atmospheric and underground nuclear tests on the lands of indigenous peoples.

Thermoneutral weapons are capable of destroying cities, countries and civilization. They could end intelligent life on Earth.

Humanity has been warned again and again of the perils of nuclear weapons and nuclear war. We recall the Russell-Einstein Manifesto, issued on July 9, 1955. The Manifesto warned, “Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the war far more by good fortune than by sound planning. This good fortune will not be possible to maintain indefinitely – particularly, as is foreseeable, if nuclear weapons continue to proliferate and fall into the hands of non-state extremist groups.

Nuclear weapons were created by humans, and it is our responsibility to eliminate them before they eliminate us and much of the life on our planet. The era of nuclear weapons must be brought to an end. A world without nuclear weapons is possible, realistic, necessary and urgent.

Therefore, we the undersigned scientists and engineers, call upon the leaders of the world, and particularly the leaders of the nine nuclear weapons states, to make a world free of nuclear weapons an urgent priority.

We further call on these leaders to immediately commence good faith negotiations, as required by the nuclear Non-Proliferation Treaty and the 1996 Advisory Opinion of the International Court of Justice, with the goal of achieving a Nuclear Weapons Convention for the phased, verifiable, irreversible and transparent elimination of nuclear weapons by the year 2020.

Finally, we call upon scientists and engineers throughout the world to cease all cooperation in the research, development, testing, production and manufacture of new nuclear weapons.

Prof. Dr. Peter C. Agre Nobel Laureate in Chemistry (2003), USA Prof. Dr. Abhay Ashtekar Director of the Institute for Gravitational Physics and Geometry at Pennsylvania State University, India / USA Prof. Dr. Ulrike Beisiegel Chairwoman of the Scientific Commission of the German Council of Science and Humanities, Germany Prof. Dr. Günter Blobel Nobel Laureate in Physiology / Medicine (1999), USA Prof. Dr. Reiner Braun Executive Director of the German Section of International Association of Lawyers against Nuclear Arms (IALANA) and Program Director of INES, Germany Prof. Dr. Elias J. Corey Nobel Laureate in Chemistry (1976), UK (Northern Ireland) Prof. Dr. Paul Crutzen Nobel Laureate in Chemistry (1995), Germany / Netherlands Prof. Dr. Johann Deisenhofer Nobel Laureate in Chemistry (1988), Germany / USA Dr. Jayantha Dhanapala former UN Under-Secretary-General for Disarmament Affairs and former Sri Lanka Ambassador, Sri Lanka Prof. Dr. Hans-Peter Dürr Alternative Nobel Prize Laureate (1987) and former President at the Max Planck Institute for Physics and Astrophysics, Germany Prof. Dr. Manfred Eigen Nobel Laureate in Chemistry (1967), Germany Prof. Dr. Richard R. Ernst Nobel Laureate in Chemistry (1991), Switzerland Prof. Dr. Gerhard Erli Nobel Laureate in Chemistry (2007), Germany Prof. Dr. John Finney Professor of Physics at University College London, Pugwash Council member, UK Prof. Dr. Johan Galtung founder and Director of TRANSCEND International, Alternative Nobel Prize Laureate (1987), Norway Prof. Dr. Hartmut Graßl Former Director at the Max Planck Institute for Meteorology, Germany Prof. Dr. Paul Greengard Nobel Laureate in Physiology / Medicine (2000), USA Prof. Dr. Herbert A. Hauptman Nobel Laureate in Chemistry (1985), USA Prof. Dr. Allen J. Heeger Nobel Laureate in Chemistry (2000), USA Prof. Dr. Dudley R. Herschbach Nobel Laureate in Chemistry (1986), USA Prof. Dr. David Krieger Chairman of INES and President of the Nuclear Age Peace Foundation (NAPF), USA Prof. Dr. Herbert Kroemer Nobel Laureate in Physics (2000), Germany / USA Prof. Dr. Sir Harold Kroto Nobel Laureate in Chemistry (1996), UK / USA Prof. Dr. Yuan T. Lee Nobel Laureate in Chemistry (1986), Taiwan Prof. Dr. Jean-Marie Lehn Nobel Laureate in Chemistry (1987), France Prof. Dr. Rita Levi-Montalcini Nobel Laureate in Physiology / Medicine (1986), Senator for Life in the Italian Senate, Italy / USA Prof. Dr. Bernard Lown Co-founder of the International Physicians for the Prevention of Nuclear War (IPPNW) – Nobel Peace Prize 1985, USA Prof. Dr. Wangari Maathai Nobel Peace Prize Laureate (2004), Kenya Dr. Ronald S. McCoy Former Co-president of the International Physicians for the Prevention of Nuclear War (IPPNW), Malaysia Prof. Dr. Sir James Mirrlees Nobel Laureate in Economics (1996), UK Prof. Dr. Erwin Neher Nobel Laureate in Physiology / Medicine (1991), Germany Prof. Dr. Marshall Nirenberg Nobel Laureate in Physiology / Medicine (1968), USA Prof. Dr. Ryoji Noyori Nobel Laureate in Chemistry (2001), Japan Prof. Dr. Valery S. Petrosyan Professor at Lomonosov State University and Open Ecological University, Russia Prof. Dr. Martin L. Perl Nobel Laureate in Physics (1955), USA Prof. Dr. John C. Polanyi Nobel Laureate in Chemistry (1986), Canada Sir Richard J. Roberts Nobel Laureate in Physiology / Medicine (1993), UK Prof. Dr. Shoji Sawada Representative Director of Japan Council against A & H Bombs, Japan Prof. Dr. Jack Steinberger Nobel Laureate in Physics (1988), USA Dr. Mark Byung-Moon Suh Political Scientist, Pugwash Council member, South Korea Prof. Dr. Sir John E. Sulston Nobel Laureate in Physiology / Medicine (2002), UK Dr. Jakob von Uexküll Founder of the Right Livelihood Award (Alternative Nobel Prize) and initiator of the World Future Council, Sweden / Germany Prof. Dr. Martinus J.G. Veltman Nobel Laureate in Physics (1999), Netherlands Prof. Dr. John E. Walker Nobel Laureate in Chemistry (1997), UK Judge Christopher Gregory Weeramantry Alternative Nobel Prize Laureate (2007) and former Chair of the International Court of Justice; Sri Lanka Dr. Christine von Weizsäcker, Biologist, Coordinator of the ECORIPA biotechnology programme, Germany Prof. Dr. Ernst-Ulrich von Weizsäcker, Founder and former President of the Wuppertal Institute, Club of Rome member, Germany Prof. Dr. Kurt Wüthrich, Nobel Laureate in Chemistry (2002), Switzerland

