CONFERENCE TRANSCRIPTION

CLIMATE CHANGE AND SECURITY IN AFRICA

PARIS, 20/01/2009

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'Word' cloud from the conference. The cloud gives greater prominence to words that were repeated more frequently during the conference

Organized by

EGMONT – Royal Institute for International Relations
ACTED – Agency for Technical Cooperation and Development
CERI – Centre d'études et de recherches internationales
CEAN – Centre d'études d'Afrique Noire (Sciences po Bordeaux)

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INTRODUCTION

- **Koen Vlassenroot (Egmont, Director of the Central Africa Programme)**

It is a great pleasure, on behalf of Egmont Institute, to welcome you all to this conference on Climate Change and Security in Africa. This conference is organized as part of the Observatoire de l'Afrique.

The Observatoire de l'Afrique is a network of institutions coordinated by the Central Africa Programme of Egmont Institute, based in Brussels, and has been launched in October 2007 with the objective to encourage joint reflexion associating African and European experts, on political and security issues in Africa. This project has been set up to remedy to the absence of a large platform of both academic and professional exchange, including in particular key African actors on relevant issues on PESD and PESC. The overall objective is to create a kind of forum, of dialogue and open and constructive debate as well as to bring forth to conclusions and operational recommendations addressed to policy-makers. The activities of the Observatoire deal with contemporary political issues under two different formats. The first one consists in the organization of two major closed seminars, one in Europe, the other one in Africa, and the second one consists in the organizations of several punctual meetings corresponding to seminars between experts: the 'Africa briefing', aiming at drawing overall outlooks on specific political and security issues, and organized either in Brussels, or elsewhere by the partners of the Observatoire. There is also a website to disseminate publications and relevant information, in particular seminars reports. The targeted audience includes policy-makers at all levels, including at the European Union, the African Union, diplomats, representatives of Ministries of Foreign Affairs and Defense, as well as representatives of think-tanks and of the academic sector. The Observatoire de l'Afrique brings together about ten partners, in Africa and in Europe, and is develped in association with the Délégation aux Affaires Stratégiques (DAS at the French Ministry for Foreign Affairs) and I am glad to welcome Mrs Véronique Roger-Lacan, DAS vice-director, who is here with us today.

This conference is the result of a close collaboration between CEAN, CERI, ACTED and Egmont. It aims at stimulating a critical reflexion on climate change and security in Africa. This topic is of very high importance and relevance, both for the European Union and the African Union, and for the international community at large, but also for those African societies which have to deal with the effects of climate change today. I am very confident that this conference today will help us to better understand the critical and complex relationships between climate change and security on the African continent. Thank you very much for being here today and I wish you a very fruitful day.

- **Pascal Bernard (ACTED, Operations Director)**

On behalf of ACTED, I would like to say very simply that I am very happy to be part of this initiative today on climate change and security in Africa. First of all, let me thank all those who made this event possible: the European Commission, Egmont Institute, the CERI and the CEAN and others.

For a few years now ACTED has been working in Uganda, in Kenya and South Sudan, with pastoralist societies on issues of climate change, drought preparedness and livelihood support. Today, ACTED wishes to contribute, very modestly, to the debate on climate change, by sharing its experience from the field. Conferences, such as this one today, provide a wonderful

opportunity to share for a wide range of stakeholders their know-how and expertise and to create links with each other. I am sure that today's conference will be a stimulating exercise that can fuel new initiatives both in the South and in the North.

- **David Knaute (ACTED, Project coordinator)**

Firstly, I would like to thank all the speakers, and all of you present here, to attend this conference. Thank you too to Elizabeth Paula Napeyok, as several presentations will deal with your country, Uganda, and neighbouring East Africa.

As I talk, a group of scientists is stationed in Antarctica. They are witnessing the collapse of the Wilkins ice sheet, a strong sign of climate change. Last week, a US report was released, estimating that half the world's population could face a climate-induced food crisis by 2100. In France, the heatwave that cut by a third wheat yields in 2003, could become normal by then. Today, however, we are together to discuss the already visible, and the already happening impact of climate change on one of the most vulnerable region in the world, that is sub-Saharan Africa. Those countries are not responsible for climate change, however they are already affected by it.

