



Environment and Security: Challenges for Change

Report on the Roundtable Workshop on Environment
and Security

IUCN World Conservation Congress

Barcelona, 6 October 2008



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IUCN Commission on Education and Communication

and

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Introduction

On 6 October 2008 over 70 representatives from the worlds of conservation and security met at the Roundtable Workshop on Environment and Security at the [IUCN World Conservation Congress](#) in Barcelona. The roundtable workshop was organised by the IUCN Commission on Environmental Economic and Social Policy and the IUCN Commission on Education and Communication in partnership with the Institute for Environmental Security (IES). Participants exchanged their views on current and upcoming environmental security challenges and explored common grounds for further cooperation.

Both worlds shared the vision that environmental issues and in particular climate change are a major security challenge for all nations. Both worlds have a role to play in combating climate change and participants value the bringing of the two sides together. The two worlds have different cultures, but may benefit from each others' knowledge, competences and capacities. The conservation community could play a role as an early warning network for the security community and may add knowledge for planning war games and developing security scenarios. The military have the capability to react quickly in case of natural disasters and their scenario planning could include attention to climate change adaptation and mitigation.

There was a consensus among the participants that cooperation on environment and security must go beyond reduction of the environmental impact of the military to include, for example, early warning and interaction on the management of environmental problems that may lead to, or aggravate, conflict. A number of promising opportunities for cooperation were identified, particularly with regard to sharing expertise and information, joint scenario exercises and public diplomacy events to put the issue higher on the agenda of decision makers.

Military leaders from the Ecuador, Mauritania, Nepal, the Netherlands, Thailand and the United States offered insights with regard to how environmental issues affect the security situation of their countries and peacekeeping missions. Contributions from these and other participants made clear that the impact of environmental issues on security is large and increasing, but that these issues do not yet receive the attention required as they typically compete for attention with a large number of other pressing challenges.

The formal sessions of the round table and the informal discussions during the reception afterwards generated a number of recommendations for next steps to bring the two worlds closer together. One suggestion was to organise a joint workshop during the next IUCN World Conservation Congress where experts from both worlds could together engage in war games and deepen scenarios. There were ideas about how to increase attention to environment and security on the agenda of NATO, to develop distance education courses on the ecosystem approach and sustainable development for peace keeping troops and to organise a joint campaign to influence the Copenhagen climate change negotiations.

In partnership with the two IUCN Commissions and the US-based CNA Corporation, IES is taking the lead to facilitate the next steps within the context of its programme on "[Climate Change and International Security](#)" (CCIS).

In addition to this written report, a video report of the conference is available at <http://www.envirosecurity.org/challengesforchange/video/>.

Report

Workshop Part I: Introductions

Wouter Veening

Chairman and co-founder of IES, the Institute for Environment and Security, and former Policy Director, Netherlands Committee for the IUCN

Introduction to the Theme of Environment and Security

Hiroshima, Nagasaki and Kyoto are three Japanese cities associated with the fate of the world. The last one is associated with efforts to prevent human-induced disaster in the making. The melting of ice caps and glaciers, droughts and floods—it is all happening more frequently and intensively than we expected. The 15th Conference of the Parties (COP15) of the United Nations Framework Convention on Climate Change (UNFCCC) will meet in Copenhagen, Denmark, in December 2009. The world community has to agree on quantifiable, measurable and verifiable standards for emissions of greenhouse gases.



If the ship is sinking, everybody has to be at the pumps: the environment is a global public good, and everyone is affected. So we can't have free riders. Some are more affected than others, such as people living on small islands or in arid areas. Also, historically, the industrialized world has put most of the load of CO₂ and greenhouse gases into the atmosphere. Now we see the economic growth of the BRICs (Brazil, Russia, India and China) fuelling their growth to a large extent with fossil fuels. They have to be part of the global agreements we have to achieve in Copenhagen. There are issues of equity, responsibility and liability. Of course those who created the problem, bear the greater share of the burden.

It will be a tremendous challenge to monitor and enforce agreements from Copenhagen. My Institute in The Hague is looking at arrangements to do this job.

About "mitigation" of climate change: Is this just buying time? Is it too costly or difficult? Should we focus on adaptation? Adaptation is the response to on-going and inevitable climate change, due to what's already emitted to the atmosphere. But we may be able to make it less bad. If adaptation fails and natural resources become so scarce that violence erupts, the military may have to be called in.

Himalayan and Tibetan plateau glaciers are melting faster than expected, and this will continue. They feed the rivers on which billions of people in Central, South and Southeast Asia depend. How can we cope with a decreasing water supply affecting these billions? We need to learn think in terms of the integrative scenarios the military security people employ. Maybe we will not share their suppositions, but it is about the approach. If we do get an idea of what kind of situation we may face and what kind of work it may entail, how do we cope? Will we turn to a large and hierarchical organization that is partly Red Cross, partly military and partly something else? I am thinking of massive migration induced by floods, droughts, drying up of water resources, new border disputes.

In terms of mitigation, we have to reduce the use of fossils fuels, but concerns of energy security may lead to a scramble for the access to the remaining oil and gas reserves, with the need to protect pipelines and other choke points. That is, if we are not managing an orderly retreat from fossil fuels. We see revived interest in nuclear energy, causing proliferation concerns. I would hate to see global warming lead to nuclear winter.

Jeffrey McNeely

IUCN Chief Scientist

What Environment and Security Means for Ecosystems



Let's look at the history of climate change in terms of security. If we consider archaeology, we find that the times when human cultures have gone through particularly violent periods often coincide with change in the distribution of rainfall, sometimes involving drought. Changing rainfall patterns have had a significant impact on the distribution of adjacent cultures. For example, in the case of pre-historic warfare in the American Southwest that involved the Anasazi and its neighbours, the distribution of the cultures depended on patterns of rainfall. The IPCC tells us that we can expect changes in the distribution of rainfall which affects agriculture, changing the productivity of the land, and the distribution of agricultural lands, due to flood and drought. Times of changing ways of life is when conflict tends to occur, as people try to hold on to land that is no longer productive for their crops, or for their migratory herds.

Then consider the distribution of forests in terms of security. The most effective way to sequester carbon is to protect old growth forest. The Brazilian Government is very protective of its Amazonian forests. It runs military operations, war games, designed to defend the country's rainforests against potential invaders. Some Brazilians think environmentalists might invade their rainforests, which some consider "the lungs of the earth". The Brazilian army wants a capacity to respond to a perceived threat from conservationists to their forests, however unlikely this threat may seem.

More immediate perhaps is the example of military action in Central Africa over the hippopotamus. The population in Lake Albert was reduced from almost 10,000 in the 1970s to about 1,000 in the 1990s as the hippos were slaughtered to feed the various militaries that were in conflict in the region. But the hippo's dung put nutrients into the lake that supported very good fishing – no hippo droppings, no Tilapia, nothing for the fisherman. The militants got meat, the fisherman got poverty.

Conflict over resources can be deadly. In the past decade, at least 97, and perhaps as many as 150, rangers have been killed on active duty in Virunga National Park, Democratic Republic of the Congo. It's a World Heritage site, where many refugees have been placed. Guerrillas threatened to kill the gorillas if their demands were not met, and indeed in two months in 2007, unknown assailants killed seven mountain gorillas. On the other hand, some of the mountain gorillas had been protected by the soldiers from several factions, because they could collect money from tourists who are willing to brave the strife to catch sight of a vanishing species.

A more positive element of environment and security is so-called "International Peace Parks". One example is on the border between Ecuador and Peru. The governments agreed to binding arbitration regarding a series of protected areas on each side of the border, and also where indigenous peoples live (e.g., the Guajaro-speaking people of the Amazon). What if governments agreed to a peace park in the South China Sea? This region is claimed by many countries and may have rich oil and gas resources. As a peace park, governments would agree on how to divide petroleum profits while also protecting biodiversity, especially for fisheries. This might be a way of bringing governments together peacefully when they might otherwise be in conflict.

When the recent typhoon hit Burma, the military provided a quick response to a humanitarian crisis resulting from an extreme climatic event. Who will respond when we see more typhoons? More are predicted, so does the military need to start training for humanitarian interventions? Many militaries already have senior officers assigned to maintain the environmental integrity of their bases. Indeed, because hunting is limited on military bases, these installations are often good places to study wildlife. India, for example, has a military that is very interested in conservation and sees conservation as part of its mission. During the 1960s, the riparian governments sought to develop/manage the Mekong River to benefit people in adjoining countries in Indochina -- Laos, Thailand, Cambodia, and Vietnam -- to promote peace. The ideas developed during that

turbulent time of war are now regarded as valid and useful. War is a process where relationships change. If they can somehow promote biodiversity, and protect the functioning of ecosystems, governments may come out of wars in a more productive way. The more able governments are to maintain biodiversity and healthy ecosystems, the better off the world is going to be and the more likely peace will follow.