Sign the appeal online at www.inesglobal.com
INES and NGO activities at the 8th NPT Review Conference

8.–29. April 2010
Peace Walk for Nuclear Disarmament and Abolition from Washington DC to New York City
Please consider walking with us, sponsoring a peace walker, joining us in NYC, or otherwise contributing to our mission. Whether you can join us for many miles or a few steps, we especially desire to see you walking with us!
Further information: nptwalk2010.wikidot.com/

Friday 30. April – Saturday 1. May
International Conference: For a Nuclear Free, Peaceful, Just and Sustainable World
Riverside Church, New York City/USA
Further information: www.peaceandjusticenow.org

Sunday, 2. May
International Demonstration of the worldwide peace movement. Start near Time Square, 13:00

Monday, 3. May
Opening of the NPT Review Conference and presentation of endorsers of the worldwide calls against nuclear weapons (among others “Scientists for a nuclear weapons-free world” and “Für eine Zukunft ohne Atomwaffen”) to General Secretary Ban Ki Moon.

Tuesday, 4. May
Workshop: „NATO and Nuclear Weapons – Discussion about the new NATO strategy”; (International Coordinating Committee „No to War - No to NATO” / IALANA Europe)
Church Center, 10:00–12:00

Workshop: Nuclear armament and disarmament – the role of science and technology (INES / IPB) UN Building, 13:00–15:00

Wednesday, 5. May
Workshop: „Nuclear Weapons in Europe - for a nuclear weapons free world” (INES / IALANA) Church Center, 10:00–12:00

Friday 7. May
Global Zero NOW Festival
18:30 Dag Hammarskjöld Plaza
See http://www.bang-europe.org/globalzeronow/index.php

Preparation of the simulation conference on the Nuclear Weapons Convention
Princeton University

Monday 10. May
International Youth Meeting
10:00–13:00 NGO room
To see all Youth events visit: npyouth2010.wiki.zoho.com/Calendar-of-Events.html

IGSE* Panel on the Detectability of Clandestine Nuclear Materials Production
Church Center for the United Nations, 777 United Nations Plaza, 13:30

Tuesday 11. May - Wednesday 12. May
Simulation conference on the Nuclear Weapons Convention
INESAP together with the Carl Friedrich von Weizsäcker Centre for Science and Peace Research (University of Hamburg) and IANUS (TU Darmstadt) would like to invite you to a simulation conference that is going to negotiate the Nuclear Weapons Convention. Venue: tba

Wednesday, 12. May
Workshop: Nuclear Weapons Convention and the NPT- Legal Challenges and Prospects (IALANA Germany)
NGO Room A, Temporary North Lawn Building, 15:00–18:00

Workshop: On the way to banning uranium weapons (ICBUW / IALANA)
NGO Room A, Temporary North Lawn Building, 16:30–18:30

*Independent Group of Scientific Experts on the detection of clandestine nuclear-weapons usable materials production