I will not extend on the meaning of this myself, since we are lucky today to welcome many experts who will share with us their experiences. Instead, as one of the conference organizer, I will give you a brief outlook of the conference. As you can see in the programme, there will be four panels. In each panel, there will be a chairperson who will present individual speakers, who will each make a brief presentation, followed by a debate. In the first panel, Roland Marchal, from CERI, will chair a discussion on 'governing climate change and human security in Africa', which will give you a sense of the number of issues at stake when it comes to relating conflict to environmental challenges in Africa. In the second and third panels, we will look at two specific examples of the impact of climate change. Firstly, in the second panel, Vincent Foucher, from CEAN, will chair a discussion on food security. In the third panel, Sacha Kagan, from the Leuphana University of Lüneburg, will chair a discussion on pastoralist regions which are the first to be affected by climate change. Finally, in the fourth and last panel, we will focus at policy level to see how European and African institutions tackle the connection between security and climate change.

Before we start, I would like to mention that we will have two coffee breaks at 11.15 and 16.00. Some of you will also join the speakers at lunch time around 1.15. We will walk the 10-minutes to the restaurant from the hall. For the others, you will be able to easily find your meal in the neighbourhood. Finally, at 6pm, we will end the conference with a brief reception in this place.

This said, I will invite the first panellists, and I wish you all a very fruitful day.

- **Elizabeth Paula Napeyok (Ambassador Extraordinary and Plenipotentiary of the Republic of Uganda to France)**

I would like to begin by thanking ACTED for inviting me, and greet all of you ladies and gentlemen in your different capacities. I stand here really not as the Ambassador of Uganda, but as a Ugandan, a Karamojong, who comes from one of those areas that has felt the effects of climate change. I know there are experts here on Karamoja, but I speak as somebody who has lived it. And I would like to say that pastoralism has helped us to cope with climate change, but we have not managed to completely overcome it.

Sometimes we are called primitive, and yet when I look back at the way my people organize themselves, how they manage their livestock, their lives, their pastures and their water resources, I realize it is a very organized group. I would like us to focus on the positive aspects of pastoralism and see how this can be used to address the issues of climate change, instead of focusing mainly on our negatives, we have lots of negatives. But the way we have lived our lives, sometimes the Karamojong or even other pastoralists have been told what to do: 'you cannot graze here, you can only graze there'… and this has created a lot of problems. This has brought competition, overgrazing, and of course with climate effects, it has made it even worse.

Because of the lack of understanding between government and the people; sometimes we have made mistakes, on both sides. And climate change, especially for those of us in the arid areas, is deeply felt: the rainfall is erratic, sometimes you either have floods or you have drought, and you suffer from famine either way. Livestock is our livelihood, so all this is affected, the people do not have another way of living. Their livelihood is completely disorganized. So what can we do about climate change? How do we address this? There are lots of pastoralists in Africa, over two million of them. In Uganda there is a whole corridor of pastoralists beginning from the South to the Northeast where I come from. This is a real challenge for the experts who are here to help us understand how to cope. Now we fight among ourselves because even our grazing lands are now too small to sustain us. We can no longer live on what we have. Our cattle are dying; our livelihood is completely messed up. We are forced: 'please you have to settle here, don't move with your cattle, live here!'; as a result we fight, and we lose out. We are so remote, we are not properly educated, we don't have access to many things; some of it is our own fault, some of it because government doesn't reach us. Maybe they want us to be as they are.

The climate change has been a real problem, and I have seen it growing up, and I have seen how the lives of our people have been completely ruined. People have migrated. Now we have a new phenomenon, our people go to the town, with all the problems. The men leave home, find jobs, come back and bring diseases. So this is a whole mess.