Sherri Goodman

CNA General Counsel¹ and former Deputy Under Secretary of Defence (Environmental Security) during the Clinton administration

Policy implications and new scenarios

Lewis and Clark were Army officers who catalogued hundreds of species in their travels to the American West. In recent years, the military has been thought of as a polluter as much as a preserver of the environment. In the United States, the military is third largest federal landholder. Because lands are protected from development, they have become islands of nature. As one of the better-funded areas of government, the military have developed a core capability with hundreds of biologists and other environmental scientists. We used this as an engagement tool to build capabilities and skills. With Generals Wes Clark, Tony Zinni and others I worked with U.S. military commanders to organise environmental and defence conferences around the world.

I saw a story about the Brazilian fear of American military taking over rainforests. It pointed up the importance of cultural sensitivity around these issues.

I worked with leaders of Pacific Command to structure a dialogue about non-threatening issues of the environment as a way of building cooperation and understanding.

Regarding NATO, there is an opportunity to further engage with NATO, which is a source for environmental guidelines for militaries around the world.

The impacts of climate change are likely to increase humanitarian action in disasters, which in turn will demand the military to be “global first responders”. The military will likely need to develop new partnerships to effectively meet these challenges.

Conferences conducted on environment and security in the 1980s often used potential scenarios. CNA just co-sponsored a war game on climate change.

A lot of important data and evidence has been gathered about ecological conditions. Environmental data from scientists could be used in looking at various scenarios that could occur, e.g., flooding and sea level in Bangladesh, melting in the Arctic. It is important to bring these communities together.

Recommendations on how IUCN might engage with the security community:

- Create a task force to develop a global environmental survey tool. Build off concept of IBAT². The data can be used to develop long-range planning scenarios for war games. The result is bringing communities together, NATO and others, for cooperative engagement.
- IUCN can assist in planning dimensions of military exercises and war games on climate change, energy security, and global environmental degradation. You do long range planning and strategic planning in

¹ CNA is a non-profit research organization in Alexandria, Virginia, that operates the Center for Naval Analyses and the Institute for Public Research

² Integrated Biodiversity Assessment Tool, Conservation International

the military. What might be likely scenarios five years, ten years and twenty years from now? Such scenarios help you understand the urgency of taking action now.

In the 1930s it was hard for many people to see the future and to take action to protect themselves. But we can see more migration to higher ground, to seek food as areas become less productive. We can see more natural disasters as climate changes. We can together act to reduce the number affected, to provide a better world for our children and grandchildren.

David Catarious

CNA Research Analyst

Environmental Security and opportunities for collaboration

At CNA about a year ago, we looked at environmental problems from a security perspective. We published study "National Security and the Threat of Climate Change"³ [available online: <http://securityandclimate.cna.org/report/>]. We worked with three- and four-star generals. We used their experience and the analytical rigor of the CNA research staff. A series of meetings were held over nine months. First we looked at the work done by environmental community on the topic, including Jim Hansen from NASA⁴, to explain climate change. "We can't be 100 per cent certain about climate change but we never have certainty on the battlefield. And if you wait for it, something bad is going to happen." We also had insurance companies, etc.

The report issued four findings:

1. The projected climate change is a threat to American security;
2. Climate change is a threat multiplier;
3. Climate change will add tensions even to stable regions;
4. Climate change, national security and energy dependence are interdependent. Some aspects we can solve with clean energy (carbon footprint, free of reliance on hostile governments for oil, less damage to environment).

What is the impact of climate change on human systems? Water. It will create change in precipitation patterns, and by the melting of glaciers (e.g., Tibetan Plateau). Populations will become even more water stressed than they already are. In the tropics and sub-tropics, some crops are already growing at the top of their temperature range. With climate change, we will see global agricultural production drop. We will see malaria and Dengue fever in new areas, for example Italy is seeing cases already. Sea level rise also brings illness. Coastal areas where people live will be inundated. This will cause migration, including local movements, internal state migration and international migration. All types can destabilize areas, which has worried security people.

Every place is different. In Africa, there are already demographic pressures, weak governance and poverty. Add to this situation the impacts of climate change on water and food, and the affect is instability. The Middle East will be hard hit, with its abundant oil but scarce water. Agreements between Israel and Jordan in 1995 used water as source of cooperation. But now there is a problem with salinization.

The CNA report recommends integrating climate change into national security and defence strategies, and making it a matter of strategic national policy [National Intelligence just published report]. The U.S. needs to

³ Global climate change presents a serious national security threat which could impact Americans at home, impact US military operations, and heighten global tensions, according to a new study released by a blue-ribbon panel of retired admirals and generals from the Army, Navy, Air Force, and Marines.

⁴ <http://www.giss.nasa.gov/staff/jhansen.html>

commit to a stronger national and international role in stabilizing climate change; it must get on board as productive player, not an obstacle.

Julia Marton-Lefèvre

IUCN Director General

Why is this important for IUCN, and what are challenges for international work on environment and security in the UN system

I took my previous position as Director for the University for Peace in Costa Rica because I was absolutely convinced of the risks involved in the environment and security nexus. I really wanted to understand the links. I set up a master's degree in environmental security. I see a role for IUCN in this: We are really involved through our membership and structure in building bridges to different communities, and we need the skills of these two communities.

Because we have so many experts in our members on the ground all over the world – they could be a part of this machinery to provide early warning about the issues that are going to happen. They have the skills to monitor, assess and report. On climate change and biodiversity loss, we need to mobilize the IUCN members to be the eyes and ears of the climate. At the opening ceremony, the last banner that came down said "action". IUCN members can report; we must not be satisfied just with gathering knowledge, but we must actually be reporting so governments and citizens will be able to use our knowledge to react. For 60 years IUCN has been building bridges. These IUCN people already have the expertise in monitoring issues, and can go quickly to those who can take action. Putting the issue of environment and security high on IUCN agenda is important.

What can we do at a multilateral level? With IUCN's observer status at the United Nations, we have the right to speak on behalf of nature and our memberships. We have this access to the multilateral level. We can bring the message of environment and security to the United Nations system. While governmental delegations to the UN system are often fragmented and don't agree, we do as IUCN; we go to all meetings of Conventions. Monitoring, observing and reporting can reach the Government members of IUCN and up to the UN system.

Workshop Part II: Panel Discussion

Testimonials from Different Regions and Perspectives

Ton Boon von Ochssée

Ambassador to Kuwait and former Ambassador for Sustainable Development, Ministry of Foreign Affairs, the Netherlands

Question asked by moderator, Wouter Veening: What are your personal reasons for joining this panel?

Ton Boon von Ochssée: I have been a roving ambassador for sustainable development for the Dutch government. Now we see security issues coming up. In long term, security will be one of the major issues not only from a traditional political perspective but from the level of risk that will occur on a global level. Our Director General [Julia Marton-Lefèvre] made it clear that knowledge to share on these issues is very important. We need to interlink the different areas of knowledge present here today much more. The word on the banner, "action", we're looking at it. We are looking at jigsaw puzzle pieces; they are all important, but who is going to make the puzzle? IUCN task force with NATO can take those jigsaw pieces out of the box and start putting the puzzle together.

Moderator: What does this mean for IUCN programme?

Ton Boon von Ochssée: The IUCN membership has put forward more than 150 motions. The motions show that the concern of members is much broader than the environment alone. We need more multi-stakeholder processes. We need more picking-of-brains between disciplines. We can't be only the people who care about conservation of nature. You can't look only at species but at the whole context in which species have their life. Likewise for humans. IUCN can bring new flavour, new energy to the issues of environment and security. We are going towards options for synergy. Our emphasis needs to be on multi-stakeholder approaches, plus the kind of knowledge that is needed.

With regard to the Gulf region: Energy security is high on the agenda. Kuwait is keenly interested in understanding new technologies, and new opportunities to invest. Poverty reduction is one of the short-term issues of the Millennium Development Goals (MDG's) but it needs long-term answers. We have a food crisis, water crisis, financial crisis – I think the human being is in crisis and we must bring us closer to the environment.

Tommy Garnett

Director and founder, Environmental Foundation for Africa, Sierra Leone



Moderator: How is climate change affecting West Africa, and what are the security implications?

