Specialist Conference Report

# Desertification: a security threat?

## – Analysis of risks and challenges

A conference on the occasion of the World Day
to Combat Desertification 2007

Federal Foreign Office, Berlin, June 26, 2007

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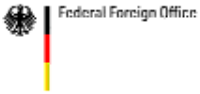
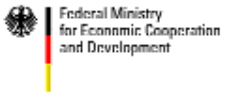
This is a record of the proceedings of the conference »Desertification: a security threat? – Analysis of risks and challenges« held in the Federal Foreign Office in Berlin on June 26, 2007.
The speeches and discussions have been edited for reasons of space.

The conference was realised by the Federal Foreign Office in cooperation with the Federal Ministry for Economic Cooperation and Development, the GTZ and the UNCCD Secretariat.

The conference was held as Germany's contribution to the World Day to Combat Desertification 2007.
The World Day to Combat Desertification is celebrated every year on June 17 all over the world in order to highlight the urgent need to curb the process of desertification and to strengthen the visibility of this serious drylands issue on the international environmental agenda.

This report seeks to inform and stimulate debate, but is not a statement of policy, and does not represent the official viewpoint of any of the convening organisations, nor of the organisations represented by speakers and conference participants.



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# Introduction

Desertification is one of the greatest environmental and development problems of the 21st century. Some two billion people live in the world's drylands, whose biological productivity is under threat from the progressive degradation of soils and other natural resources. Desertification can trigger a vicious circle of environmental degradation, impoverishment, migration and conflicts, often also putting the political stability of the affected countries and regions at risk. It is estimated that about half of all armed conflicts present environmental causal factors characteristic of drylands. The particular conflict sensitivity of these areas is worsened as a result of climate change and the ensuing droughts and extreme weather conditions.

Not only are the linkages between environmental, development, foreign and security policy being more discussed by experts, but national governments and multilateral organisations are increasingly focusing on them, too. In many crisis regions, it is becoming obvious that environmental, development and security policy strategies complement each other and have to converge. For instance, military contingents are supporting humanitarian missions and deploying their technologies to identify environmental risks, and may also be directly involved in strategic environmental measures such as major afforestation programs. Conflict and crisis prevention as well as reforms in the security sector are now an established area of development policy, and projects undertaken in conflict regions in particular are designed with »conflict sensitivity« in mind.

As the impacts of climate change become increasingly obvious, the debate about »joined-up« development, security and environmental policy has acquired fresh impetus and a new dimension. The UN Security Council has already begun to focus on the possible impacts of climate change on international security, while high-level conferences concerning this topic have taken place in Germany and other countries. In June, the German Advisory Council on Global Change (WBGU) unveiled its latest report on this issue in Berlin.

The Expert Conference on »Desertification: a security threat? - Analysis of risks and challenges« facilitated debate about the linkages between security and the degradation of land resources as defined in the United Nations Convention to Combat Desertification (UNCCD). Participants discussed the challenges arising for the Convention as well as for security and development policy under the conditions of a progressing climate change, and examined the potential of the »joined-up« approaches already identified.

The event was attended mainly by German decision-makers, parliamentarians, experts and academics working in the area of environmental, security, foreign and development policy as well as experts from implementing organisations involved in German development cooperation and from civil society organisations. Also, a large number of embassy officials and representatives of international organisations participated in the conference.


# Opening Speeches

**State Secretary Georg Boomgaarden** – Federal Foreign Office

Welcoming the participants of the Conference »Desertification: a security threat? - Analysis of risks and challenges« to the Federal Foreign Office's »Europasaal«, Foreign Office State Secretary Georg Boomgaarden stressed the immediacy of the issues they were about to discuss. The devastating impacts of desertification urgently required the international community to step up its efforts in addressing them, especially given the possible implications for security structures. As the country where the UNCCD has its statutory seat, Germany had assumed a special responsibility for this topic.

Already, desertification was directly affecting or threatening more than one billion people and nearly 40 mill. km². It was resulting in a drastic reduction of soil and water resources, subsequent declines in harvests and an increase in food crises in the areas at risk. However, State Secretary Boomgaarden warned that additional impacts of climate change, such as the melting of the glaciers and severe shifts in rainfall and vegetation patterns, could affect several million more people in the future. Environmental and poverty related migration was set to grow, within and across state boundaries. Even if extreme scenarios could be avoided, economies and societies had to adapt to climate change.

»Wegweiser Nachhaltigkeit«, the German Federal Government's most recent report on Germany's sustainability strategy, already refers to anthropogenic changes in world climate as a global security risk. Such potential risks are described on the basis of scientifically sound global analysis and with the aid of concrete regional scenarios in the recently published WBGU report.

State Secretary Boomgaarden said he was convinced that the WBGU report would promote further national and international discussion and – more importantly – action on the part of the international community. For it was becoming increasingly apparent that the economic, social and political risks entailed by major environmental change were threatening to assume risks comparable to the great conflicts of the past century. For many states, climate change had already become the security issue par excellence.

What foreign policy measures could be taken, especially with a view to combating global warming, the issue so crucial to desertification? The State Secretary first of all pointed to establishing and extending the concept of cooperative security, in which confidence-building played an important role. Confidence-building was required in global climate policy to prevent new lines of conflict between:

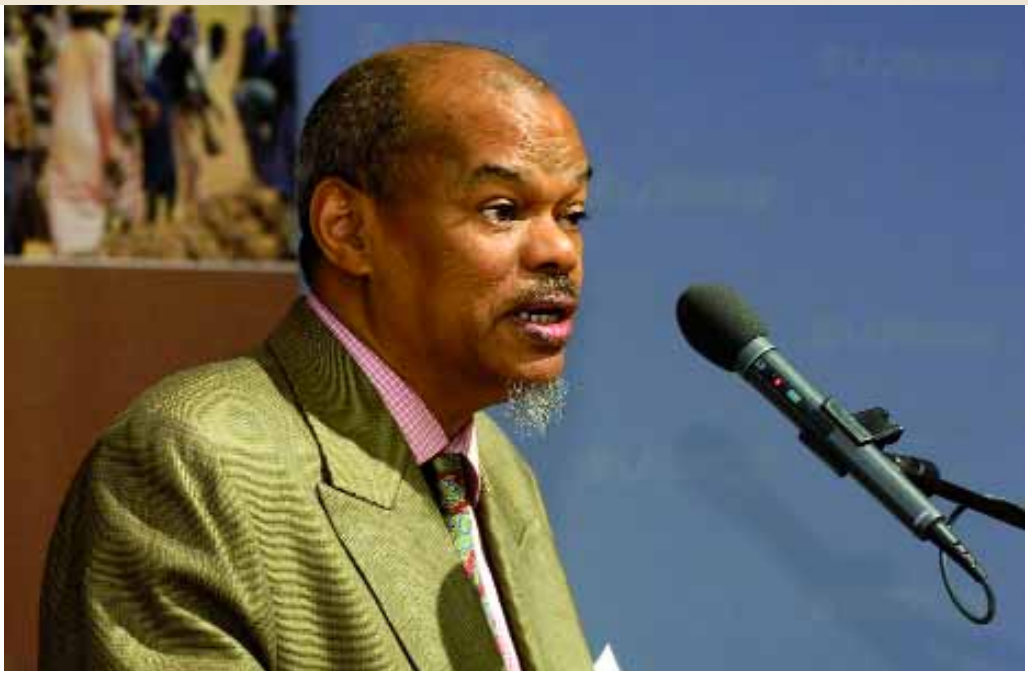
- the industrialised countries, which had to bear the brunt of responsibility for global warming, and the developing countries, which were least responsible but were suffering most;
- the old industrialised countries and the emerging economies, which were copying Western models of growth in affluence with increasing success and were attaining top positions as greenhouse-gas emitters, but also between the emerging economies and other developing countries.

Any suspicions of the industrialised countries seeking to hinder growth among the developing countries or of others becoming »free riders« by violating environmental requirements or not even entering corresponding agreements could only impede coping with the climate problem. Détente in the field of environment and development policy required transparency and reliability, but also the liberty to take individual steps if they were deemed necessary and feasible. This was why State Secretary Boomgaarden called the European Council's decision to unilaterally reduce greenhouse gas emissions by at least 20% by 2020 an important confidence-building measure that could pave the way for talks with others on future reductions of even 30%. Joining forces was paramount in establishing a successor regime to follow up on the Kyoto Protocol in 2012.

Foreign, security, environment and development policy depended on one another: no development without peace and lasting peace without sustainable development and the conservation of natural resources. Seen as a network, security policy was far more than an issue of military capacities: it above all represented an answer to the question whether crises could be coped with politically, culturally and socioeconomically before military means were required. Civil crisis prevention and early warning systems were set to attain even more significance in the future. The phenomenon of failing states must not be allowed to spread further on account of deteriorating environmental conditions.

»If we ask ourselves who the enemy is in climate change, using the concepts of classic security policy, we must conclude that we are turning nature itself into an enemy,« the State Secretary said. »And with this enemy, neither deception nor deterrence is going to be of any use. The later we adapt, the greater the cost will be.« Never before had anthropogenic climate changes occurred. Avoiding security-relevant cataclysms of global extent required the course to be set today. The time window for possibly irreversible processes to occur as a result of global temperatures rising by more than two degrees compared to pre-industrial days was about to close.

In March, the EU heads of states and governments had made a pioneering step towards combating global warming. Now the course had to be set for the UNFCCC Conference of the Parties in Bali in December 2007, with the halving of greenhouse-gas emissions by 2050 as a goal. However, more than 85% of greenhouse-gas emissions was occurring outside the EU, so there was an urgent need to win over new partners such as China and India, but also those on the other side of the Atlantic. This presupposed cultural change, mutual understanding, international cultural policy and scientific cooperation, as well. Gaining an understanding of the problem, how to solve it and in what spirit to do so was a paramount issue, State Secretary Boomgaarden concluded, an issue that the Conference on Desertification and Security was also dedicated to.



**Hama Arba Diallo** – Former Executive Secretary UNCCD

The former UNCCD Executive Secretary Hama Arba Diallo stressed that the linkage between desertification and security had become increasingly obvious in recent years, and pointed to workshops and expert reports relating to the issue. One of the workshops, on Desertification and Migration, was facilitated by the UNCCD together with the Spanish government. At this meeting, held in Almeria in 1995, experts provided evidence of a correlation between poverty, desertification and conflicts of various kinds in arid and semi arid areas. In 2003, NATO organised a workshop in Valencia on the same subject. Experts came up with the conclusion that migration into cities or onto marginal lands accelerate the impoverishment of natural resources and the inhabitants of drylands, which could lead to persistent upheaval or further migration, stimulating local conflicts and social unrest. There was also agreement in the Valencia workshop that drought aggravates the situation by creating destabilisation among populations and generating competition between farmers and herders for limited land and water resources. This intense pressure on productive land causes an increase in the migration of people within their own countries as well as into foreign countries, eventually producing an imbalance between more populated urban areas and desertified areas. Expert reports from Africa demonstrate a steady increase in conflicts fuelled by disputes over scarce grazing land, as a result of severe desertification and recurrent drought cycles.

The common denominator in all this was clearly the catalytic role played by land degradation in the dynamics of conflict. »I am afraid that if we do not address the problem adequately within a few decades, the relation between the environment, natural resources and conflict may seem almost as obvious as the connection we see today between human rights, democracy and peace,« Mr. Diallo said. The terrible images of migrants desperately trying to reach the Canary Islands, Gibraltar or Southern Italy, but also the US across the Rio Grande, were all a sad testimony to the gravity of the situation. An examination of the consequences of desertification as it relates to environmental security revealed much about the state of global environmental governance. It also revealed that environmental security might be driven more by the power of security-makers than by the need to address envi-

The conference was accompanied by the exhibition »Wüstenwelten«, featuring the work of the famous desert photographer Michael Martin.

ronmental problems. However, there was a general consensus that global challenges must be met with an emphasis on peace, in harmony with others, with strong alliances and international consensus.

There was no doubt that this could best be done through the United Nations, imperfect as it might be. Some had described the UN as exhibiting a »fortunate flexibility« - not merely in preserving peace but also in bringing about change, even radical change, without violence. Meeting the desertification challenge required international cooperation across all national boundaries on a much larger scale than hitherto. »We live on the same globe. We must all cooperate to meet the world's environmental challenges,« Mr. Diallo said. »Together we are strong, divided we are indeed very weak.«

Mr. Diallo concluded his statement by stressing the German government's strong commitment to the UNCCD. Germany and the EU, he maintained, could play an important role in promoting the efforts of developed and developing countries alike to attain sustainable security.

**State Secretary Erich Stather –**
Federal Ministry for Economic Cooperation and Development

State Secretary Erich Stather of the Federal Ministry for Economic Cooperation and Development opened his statement by maintaining that even climate development in Germany showed the need for action, with temperatures soaring to around 30° in late April and plummeting to a mere 19° in June, while at the same time, people in Greece and Turkey were having to cope with almost 45°. Mr. Stather said that all these phenomena had to be seen together and local issues had to be tackled in the global context, and he emphasised the WBGU's outlining several policy fields required to act to combat climate change and its effects.

In terms of development, a particular conflict was apparent between the North and the South. »We cannot leave the South alone with the consequences of climate change,« Mr. Stather said. »We have to offer support, especially when it comes to increasing adaptability.« The fight against poverty needed strengthening, rural development had to be promoted, erosion protection offered, and political consultancy was required in the fields of water and energy. Mr. Stather then outlined the German government's efforts in these fields.