I am not an expert, the experts are here today to help us understand these things. Maybe we have to start also to talk to the Karamojongs themselves and to other pastoralists, and find out what works, what are their ambitions, what are their aspirations. Sometimes, organizations come to our villages, and they enlarge their natural water depression, without talking to you, let alone you cannot distinct these big things. And therefore the animals lose out. They dig a valley tank where they want, the dams on the routes where they want, not where people want. So maybe if all this is put together, if the experts can help us understand the relationship between the people, the government, climate, maybe we can come out with something workable?

Thank you for listening to me.

Panel 1: *'Governing Climate change and human security in Africa'*

- **Introduction by facilitator: Roland Marchal (Senior researcher at CNRS/CERI)**

It looks very challenging, well human security is already a discussed concept since it's putting everything in the same box and certainly a number of experts are arguing that adding confusion to confusion doesn't bring knowledge but we see that they seem to be today and this is to challenge the speakers. This seems to be a new attempt to maybe bring one more layer in this human security understanding which will be climate change. Governing raises another question specially which is the duration and you don't need to be an expert in ecological problems to see

how actually governments are driven by short term policies waiting for the next elections, trying to solve immediate problems while climate change of course raises much long term issues and of course frames solutions that should go not for one mandate, two mandate but quite for a few more.

- **Fabrice Renaud (UNU/Institute for Environment and Human Security)**

The conception of the UNU EHS on the concept of Human Security:
We use the concept of the United Nations Development Programme and from a speech of the former UN General Secretary Mr. Kofi Annan, which sees sevens pillars characterising **Human Security**: economic security, security of communities, political security, personal security, environmental security, health safe security and food security. All these pillars are linked to the concept of sustainable development and it's one of the reasons why UNDP has defined it in this way. Within the sustainable development concept you have "freedom from want" and "freedom for fear" (as Kofi Annan said in one of his speeches). **Direct or indirect impacts of climate change can significantly affect each one of these pillars** in many various ways and I will highlight just a couple of them in this presentation.

The IPCC report (2007): Boko et Al.
This report has highlighted that Africa is the most vulnerable continent to climate change because of weak capacities to adapt. In rural environments, adaptation strategies have already been put in place to deal with what already exists in terms of climatic variations. But this may not allow communities to cope with future climate change that may increase the frequencies or amplitudes hazards such as floods or droughts for example. In particular, agricultural productivity is likely to decline with repercussion on food security. There will be negative impacts on water resources and ecosystems. There will be a higher risk of flooding, particularly in coastal areas because of see level rise and a direct and indirect effects on personal health and particularly through vector born diseases. Climate Change can manifest itself in many different ways and I'll just highlight one from a report that was just published a couple of weeks ago and that has already been mentioned by one of the person speaking before me. The work of **Battisti and Naylor** (2009) shows worldwide that middle **summer temperatures** at the end of this century will be much higher than those that have already been measured in the decade that we are in right now.
If you look at this for Africa (Sahel Region) in particular, you can see that for the period around 2090, there is a very likelihood that this hypothesis will be verified and that they will have much higher summer temperature. **SEE ILLUSTRATION 1**

This will have **significant impacts** on the agricultural sector, even if we only consider the heat problem. But of course, other factors will be induced by climate change such as variable rainfalls patterns and an increase incident of agronomical droughts. This has a potential to increase poverty, malnutrition and migration, which is one of the themes I will develop a little bit more later on.

If we look at climate change and conflict and particularly look at the discourses that we have right now in the scientific literature in particular, it's clear that climate change is often discussed in relations to international conflicts and the security in general[1]. There is very little proof that water scarcity has generated wars is the past as we speak now. Nevertheless it's also quite often noted that Africa would be the **most vulnerable continent** with respect to this. If you look at the work