Climate Change is a new issue for West Africa. We have only started to talk about it seriously within the past two years. It has a multiplier effect related to poverty. Just when we are starting to make inroads in the Poverty Reduction Strategies, now this. People are confused. There are quite a few changes we can not explain. We are seeing a lot of coastal erosion. Hundreds of thousands of acres have been cleared for farming, the forest lost, but erratic rainfall means that no rice has been planted; it means hungry people. But we can not say for sure whether this was caused by climate change. Our governments are trying to understand what this means, but they have little time, because they have to deal with the aftermath of conflicts. Over 65 per cent of people in Sierra Leone are under that age of 35 and may have fought since the age of 8 or 9 and now must make a living. More attention needs to be paid to educating people to improve the understanding of climate change and how it is going to impact on peace and security. Millions in the region were displaced by conflict. Conflicts did lead to a break in forest destruction, but the creation of refugee camps which cut into the forests offsets the balance. There has been a massive influx of people into fragile ecosystems. We have not yet seen people starting to move because areas become unproductive, but we can expect to hear more about this sooner or later.

Moderator: Regarding Liberia and Sierra Leone, what is the role of the international community to prevent conflict over natural resources?

Liberia and Sierra Leone are resource-rich countries with a lot of poor people. Dependency syndrome has become an impediment to development. The international community has not succeeded in preventing the exploitation of natural resources in reference to conflict. Wars in Liberia and Sierra Leone were raging for ten years before concrete interventions took place. Even though it was clear that diamonds, and in the case of Liberia, timber were involved. A lot of people suffered, there was a lot of unnecessary destruction and there is a lot of catching up now. In the DRC or Darfur we see it happening today. Because of these conflicts there is recognition that natural resources should lead to development, but in our case their mismanagement has led to conflict. A lot of learning is happening in managing natural resources. In Liberia, the entire forest sector has been reformed. Measures like the Kimberley Process diamond certification scheme have been put in place

through international interventions. But sometimes it is better to invest in prevention of conflict than in these programmes which address the impact. These mechanisms can be somewhat effective, but at great expense.

Susanne Michaelis

Associate Programme Director, NATO (North Atlantic Treaty Organization) Science for Peace and Security Programme⁵

<http://www.nato.int/science/>

Moderator: What is NATO currently doing in the field of environment and security?

Today environmental protection is an integrated part of any military operation that is carried out under NATO command. But it is not enough to make military operations 'environmentally friendly'. We still have a long way to go to fully understand the link between environmental issues and security and develop appropriate policy approaches for preventive actions. In the nineties, the NATO Pilot Study "Environment and Security in an International Context" resulted in recommendations how to integrate environmental considerations in national and international policies. Sherri Goodman was one of the co-authors and I think she can confirm that some of the recommendations are currently being adopted by NATO countries and other international organisations.



Environmental activities are also a priority under NATO's Partnership programmes that support cooperation between NATO and former Soviet countries: The NATO Science for Peace and Security (SPS) Programme⁶ and the NATO Partnership for Peace Trust Funds⁷. NATO joined the Environment and Security (ENVSEC) Initiative in 2004 under which activities conducted by OSCE, UNECE, UNDP, UNEP and REC are coordinated (www.envsec.org). The focus is on shared water bodies, chemical pollutants, radioactive waste, and protection of transboundary ecosystems in vulnerable regions of former Soviet countries. This Initiative has helped to raise the topic of environmental security on the political agenda of NATO. In a speech to the HERA Foundation, April 2008, the NATO Secretary General said : " The more we realize environmental change has serious security implications, the more we understand that NATO can not stand idly by."

Moderator: How does NATO view the new challenges of climate change and the need for new partnerships in the field of environment and security?

The Secretary General of NATO mentioned in his speech to the Security and Defence Agenda in June this year that climate change and energy security were amongst the major threats to security that NATO would have to face within the next decade. "Climate change could confront us with a whole range of unpleasant developments – developments which no single nation-state has the power to contain." Civil servants have a

⁵ The Science for Peace and Security Programme offers grants to scientists in NATO, Partner and Mediterranean Dialogue countries to collaborate on priority research areas.

⁶ Website headlines: NATO Science for Peace Project clears radioactive waste in Kyrgyzstan; Harmful pesticides cleaned up in Republic of Moldova. See coverage of NATO Security Science Forum on Environmental Security, March 2008 <http://www.nato.int/docu/update/2008/03-march/e0312b.html>

⁷ <http://www.nato.int/pfp/trust-fund.htm>

responsibility to challenge the members of their organisations with forward-looking scenarios and develop solutions that will benefit their entire population, not just one nation or organisation.

As a forward-looking tool, NATO established a working group debating climate change in the High North⁸. One result of this working group is the organisation of a first NATO conference that will take place in Reykjavik in January 2009.

Piet Wit

Functional Specialist, CIMIC (Civil-Military Cooperation), Dutch army in Afghanistan

It's time to go further than winning hearts and minds. Now we need to talk about long-term security. There is no security without food security, and that has many dimensions: water, pricing, leadership, etcetera. In Afghanistan, I was very much impressed by the sustainability of the agro-ecosystem – thousands of years of irrigation have sustained agricultural production. Biodiversity is rich in this small scale agricultural landscape as exemplified by the fish and tadpoles in the irrigation canals and the numerous insectivorous birds in the orchards. .

Moderator: Is the ecosystem management approach⁹ useful to military?

Last year the main question to me was How to solve the problem of the farmers growing poppy? This year there is a serious drought problem. This is not simply solved as farmers are well aware of: If one takes water upstream, downstream users will go without. No mechanism exists for dealing with that situation. Another example: Digging a deep well and equipping it with a diesel pump will draw down ground water levels. One family may benefit from the well but 50 others will suffer when the groundwater supply for their underground irrigation channels (so-called *kareshes*) dries up. I applied the ecosystem approach in my work. I looked at conservation of the resources base: water, land and vegetation; I analysed the uses made by the farmers of this resource base: horticulture, agriculture, some animal husbandry and related aspects such as processing, markets and trade; the third level of the system that I dealt with relates to management, how to deal with conflicting interests, how to develop opportunities. It involved institutions, both traditional and modern, their mandate and policies. The most encouraging signal I got was that farmers are starting to invest in their farms as they have confidence in their future again..

Javed Jabbar

Chairman and CEO of J.J. Media and IUCN Regional Councillor for West Asia

The environment itself has become a pervasive, multi-dimensional concept. Ecological security is tied to the very security of the State. We see three threats related to climate change: (1) ecological threat, (2) geopolitical threat and (3) internal dynamic threat. Numbers two and three undermine our ability to deal with the first threat. The geopolitical threat undermines and devastates a country's ability to manage disaster situations, for

⁸ <http://www.nato.int/docu/speech/2008/s080226a.html>

⁹ The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention on Biological Diversity: conservation, sustainable use, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. 'Ecosystem' means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit." <http://www.cbd.int/ecosystem/>

example by deployment of the army. IUCN launched a conservation strategy in the Federally Administered Tribal Areas, with its high level of poverty, so this is a good sign in all this grimness.

Regarding the impact of melting glaciers, in theory, it should lead to more water in rivers, but it leads to sea water intrusion. Tens of thousands of people who live in the Indus delta, the coastline of Pakistan that abuts the Arabian sea, are affected.

Let me conclude with something that is the basis for hope. In a situation, where India and Pakistan traditionally have been adversaries, we are showing maturing in signing the Indus Waters Treaty. This survived several conflicts. Despite hostilities both countries have the maturity to recognize its importance. They divide water supply and divide five rivers; the situation needs a new look because the impact of climate change asks for a shared, cooperative process. The ongoing peace process includes water management.

With regard to the situation in south Asia it is important to consider this: if the two largest countries in a region do not have a stable relationship, they are bound to destabilize the entire region. If they can't manage to cooperate on environment, and other issues, they are bound to destabilize the region. Now the United States has added to asymmetry by granting nuclear status to India. This has very grim prospects for stability in South Asia. India has borders with seven countries. The onus for creating stability rests with the largest state, in this case India; India will be more populated than China within 20 years. Pakistan will grow to number four in the world's list of most populous nations. Our capacity to be equitable with ecological issues and resources is very much hindered by this.

Workshop Part III: Roundtables (impression from one roundtable)

Moderator: How can we put the jigsaw puzzle together?