German development cooperation is currently financing a total of 250 projects relating to the issue with 1.5 billion €. Sixty percent of these projects are on combating desertification in Africa. One billion € has been made available for steps towards renewable energy between 2002 and 2007. And a further 750 million € has been earmarked for development cooperation focusing particularly on poverty and AIDS. Political emphasis is placed on making globalisation fair and promoting global partnership, in accordance with the Eighth Millennium Goal, as well as on adapting instruments of international cooperation to the ecological changes and continuing to support the UNCCD and the Kyoto Process.

In his concluding remarks, Mr. Stather warned that climate change should not paralyse international cooperation. Rather, it should become a driving force to improve collaboration across the globe.

# Conference Keynote

## Current trouble-spots and integrated solutions – More than mere concepts?

**Pekka Haavisto** –
Member of the Finnish Parliament and former EU Special Representative for Darfur

I have just come back from Darfur, where trees are the only places that offer you shade. Under these trees, we sit together with the rebels, representatives of the Camps for Internally Displaced Persons (IDPs) and the local villagers, trying once again to find a way to peace. Civil society there is very fragmented. Many visits to many villages are needed and we have to talk to many Darfurian people to get on the track of peace again.

My work for the United Nations Environment Programme (UNEP) brought me to places such as Afghanistan, Palestine, Iraq and Liberia, and of course, desertification, erosion and deforestation were issues that we were looking at very closely. Climate change has brought the topic of desertification back on the agenda. The links established between these two phenomena are of course very important. Hopefully, we will find ways and means to combat desertification when we are talking about the most effective means to prevent climate change. But I have doubts that the resources will be sufficient.

If we take a look at desertification, it has been lagging behind all the time, with efforts being based on voluntary contributions and voluntary support from the donors instead of true financing mechanisms. I think it is time to discuss how to address desertification in a more serious way.

We have seen other environmental topics being addressed during the last few years. For example, if you look at the Rio agenda, many issues, including biodiversity and pollution, have been raised, and many of them have been addressed with special funds or special financing mechanisms. But if we take a look at desertification, it has been lagging behind all the time, with efforts being based on voluntary contributions and voluntary support from the donors instead of true financing mechanisms. I think it is time to discuss how to address desertification in a more serious way.

Desertification and security has many aspects, and indeed there are many securities. We speak nowadays more and more about global security. When we speak about climate change and desertification, we are referring to global security instead of only looking at security from a regional or national point of view. Climate change and desertification have local and regional security aspects as well as international ones. Then there is the issue of human security, affecting individual people and their human rights. First of all, people must have security in those places that they have traditionally been living in. If they have to go elsewhere for reasons of security, we have to provide security to those people under new circumstances. Human security is linked to the risks of migration. Refugees and IDPs are more and more on the agenda of the international community.

The aspect of security, environment and desertification can, in some cases, be separated into two categories. Some things are happening due to our ignorance or the fact that we are not respecting the rules of nature, while some environmental changes are intentional, specifically aimed at harming parts of the population. I have, for instance, witnessed illegal timber trade and cutting down of forested areas in Afghanistan which caused erosion and harm to the traditional irrigation systems in the country. Then the trees around some villages were cut down on purpose so that the sand could take over the villages, forcing people to move from these areas. Or some water resources were blocked or the flow direction was changed by people living up-stream so that the people down-stream no longer had wa-


ter and had to flee. Such »environmental weapons« are part of warfare nowadays, and we have to pay attention.

Coming back to Darfur, tribes have been moving in this area for hundreds of years using their traditional nomadic routes, grassing areas and water wells, and crossing borders. They benefit neither from the Chadian nor the Sudanese nor the Libyan government. The nomads have traditional mechanisms to negotiate with the villages along the trade routes to find out where the cattle can graze and which wells they can use. But the Sudanese government has given arms to certain groups called *Janjaweed* in Darfur to fight against the traditional villagers, burning villages and committing atrocities. People have fled from these areas, while villagers are now blocking some of the traditional routes and trying to prevent nomads using them to their traditional areas. So there is a break-down of civil society. And this is harmful both for the nomads, the villagers and those who are involved in traditional agriculture.

**»Environmental weapons« are part of warfare nowadays, and we have to pay attention**

Everybody in Darfur recognises that reconciliation should re-establish traditional contacts that have always existed between the nomadic people and others in the area. But this requires a peace agreement. Here, the international community can be helpful, while the Sudanese government must accept its responsibility for the atrocities. The Darfurian rebels, too, need to arrive at a peaceful solution. The new hybrid force of the African Union is also in Darfur with 20,000 to 25,000 troops, and the region can generally reckon with international support to solve the conflict. However, given the breakdown of civil society, maintaining basic security in the region will be a long-term commitment.

Desertification in Darfur is increasingly pushing the nomadic tribes to the areas where traditional agriculture is used. I believe that we will be seeing more and more of such problems in the world. We have to be ready to cope with them, also as an international community, in the future. We have to understand the need for migration and acknowledge the fact of environmental refugees. So we are dealing with new types of conflict and have to find effective international mechanisms to address them.

Whatever we can do in a global framework to stop climate change, desertification and deforestation processes also helps to solve such problems in Africa and on other continents. It is time to understand that these environmental changes first hit the poor people of the world. When I was Minister in Finland and was responsible for an environment and a development portfolio, we had a lot of discussions in the parliament, and some parliamentarians said: »Who cares about environmental issues in the third world? This is a luxury topic for us Europeans and others. The poor people of the world are busy with other issues.« And now, when working in areas like Afghanistan, Iraq, Darfur, or Liberia, I can see that the first thing that people have on mind is in fact the environment, environmental security where they are living, and I believe that it is our responsibility to work together with them to solve these problems.

## Session I
## Relevance of desertification for national and international security

The results of the recent survey by the German Advisory Council on Global Change (WBGU) suggest that climate change is going to exacerbate environmental degradation in several of the world's dryland regions. In the drylands of Darfur, while armed conflicts continue to cause hardship and displace people, a prolonged trend towards less rainfall has resulted in famine crises and a population exodus. People in Africa appear to be particularly hard hit by desertification, and in increasing numbers, they are seeking new livelihoods elsewhere. While migration on such a hitherto unprecedented scale poses potential security risks, remittances that these people send back to their home regions are having a positive impact on development there.


# Impacts of climate change on land use and desertification: a new security risk?

**Prof. Dr. Nina Buchmann** – German Advisory Council on Global Change (WBGU)

**Typically, already dry areas will become even drier and already wet areas will become even wetter. These changes will have major implications on future land use.**

The latest WBGU report addresses the topic »Climate Change as a Security Risk«; here, I would like to focus on climate change, land use and desertification. The term »desertification« refers to land and soil degradation in arid, semi-arid and dry sub-humid areas. Desertification has become a global problem, with very strong implications for land cover and land use. Thus, combating desertification has to be forward-looking and has to address sustainable land use and integrated development. It is today that we have to take care of processes in the future, in a future with pronounced climate change.

Already today, we have many regions with extreme climatic conditions in the world. For example, we see prolonged droughts like in northern Africa, extreme rainfall in areas like Indonesia or the Amazon Basin, and hurricanes in the tropics [1]. One big question for us as an advisory council was whether new areas will develop where climate-induced conflicts might arise in the future.

The Intergovernmental Panel on Climate Change (IPCC) has just published its fourth assessment report. Globally, both atmospheric temperatures and sea-surface temperatures are on the rise, with projected increases in temperature varying considerably according to the emission scenario used. Precipitation patterns will also change: typically, already dry areas will become even drier and already wet areas will become even wetter. These changes, along with the increasing occurrence of extreme events, will have major implications on future land use. Another key factor in the future is glacial retreat, which is going to affect freshwater availability in areas such as the Andes and also in Asia. What further aggravates this situation is that many countries affected by climate change already bear the heavy burden of soil degradation. For instance, soil degradation is very high in large areas of China, while it is accelerating fast in Central Asia and North Africa [2]. Thus, we asked

how such conditions will affect the potential development of conflicts.

Past conflicts classified as environmental conflicts (1980-2005) can be separated into conflicts for biodiversity, fish, land and soil, and water (although many of the water conflicts resulted not in violence but in agreements between countries). The question then was whether there will be – under future climatic conditions – a new quality of security risk. Since many other major factors contribute to potential conflicts, i.e., social and political factors, we also considered these and identified more than 30 weak and/or fragile states and asked whether new climate-induced security risks actually differ among states with different governance.

If we take a look at the entire complex of land use and desertification, two major factors of particular importance need to be considered, i.e. socio-economic and political aspects on the one hand and climatic factors such as climate change and droughts on the other. The approach we have used for our assessment is what we call conflict constellations. These are typical causal linkages at the interface of environment and society which can lead to social destabilisation and ultimately to violence. The report focuses on four of these constellations:

1st climate-induced degradation of freshwater resources

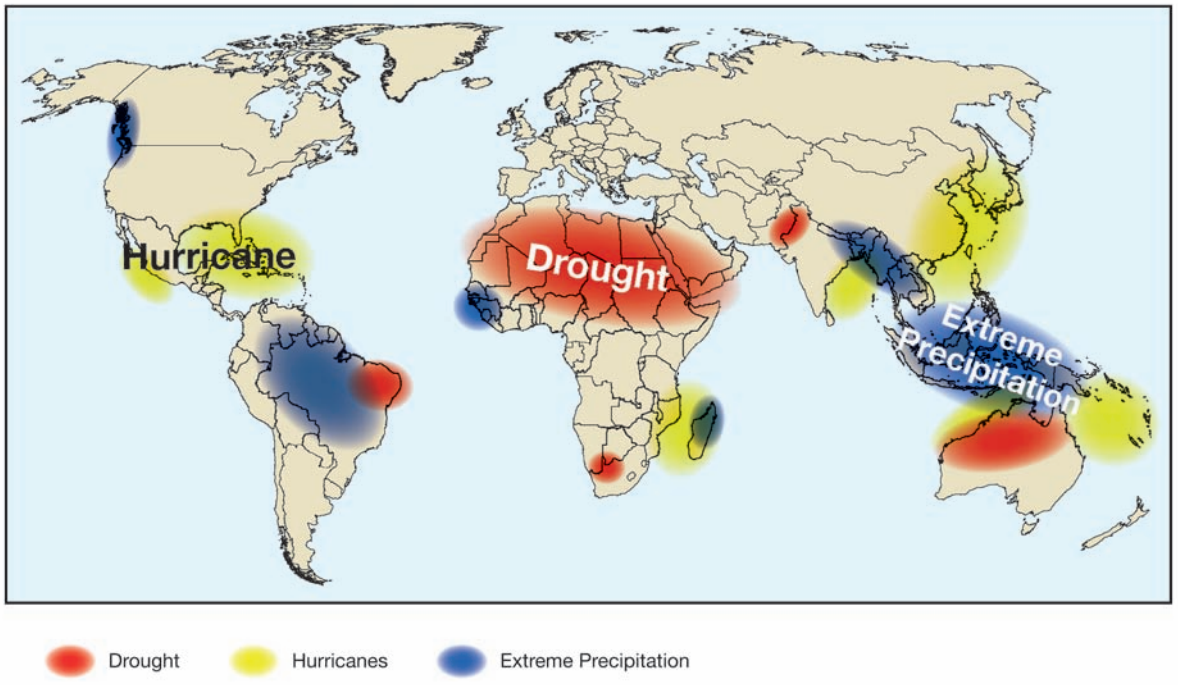
2nd climate-induced decline in food production

3rd climate-induced increase in storm and flood disasters

4th environmentally-induced migration

Let`s take a closer look at the first constellation, the climate-induced degradation of fresh-

[1] Are there new areas where climate-induced conflicts might arise in the future?




Source: WBGU

water. Freshwater use has been increasing more and more over the last hundred years. The major water user is agriculture, especially for irrigated land, although industries and cities also have their increasing share. Combining the demand and the supply side, we can see that there is water scarcity, both economic and hydrological water scarcity, in many parts of the world. Hydrological water scarcity refers to water stress because of too little rainfall to meet human water use, while economic water scarcity brings water stress to societies for many different reasons. Hydrological water stress has developed e.g. in Central Asia and parts of North and Central America, whereas economic water stress occurs in large areas of Africa and the North of India, for instance [3].

While climate change will alter regional water availability, there are many different factors that can promote but also limit the development of conflicts and violence. Politics and society can counteract such a development in many instances. For example, starting with low regional water availability, it will depend on the change of a society`s water demand, on its economy as well as on water management, whether this society is able to cope with a smaller amount of available water or whether it moves towards a regional water crisis. And again, before a society slips from a regional water crisis to destabilisation and conflict, many other factors, such as the existence of an integrated water regime and political and social stability come into play, factors that can actually intervene and stop the downward spiral to violence.