[1]Brown et al (2007): Climate change as the 'new' security threat: implications for Africa. International Affairs 83:1141-54

of Nyong[2], he showed that in the West African Sahel that there were conflicts that have been triggered by variability in climate between pastoralist and sedentary farmers. This is particularly due to the fact that some of the pastoralists move south towards agricultural lands during dry seasons which generated conflicts but the reverse movements were also observed because of land degradation in the Southern region of the Sahel that has pushed people to move up North to cultivate more marginal lands in order to sustain their livelihoods. So there are examples in the literature where these kinds of conflicts were linked to climate variability. However, **it's not a straightforward linear relationship: there are many different factors that can also explain these conflicts** such as socio economic and political factors and all this have to be considered when undertaking this kind of analysis.
Human Security is very complex and very difficult to define and we like to use the concept of **vulnerability** at UNU EHS. The person and communities who will be the most vulnerable to climate change are the people who **rely** heavily on ecosystem services and this is certainly the case for the vast part of Africa. The vulnerability of the persons and the communities also depend on the influence of climate change on these ecosystems and on the capacity of adaptation to climate change. This adaptation capacity on climate change allows to reduce the vulnerability of the persons and communities. Societies adapt constantly and this is the case everywhere and this is certainly the case in Africa also. However, these capacities to adapt may be challenged by the effects of climate change. If you have a higher frequency of droughts for example, society might cope with one drought every ten years, but what would happen if they have a drought every three years? The adaptation capacity and the coping mechanism in place may be overwhelmed by these new changes. One type of adaptation that is often considered is **migration**.

Migration in Developed countries has a very negative connotation but actually it should be seen more as a capacity to adapt to the circumstances affecting a certain region. Migrations are triggered mainly by environmental push factors. Climate change will have direct impacts on people and on ecosystems but it will also have impacts in terms of changing the patterns of certain hazards such as droughts, floods etc. Migration may result and be in the form of internal displacements or international migrations. This topic has been discussed for the last decades but there is no consensus on the numbers of environmental migrants that are published. The UNHCR for example estimated in 2002 that there were about 24 millions environmental migrants whereas Christian Aid estimated that by 2050, there will be more or less 700 millions environmental migrants. (Look at the map to see the impact of the see level rise in terms of loss of arable lands and migration). A see level rise of one meter, which is higher than what the IPCC has projected in 2007, will affect around 6.100.000 persons and cause a loss of arable land of 4500 m^2 in Egypt. The UNHCR is looking more and more at these effects of climate change with respect to migrations and recognizes that we have to understand much better the humanitarian and migration patterns that could be caused by climate change. There are already some **legislative texts** that can protect environmental migrants particularly when they are internally displaced people. But in the case of some of borders movements, migrants may not be protected because the convention on refugees of 1951 would not recognize an environmental stressor as a cause to claim the status of refugee, which poses obvious problems.

There are 5 scenarios that the UNHCR is currently looking into with respect to population migrations with respect to climate change:

- Hydro meteorological disasters
- Excluding people from areas considered as high risk places
- Environmental degradation
- Flooding of small island states

[2] Nyong: Climate related conflicts in West Africa. ECSP Report, Issue No 12.

- Armed conflicts linked to natural resources scarcity

Our organisation considers that **5 actions** are needed to address this issue:

1/Research:

- **Bridge the research gap on this topic** as it is a very complex topic because of the different factors that play a role (political, environmental, social, economic factors) in this process and you have to find out which of these factor become more important to relevant and to know more about who will migrate, where they will migrate, from where they will migrate and at which time they will migrate.
- We need to have a **better understanding of the cause-effect relationships** between environmental degradation and what we called creeping processes in migrations particularly in the case of land degradation because there are so many factors that come into play at this time that it's very difficult to determine which one has remained one.
- Always put migrations in light of adaptations

2/ Increase our awareness:

- At the International and national level but also of the public in general
- Understand that migration is not a negative feature but an adaptation strategy. This concept has to be discussed in more details within the climate change negotiations that are going to take place in **Copenhagen**, within the UNCCD or the IPCC.

3/ Legislation:

- We need to set up a **convention** that would protect these environmental migrants and that would recognise them as such and give them the protection they need and deserve.