Javed Jabbar: I would urge IUCN to try to sponsor the first-ever conference in South-Asia in which we invite RETIRED armed forces people with environmental leaders to look at the implications of environment and security. There is a great need for a regional approach, but it has never happened.

The Dutch government has been perusing a dialogue in water with Nepal, etc., around the Indus Waters Treaty. We could build an IUCN conference on the Dutch work. Include non-government actors. Serving officers are too tricky. In South Asia, the issue will be water sharing or diverting water.

Miguel Carvajal: Ecuador is the one of the countries with the highest biodiversity on earth. Our problems include deforestation, systematic loss of natural resources (e.g., tropical forest and the Amazon). There are issues of indigenous communities and Afro-American communities. We are facing a decrease in quality and quantity of water. It is a problem of human security and quality of life. The lack of water can originate internal conflict, especially with poverty. Desertification is affecting food security. Natural disasters are occurring; floods destroyed coastal agriculture this year, with great impact on local and national economies. This affects our economy, and economies throughout our region. Our security and defence must include good handling of natural resources. There has been the creation of some military reserves with the frontier with Colombia. Irregular groups destabilize the region. When Colombian military bombarded Ecuador on 1 March 2008¹⁰, it was the first time for an invasion from another country. Challenges include illegal fishing, and other internal and international problems, and the integration processes of South American countries. We have new democratic governments, and we are building a South American Defense Council¹¹. This is a break with the historical and the traditional. Our issues are natural disasters, sovereignty, social democracy. We look at the

¹⁰ 2008 March - Diplomatic crisis after a Colombia cross-border strike into Ecuador kills senior Farc rebel Raul Reyes. Venezuela and Ecuador cut ties with Colombia and order troops to their borders.

http://news.bbc.co.uk/1/hi/world/americas/country_profiles/1212826.stm

¹¹ <http://www.venezuelanalysis.com/news/3361>

links between development, sovereignty and environment. For example, military reserves in border area also are environmental resources. They are protected areas. I think this is the most important. We have interest for security and biodiversity, and so does the international community.

Javed Jabbar: Environment and security is a regional concept across the globe. The conference with a South American security council would really benefit from establishing a dialogue with the conservation community. It is sovereignty defined as possibility, in this case for natural resources management.

Moderator: What outcomes would you like to see from Regional Conferences?

1. Coming together
2. Relationship building
3. Deep listening

Abdul Mueyed Chowdhury: Glaciers melt earlier and longer, and deforestation in the hills means more sand and mud and boulders from the hills. Now our rivers are getting silted. More water comes during monsoon. Erosion of riverfronts has increased enormously. We already have dense population per sq kilometre. There is risk of a serious crisis of land and food. People would also try to go out into other countries. This situation will again endanger security. The global community can help find solutions. On one hand, the global community can work to prevent climate change. On the other hand, it can work with countries to deal with the affects of climate change. Bangladesh could disappear. This is going to happen in the next 20 years.

All countries have a responsibility in abating climate change, but some people are more responsible for creating it in the first place. So it is not just an issue of sharing water, but of taking care of these environmental refugees.

Geoffrey Dabelko: In a very practical sense, there needs to be more avenues for these dialogues, in regions and beyond. We need to be spending more time on how to make links, proactively use environmental logic, and to build trust and confidence between parties and within and beyond countries. We are good at the risk; it's the headlines. But if we can find ways to frame it in terms of opportunities, we have more chance of getting something done.

Moderator: What is the added value of bringing in IUCN?

Summary of the discussion:

One of the critical challenges is how to mix the civil society track and an intergovernmental/governmental track. This entails figuring out ways to bring parties together, build up confidence in unofficial places. In some ways the Nile Basin Initiative was successful, although it was formal and not much civil society was in the room. As a result, some of the bargains that politicians made will be a harder sell because civil society was not involved. IUCN can help bring in robust civil society input.

IUCN can bring in total knowledge, e.g., on transboundary protected areas. It can ensure that measures are implemented in the right spirit. It can use existing mechanisms, and where necessary create new initiatives.

How do people in army learn about and view the environment? Army people need to be aware of the problems. There is training inside the army. Methods in different countries captured in the CNA report. IUCN might have a role in continuing these workshops. Environment and security is new and not very popular in the military sectors. NATO material can be created for common soldiers, for commanders.

Suggestion is made to hold regional conferences on environment and security first, and then bring in army people later. The army is more likely to be interested after the governments are involved.

Sherri Goodman: Oil, forests and biodiversity are the security issues of the environment. The security concerns of the United States are terrorism, drug trafficking and illegal immigration. We do cooperate but the issues are different. The emphasis is different. So it is important and necessary to have spaces for dialogue for us to share

our respective agendas, and also our concerns about environmental threats and security. Only then we can build strong alliances with our neighbouring countries and other countries around key concerns.

Workshop Part IV: Plenary Conclusion

Keith Wheeler
Chair IUCN Committee on Communication and Education

This workshop is about transformational change. The pretext for the meeting was that military and conservationists think in different ways. But look at the commonalities. Yes, one is top-down, and the other is grassroots, but beyond this the issues are more commonly shared. There are five key components for the transformation of individual, organizations, national states and multinationals:

1. Shared vision. Human beings are moving towards a significant crisis based on the impact of climate change on other environmental parameters. In Maslow's hierarchy of needs – security is key before we can start to deal with other issues. Food, water and biodiversity are right at that base level.
2. Leadership. There is an abundance of leadership in this room, and our networks that we can bring together. There is leadership in innovation.
3. Alignment. This refers to alignment in purpose and in work. What does the military sector bring to IUCN? What can IUCN bring to the military? It's been suggested that there could be a sharing of knowledge and data as well as the rigor of scenarios.
4. Culture. Clearly, the cultures are born out of different things. But there are also some commonalities. Some rules of engagement are ancient: you can shoot each other but not shoot the animals or destroy the forest.
5. Process. Transformational change is a continual process, moving from dialogue to next steps that build on each other.

Workshop Part V: Reporting from Roundtables

Each table engaged in 30 minutes of small group discussion, selecting one participant to report to the group.

Table 1

The collateral advantage of the army is in looking at environmental and security issues. Do we need to redefine the purpose of armies all over the world—from waging war to keeping peace to development to environmental protection? We looked at broader quality of life issues around human beings. Capacity-building is needed in the army to equip it to do this, to respond to and prevent disasters. It's a continual process, longer term commitments are needed.

Table 2

Example from Nepal: A difficult armed struggle has now led to a more or less peace situation also thanks to conservationists and environmental journalists. In our project, we worked with conservationists and environmental journalists, and this was an effective peace-building opportunity. In a post-conflict situation, the question is not only how to educate the Red Cross on ecological matters, but how to cope with the thousands of refugees who need water and timber.

In Mexico, issues include instability, narcotics trafficking, and the need for a high-level systematic programme of environmental instruction to the military.

Table 3

Collaboration between environmental and military actors is needed, but there are different contexts, needs, feelings and priorities in different regions. Special meetings can start dialogue on the problems. These meetings can be based on existing institutions such as the South Asian Association for Regional Cooperation or the South

American Defense Council. IUCN can facilitate this dialogue. IUCN can broker knowledge, and be a neutral facilitator. Such meetings should involve retired armed forces leaders with an interest in the environment. Since they are retired, they can bring their experience but are free from the pressure of the army hierarchy. There is also a need for environmental awareness in the army, through training. IUCN can help to discuss environmental refugees, solve water problems and address issues such as deforestation or glacial melting.

Table 4

This table came up with seven ways to make partnerships:

1. Peace Parks, build common ground on how to share resources;
2. Ministries of Defence are efficient in environmental protection (e.g. Mauritania fisheries);
3. Military-to-military cooperation on how to integrate environmental issues in their programmes;
4. IUCN should have Ministries of Defence engaged in IUCN membership;
5. IUCN could recognize NATO as an environmental protector, as a possible stimulus to action;
6. Include retired military in IUCN Commissions;
7. IUCN provide data to military to construct war games (climate change scenarios), and create one for the next IUCN Congress.

Keith Wheeler: If we want to grab attention, and create the action and change, the language is important.

Table 5

There is a good amount of support for military performing crisis response and humanitarian assistance missions in its own countries and abroad, for example in Thailand. There is debate over the role of national and international organizations (what issues they should be responsible for and what issues they should not be responsible for). Water may be a source of conflict in the future. As we look at biodiversity security, we need to determine a baseline. What are the base amounts we need to survive as communities before we go over a threshold? IUCN has a role in policy and environmental law and perhaps as education and capacity-building organization with the military, especially in non-controversial operations.