**There could well be an increase in the number of weak and fragile states as a result of climate change.**

The second conflict constellation, climate-induced decline in food production, is of equal importance for the topic climate change, land use and desertification. While global food production has steadily increased since 1960, food production per person could hardly keep pace – in fact, there are still more than 800 million undernourished persons in the developing countries. The effects of climate change on food production depend strongly on the regional environment, on soil and water availability, but also on storms and flood disasters, all impacting on regional production. However, as discussed before, many factors can intervene, so that a decline of production does not necessarily lead to a food crisis and cause conflict and violence. Depending on demography, economy, infrastructure, so-

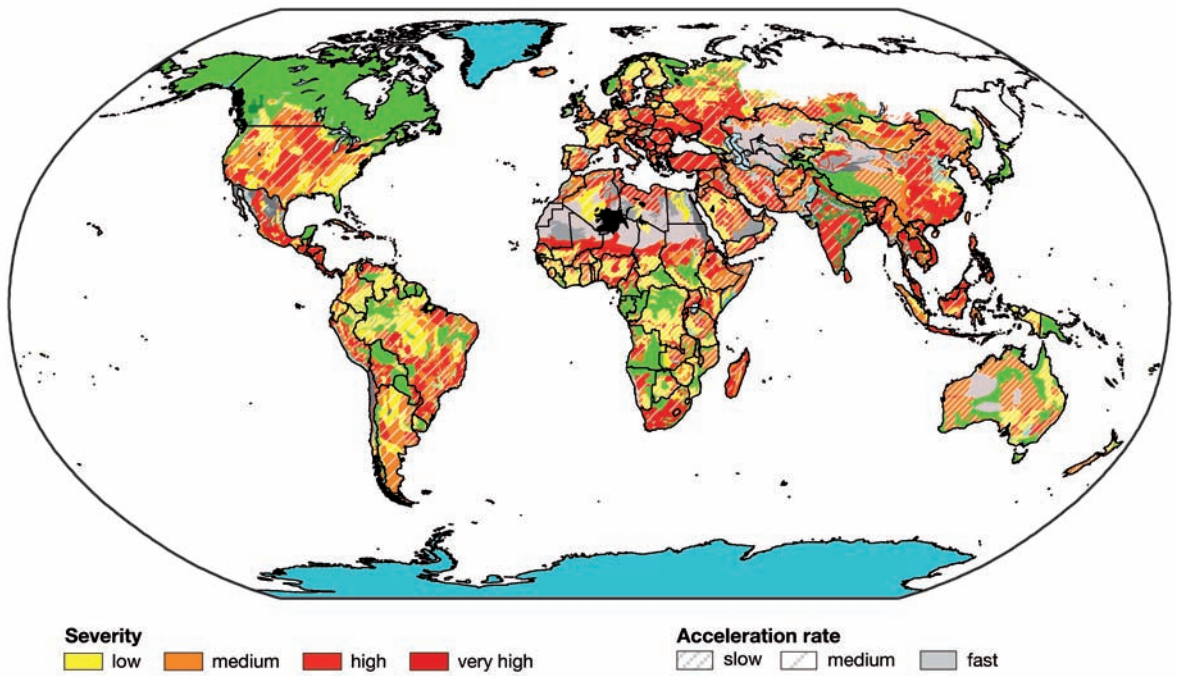
**In brief, with these climate-induced conflicts, we are overstretching what we consider classic security policy because conflicts are now assuming a potential new dimension**

cial and political stability as well as on external or global factors, there are ways how a country can counteract, with or without international support, a downward spiral of its society owing to a decline in production. Even a true food crisis does not need to end in violent conflict and destabilisation.

Considering all four conflict constellations, hotspots for potential climate-induced conflicts include regions of the high Andes, but also in the Amazon basin, large parts of Africa, Northern China and parts of Central and Southern Asia, also areas not bearing conflicts before [4]. In addition, conflict constellations often occur in combinations, i.e. climate change can trigger interacting conflicts. For example, setting out from freshwater degradation and reduced freshwater availability, we might arrive at a destabilisation of food production that in turn causes migration. Thus, a diffuse conflict structure evolves, possibly resulting in a destabilisation of society and, at a later stage, of the entire international system.

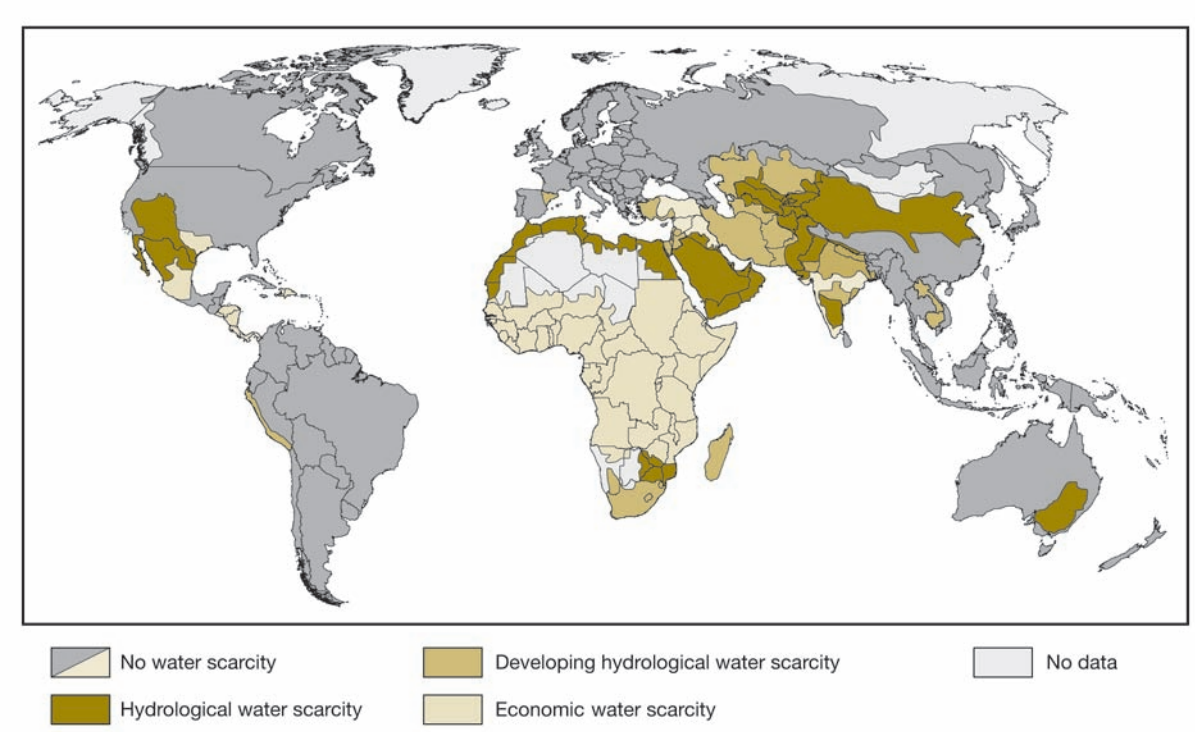
Summarising our findings, we identified six threats to international stability and security that are caused by climate change. (1) There could well be an increase in the number of weak and fragile states as a result of climate change. For example, costs of adaptation to climate change could be too high, or perhaps adaptation strategies cannot be tackled for other reasons. (2) So there might be increased risks for the global economy and its devel-

[2] Global soil degradation: a heavy burden




Source: Oldemann et al., 1991

[3] Hydrological vs. economic water scarcity

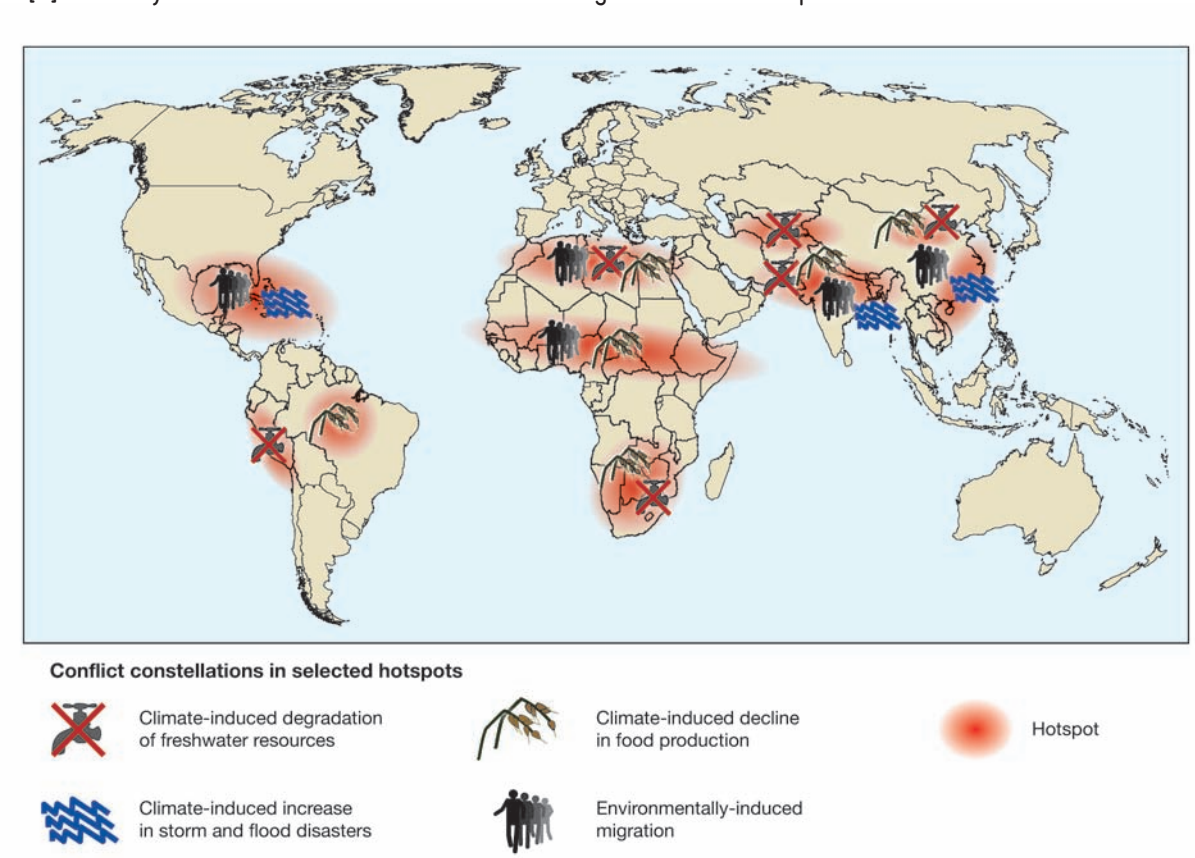



Source: IWMI, 2007

opment. (3) There are risks of growing international distributional conflicts between the main drivers of climate change and those most affected. It is mainly the rich societies who are causing climate change but the poor societies suffering the most from the impacts. Thus, we are dealing with a growing equity gap. (4) Consequently, industrialised countries might actually lose their legitimacy as global governance actors because of climate change impacts. (5) Human rights might also be in jeopardy. Climate change might trigger and intensify migration with the emergence of environmental refugees and migrants. How are international law and the convention system going to deal with people who will possibly be labelled »environmental migrants«? (6) In brief, with these climate-induced conflicts, we are overstretching what we consider classic security policy because conflicts are now assuming a potential new dimension.

So what can we do today? The first aspect is to foster a cooperative setting for a multipolar world, a global political governance system to cope with future problems. The second aspect is to consider climate policy not only as environmental policy, but as security policy as well, by avoiding dangerous climate change. The third aspect is then helping and supporting developing countries – particularly those most affected by climate change – to cope with and adapt to climate-induced changes. To tackle these three major conclusions of the report, we have formulated nine initiatives that could be taken by policy-makers

[4] Security risks associated with climate change: selected hotspots




Source: WBGU

and stakeholders in various fields. The initiatives need to be launched within the next fifteen to twenty years to avoid the described impacts in the future.

The first initiative is to shape the global arena. Certain actors need to take a stronger lead in global political change. The second initiative, i.e. reforming the United Nations, also addresses the international level. Initiative three is to ambitiously pursue international climate policy. Initiative four is to reduce total emissions by really turning around our energy consumption. Initiative five is to develop mitigation strategies and to implement them in partnership with developing countries. The sixth initiative is to support adaptation strategies for developing countries. The seventh initiative addresses the need to stabilise weak and fragile states that are additionally threatened by climate change. The eighth initiative is to manage migration through cooperation and to further develop international law. As a ninth initiative, global information and early warning systems should be expanded.


# Interactions between land use and conflicts: the Darfur conflict

**Prof. Dr. Fouad N. Ibrahim** – University of Bayreuth

The UN Secretary General made some statements on June 18, 2007 which are of high relevance to our conference. He said: »The Darfur conflict began as an ecological crisis, arising at least in part from climate change… It is no accident that the violence in Darfur erupted during the drought… When Darfur's land was rich, black farmers welcomed Arab herders and shared their water… For the first time in memory, there was no longer enough food and water for all. Fighting broke out.« I think his last sentence is especially important: »Any real solution to Darfur's troubles involves sustained economic development.«

**The catastrophic effect of famines in Darfur was not only due to drought, but above all to the neglect of this region by the central Sudanese government.**

For a better understanding of what the present war in Darfur is really about, let us begin by assessing the region's natural potential. Darfur covers an area a large as France. It extends over more than 1,200 km in north-south direction and includes the four ecological marginal-tropical zones from the desert in the north to the thornscrub and then to the low-rainfall woodland savannah and finally the high rainfall woodland savannah in the south. In the desert of northern Darfur, trees play a vital role for the Arab and African camel nomads. The trees provide food for the animals and wells supply drinking water. The thrornscrub savannah occurs in northern Dafur and is composed mainly of knee-high *aristida* grasses and gumarabic trees (*Acacia senegal*). The low-rainfall woodland savannah follows southwards. It begins with at least 500 mm of annual rainfall. This is where *Acacia albida* trees occur, whose pods are important fodder for the livestock. The high-rainfall woodland savannah begins in the farthest south of Darfur. It is an important grazing-area for the cattle nomads. Under British rule, fruit trees such as mangos were introduced from India. Jebel Marra is a volcanic mountain massif covering an area of 10,000 km² that is rich both in water resources and good soils and is home to the Fur, who gave Darfur its name.

In the second half of the last century, rainfall averaged at 240 mm, and peaked in the early fifties. There is a general trend of less rainfall, what we call aridification. In 1954, we had more than 600 mm of annual rainfall while in 1982, we had only 80 mm. Four famines struck Darfur during the last three decades: in the early nineteen-seventies, the early and the late eighties and the mid-nineties. The catastrophic effect of these famines was not only due to drought, but above all to the neglect of this region by the central Sudanese government. The government in Khartoum even prevented foreign relief organisations from bringing food aid to Darfur.

There are about 80 ethnic groups in Darfur. Following the local Sudanese discourse, one may distinguish two main groups: Africans and Arabs. While the Arabs live more towards the south of Darfur, the Africans are in the centre, the west and the north. The Africans call all their non-African neighbours »*Arab*« while the so-called »Arabs« pejoratively call the Africans »*Zurga*«, meaning »blacks«. The Africans, who constitute about 60% of the population, are mainly sedentary smallholders, but they also practise animal husbandry. Most of the Arabs have become sedentary in the meantime, but they still stick to their pastoral traditions, namely those of camel nomads in the north and of cattle nomads in the south. Arab camel nomads generally tend to be better-off than African smallholders.

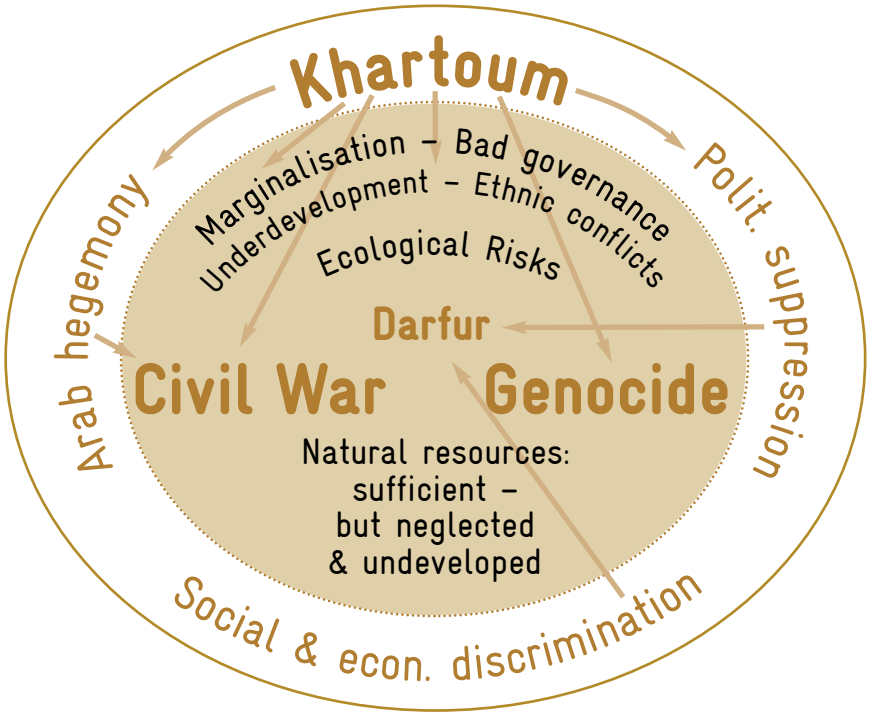
**Today, a government is trying to eliminate unwanted, already long-disadvantaged ethnic groups among its own population.**

Arabs have moved into the region mainly from the east, establishing themselves as cattle nomads in the north and camel nomads in the south. Members of the Arab ethnic groups from the Nile valley form the government, and with the help of the Arab cattle and camel nomads as well as the clientele loyal to the government in the capitals of El-Fasher, Nyala and El-Geneina, they are increasingly exercising power over the African population of Darfur. Although Darfur's population constitutes about 1/5 of Sudan's total population, it benefits minimally from the state education and health services.

Darfur's internal risks are caused by environmental stress that is typical of arid regions and is aggravated by a recent aridification trend. But while the natural resources are basically sufficient for meeting the food needs of the people, the government is neglecting the region and doing nothing to develop its resources. The government of Khartoum is the main culprit behind the current disaster in Darfur (cf. Fig.). Today, a government is trying to eliminate unwanted, already long-disadvantaged ethnic groups among its own population. We call this ethnic cleansing, or better, genocide. The German Federal Minister of Economic Cooperation and Development arrived at the same conclusion: »2.5 million people from Darfur have been fleeing ... 400,000 persons, including many children, have been brutally murdered. Here, genocide is taking place in slow motion.« Thousands of Darfur villages have been set on fire and razed by the *Janjaweed*, a militia drawn from Darfurian-Chadian Arab-speaking tribes, and the government troops. The role played by ecological risks is negligible, if compared with the kind of genocide described above by the minister. Genocide in Darfur was accompanied by economic, political, social and cultural marginalisation, bad governance, underdevelopment due to government neglect, ethnic conflicts which are kindled by Khartoum, Arab hegemony and political suppression of the African indigenous majority.

**Prevention is better than cure in combating desertification, and population mobility is the key to preventing land degradation.**

The only positive effect of the population exodus from large areas of Darfur is that environmental rehabilitation has been taking place. The process of desertification has come to a standstill in northern Darfur over the last four years. Processes of recovery and prospects of security in Darfur have also been improving. We should seize this opportunity and organise quick and wise action now. Conferences should be held at grass-root levels to reconcile the conflicting tribes and allow them to participate in working out ecologically and socially viable land-use plans for their regions. A comprehensive program for sustainable development of the whole of Darfur should be prepared, and implementation should start immediately. Based on my thirty-year long research on land-use, environmental hazards, desertification and development work in Darfur, I recommend the following: discourage permanent settlement in grazing-areas; promote mobile livestock-herding by restocking, rehabilitating seasonal water reservoirs, regulating grazing rights, offering mobile veterinary and social services, etc.; upgrade traditional farming by providing improved seeds, combating pests and plant diseases, providing suitable fertilisers, developing wadis by introducing methods of horticulture, water-harvesting techniques and animal-drawn ploughs and improving storage, transport and marketing of farm products; promote projects for women: house-gardening, small-stock raising, energy-saving cooking, handicraft, water supply etc. However, prevention is better than cure in combating desertification and population mobility is the key to preventing land degradation. That is why we observe in Darfur, as in all hot arid regions, that in areas of sedentary population people suffer more from ecological destruction than in areas of mobile land-use.




Khartoum's crimes against humanity

# Desertification + Migration = Conflict?

**Dr. Michelle Leighton** –
Centre for Law and Global Justice, University of San Francisco School of Law

Migration linked to food insecurity, including from Africa, is an ancient phenomenon. What is different today is that Africa's agricultural drylands are significantly more degraded and people are much more mobile globally. Also, climate change will exacerbate this problem as it intensifies drought on the continent.

The International Organization for Migration (IOM) estimates that there are currently 191 million international migrants. This represents a doubling of the number of international migrants since 1960. Millions more are undocumented as irregular or illegal migrants. In Africa, the structure of migration flows has changed, with more internal displacement and more low-skilled, low-wage workers migrating internationally to Europe.

**People able to migrate are not the most impoverished but those above an absolute poverty threshold.**

The increase in desertification is one driver of this migration. How do desertification and migration relate? Two closely linked underlying correlations are *poverty and migration* and *drought/desertification and poverty*. Poverty is a determinant of migration. Those who cannot survive in their present place of residence are likely to migrate elsewhere in search of employment. These are not the most impoverished but those above an absolute poverty threshold. Migration, unless instigated by a rapid unpredictable event such as war, requires a modicum of planning and resources. A potential migrant must not only consider a suitable destination, employment prospects, obtain funds for the trip, and contact friends or relatives that could help along the way, but must have the health needed to endure a long journey.

The travel can be perilous for a migrant who has no visa or work papers if crossing international borders. She/he may encounter hostility from the transit or destination community, local ethnic group, or government authorities. Hostility may also ensue if migrants are forced to compete with local residents for scarce jobs or resources. The trafficking net-


works that assist undocumented migrants can themselves be very dangerous, too. Migrants may undergo physical abuse, deprivation of food, water or shelter, and even death at sea in crossing the Atlantic or Mediterranean.

The relationship between drought or desertification and poverty is influenced by environmental, economic and political factors. So many of the rural poor depend upon agriculture for subsistence and minimal household income that small changes in the physical environmental system or economic farm supports can have severe ramifications. One drought may wipe out the family savings and threaten a family's ability to buy farm inputs (seed, fertiliser) for the next planting.

When farmland becomes desertified, crop yields are significantly diminished along with household income. As income declines, families are forced to consider alternative means of livelihood. Migration may become the most feasible investment or the only alternative and thus used as a coping strategy.

**Spill-over migration occurring across borders of weakly governed states in Africa can contribute to political instability.**

Often, what begins among members of a family (similarly within an entire community) as temporary migration, such as to take advantage of seasonal agricultural jobs, can evolve into permanent relocation. Networks established between the sending and receiving communities can constitute a strong magnet for continued migration, particularly as desertification or drought continue to impact household income.

In Africa, the indicators and incentives for migration as a coping mechanism for desertification and drought are strong: widespread degradation of drylands reducing farming activity and household incomes; increased incidence of poverty; and larger population movements in the continent and to Europe where migrant networks are becoming better established. Three-quarters of all agricultural drylands in Africa are now degraded to some degree; most of Africa's poor populations live in these ecologically vulnerable drylands; the poor are small-scale farmers, nomads and herders, artisanal fishers, wage labourers, displaced people, households headed by woman, unemployed youth, and landless people. More than 70% of poor on the continent live in rural areas and depend on agriculture for food and their livelihood.

The International Fund for Agricultural Development (IFAD) records that three quarters of poor people in western and middle Africa — an estimated 90 million people — live in rural areas and depend on agriculture for their livelihoods. According to IFAD, »[l]and degradation, a consequence of extensive agriculture, deforestation and overgrazing, has reached alarming levels and further threatens livelihoods. The poorest people live in isolated zones, deprived of the social safety nets and poverty reduction programs available in semi-urban and urban areas.« Poverty in northern Africa is also concentrated in rural areas. It is rooted in limited availability of useable or arable land and water, droughts and floods.

Internal displacement in Africa is rising, as well as migration internationally. Aside from conflict regions, if a rural household is not already engaged in some form of coping strategy, including through migration, they may become more engaged as desertification and poverty deepen. The fastest growing sending regions may be of greatest concern to receiving countries because small networks of migration paths lead to larger ones. As these become more entrenched they can become self-sustaining, limiting the impact of development aid as a preventative measure.

There are approximately 17 million migrants in Africa. Five million are considered international migrants, with over four million living in Europe. The largest number destined for Europe (two-thirds) come from north Africa. The remaining migrants from sub-Saharan Africa are largely settled in France (275,000), UK (250,000), Germany (155,000) and Italy (138,000).

The majority of migrants from Sub-Saharan Africa originate in Ghana, Senegal and Nigeria, but they are increasingly coming from Mali, Cape Verde and Somalia. These figures do not include an estimated 7 to 8 million illegal African immigrants in Europe. These migrants reside mostly in France, Italy and Spain.

Annually, some 830,000 migrants travel from the African continent to 25 countries in the European Union. Added to this is an estimated 240,000 undocumented migrants smuggled to Europe each year.

**Migration is not inherently a threat to security. There are a number of benefits to sending, transit and receiving countries from permitting migration.**

Identifying more precisely how many migrants cross the African continent to Europe is difficult because data is not systematically collected or collated in either the sending or receiving communities and illegal migrants are undocumented. This is even more problematic when attempting to quantify how many migrants leave the African drylands for other rural areas, urban centres or areas across the Atlantic, where desertification was a primary stimulus. However, case studies have documented migration during drought periods from the drylands in Burkina Faso, Mali, and Senegal.

If climate change adds to migration pressure there will be initial waves of migration with immediate disruptions, possibly followed by secondary population movements from communities that over-fill and are unable to support the influx of new migrants. This could be especially dangerous if decision-makers overlook these scenarios in planning their humanitarian and migration policies. It is also an area little measured in terms of the links between climate, desertification and migration.

The Intergovernmental Panel on Climate Change (IPCC) has found that climate change will lead to reduced agricultural outputs and migration, particularly in Africa. In some African countries, yields from rainfed agriculture could be reduced by up to 50%. If such predictions are accurate, large population movements are inevitable.

What are the security implications? International migration can raise security issues in countries of origin, transit and destination, both in terms of human security and national security. Spill-over migration occurring across borders of weakly governed states in Africa can contribute to political instability. Smuggling also heightens criminal activity, posing additional risks.

In Sub-Saharan Africa, the movement of large populations from one area to another can cause tension, hostility and sometimes violence among ethnic groups by:

- Intensifying competition for land and water resources:

  The decline in incomes from desertification, combined with factors such as population growth and limited access to labour markets, can exacerbate conflicts over land resources and stimulate migration.

- Intensifying tension or hostility among ethnic groups:

  Tension among different ethnic groups in some countries may increase if population movements force them to share scarce farmlands, forests, grazing lands, or water resources.

- Intensifying pressure on urban centres, infrastructure and environmental resources:

  Africa is the fastest urbanising continent, with 37% of the population living in cities. The spread of slum dwellers exacerbated by migrants is a problem for local security authorities.