Speakers

Frits Hesselink, IUCN CEC

Introduction, workshop procedure, recognition of special invited guest and introductions

Wouter Veening, Deputy Chair, IUCN CEESP / Chairman, Institute for Environmental Security

Environment and Security: Challenges for Change, Introduction to the workshop theme, interview of panel members and closing remarks

Jeff McNeely, Chief Scientist, IUCN

Challenges for change: Biodiversity and the Ecosystem Approach: The added value of conservation to environmental security

Sherri Goodman, General Counsel, CNA

Challenges for Change in Security Policy: Policy implications and new scenarios

David Catarious, CNA

Challenges for Change for the Military: Environmental Security and opportunities for collaboration

Julia Marton-Lefèvre, DG, IUCN

Environmental security and the need for new partnerships: Why this is important for IUCN; what are the challenges at the multilateral level?

Ton Boon von Ochssée

Ambassador to Kuwait and former Ambassador for Sustainable Development, Ministry of Foreign Affairs, the Netherlands. Panel discussion

Major Piet Wit, Royal Dutch Army

Panel discussion: testimonial from Afghanistan

Tommy Garnett, Environmental Foundation for Africa, Sierra Leone

Panel discussion: testimonial on post-conflict reconstruction in West Africa

Javed Jabbar, IUCN Councillor, Pakistan

Panel discussion: reflecting on conflict prevention in the Sub Indian continent

Susanne Michaelis, NATO Public Diplomacy Division

Panel discussion: looking at the challenges for NATO

Keith Wheeler, Chair, IUCN CEC

Plenary conclusions

Speakers Bio's

Boon von Ochssée, Ton

Mr. G. A. (Ton) Boon von Ochssée is since September 2008 the Netherlands Ambassador in Kuwait. Previously he was Ambassador for Sustainable Development and Chair of the Inter Ministerial Task Force Johannesburg of the Netherlands Ministry of Foreign Affairs. Before that he coordinated at the GEF Secretariat efforts with the Implementing Agencies, UNDP, UNEP and the World Bank to strengthen member country involvement in the GEF. He prepared policy conclusions for the GEF Council and conducted consultations with the Implementing Agencies in the formulation of strategies, business plans and action plans. In the period 2000 to 2002 he coordinated the GEF involvement in the preparation of the World Summit which took place in Johannesburg, September 2002. From 1995 to 1999 he was advisor on policies related to Climate Change/Ozone Depletion at the Ministry of Foreign Affairs. He developed at the Ministry of Foreign Affairs (DGIS) in the Hague a Climate Change Study Programme for Developing Countries. He participated in the negotiations to implement the Climate Change Convention and in the negotiations leading to the Kyoto Protocol in 1997. Before that he was posted as a foreign service career officer at the Netherlands Consulate-General in Chicago (US), and at Embassies in Kinshasa, Riyadh and Tunis. From 1984 to 1987 he was desk-officer at the Ministry in the Directorate for Economic Cooperation. From 1979 to 1981 he was with FAO, as Environmental Toxicologist involved in the applied research programme of FAO and WHO, in Zambia and Burkina Faso.



Catarious, David

Dr. Catarious is a Research Analyst and Project Director at CNA, a non-profit think tank which provides analysis and solutions for national security leaders and public sector organizations. Dr. Catarious is currently directing a group of twelve retired flag and general officers in examining the Department of Defense's role in achieving a more energy- and climate-secure future. He was also a co-author of the April 2007 CNA report National Security and the Threat of Climate Change. His focus on environmental security spans the areas of climate change, national security, energy security, and homeland security. --Prior to joining CNA, Dr. Catarious worked on energy and environmental policy issues for Rep. Ed Markey as a Congressional Science Fellow for the American Association for the Advancement of Science (AAAS). While on the Hill, Dr. Catarious focused specifically on the issues of climate change, energy independence, biofuels, renewable energy, and the Arctic National Wildlife Refuge. --Dr. Catarious holds a doctorate in biomedical engineering from Duke University as well as masters and bachelors degrees in mathematics from Virginia Tech. He is also a Fellow of the Truman National Security Project.



Garnett, Tommy

Stephen Tommy Garnett is the director and founder of the Environmental Foundation for Africa, a Sierra Leone -based NGO with regional focus, working to empower the local people to protect the integrity of nature in Africa . From 1998 to date, EFA led by TG, has been a partner of the UNHCR, working in Guinea , Liberia and Sierra Leone to address the environmental impacts of conflict and displacement in these war torn countries. The work has focused mainly on: environmental assessments in war affected areas, public awareness, advocacy, development of learning materials and tools, training of beneficiary groups and staff of humanitarian relief organisations in integrating environmental management in post conflict relief operations. From 2003-2007 TG was a member of the UN panel of experts on Liberia, monitoring the humanitarian impacts of the sanctions which were imposed by the security council, because of the role diamonds and timber played in fuelling conflict across the region.



Goodman, Sherri

Sherri Goodman is General Counsel and Corporate Secretary of CNA, a non-profit think tank which provides analysis and solutions for national security leaders and public sector organizations. She is also the Executive Director of the Military Advisory Board for CNA's project on National Security and the Threat of Climate Change. She is member of the Council on Foreign Relations Task Force, Confronting Climate Change: A Strategy for U.S. Foreign Policy. --Ms. Goodman was the Deputy Under Secretary of Defense (Environmental Security) from 1993-2001. As the chief environmental, safety, and occupational health officer for the Department of Defense, Ms. Goodman was responsible for over \$5 billion in annual defence spending including programs on energy efficiency and climate change, cleanup at active and closing bases, compliance with environmental laws, environmental cooperation with foreign militaries, and conservation of natural and cultural resources. Ms. Goodman has twice received the DoD medal for Distinguished Public Service, the Gold Medal from the American Defense Preparedness Association, and EPA's Climate Change Award. --Ms. Goodman received a J.D. cum laude from the Harvard Law School and a Masters in Public Policy from Harvard's John F. Kennedy School of Government. She received her Bachelor of Arts summa cum laude from Amherst College.



Hesselink, Frits

Frits Hesselink (Netherlands, 1945) is a former Chair (1994-2000) of the IUCN Commission on Education and Communication (www.iucn.org/cec). He has a background in International Law and started his career in 1970 as a Fellow at the Institute for International Law of the State University of Utrecht. In 1975 he co-founded the Dutch Institute for Environmental Communication, of which he was a executive director from 1983-1998. During this period he and his Institute played a leading role in the preparation, design and management of several of the Dutch Interdepartmental Programs for Environmental Education. Since 1998 Frits Hesselink is executive director of HECT Consultancy, a private company working for international organizations, governments, NGOs and the private sector. HECT Consultancy is specialised in stakeholder management for sustainable solutions. Services include research & advice, meeting management, coaching and training (www.hect.nl).



Jabbar, Javed

Javed Jabbar has diverse interests in mass media, international and national affairs, the environment, voluntary development work, social and cultural issues. He is Chairman and Chief Executive of J.J. Media (Pvt.) Ltd. in Pakistan and has written and produced a new feature film for international cinema in 2008 titled: "Ramchand Pakistani" which has won the International Critics Prize in July 2008. --As part of his voluntary work, he is one of the four elected global Vice Presidents & a Regional Councillor for West Asia of IUCN–International Union for Conservation of Nature (2005-2008). He is the co-founder of the Social Policy & Development Centre, Karachi, the South Asian Media Association and several research centres and grass-roots development organisations which work in about 2000 villages and towns of Pakistan. He has served as Minister in three Federal Cabinets of Pakistan and as a Senator. The Ministries he has headed include Information & Media Development, Petroleum & Natural Resources, Science & Technology and he has also served as Advisor on National Affairs with General Pervez Musharraf (1999-2000) after which he resigned from the Cabinet. He has a long association with Track-II diplomacy & regional security issues. He has drafted several progressive laws and policies including the original PEMRA law for private electronic media. His writings have been published in 10 books on a range of subjects and he has made several award-winning documentaries, and Pakistan's first English language cinema film: "Beyond the last mountain." (1976).



Marton Lefevre, Julia

Julia Marton-Lefevre is Director General of the International Union for Conservation of Nature (IUCN), which brings together governments, NGOs and scientists in a unique world partnership of over 1000 members spread across most of the globe.--Prior positions include: Rector of the UN-mandated University for Peace (UPEACE), Executive Director of LEAD (Leadership for Environment and Development) International, Executive Director of the International Council for Science (ICSU), Programme Specialist in Environmental Education under a joint UNESCO-UNEP Programme, university teacher in Thailand as a Peace Corps Volunteer and a staff member of the Fund for Education and Peace in New York. Julia is a member of a number of boards and commissions including the Council of UPEACE, the Board of Directors of LEAD International and of the International Institute for Environment and Development (IIED), the Board of Trustees of the Bibliotheca Alexandrina and the



McNeely, Jeff

Jeffrey A. McNeely is Chief Scientist at IUCN, where he has worked since 1980. Before joining IUCN, he spent twelve years in Thailand, Indonesia, and Nepal, conducting research and practical application of resource management activities. As IUCN's Chief Scientist, he is responsible for overseeing the work of the world's largest conservation network, with over 1,000 institutional members and 10,000 scientists and other specialists working in biological conservation. He has written or edited over 40 books and 500 popular and technical articles on a wide range of environmental topics, as well as serving on the editorial board of 14 international journals. He is currently working to link biodiversity to environmental security, violent conflict, conflict resolution, sustainable agriculture, human health, biotechnology, climate change, energy, and more traditional fields of IUCN interest such as species, protected areas, ecosystems, and economics. He is a member of the Advisory Committee of the Sustainable Agriculture Initiative Platform, Chairman of the Board of Ecoagriculture Partners, President of the Asia Section of the Society for Conservation Biology, and a member of the Scientific and Technical Council of the International Risk Governance Council.



Michaelis, Susanne C.

Dr. Susanne Michaelis, born on 3 October 1960 in Germany, studied Molecular Biology and received her PhD in the area of human genetics. In 1994, Dr. Michaelis joined DG XII (Research) of the European Commission where she was responsible as scientific officer for one of the life science programmes under FP 3 and 4. In 1996, she started at NATO as project manager for a programme that supported civil science cooperation within the Alliance. Today, Dr. Michaelis is Associate Programme Director in NATO's Science for Peace and Security Programme which supports cooperation between experts from NATO and its Partner and Mediterranean Dialogue countries. Her focus lies on enhancing NATO's relations with other international organisations and with Ukraine in the field of scientific and environmental cooperation.



Veening, Wouter

Wouter Veening studied political science, economics and social psychology at the University of Amsterdam. After working as policy adviser at the Dutch Ministry of the Environment, he became policy director at the Netherlands Committee for IUCN/World Conservation Union, where he dealt with the environmental policies of multilateral finance and donor institutions, such as the World Bank, IMF, the Global Environment Facility and the European Union. --As co-founder and Chairman of the Institute for



Environmental Security (2003) in The Hague he now focuses on the policy and legal responses to security risks emanating from environmental degradation in key regions of the world.

Wheeler, Keith

Keith A. Wheeler has over 32 years of professional experience in the field of conservation and the environment. This includes work at the local, national and international levels with governmental and non-governmental organizations and the private sector. He holds undergraduate degrees in Biology and Chemistry and graduate degrees in Environmental Science and Soil and Water Conservation. As President of the Foundation for Our Future he provides leadership and institutional development for an international, non-governmental R&D sustainable development organization focused on sustainable development knowledge management, organizational change management, and capacity development. As Chairman and CEO of ZedX, he provides overall leadership and strategy development for the international state-of-the-art knowledge management and IT company that focuses on sustainable resource management through a wide range of interactive, web-based, decision-support systems designed for the agricultural, water and energy sectors. He has served as President of CFix, a conservation carbon sequestration fund that developed significant forest-based carbon offset projects in South America. He was the first Executive Director for the Global Rivers Environmental Education Network (GREEN), with 46 coordinating offices and programs in over 55,000 communities in 135 nations worldwide. Additionally, he served as the Assistant Director of the Adirondack Park Agency directing the education and communication efforts in the six million acre protected area. Keith was appointed to the Public Linkage and Education Task Force of President Clinton's Council for Sustainable Development, served as Co-Chairman of the White House Conference on Partnerships for Education about the Environment and as Co-Chairman of Education for Sustainability: An Agenda for Action, a White House initiative to establish a national policy for Education for Sustainability. Keith has authored numerous peer reviewed and popular publications, including a book titled Education for Sustainability: a Paradigm for Hope.



Piet Wit

Mr Wit has over 30 years of experience in the integrated conservation and management of natural resources in over 40 countries in Europe, Africa and Asia. The main focus of his work is the integration of biodiversity conservation with sustainable rural development. Mr. Wit is a Functional Specialist with the CIMIC group of the Dutch Army, where he specialises in reconstructing and strengthening the civil society in environmental and rural development issues during peace keeping operations. Mr. Wit was a key-note speaker at the conference "Nature in War" (Utrecht 2000). He also presented a paper at the conference at the Palace for Peace in The Hague on Environment and Security: The role of the military (2004) and was an invited speaker at two workshops on forests and conflicts in Brussels and Ede (The Netherlands). Mr Wit is currently Deputy Chairman of IUCN's Commission on Ecosystem Management, member of the Board of the Hustai National Park Trust (Mongolia), of the Foundation Reserves for the Przewalski Horse (The Netherlands) and of the NGO Daridibó in Guinea Bissau. Mr. Wit has been awarded Mongolia's highest recognition for nature conservation by the Minister of Nature and Environment of Mongolia. He is an honoured citizen of the Central Province of Mongolia.



Special Guests from the Security Sector

Carvajal, Miguel

Vice Minister of Defence, Ecuador.



van der Lijn, Jaïr

Dr. Jaïr van der Lijn joined the Clingendael Institute in 2007. Mr. van der Lijn has strong interests in the many aspects of conflict resolution, such as peace operations, peace agreements, and the role of the United Nations. Given the nature of his research, Mr. van der Lijn's focus lies predominantly, but not exclusively on the Balkans and Africa. In addition, the Future Security Environment for the Netherlands constitutes one of his research topics. Mr. van der Lijn holds a PhD in Management Sciences from the Radboud University Nijmegen, where he is also currently lecturing as an Assistant Professor at the Centre for International Conflict Analysis and Management.



Ould Ahmed, Cheikh

Born 31 December 1954 in F'Derick in the North of Mauritania. Joined the Mauritanian Navy in 1977. Since then assigned PB X'o, Pb captain, naval base Cdr, Ops Chief and finally Director of the Navy in 2003. Transferred to the Ministry of fisheries as the Head of Fishery Surveillance known in french as "DSPCM: Delegation à la Surveillance des Pêches et au Controle en Mer" which is a Coast Guard institution. Besides navy training, he is a USCG Reserve Training Center graduate (Yorktown, Va) and he attended also some environment courses like the Wetland International course (Lelystad, Netherlands). He speaks Arabic, French and English.



Sharma, Bala Nanda

Born in April 5, 1949, in Nepal, Lt General Bala Nanda Sharma holds MA degree in History from Tribhuban University, Nepal. He joined the Royal Nepalese Army (RNA) in 1969 and after basic training at the Royal Nepalese Army Academy he was commissioned into the Regiment of Artillery. He has undergone training both in Nepal and abroad. As mid level officer, he served as Assistant Senior Military Officer in the United Nations Interim Force in Lebanon (UNIFIL), Brigade Major in an Infantry Brigade, Chief Instructor in the Royal Nepalese Army School and the Staff College. He commanded an Infantry Battalion and worked as Defence Attaché to the USSR. As a Colonel and Brigadier, he commanded an Artillery Brigade and was the Commandant of the Royal Nepalese Army Command and Staff College. --As General Officer, he has been the Director of Military Training of the RNA, worked as Master General of Ordnance (MGO) and served on various Strategic Task Forces on National Security Policy and Strategy including restructuring of the RNA. He commanded an infantry division at home and served as Force Commander of United Nations Disengagement Force in the Golan Heights. He is retired from the Nepalese Army after completing 39 years of service. He continues to attend various Peacekeeping Seminars nationally and internationally. He is decorated with Gorkha Dakhsin Bahu & Trishakti Patta-III. He is married with one son.