Most OECD countries view migration as a security issue. Europe has vowed to fight illegal immigration and increase jobs in response to a growing concern among Europeans that migrants are taking limited jobs. Some believe that migrants threaten nationalist and cultural values. If these views lead to harassment or discrimination, hostility between citizens and migrant communities could erupt as it did in Cachan, France. New public awareness of national security issues via terrorism has also contributed to a heightened perception of immigrant threats.

**The management of natural resources and financial and political stability are often intertwined, certainly at the national level but frequently at the regional and even global level as well.**

These challenges noted, migration is not inherently a threat to security. Cooperation on migration may yield a number of benefits to sending, transit and receiving countries. For example, money sent home by migrants earning an income outside their country of origin (remittances) may be viewed as a tool for reducing poverty, hence reducing tension and potential conflict within struggling African nations, even those in conflict such as Sudan. Moreover, this income makes a substantial contribution to economic development outside of foreign direct investment and foreign aid, potentially reducing dependence on European foreign assistance. These remittances go directly to the household without passing through government agencies, being taxed or fuelling corruption, representing for some an efficient aid delivery system for the communities which invested in migration.

The revenues are staggering for some African countries. The Economic Commission for Africa (ECA), citing a number of World Bank and other research studies, has made the following findings:

- Remittances accounted for a growing share of country GDP in sub-Saharan Africa, rising from USD 4.9 billion in 2000 to 6.1 billion in 2004 and 8.1 billion, in 2006. They totalled 14 billion in all of Africa. These figures are heavily underestimated.

- A 10% increase in the share of international migrants in a country's population will translate to a 1.9% decline in the share of people living in poverty, which on average would be about USD 1.00/day.

- A 10% increase in the share of remittances as a factor of a developing country's GDP will equal a 1.6% decline in the number of people living in poverty. In Burkina Faso, the percentage of population living below the poverty line is reduced by 7.2% in rural households if one considers remittances.
- Remittances are becoming increasingly significant to country GDPs, equalling 40% in Lesotho, 18% in Cape Verde, 11% Ghana and 7% in Ethiopia, Senegal and Sudan.

Furthermore, migrants can provide a pool of labour to needed markets of developed countries, filling jobs that local labour may not fill. This can promote economic prosperity for European companies. In the area of origin, the environment may improve. Migration by its nature moves people off land which allows fallowing and eventual rejuvenation of degraded soils. However, mass movements of populations to refugee camps can have severe impacts on the transit or receiving country environment, such as depletion of water supplies, deforestation, and pollution from refuse.

Migration law and policy needs to better incorporate the new realities of migration. Over the last century, international law has remained fairly stagnant. It affords rights to migrants fleeing their homeland to escape war or political repression but not to migrants pursuing strictly economic gain. A political refugee entering another country must be given asylum, for example. A non-political refugee has traditionally been viewed as an »economic« migrant warranting disparate treatment by the receiving country, including detention and deportation to another country or to the country of origin.

Migration has changed in recent years. Whether a migrant is fleeing a »well-founded fear of persecution« (a determination which precedes immediate asylum) is much less relevant today where civil strife is caused by factors other than political repression. The management of natural resources and financial and political stability are often intertwined, certainly at the national level but frequently at the regional and even global level as well.

The drivers of forced migration, whether they be economic, environmental or conflict-driven, will be of increasing importance to European countries seeking to manage migration flows. Understanding the causes and trends in migration from sub-Saharan Africa to Europe more clearly can help policy-makers better identify priority areas of attention. Considering what we know about one driver of migration — desertification — our understanding can inform training and education programs, and foreign aid, in directing new migration policy.

## Session II
## Integrated security concepts in practice

Environmental peace-making, which would address migration and environmental conflicts in the wider context of security, is hardly established. Conservation efforts in a cross-border context can foster good relations between neighbouring countries, while conversely, peace processes may impact positively on the environment, as examples of »peace parks« from different continents show. Dryland regions throughout the world are benefiting from contributions by agricultural research to enhancing food security and agricultural productivity. In northern Kenya, the peace process among communities in the district of Marsabit is being accompanied by improvements in environmental management.

# Environmental peacemaking – Progress, challenges and research opportunities

**Alexander Carius** – Adelphi Research

To start with, there is no good practice on integrated approaches on environment, conflict and cooperation in other EU member states by international or regional organisations that may serve as blueprints for similar approaches in Germany. So I will talk about why no integrated concepts are currently in place and what should be changed in order to develop them. Over the last five to ten months, conditions under which political decision-makers operate in the context of environmental peacemaking – or more generally environment, conflict and cooperation - have changed. I recall the UK foreign secretary's speech at the UN Security Council in April and subsequent government initiatives in the UK, Al Gore's movie »An inconvenient truth«, the Stern report and the most recent IPCC assessment report. Also, the European Commission has started to address the question of environment, conflict and cooperation within the New Peacebuilding Partnership, the European Conflict Prevention Network and through a new inter-institutional working group on natural resources and conflict. The OSCE is currently working on its environmental security strategy, and together with UNEP and UNDP, it is operating a rather big program on environment and conflict assessment. And in Germany we now have the recent WBGU report on climate change and security in front of us. Both at the domestic and international level, decision-makers are getting more receptive and aware of this subject, and it has gained more attention at the top of government agencies as well as regional and international organisations.

**The programs of donors mainly have a very strong emphasis on prevention, but not on adaptation policy and conflict management.**


As climate change is recognised as a threat to humankind, it also offers opportunities to work with those countries that are not only suffering from the impacts of climate change but are, at the same time, becoming major producers of greenhouse gases, like India and China.

As yet, environmental conflicts do not pose immediate threats to security with a certain magnitude with regard to violent conflicts between states. However, various conflict potentials induced by climate change, water scarcity and degradation of arable land may reinforce each other in the future and increase the potential for violence. This is the outcome of the study presented here today. The study indicates that climate change will increase the scale of the problems that we observe. And today we are already witnessing an increasing number of localised environmental conflicts within countries among local communities that rarely attract the attention of policy-makers but may increase and spill-over into larger conflicts if not managed properly and preventative. However, as climate change is recognised as a threat to humankind, it also offers opportunities to work with those countries that are not only suffering from the impacts of climate change but are, at the same time, becoming major producers of greenhouse gases, like India and China. So it is not only the political setting and the role of the countries both as victims and obvious drivers of the environmental conflict nexus that are changing.

The four conflict constellations that the WBGU has developed (degradation of freshwater resources, decline in food production, storm and flood disasters, migration) are all linked to the question of desertification in one way or another. In my intervention, I would like to put this into the context of the UNCCD. Basically, CCD is a very preventative approach to reduce land degradation, to rehabilitate land and to reclaim desertified land. So while it is an environment convention in principle, it is also a convention on sustainable development, for it addresses larger question of improving livelihood security. Thousands of projects have been implemented so far, 679 alone by German Development Cooperation, partly or fully funded by the German government with 1.8 billion €. This number results from the fact that the majority of these projects touch issues such as sustainable land management, improving rural livelihoods, reforestation, agricultural capacity-building, etc. And in most cases, they are related to questions of desertification in some way or another.

Consensus has been reached among the donor community on working on sustainable rural development and enhancing food and livelihood security, which also contributes to the implementation of the UNCCD, even by those countries which are not part of the con-

vention. As desertification is linked to sustainable development and a variety of other topics in the environmental policy world, donors aim at increasing coherence between the different policies, conventions and approaches. Not only do integrated concepts represent one of the key requirements put forward by the recent German report to the secretariat of the UNCCD, but they have also been demanded by the EU, as has integration of the CCD and poverty reduction programs.

While donors are aware that the negative consequences of desertification are, basically, conflicts over scarce resources and migration, their programs focus mainly on the prevention of desertification and do not deal with the threats emerging from desertification. There is a very strong emphasis on prevention, but not on adaptation policies. The overwhelming majority of projects are preventative. Mostly, they are engineering projects that follow a very narrow technical approach compared to the broad issue of links between climate change, desertification, migration and their impacts on security and conflict. Neither does CCD mention conflicts explicitly. It focuses largely on migration and does not include recommendations for policy-makers or ideas or principles on how to deal basically with the consequences of desertification. Neither is there anything on returning people after migration or on how to stop migrants from exporting desertification by using unsustainable agricultural practices in their new communities. In this regard, the UNCCD's processes are primarily technical exercises with a strong focus on preventing desertification.

**The capacities of research institutions throughout the world display a strict divide between natural and social scientists and more specifically between environmentalists and peace and conflict experts.**

The scenarios presented by the WBGU on the impacts of global climate change suggest that there will be an acceleration of climate change, and this could mean that the kind of low-level conflicts that we have seen so far will grow in number, reinforce each other and bear the risk of spilling over into larger and what will then be more visible and severe conflicts. Research on environment and conflict with regard to desertification and migration shows that the latter can be prevented if addressed at an early stage and integrated in related sectoral approaches.

To what extent and how can we use integrated concepts on transboundary environmental cooperation? Sustainable development programs often represent a sort of entry point for conflict parties to initiate dialogue or to impose settings to reinitiate talks among those parties. The reason why most programs only address problems of desertification and are not characterised as integrative approaches lies both with policy-making and the field of science. The capacities of research institutions throughout the world display a strict divide between natural and social scientists. Even within the group of social scientists, we have certain distinctions and fragmentations between those working on conflict prevention and peace-building efforts and those working on environmental policies. Unless we change this divide, policy approaches will fall short of necessary integrated mechanisms to address environmental conflicts. Looking at research programs set up at German or European level, we can identify one called DesertNet and its European equivalent, which basically deals with the analysis of desertification but does not sufficiently address the conflict and security implications of desertification. On a European scale, the different programs include hardly any projects with a mixture of scientists from both the natural and the social sci-

**If you look at environmental peace-building efforts so far, there is not a single case where there is a systematic review of the peace-building or conflict prevention impacts it actually had.**

ences (and more specifically environmentalists and peace and conflict experts) and dealing with the different aspects of both global climate change or desertification and the social-economic impacts relating to conflicts. The European Union's 7th Framework Program contains three new major projects on desertification and land degradation only one of which brings the question of crisis and security into the analysis of desertification and its impact.

One of the questions raised before this conference was to what extent international conventions can be used to put forward the argument of environmental peace-making in order to also address questions of migration and refugees in the broader security context. It appears that migration and environmental conflicts are dealt with separately, not only in research but also in the world of policy-making. The reason why it is difficult for policy-makers to develop strategies for environmental peace-making is that it was quite easy not only for civil servants in our government but world-wide to label environmental projects for the sake of peace-building. The problem is that if you look at these environmental peace-building efforts, there is not a single case where there is a systematic review of the peace-building or conflict prevention impacts it actually had.

With regard to research needs, there are three aspects I want to highlight: First, only little research is available on how to adapt to the emerging security risk with recommendations to policy-makers. Second, this kind of research has to be interdisciplinary, which we have already argued above. And third, policy-makers require concrete advice but lack the research results that would meet their urgent needs. Moving out of the research institutions and combining research efforts with applied policy analysis and advice (what I call »action-oriented research approaches«) means bringing researchers, practitioners and policy-makers together.

# Peace parks – Linking conservation of natural resources with national security

**Jeffrey A. McNeely** – International Union for the Conservation of Nature (IUCN)

I am going to narrow down on a very specific response to national security: international peace parks. This topic may seem a little esoteric, but I hope that you will see the relevance of international peace parks to security by the end of this paper. I worked for two years in an international peace park on the border between Nepal and Tibet, and spent several years working on similar areas in Indochina, learning a lot about border challenges. So what are international peace parks, and why should you care about them?

**As climates change, distributions of ecosystems change, and protected areas that stretch North-South give us the ability to adapt to those changes.**

One reason to have international peace parks is that they expand the size of protected areas, and more territory simply means more species. This has been borne out by numerous studies, for instance in the Caribbean, Germany and Gabon. So more space is better for conserving biodiversity, which in turn brings multiple benefits to people. By conserving biodiversity, people have more capacity to adapt to changing conditions brought about by desertification or climate change.

The ranges of large mammals, like elephants, tigers and snow leopards, all stretch across international boundaries, as do many smaller animals and most plants. For example, the annual wildebeest and zebra migration crosses the border between Kenya and Tanzania, so conserving biodiversity will not be possible if we take only a country-by-country approach. Instead, we must look across international boundaries. Nor is transboundary cooperation relevant only to developing countries. Similar efforts are being made in North America with the Yellowstone to Yukon Corridor and in Europe along the former Iron Curtain, from Finland to the Balkan mountains. The idea is to manage the areas between the protected areas to provide links between them for many of the native species that move over long distances or have extensive ranges.

**Peace Parks reduce the likelihood of conflict and expand the area of national habitat, which is good for biodiversity, and they provide a sense of hope that conservation can bring peace both for people and nature.**

As climates change, distributions of ecosystems change, and protected areas that extend North-South enhance the ability to adapt to those changes. A good example is the Meso-American Biological Corridor, which stretches from Panama in the south to Guatemala and Belize in the north. It involves all the countries of Central America, which are trying to link their protected areas together for the benefit of their people. Another successful venture involves Uganda, the Democratic Republic of Congo, and Rwanda, which provide the only home to the mountain gorilla. These three countries are collaborating to manage their gorilla population, the tourists, and the people who are living in this region, balancing seemingly-conflicting demands for the benefit of all.

So if we look around the world, where else is it possible to establish linked protected areas?

The latest compilation from IUCN shows at least 169 potential transboundary protected areas, and 31 of them involve at least three countries. Not that this is a new idea. The Waterton-Glacier International Peace Park in Canada and the USA was 75 years old last year. A much more recent example is the Greater Limpopo Peace Park, shared among South Africa, Mozambique and Zambia. It is enabling countries that were in conflict for many years to work together for peace and conservation. Another example is from Peru and Ecuador, who had a long-standing border conflict that sometimes involved violence. About ten years ago they invited four countries (the USA, Chile, Brazil and Argentina) to negotiate a new boundary to which they would agree under a binding treaty. As part of the solution, the mediating governments designated a boundary with protected areas on both sides of it - parks designed to keep peace. The indigenous people who lived in the region were very happy with this solution because moving back and forth across the border was part of their life, and armed conflict between government troops had caused them severe problems.

The Terai Arc of Nepal and India includes a large number of protected areas -- some suffering from desertification -- and extends in a long narrow strip that goes from the Rajaji National Park in the northwest all the way down to the Parsa Wildlife Reserve in the southeast. It enables species like tigers, rhinos and elephants to actually have sufficient habitat to support healthy populations. Finally, the countries of Indochina are designing a system of protected areas for Laos, Cambodia, Vietnam and Thailand, many of them located along international borders. The greater Mekong sub-region has a major program with the Asian Development Bank to work on a cooperation scheme between these neighbouring countries that includes the protected areas as part of peaceful and sustainable development.

Peace parks emphasise regional interests rather than just narrow national interests. They establish international communication so that people can talk to each other and discuss problems. They reduce the likelihood of conflict and expand the area of natural habitat, which is good for biodiversity. And finally, they provide a sense of hope that conservation can bring peace both for people and nature. So the international peace parks have multiple applications for the kinds of issues we are talking about at this meeting. Many of them are in areas that are in danger of desertification, and conservation management is an important part of regional progress toward sustainability.


# Sustainable agriculture production in conflict and crisis management – Lessons learned from ICARDA

**Dr. Mahmoud Solh** –
International Center for Agricultural Research in the Dry Areas (ICARDA)

**There are numerous ethnic, social and governance factors that influence the war-poverty link, but clearly agricultural research for development and development itself has a major role to play in helping the poor out of this trap.**

Our world is going through an ecological transition in which desertification and climate change are becoming major challenges. These challenges are not new, but they did not receive enough attention of the international community in the past. Desertification is caused by a combination of multiple social and biophysical factors rather than by a single variable alone. The recent Millennium Ecosystems Assessment Report indicates that desertification threatens over 41% of the land.

Desertification leads to a poverty trap in dry areas, which can, in certain circumstances, turn into a poverty-conflict trap. This is because there is a link between desertification, food insecurity, poverty, and human insecurity. Studies at Cornell University have found that countries with low per capita gross domestic production are more likely to experience war or conflicts. There are numerous ethnic, social and governance factors that influence the poverty-conflict link, but clearly agricultural research for development and development itself has a major role to play in helping the poor out of this trap.

There are several pathways out of poverty. Agricultural research is very important for establishing sustainable economic development in many of the world's poor areas. In this context, the Consultative Group on International Agricultural Research (CGIAR), a consortium of donors from both North and South, was established in 1971 with the mission to improve food security, eliminate poverty and protect the natural resource base. ICARDA, the International Centre for Agricultural Research in the Dry Areas, was set up in 1977 as one of the fifteen centres supported by the CGIAR that work in more than 100 developing countries. ICARDA's mission is to contribute to the improvement of liveli-

**Desertification is certainly on top of ICARDA's research agenda. The Centre covers the non-tropical dry areas globally where desertification is a serious challenge.**

hoods of the resource poor in dry areas by enhancing food security and eliminating poverty through research and partnership to achieve sustainable increases in agricultural productivity and income, while ensuring efficient and more equitable use and conservation of natural resources. Desertification is on top of ICARDA's research agenda. ICARDA's work covers all the non-tropical dry areas globally, where desertification poses a serious challenge. The Centre uses a partnership approach for implementing its collaborative projects.

For example, ICARDA's Mashreq and Maghreb project on the development of integrated crop-livestock production systems in eight major countries in West Asia and North Africa is an example of partnership between scientific communities and policy- and decision-makers. Several technologies have been developed by the project and adopted by farmers in the very low rainfall areas of these countries, making a major contribution to improving livelihoods of the resource-poor.

Agricultural research for sustainable development rests on three major pillars: natural resource management; biodiversity and crop genetic improvement; and socioeconomics, policy and institutional capacity building. The objective of ICARDA's research program is to integrate these three pillars through a multi-disciplinary approach aimed at creating and strengthening the production systems for sustainable agricultural development to combat desertification as well as to improve livelihoods. ICARDA has developed strong partnerships with diverse stakeholders, particularly with the national programs, the sister CGIAR centres, and advanced research institutes in combating desertification. The Centre also works closely with the UN Conventions, particularly the UNCCD. ICARDA represents the CGIAR centres on the steering committee of the UNCCD's Global Mechanism.

ICARDA works in a very volatile geopolitical region where wars and civil conflicts continue to destroy the already scarce natural resources, further increasing desertification and the misery and suffering of the people. The Centre has been called upon to help rebuild agricultural research for development in countries affected by conflict and desertification, particularly Afghanistan, Ethiopia, Eritrea, Iraq, Lebanon, Palestine, and others. The Centre's achievements are based on the premise that improved agricultural technologies lead to improved nutrition, reduced poverty and sustainable management of natural resources, which in turn improve sustainable livelihoods and reduce armed conflicts and extremism. Planning for and working on post-conflict rehabilitation of agriculture is not an easy task, for in many of these countries, research infrastructure has been damaged and security

problems persist. Therefore, the strategy to work in post-conflict situations is built around four key elements: partnership and collaboration, rapid needs assessment surveys, program development and implementation, and capacity-building.

Afghanistan has suffered more than 20 years of conflict and several years of drought leading to a huge death toll and widespread displacement of people. Much of the infrastructure is damaged, and markets have been disrupted. In January 2002, a Future Harvest Consortium was established to rehabilitate agricultural research for development in Afghanistan, involving a very wide range of partners from the CGIAR centres, donors, national government of Afghanistan, NGOs, and others. The Consortium has designed a framework for both short- and medium-term rehabilitation projects to work on the following: seed systems and crop improvement, soil and water management, livestock feed and rangelands, and horticulture. In the past, horticulture contributed 40% of the gross national production, but this is not the case anymore. In a bid to revive agricultural research and production, ICARDA had to move quickly to help the Afghanistan government to put in place a seed system to provide quality seed to farmers. In May 2002, a workshop was convened in Kabul to formulate and introduce a code of conduct governing all seed-related activities in Afghanistan. It was the first scientific meeting on seeds in the country. Based on the code of conduct formulated at this meeting, the government is now in the process of enacting a law pertaining to seeds.

ICARDA and its partners are also promoting the development of community-based seed enterprises and complementary legislative policy options, and institutional commitment has been achieved for this initiative. Twenty village-based seed enterprises have been established in Afghanistan in which farmers produce seeds themselves. A fourfold increase in seed production of highly improved varieties was recorded in 2005 compared to 2003 and 2004.

With funding from the UK's Department for International Development (DFID) and the USA, ICARDA is working in Afghanistan to provide farmers with profitable alternatives to the cultivation of opium poppies. One such alternative is mint. ICARDA has established a mint water production and training centre in Kabul and trained more than 100 housewives to produce mint water at home and at community level. With the mint water and the mint itself, the farmers can make more money than with the opium poppy. Mint producers' associations have now been established in three provinces.

**[...] technological change in agriculture leads to improved nutrition, reduced poverty and sustainable management of natural resources, which in turn improve sustainable livelihoods and reduce armed conflict and extremism.**

The Gene Bank of ICARDA, based at its headquarters, holds more than 133,000 accessions of food and feed crops, collected from all over the world. A large proportion of the collection is landraces and wild relatives of crops which have been evolving and surviving in very harsh environments. In its gene bank, ICARDA also holds in trust over 3,000 accessions from Afghanistan that were collected before the conflict and wars and over 1,000 each from Iraq and Palestine of the important food and feed crops. These accessions will be repatriated to respective countries when gene banks have been rebuilt there.

ICARDA has collaborated with Iraq for many years, and its current program in collaboration with the Iraqi researchers, supported by Australia and Japan, focuses on dissemination of new technologies, including conservation tillage to combat desertification, germplasm enhancement, and capacity-building.

In Palestine, ICARDA has introduced water-harvesting techniques to conserve biodiversity and establish field gene banks, particularly for indigenous species of fruit trees. In Lebanon, ICARDA has been working together with the national government, even during the 17 years of civil war, and has helped generate many technologies that are now in the hands of the farmers.

**Networks of expertise and gene banks are priceless safety nets. They provide the key to restore and secure agrobiodiversity and re-establish seed and food production systems.**

Unfortunately, many of the conflict-affected countries where ICARDA has been working have lost much their human expertise because of people emigrating. So capacity-building in these countries is very important. In the last ten years, ICARDA has trained over 600 scientists and professionals from Afghanistan, Iraq and, Palestine. ICARDA is not the only CGIAR centre working on post-conflict rehabilitation of agriculture. Several other CGIAR centres have been involved in such work in different parts of the world. ICARDA recently documented this work and published a global report, Healing Wounds.

Several lessons emerge from ICARDA's collaborative work in countries affected by conflict and war. First, local seed systems are more resilient than the formal seed systems; the latter are more vulnerable to disruption because these depend on centralised infrastructure, institutions and human resources and assets that are often damaged during the conflicts. Also, using local knowledge to improve livelihoods is critical and the coordination of the support from the various stakeholders, including government organisations, donors, UN agencies, and NGOs, is very important to avoid duplication. Second, networks of expertise and gene banks are priceless safety nets. These provide the key to restore and secure agro-biodiversity and re-establish seed and food production systems. Third, restoring the capacity of national institutions to conduct agricultural research for development is vital. ICARDA's support has contributed greatly to the rapid progress now being made by the national research centres in Afghanistan, and many of these activities are now led by national scientists. Fourth, broad partnerships are key to accelerating the speed and impact of rehabilitation work. Fifth, restoring the community bonds, codes of conduct, and a participatory approach involving the communities in promoting technology transfer are crucial to success. Sixth, it is very important to restart the small-scale private sector, especially with respect to input supplies and markets. The last aspect is that ICARDA and its partners are helping aid agencies to increase their effectiveness in a crisis situation by precisely targeting their aid. The new approach shifts the focus from relief to development, redirecting aid investment towards preventive rehabilitation and recovery rather than relief alone.

It is only through an effective global alliance supported by science and technology, an enabling policy environment, and a strong political will that we can hope to improve livelihoods of the poorest and the most vulnerable people and bring peace and security not only to the war-torn countries but also elsewhere in the world where such support is needed.


# Peace processes serving the environment - Reconciliation between the Gabra and the Dassanetch in the north of Kenya

**Guyo O. Haro** - German Technical Cooperation (GTZ) Kenya

I am going to talk about the peace process serving the environment, and will be focussing on a small area in northern Kenya, the Marsabit district. In this district, 85% of the people are pastoralists. About 40% of the area is underutilised because of insecurity. We have multiple communities in the Marsabit district, comprising Gabra and Dassanetch people. All these communities have different relations. Sometimes they are at war, and sometimes they corporate, depending on the level of interaction and social competition. There is competition for resources in a number of areas.

**Attempts were made to rehabilitate the rangelands by demonstrations and supporting a set of measures to revise land degradation and promote the application of useful traditional grazing practices.**

Although the communities vary considerably culturally, the settings within them are quite similar. In particular, the decision-making levels within them resemble each other closely. The lowest decision-making level is the household, which decides on livestock management and marketing of livestock products. Then there are groups of houses, which have to make corporate decisions on sharing and managing water, grazing or raising defences against would-be foes, whether they be predators or human beings. Groups of these settlements, in turn, go to a neighbourhood association, where they decide on coordination and the management of multiple camps. A pastoral camp cluster may contain up to 40 households. In Korr, an area that we work in, intense pressure sometimes builds up among the pastoralists owing to insecurity.

Marsabit has had a long history of environmental management programs, starting with UNESCO's Integrated Project on Arid Lands (IPAL), aimed at finding a direct solution to most imminent environmental degradation associated with desert encroachment, and running from 1976-1986. IPAL was also asked to provide a scientific basis for rehabilitation

**Addressing conservation and land rehabilitation was futile without addressing insecurity.**

and rational development of the lands. But at the time, IPAL only had a limited impact as the target communities were not given the role to define their own future in the research program. I was part of the more recent Marsabit Development Program (MDP), which GTZ ran from 1990 to 2002. MDP has several components: the livestock component, the human resources development component, the farming systems, and also the natural resource management component. In the latter component, the idea was to try to rehabilitate the rangelands by demonstrations and supporting a set of measures to revise land degradation and promote the application of useful traditional grazing practices.

The MDP, extending from IPAL, immediately commissioned a study that looked at traditional grazing practice systems, and we developed a plan of action that was implemented between 1993 and 1994. The aim was to revive traditional community practices. This was achieved by training the community leaders, who were then expected to come up with an environmental action plan for implementation. However, the process sparked a resource use conflict instead of addressing land degradation. The MDP organised a review, and we discussed the issue with eleven neighbouring communities to try to find out what the underlying causes of land degradation were and initiate the consultative process with the communities. The neighbourhood leaders advised us to establish and support Environmental Management Committees (EMC), composed of different levels of elders, traditional leaders, women, and youths and to also mobilise the community at its lowest level, the camp level, within the neighbourhood, and to support workshops to disseminate information within the neighbourhood. We on our part advised the support of inter-neighbourhood discussion because resources are shared and no neighbourhood has control over a particular resource.