Wachirakul , Wittaya

Colonel Wittaya Wachirakul was a cadet in Chulachomklao Royal Military Academy class 27 for five years, and graduated with a Bachelor of Science in 1980. --Wittaya Wachirakul was promoted to be an Infantry Company Commander of the 4th Light Infantry Battalion, 7th Regiment in 1985. In the year 1999, Colonel Wittaya Wachirakul was graduated the Defence Staff Course and Defense Strategic Study Course at Australian Defence Collage. --Colonel Wittaya Wachirakul's work was awarded the best research of the Joint Staff College class 38th in 1997. There another distinguish positions: he was assigned Commander of Thai Contingent (NCC) Peacekeeping Forces, UNMISET in East Timor in 2003 and Commander of Thai Humanitarian Assistance Task Forces in Iran in 2003-2004 for the earth Quake in Bam, Iran. His current position is Director of Doctrine Development and Evaluation Division of Joint and Combined Exercise Planning office, Directorate of Joint Operation, Royal Thai Armed Forces. Colonel Wittaya is a Director of Joint Operations' staff for Doi Mae Salong reforestation project that is one of the Royal Thai Armed Forces in collaboration with IUCN in Thailand.



Annex I: Programme

16.00 Coffee and tea

Arrival of participants, distribution of name badges and workshop brochure

Participants seek their seats at the round tables while selected photos about this theme are projected

16.30 Welcome and introductions

Workshop procedure, recognition of special invited guest and introductions by Frits Hesselink, IUCN CEC

16.45 Environment and Security: Challenges for Change

Introduction to the workshop theme by Wouter Veening, Deputy Chair IUCN CEESP

17.00 Challenges for change: Biodiversity and the Ecosystem Approach

The added value of conservation to environmental security by Jeff McNeely, Chief Scientist IUCN

17.15 Challenges for Change in Security Policy

Policy implications and new scenarios by Sherri Goodman, General Counsel CNA

17.30 Challenges for Change for the Military

Environmental Security and opportunities for collaboration by David Catarious, CNA

David Catarious replaced Lt Col. Shannon Beebe, US Army who was unable to attend

17.45 Why this is important for IUCN; what are the challenges at the multilateral level?

Environmental security and the need for new partnerships by Julia Marton-Lefèvre, DG IUCN

18.00 Coffee break

18.15 Panel discussion: testimonials from different regions and perspectives

To trigger further discussion at the five roundtables, Wouter Veening interviews:

- Major Piet Wit, Royal Dutch Army, just back from his second mission to Afghanistan
- Tommy Garnett (Environmental Foundation for Africa, Sierra Leone), involved in post-conflict reconstruction in West Africa
- Javed Jabbar (IUCN Councillor, Pakistan), reflecting on conflict prevention in the Sub Indian continent
- Susanne Michaelis (NATO Public Diplomacy Division), looking at the challenges for NATO
- Ton Boon von Ochssee (IUCN Councillor, Netherlands), looking at the challenges for IUCN and the conservation community

18.45 Roundtables: How can the two worlds work together towards positive change

Participants from the world of environment meet in an open discussion with speakers, panel members and special invited guests from the world of security in 5 roundtables. They discuss in more details the issues brought up by the previous speakers and the panel, and explore pathways for change and new partnerships.

19.30 Plenary conclusions

Keith Wheeler (Chair CEC) looks back on this meeting of the two 'worlds'. He reflects on transformational change and collects from each table impressions, conclusions, suggestions for change pathways, partnerships and commitments for next steps.

19.55 Closing remarks

Vote of thanks and Closure by Wouter Veening

20.00 Press Conference

IUCN Media Centre, Barcelona International Congress Centre

20.30 Reception

Drinks and bites for participants to support further informal networking

Annex II: List of Participants¹²

Monica Acuna Garcia, University for Peace, Costa Rica
 Ton Boon von Ochssée, Ministry of Foreign Affairs, the Netherlands
 Purificació Canals, DEPANA, Spain
 Miguel Carvajal, Vice Minister of Defence, Ecuador
 David Catarious, CNA, USA
 Abdul-Muyeed Chowdhury, IUCN Councillor, Bangladesh
 Ali Darwish. Green Line, Lebanon
 Arzu Deuwa, SAMANATA , Nepal
 Ewout Doorman, Institute for Environmental Security, the Netherlands
 Taghi Farvar, IUCN, Iran
 María Fernanda Espinosa, Ecuador
 Tommy Garnett, Environmental Foundation for Africa ,Sierra Leone
 Dabelko Geoffrey, Woodrow Wilson International Center for Scholars, United States
 Sherri Goodman, CNA, United States
 Paul Grigoriev, IUCN, Belgium
 Susan Guthridge-Gould, IUCN - CEESP, United States
 Frits Hesselink, IUCN CEC, the Netherlands
 Lynn P Holowesko, IUCN Councillor, Bahamas
 Zakir Hussain, Bangladesh
 Javed Jabbar, J.J.Media Pvt Ltd & Project One Pvt Ltd., Pakistan
 David Jensen, UNEP, Switzerland
 Aban Kabraji, IUCN, Pakistan
 Yolanda Kakabadse, Ecuador
 Anna Kalinowska, Warsaw University, Poland
 Ashok Koshla, IUCN, India
 Tamas Marghescu, IUCN, Hungary
 Gillian Martin Mehers, IUCN, Switzerland
 Julia Marton-Lefevre, IUCN, Switzerland
 Richard Matthew, University of California, United States
 Jeff McNeely, IUCN, Switzerland
 Aroha Mead, Victoria University of Wellington, New Zealand
 Susanne C. Michaelis, NATO, Belgium
 Cheikh Ould Ahmed, Ministry of Fisheries, Mauritania
 Chuck Phillips, Sapience Organizational Consultants , United States
 Ana Puyol, TRAFFIC South America, Ecuador
 Giuseppe Raaphorst, Netherlands
 Sylvia Sanchez, Apeco, Peru
 Mangal Man Shakya, Wildlife Watch Group, Nepal
 Diana Shand ICLEI - Local Governments for Sustainability, New Zealand
 Bala Nanda Sharma, Nepal
 Bradley Smith, Western Washington University, United States
 Jair van der Lijn, Clingendael Institute of International Relations, the Netherlands
 Wouter Veening, Institute for Environmental Security, the Netherlands
 Wittaya Wachirakul, Royal Thai Army, Thailand
 Keith Wheeler, Foundation for Our Future , IUCN CEC, United States
 Piet Wit, Dutch army, the Netherlands

¹² In addition to these registered participants a number of free seated participants was present at the workshop

Annex III: Essay

WAGING SUSTAINABLE PEACE:

A Meeting of Security and Environment to Create a Climate for Positive Alliances

Cindy Ellen Hill

Ice dams give way, inundating the impoverished countryside with glacial melt-water. Sea level rises, forcing coastal residents inland into already overpopulated areas. One country diverts a dwindling river; tensions flare as a downstream country faces a desperate water shortage.

These scenarios are far from hypothetical. The glaciers of the Himalayas are disappearing at an exponential rate, leaving billions of people who rely on the Indus, Ganges, and Yangtze river systems in danger of short-term flooding and long-term drought, while many in already overpopulated coastal regions, such as in Bangladesh, face rising sea levels.

This is when members of conservation community and the military must sit down at the same table.

"If these rivers run dry, imagine the security risk," says Wouter Veening, president of the Institute for Environmental Security(IES), an NGO working worldwide from offices in the Hague, Brussels, London and Washington, and Deputy Chairman of the International Union for Conservation of Nature (IUCN) Commission on Environmental, Economic and Social Policy (CEESP). "The Red Cross and other aid organizations are great, but they do not have the ships, the helicopters, the transport trucks. You need experience in large-scale operations, such as the military."

This connection between environmental issues and security is becoming increasingly apparent, and increasingly urgent.

"Climate change is a national security threat. It is a threat multiplier for instability in fragile regions," says Sherri Goodman, General Counsel for the Arlington, Virginia think tank CNA, and former U.S. Deputy Undersecretary of Defense for Environmental Security. "We need to protect natural resources, food, water, forests, agriculture, as a matter of security."

The field of environmental security "is all about the threats, vulnerabilities, and opportunities that our interactions with the environment pose to our national security," explains CNA research analyst David Catarious. The field is broad, with issues range from the dangers of unexploded ordinance, to global climate change, to the study of how environmental factors like water or food scarcity contribute to localized and regional conflict.

IUCN CONGRESS TO BRING TOGETHER MILITARY AND CONSERVATIONISTS AT GLOBAL LEVEL

Environmental and security communities need to learn to communicate effectively with one another, realized Frits Hesselink, CEO of HECT Consultancy and member of the IUCN Commission on Education and Communication(CEC). In discussions with colleagues, it became apparent that opportunity to foster this interaction could be created at the IUCN World Conservation Congress in Barcelona. Workshop goals reflect the spectrum of changing attitudes and approaches to environmental security.

"We want to look beyond just primary environmental care by the military: cleaning up pollution they cause or postponing manoeuvres to let birds breed," Hesselink says.