A total of 29 EMCs were established, with a membership of nearly 600, 40% of them women, to implement the programs and revise land degradation. Members of the EMCs often dress like guards. They wish to be visible, and it should be recognisable that they have the mandate to execute the environmental action programs. The challenge the EMCs face includes overlapping interests among the neighbourhoods. Also, the groups are relatively far apart, making communication difficult. Different rules apply in different groups and are not necessarily respected by herders coming from other areas. Following consulta-

tions between 1998 and 1999, four clustered territories were established out of the 29 neighbourhoods. The clusters were requested to come up with harmonised procedures for sustainable management of resources as well as penalties relating to how to manage water and control grazing and movement from one neighbourhood to another.

At neighbourhood meetings, it was stressed that issues of environmental mismanagement could not be separated from issues of conflict, and that insecurity led to localised overuse of resources while leaving vast expanses of rangeland unused. Addressing conservation and land rehabilitation was futile without addressing insecurity. This was obviously beyond the remit of the MDP. Project management insisted that security was the preserve of the government. The committee side argued that what they needed was a facilitation process for them to meet and come up with solutions through dialogue. Eventually, the environmental program did launch a conflict management initiative.

The MDP had a series of meetings with communities from different groups in several problem-solving workshops. In the meetings, communities could present their problems to each other. The insight that they were in fact all facing very similar problems helped to tone down tensions. Strategies to minimise the conflicts were identified, and the solutions proposed were acceptable to all parties and within their means to implement. The agreements reached were translated into local languages and Kiswaheli for dissemination to all categories of users within management units. Peace committees were established in all neighbourhoods, security was improved, and we returned to environmental management programs.

**When there are multiple claims on a given resource, management of the resource requires addressing conflicts arising from these multiple claims.**

What is the status of the environmental management efforts by EMC to date? The traditional neighbourhood boundaries have been reaffirmed and agreed between the committees, the dry and wet season grazing areas established between neighbourhoods, and no settlement allowed in grazing areas in the dry season. Management of important trees has been improved. For instance, over 1,000 hectares of Acacia tortilis stand regenerated in areas that are degraded. These acacias are now marked with red paint to prevent people from cutting them. Penalties are very high. The EMCs have been mandated to implement their plans by the National Environment Management Authority and the District Environmental Committee, which are government agencies responsible for the environment.

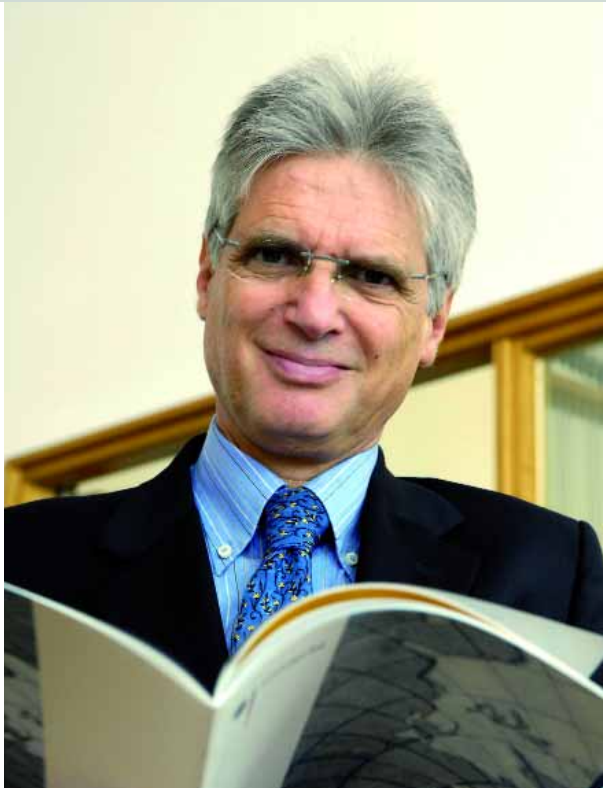
The EMC also had a role in protection of the wildlife. Ostriches in the range area that would have been destroyed previously now graze side by side with the livestock. With regard to conflict, there is an increased inter-ethnic cooperation through dialogue, and management of conflict is achieved through peace committees and the EMCs. Peace committees are able to retrieve stolen livestock and return it to their neighbours, preventing further conflict. Dialogue and knowledge now enables committees to act quickly on any issue arising out of a conflict. For example, goats may be imposed as a fine to their owners if they have stolen donkeys.

What are the lessons learnt? When there are multiple claims on a given resource, management of the resource requires addressing conflicts arising from these multiple claims. Community participation can lead the development agents to become involved in issues that differ from the original program focus. Pastoral populations are not inherently destructive to the environment, and environmental management efforts in pastoral areas involve more than just extending components of scientifically researched plans.

## Panel Discussion

## Desertification, conflicts and cooperation – How to bridge institutions and disciplines?

Addressing the context of desertification and security requires coordination and cooperation. Scientific collaboration touching directly on desertification issues is being supported internationally in the Mediterranean countries. In Germany, the coordinating efforts of ministries concerned need more backing by the upper levels of departments and divisions. The interdependence of development and security, while generally acknowledged, should be expressed in department budgets.



**Dr. Fausto Pedrazzini** – NATO

As you know, NATO is a political military organisation which deals mainly with security in a broad sense. But maybe not all of you are aware that NATO also has a specific science program dealing with civil science and security, and not military issues. In NATO language, we refer to this as »non-classified issues«. We strongly believe that issues like environmental security, food security, and desertification are very much related to the overall concept of security because they affect human and societal dynamics, they may lead to migration, and they have a strong influence on political stability and possible conflicts at all levels. And, last but not least, you can imagine the relevance of land degradation for border security and control, particularly in remote regions.

**We strongly believe that issues like environmental security, food security, and desertification are very much related to the overall concept of security.**

Desertification is on the NATO agenda for several reasons. The very first reason, a historical one, is that Article 2 of the North Atlantic Treaty states that NATO is committed to foster the peaceful social and economic development of civil society. During the last decade, the total number of NATO member nations and those associated through the Partnership for Peace Council has grown to 49, plus the seven Mediterranean-Dialogue countries: Algeria, Egypt, Jordan, Israel, Mauritania, Morocco and Tunisia. Such a variety of countries represents the whole spectrum of natural environments. At the workshop we organised in Valencia in December 2003 on »Desertification in the Mediterranean Region – a Security Issue«, an important achievement was the active involvement in the discussions of all the Mediterranean-Dialogue countries. This resulted in a follow-up of several collaborative activities, including joint projects between Arab and Israeli scientists.

NATO itself does not directly implement scientific activities. Rather, NATO supports cooperation between scientists from different countries aimed at reaching a better knowledge

**We support scientific cooperation between scientists from different countries aimed at reaching a better knowledge of different topics, including desertification.**

of different topics, including desertification. The SPS Program is sponsoring projects related to this topic, mainly in the Mediterranean and Central Asian regions. We can boast a quite impressive list of Advanced Study Institutes, Advanced Research Workshops and Collaborative Linkage Grants (the mechanisms to support the SPS Program offers), focused on environmental security, land degradation and desertification. A special asset of the SPS Program is that it allows for the combining of scientific expertises coming from Europe, North America, Central Asia and Mediterranean Dialogue countries.

A typical event or project sponsored by NATO has to have two co-directors, one from a NATO country and the other from a Partner or a Mediterranean Dialogue country. Such a requirement is aimed at fostering international scientific collaboration, at sharing different levels of competence on a specific issue and at establishing a productive networking of scientists and experts dealing with a specific issue. As examples, NATO-sponsored collaborative activities were established in Jordan, between Jordanians and Israelis on water management and an interesting training activity on land degradation monitoring took place between the University of Cagliari, Italy, and the Institute of Arid Regions in Tunisia.

NATO itself is never going to be an expert on desertification, but it is giving the experts in this field the opportunity to work together. The features of the SPS Program are broadly described on the following web site: www.nato.int/science. We do not have such a large budget like, for instance, the Framework Program of the European Commission, but we have some additional assets such as a very low level of bureaucracy; the relatively easy application and awarding procedures, and the unique opportunity to include in the collaborative activities scientists from North America together with their European, Central Asian, Middle East and North African colleagues and experts.

In addition, we are very much committed to continuing and fostering our cooperation with other international organisations also dealing with Environment Security (like OSCE, UNEP, UNCCD, EC etc.); with NGOs, and with national governments, in order to move NATO closer to the civil society.

**Hama Arba Diallo** – Former Executive Secretary UNCCD

I really must admit that at first, when we were invited to Valencia for the meeting on The Mediterranean Dialogue and the New NATO in 1999 by NATO, I did not want to go. Why would I go to a NATO meeting, of all places? I am from the UN and everybody knows what the UN is all about. But then again, I realised that they considered the issue at hand one for which they also had a vested interest in trying to find a solution. In fact, one year before NATO got involved in this it was the US CIA who all of a sudden realised that there was more to threaten peace and security than simply those going around with grenades round their necks. And that indeed, if the conditions were to continue to degrade in developing countries in particular, then we were likely to find ourselves faced with a situation where the classical way of attacking those sources of insecurity was not usable. The same holds for OSCE.

**Rather than criminalising migration, we should simply consider it a phenomenon for which we have a responsibility to find a solution.**

Looking at the issue of migration, we mustn't forget that it is not a crime. After all, 30% of the population of Sweden migrated to the US during the depression. And at that time, this was not a problem; so they went, they settled down, some of them now are coming back. And also look at the Japanese who live in Brazil. These days, they are coming back to Japan, and of course they have to learn Japanese because you cannot be in Japan speaking Portuguese and hoping to get a job. So rather than criminalising migration, we should simply consider it a phenomenon for which we have a responsibility to find a solution. And more and more and of what we have seen of late between Africa and Europe is going to happen, as well as more of all that between South America and North America, because do not forget that 2,000 people cross the Rio Grande every day. Two thousand people, crossing into the US. If this was happening in the Strait of Gibraltar, or in the Canary Islands, what would you do? Would you send NATO in? Because to Europe, 2,000 people is like an invasion.

It is important that we try to look at what is the fundamental approach under the conventions which is: how can we prevent? We should not wait until the situation degrades to the point where we have to solve the problem instead of preventing the problem from taking place. Bearing the UNCCD in mind, where prevention is the fundamental approach,

what can we do? If we keep on looking for conditions of degradation before we do something, it will be too late at some point. And I also believe that with the resources that some of these institutions have at their disposal – look at NATO, look at OSCE – you should not expect to just be given the leftovers from other programs, yet be able to come up with a program that could be sensible enough and forward-looking enough. And what are the other cooperation agencies doing – GTZ, the BMZ, the European Union, or the individual bilateral programs that most members of the European Union have?

This morning I was complaining that the resources are no longer going to the areas most affected by land degradation because these are the rural areas. You cannot fight desertification in the city of Calcutta or in the city of Lagos. If you want to fight desertification you have to go into the rural areas – which you are not doing. And this has been happening and this is likely to happen in the years to come; we will be crying out loud with IFAD, ICARDA and the others: Please be careful; the situation is going to become unmanageable. I really hope that we can take preventive action at our level and that the various institutions within their areas of competence can be given more leverage to help. And preventive action is the key word for me.

**I really hope that we can take preventive action at our level and that the various institutions within their areas of competence can be given more leverage to help.**

NATO cannot prevent people from going from Egypt into the Red Sea, it cannot prevent people from going from Algeria or Tunisia or Morocco into the Mediterranean and into Europe; because look at what is happening in Senegal today: people are not getting enough fish. Why? Because those who have small boats think that they can make more money smuggling people into the Canary Islands than going to get some lousy fish and bringing two or three kilos home. Why would they bring just two or three kilos home if they can bring in 200 or 300 thousand dollars? This is it.

What I always like to quote here is one of the most forward-looking policies a leader from the west, in particular from the EU, has adopted. He was a minister for cooperation in 1994 and decided that instead of waiting for Senegalese and Malians to come into France, he would try to go there and see what actions could be taken at local level to create better conditions, not only social conditions but also productive conditions as a way to prevent them from coming into France. Unfortunately he did not stay long but then became prime minister, then he lost again, and even more recently, again he was minister for one month - that was Mr. Juppé.

I am still convinced that you can find a very cost-effective and efficient way of helping the people concerned, helping the countries concerned. There definitely is a scope for international cooperation. We all have a vested interest in preventing the situation from getting out of control, so what can we do together? And things getting out of control is what we are heading for. I am still convinced that that learning from experience is an option that will be much cheaper.

**Dr. Christoph Kohlmeyer** –
Federal Ministry for Economic Cooperation and Development

**We know so much today about the connections between climate change, land degradation and security that we are no longer able to say »Oh dear, we didn't know« in the future … and it really shows just how much we need to act in the fields of resource management and conflict prevention.**

The recently presented WBGU report on »Climate Change as a Security Risk« provides a sober assessment of both the connections between climate change, land degradation and security and the trends that we have to expect. We know so much today that we are no longer able to say »Oh dear, we didn't know« in the future. We do know. We have never known it as clearly as we know it now, and it really shows just how much we need to act in the fields of resource management and conflict prevention. It is for sure that there can neither be development without security nor security without development. Maybe that is the key sentence that we need to take as a yardstick for all our efforts in development policy.

As you surely know, the Federal Ministry for Economic Cooperation and Development is involved in the Federal Government's Action Plan on Conflict Prevention and Crisis Management. We have our own inputs to this action plan and we are working on it. What I can state is that development cooperation is not becoming militarised. Our Minister never fails to underline that 900 million dollars is currently being spent on the military every day, while only a tenth of this figure is being used for development cooperation which is conflict prevention per se. I think these figures show just how distorted things are.

But a politically peaceful and an ecologically sound development in Developing World countries does not only depend on putting more money into the process. For example, if you look at the rural regions of the developing countries, the essential part is getting the national and the international agricultural policies right.

Incoherent protectionist policies in the OECD states and poor (agricultural) policy frameworks in developing countries have led to a situation where it is no longer worth investing in agriculture in developing countries. The consequences of this political neglect of rural economic potential trigger impact chains which force smallholder agriculture and entire rural areas into ever greater marginalisation and unsustainable exploitation of natural re-

sources. This is the kind of trend that we are seeing, and it is mainly so because our surpluses are being catapulted on world markets and thereby distorting the markets while farmers in developing countries can hardly gain access to their own markets and even less so to agricultural world markets. So the first thing we need to do is to make our own policies more coherent. We have to ensure that we cut our export subsidies.

As I have said, at the moment, we have a situation in which many people are driven out of their rural areas; they are spending the money they have to get to Europe, for example. When they come here, they work for low wages, helping to produce more surpluses which are then channelled back into the world market. This is a cycle which we also have to break, and we bear responsibility to do so. This brings me to the issue of migration as a whole. I think migration is an important development factor. It is an important factor as far as sustainable development is concerned because it increases productivity: if economic systems diversify, then we need migration.

Last week in Berlin, we had the European Forum on Sustainable Rural Development, and of course the desertification issue came up there as well, but we also looked at peaceful development for prosperity. There are a number of very encouraging messages, particularly from Africa. Today it is no longer the case that African governments simply say »If we get budget support we only want to invest in health, education and infrastructure«. More and more governments are saying »Okay, we also want to look at our agricultural policy, we want to improve the framework conditions so that it will become well worth producing agricultural products in rural areas«. Many African countries have realised that there is an important potential for sustainable rural development and that this is a way of anchoring its position on regional and continental markets. And here, of course, agriculture plays a key role. So I think we are well advised to support the ongoing African political reform processes as expressed e.g. by the African leaders' decision of Maputo 2004 to invest 10% of their public funding into agriculture in the near future.

**More and more African governments are saying »Okay, we want to look at our agricultural policy, we want to improve the framework conditions so that it will become well worth producing agricultural products in rural areas«.**

We know that growth in agriculture is a key factor for development and conflict prevention in rural areas. Small-scale farmers play an important role and have an important feed into the economy as a whole, also affecting productivity levels. We are continuing our dialogue with countries focusing more on rural development because this is where there is the political determination to set priorities in these spheres, and you can see this reflected in the recommendations of anti-poverty strategies. And this is precisely why we are going to work on promoting rural areas.

**Prof. Dr. Nina Buchmann** – German Advisory Council on Global Change

It is the remit of the WBGU to set ambitious goals for itself and also for the Government. What we want to do is to develop a perspective as to where the journey could go. Think of the situation in 1992, or even further back, in 1987, at a time when no one would have dreamt of the Kyoto Protocol, and compare it to where we are now, discussing the post-Kyoto regime. It really is high time that we start ambitious negotiations. At global but also at EU and national levels, we had a look at what we wanted to pass on to the various actors in the form of WBGU recommendations.

If we are not going to carry out the right development policy, then we are not going to have real security. But there is of course a gap here: environmental and climate policies have to enter this equation as well. Development policy can only be effective and successful if environmental policy and hence also climate policy is actually implemented effectively in this framework. The question of communication and information through the ministries, through the departments, through the various political arenas is another important point.

**If we are not going to carry out the right development policy, then we are not going to have real security. But there is of course a gap here: environmental and climate policies have to enter this equation as well.**

To my mind, we have produced a report that is suitable to feed into the overall consultation, coordination and cooperation process. Awareness of the problem is already there. Irrespective of whether we are talking about military, security, or development policy, or to the people who are actually implementing policies, we have to find a common language and make sure that activities proposed are actually implemented. This now embraces the global framework, addressing the reorganisation of the United Nations or the setting up of a new Council on Global Development and Environment. We ought to discuss at the United Nations level which bodies are best suited to take on these tasks.

The pioneering role played by the European Union, the G8, the presidency that Germany held as well as the European Union's efforts to anchor its position and present its ideas are all aspects reflected in our report. And we are in a position to provide support for Germany, whether it is for the Federal Ministry for Economic Development, GTZ or KFW. We also have considerable scope to provide support to agricultural and other research as well as to economic and social structures. We have to ensure that the climate aspect is integrated into all of these policies.

Of course climate change is basically just physics. We know it is there and we know that we need to reduce our emissions because we know what the implications will be if we do not. The report offers many starting points where ministerial departments can have a look for ideas, recommendations and proposals. And perhaps through the reality check that this report offers, they can decide what can be done in the short and in the long term. Maybe, if we think about a longer term goal like 2020 and look back at some point, we will then be able to say 2006/2007 was a turning point. Then we would be almost where we want to be.


**Alexander Carius** – Adelphi Research

Clearly, there is a link between climate change, conflict and security. But what the WBGU report highlights is the need for action to be taken within the next 15 to 20 years. With regard to the necessary policy shift, this seems to be a short period of time. We are no longer talking about locally restricted conflicts in rural areas (below the attention of policy-makers in governments of Western donors), but about a much bigger picture comprising the global governance structure, the reform of the system for global trade and agricultural policies and subsidies. We have already been addressing much of these bigger challenges for the last ten or fifteen years. But we have also realised that these larger policy shifts are slow, often ineffective and create severe constraints for efforts taken on a program or local level. Here I see the danger that we delegate the solution for a problem (here climate change and security) to a level that has already proved to be either ineffective or a very slow global mechanism.

The first goal is that political decision-makers in government agencies of Western industrialised countries need to make an explicit commitment to preventative action in this area. Second, we need to formulate policy goals: What do we want to achieve? Which are the regions at risk that deserve immediate action, and what can we do in what period?

The debate on environment and security in Germany started ten years ago. Now a report by the WBGU is on hand. The link between climate change and security and international climate policy is something that has really added value to international climate policy, which is a great advantage, as it extends the set of stakeholders, policy approaches and funding compared to the previous and more general debate on environment, conflict and cooperation.

In Germany, some ten years ago, the Ministry for Environment initiated an intense dialogue on this subject by conducting workshops and expert meetings, addressing all sorts of aspects of the environment, conflict and cooperation. However, with regard to climate change, climate policy experts in Germany have always remained very sceptical about link-

**We are no longer talking about locally restricted conflicts in rural areas, but about a much bigger picture comprising global governance structures, the world trade system and agricultural policy.**

ing climate change with security as they feared it could further complicate negotiations and would not offer new opportunities for policy making. The research and NGO community in particular partly feared a »militarisation of the environmental discourse«. This precondition seems to have changed with the publication of the WBGU report and parallel international debate. Government agencies in Germany have at least realised that there is the need to increase efforts to address these challenges, but I do not think that the way how we conceptualise policies and programs has already changed.

However, as far as the German Ministry for Development Cooperation is concerned, there are some initial indications of change as they start addressing a series of questions which would allow them to tailor potential new policies and programs: Do we have to change our policies? Do we need to change or enhance our set of instruments? Should we reduce our bilateral development cooperation in one region and increase it in others? Should we concentrate bilateral cooperation in countries most affected by climate change? How could we integrate preventative measures in our environmental programs? These are important and difficult questions. As far as I have observed, these questions have not been addressed yet in other ministries of our government. This is the third goal. There is a strong need to carefully analyse existing policy options and to come up with tailor made policy recommendations and programs for each sectoral domain.

I mentioned the need for integrative strategies earlier, but this requires cooperation, and each strategy then needs both ownership and leadership. You can only implement a good strategy with a strong ministry or institution behind you. And it is rare to get the backing of three strong ministries for such complex strategies. Currently, there is some sort of competition between the various ministries on who is going to take up the various aspects of an integrated environment, conflict and cooperation strategy and further deepen and develop these aspects. This can actually head in different directions and leadership for different sub-strategies. To name just two examples: Energy policy and energy security is the topic primarily addressed by the Federal Foreign Office, while global water policy is one where both the Ministry of Environment and the Ministry of Development Cooperation are at work and are in fact devising joint programs. But here too, the Foreign Office has

**Integrative strategies require cooperation, and every strategy then needs both ownership and leadership.**

the lead in the development of the Central Asia strategy, where transboundary waters are at stake. I see a whole number of ways to cooperate, and some of this is already happening, but while the debate has arrived at the upper levels of the ministries, I am not sure whether it has already reached the individual departments and divisions in our government.

At the moment, Adelphi Research is in consultation with ministries and other government agencies in Germany on the implications of the major outcome of the WBGU and to what extent policies and programs have to be redesigned or new policies developed reflecting these new challenges. It is clear that because of a lack of staff and financial resources and the overwhelming workload for the international and environmental departments, various ministries are simply unable to widen their sphere of influence and action to take new issues on board which they have not yet tackled. If climate change and conflict is really becoming an issue within our government, they would need to create sufficient institutional conditions which allow them to address these questions. Otherwise, such dialogue would remain superficial and without any impact. The second point is to what extent ministries can and actually want to cooperate. With an extended security concept, it goes without saying that different players have to communicate and cooperate. Compared to the recent debate on the »Ankerland« concept and the way we restructure our bilateral relations with India and China and foster or facilitate regional dialogue, the discourse among government agencies has been conflictive rather than based on consensus.

One instrument that we have in place in Germany to address environment and conflict linkages, the Action Plan on Civilian Crisis Prevention, generally offers such an opportunity for inter-institutional dialogue. But it has not yet been used for a thorough debate on either climate change and security or environment, conflict and cooperation in general. In the next phase of the implementation of the Action Plan, lighthouse projects on climate change and security might be an important task for the German government and civil society to address within their various institutional mechanisms of the Action Plan.

# Glossary

**ADB** Asian Development Bank

**BMZ** Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)

**CGIAR** Consultative Group for International Agriculture Research
The CGIAR fosters sustainable agricultural growth through high-quality science aimed at benefiting the poor through stronger food security, better human nutrition and health, higher incomes and improved management of natural resources

**Degradation** Loss of the typical characteristics of specific landscape components (vegetation, soil, etc.) by changed environmental conditions, over-exploitation etc.

**DFID** The UK's Department for International Development

**Drylands** Areas exposed to an arid, semi-arid or dry-subhumid climate and therefore at risk of desertification. These climatic conditions are defined easily by a simple coefficient reflecting the ratio of potential evaporation to precipitation (0.05 – 0.65).

**ECA** Economic Commission for Africa

**EMC** Environmental Management Committee

**Erosion** Detachment, removal and transport of rock material and soil by water, wind or gravity.

**EU** European Union

**GDP** Gross domestic product

**GTZ** Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Agency for Technical Cooperation)

**ICARDA** International Center for Agricultural Research in the Dry Areas

**IDP** Internally displaced person

**IFAD** International Fund for Agricultural Development

**IOM** International Organization for Migration

**IPAL** Integrated Project on Arid Lands

**IPCC** Intergovernmental Panel on Climate Change, established 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP). Its role is to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. The first volume of its Fourth Assessment Report, »Climate Change 2007«, appeared in February, 2007.

**IUCN** International Union for the Conservation of Nature

**KfW** Kreditanstalt für Wiederaufbau (The German Development Bank)

**Kyoto Protocol** An amendment to the United Nations Framework Convention on Climate Change (UNFCCC). It assigns ratifying countries mandatory targets for the reduction in the emission of six greenhouse gases, particularly carbon dioxide. The Kyoto treaty opened for signature in December 1997, in Kyoto, Japan, and entered into force in February 2005. As of December 2006, 169 nations and other governmental entities had signed the Kyoto Protocol. Most industrialised nations, with the notable exception of the USA, have also ratified it, thereby agreeing to achieve reductions in greenhouse gas emissions, between the years 2008-2012, of an average of 6 to 8% below 1990 levels.

**MDP** Marsabit Development Program

**NATO** North Atlantic Treaty Organization

**NGO** Non-Governmental Organisation
Many relevant NGOs attend inter-governmental meetings as observers in order to interact with delegates and the press and provide information. Within the UNCCD process, they dispose of a full slot in the plenary of the COP of at least two half-day sessions. NGOs must be non-profit and can include environmental groups, research institutions and business groups.

**OECD** Organization for Economic Cooperation and Development

**OSCE** Organization for Security and Cooperation in Europe

**Participation** In the context of development cooperation this term embraces all aspects of the active involvement of the population in the development process, including political participation, social involvement and active sharing in decision-making, planning and implementing processes.

**UN** United Nations

**UNCCD** United Nations Convention to Combat Desertification

**UNDP** United Nations Development Program

**UNESCO** United Nations Educational, Scientific and Cultural Organization

**UNEP** United Nations Environment Program

**UNFCCC** United Nations Framework Convention on Climate Change

**WBGU** German Advisory Council on Global Change
The WBGU was set up by the German Federal Government as an independent scientific advisory body in 1992, in the run-up to the Rio Earth Summit. It has a wide range of tasks, including analysing global environment and development problems and reporting on them, providing early warning of new issue areas, and monitoring and assessing national and international policies for the achievement of international development.

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