These direct negative environmental effects have dominated past environment and security discussions, from toxins like perchlorate, a component of rocket fuel, poisoning groundwater near military bases, to destruction of natural resources in the course of active armed conflict.

"War is the worst destructor of nature and the environment. Depleted uranium and other pollutants leave

large tracts devastated,” Veening agrees. “It uses tremendous amounts of fossil fuels, tremendous CO2 emissions from military operations. Seventy percent of what you bring to the battlefield is fuel.”

While contention over both active and peacetime military operations continues, the IUCN Congress workshop spearheads a paradigm shift in the relationship between environment and security communities.

“We want to explore the extent to which military strategies and operations can be more pro-active, integrate impacts on the environment, and examine issues like poverty and climate change,” Hesselink says. “We need transformational change towards integration and cooperation if we want to generate peace and sustainability. For example, peace mission instructions could include mandates for the military to also guard natural resources like mines, forests, water flows or food supplies. At the same time, we have to open the ears of environmental people, who may see the military as a threat instead of an ally.”

EMERGING VIEW OF MILITARY ROLE AS ALLY FOR ENVIRONMENTAL PROTECTION: DRC Example

Alliance between security and environment concerns can be seen at Virunga National Park, which spans the borders of Uganda, Rwanda, and the Democratic Republic of the Congo. It is presently site of the UN’s largest militarized peacekeeping mission. Over 17,000 troops are working “to keep rebels apart and protect world heritage sites including the mountain gorillas,” Veening explains.

But it needn’t stop there. Veening envisions potential for post-conflict transformation: “One thing I would hope could happen is you demobilize the rebels, then try to retrain the young men, typically young men, to restore agricultural lands, engage in reforestation and terracing to prevent erosion. Then you also train them to be park guards and serve ecotourism. We need some of the old-fashioned military drilling types to make environmental guards out of them.”

Conservation NGOs also increasingly ponder their own operational security needs. IES specializes in mapping and remote sensing to protect environmentally sensitive areas from intrusions like illegal resources extraction. In Colombia, IES provides assistance to a federation of indigenous persons, helping to protect the Orinoco River basin.

“How can we help without putting our personnel or the indigenous persons into a dangerous situation? They are facing threats of encroaching coca plantations and violence. We are very good at remote sensing, we do mapping and locate the coca fields, but we still have to figure out how to share those data with the communities without compromising their safety,” Veening says.

BENEFITS ARE MUTUAL WHEN MILITARY REACH OUT TO CONSERVATION COMMUNITY: Afghanistan Example

While conservation organizations face security threats, military organizations increasingly see how environmental problems threaten their equipment and facilities as well. Naval bases, for example, are inherently located in positions vulnerable to rising sea levels. This realization has focused military leadership on environmental assets and opportunities.

“When I was at the U.S. Department of Defense, I did a lot of outreach to the environmental community, so that the environmental community could get to know us, and also so that the military could learn from environmental organizations,” Goodman recalls. “Many conservation organizations, for example the Nature Conservancy, work hand-in-glove with the DoD. DoD is the third largest federal (U.S.) landowner, and its lands have the highest number of endangered species. Communities with military installations want to keep those lands open, they are a natural oasis and anchor for environmental stability in the area.”

The security community also experiences positive consequences of environmentally-minded military actions: “While environmental security is usually seen through the security lens of ‘threats’ and ‘vulnerabilities,’ the environment also presents some of our most valuable levers of soft power. In regions where we may have

strained diplomatic relations, cooperating over environmental issues like food and water scarcity can be a very effective way of rebuilding strong ties that can help in other areas," Catarious says.

Piet Wit, director of Syzygy, a conservation consultancy firm, recently returned from Afghanistan. There he served as a major in the Dutch army's peacekeeping forces. He worked on provincial reconstruction in fields of sustainable agriculture and food development, the kind of environmental military assistance that can lead to international good will and the basis for lasting peace.

"I would go into the fields and meet with small farmers, advising them on water projects, animal husbandry," Wit says. Recent armed conflict destroyed many of the irrigation systems. "By working with the farmers to improving their technology and rebuild irrigation systems, we could make the farmers see the importance of getting organised together."

In peacetime, such assistance might have been provided by civilian organizations, but "because it's an insecure situation, it must be a militarized intervention," Wit explains. "I've been in a convoy that ran over a bomb. It's very dangerous. But I hope that people realize that even during conflict, it is very much possible to join forces to work on environmental conservation issues and humanitarian issues."

A CLIMATE FOR CREATIVE ALLIANCES

Wit looks forward to returning to another service opportunity in Afghanistan next year. "Most military personnel I have worked with have a notion now that we not only win hearts and minds but bring economic stability. Security is also food security, and food security depends on ecosystem stability. It's exciting and satisfying work," he says.

Opportunities to participate in new creative alliances for environmental security will likely increase in the coming years, underscoring the need to work together.

"As climate change continues to progress, we ...anticipate that the U.S. military and international community at large will be called upon more frequently to perform disaster relief and humanitarian assistance missions," Catarious says. "It will be critical for the military and NGOs to cooperate and develop a working relationship with each other. If the organizations look at each other with suspicion, the mission and people in need will not get the help they require."

The IUCN Congress Roundtable on Environment and Security, organised by the CEC and the CEESP, will provide a sound platform for developing these working relationships as representatives from the military (United States, Netherlands, Spain, Thailand, Nepal, Mauretania), NATO, and other representatives of the world's security community meet with IUCN Councillors and other key environmental leaders to explore strategies for waging sustainable peace.

"What I would tell the environmental community is, Get to know our great soldiers and sailors and airmen and marines, and get to know the kinds of problems we face day to day in our work," Goodman says. "We have a lot of really great people in our armed services. Let's work together to solve our common challenges."

IES and the two IUCN commissions are already planning a follow-up meeting next year, to bring the positive climate for environmental security alliances to the attention of parliamentarians and key world opinion leaders.

Annex IV: About the Organisers

The International Union for the Conservation of Nature (IUCN)

IUCN, the International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. It supports scientific research, manages field projects all over the world and brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice. IUCN is the world's oldest and largest global environmental network - a democratic membership union with more than 1,000 government and NGO member organizations, and almost 11,000 volunteer scientists in more than 160 countries. IUCN's work is supported by over 1,000 professional staff in 60 offices and hundreds of partners in public, NGO and private sectors around the world. The Union's headquarters are located in Gland, near Geneva, in Switzerland.



IUCN Commission on Environmental, Economic and Social Policy (CEESP)

CEESP, the IUCN Commission on Environmental, Economic and Social Policy, is an inter-disciplinary network of professionals whose mission is to act as a source of advice on the environmental, economic, social and cultural factors that affect natural resources and biological diversity and to provide guidance and support towards effective policies and practices in environmental conservation and sustainable development.



IUCN Commission on Education and Communication (CEC)

CEC, the IUCN Commission on Education and Communication, is a knowledge network on 'powering change'. Over 700 experts and practitioners around the world, share their expertise and support IUCN on advancing sustainability through learning, communication and facilitating transformational change.



The Institute for Environmental Security (IES)

The Institute for Environmental Security (IES) is an international non-profit non-governmental organisation established in 2002 in The Hague, with representatives in Brussels, London, California, New York and Washington, DC. The "Knowledge and Action network" was set up to increase political attention to environmental security as a means to help prevent conflict, instability and unrest. The Institute's mission is: "To advance global environmental security by promoting the maintenance of the regenerative capacity of life-supporting ecosystems." Its multidisciplinary approach integrates the fields of science, diplomacy, law, finance and education. Activities are designed to provide policy-makers with a methodology to tackle environmental security risks in time, in order to safeguard essential conditions for peace and sustainable development. EnviroSecurity Assessments developed by the IES and partners, are meant to provide decision makers in government, the private sector and NGOs with an array of practical decision tools, strategic maps and initial policy recommendations for globally significant flash-point areas. Initial assessments should lead to the development, finance and implementation of multi-year EnviroSecurity Action Plans that seek to enhance global environmental, economic and human security. In each case we aim to identify the interdependency between



conservation of eco-system services and poverty alleviation. For more information about the Institute for Environmental Security please visit www.envirosecurity.org.

Dutch Ministry of Foreign Affairs

The Ministry of Foreign Affairs is the channel through which the Dutch Government communicates with foreign governments and international organisations. It coordinates and carries out Dutch foreign policy. Promoting peace, security and development and promoting sound international environmental policy are two of the main objectives of Dutch foreign policy.