4/ Humanitarian aid:

We need to reinforce the United Nations system and the humanitarian organisations to deal with this issue because this is not the case right now.

5/ Institutions: We need to establish new institutions to be able to protect these environmental migrants effectively.

Conclusion

- The links between climate change, human security, migrations, and conflicts is there (you can find it in very serious studies and scientific literature) **BUT** they are not systematic, they are not linear relationships. It's a very complex causality relationship and this has to be tackled with care and avoid the big statement such as "climate change will lead to conflicts". There is a lot of research that is still required to establish these links.
- In terms of **governance**, we have to acknowledge that it's extremely important to limit the various causes of conflict that may arise. We have to help with the adaptation process to climate change (tradition conflict resolution systems were efficient and could avoid major conflicts to facilitate adaptation to climate change). We have to protect the climatic and environmental migrants. This has to be done at very special scales.

- **Bertrand Charrier (Director of the Chirac Foundation)**

Global Water Governance and Security

Les changements climatiques font partie aujourd'hui de ces changements globaux (changements de style de vie, question d'énergie et de raréfaction du pétrole, la destruction de la biodiversité). Nous sommes dans un paysage de grande modification. Il y a un élément transversal (si pas transparent) qui ressort en permanence dans toutes ces questions ; à savoir : **l'eau.** Le fait que ce sujet soit transversal fait qu'on l'oublie et que l'attention n'est pas suffisamment attirée par la

question de l'eau. Si l'eau n'est pas gérée d'une façon durable (gestion holistique, éco systémique), elle peut provoquer des migrations, déplacements et crée des tensions ainsi qu'un excès de recherche sur l'offre. L'offre est un piège que notre type de développement occidental pousse alors que la demande est minimisée. L'hydrohégémonisme (= pouvoir d'un certains nombre d'Etats ou d'acteurs qui sont en situation dominante dans la gestion de l'eau ce qui crée par conséquent des déséquilibres dans la discussion et dans les choix) est un concept qui intéresse beaucoup les experts et les chercheurs. Ces relations de pouvoirs apparaissent dans beaucoup de domaines et notamment dans le domaine de l'eau. Quand on est dans une position de dominant, on est dans une position où toute prise de décision est préjudiciable aux personnes plus vulnérables mais aussi sur la nature, qui elle n'a aucune voix. L'apport de la science de l'écologie, c'est de montrer que lorsque la matrice est mise à mal, il n'y a pas de reproduction et de durabilité.

Il faut encourager les chercheurs à davantage travailler sur **la sécurité de l'eau** où il y a une unanimité intellectuelle et affective par rapport à cet élément vital. Cela permettrait de remettre ce sujet à un autre niveau, celui des actions urgentes, des actions concertées et des actions qui permettent d'avoir une vision de long terme. Pour s'adapter au changement climatique, il faudra essayer de prendre des mesures pour instaurer beaucoup plus de réservoirs (pour ne pas dire barrage ; terme d'ingénieur) en Afrique. Il va falloir les mettre en œuvre avec une participation active du public. L'aspect de participation est important. Dans la question de l'eau, on a des problèmes à résoudre à différents niveaux (local, national, régional et international). Si on met la sécurité de l'eau en avant, on met la gouvernance globale de l'eau en avant. Cette gouvernance globale de l'eau est mal assumée aujourd'hui. 24 agents des Nations Unies s'occupent de la gouvernance mondiale de l'eau, la Commission européenne émet des directives de son côté et il y a également le rôle joué par les Etats. Il faut établir, tout comme pour l'énergie, le climat ou pour la biodiversité, une **convention internationale de l'eau** (processus très long). Par exemple la convention des Nations Unies sur les eaux transfrontalières n'a toujours pas été ratifiée par plusieurs pays et il en faut trente-cinq pour qu'elle rentre en vigueur (jusqu'à présent, elle n'a été ratifiée que par 16 pays !). Cette convention a été préparée par les experts juridiques des Nations Unies avec un appui politique totalement insuffisant et c'est pour cela aujourd'hui qu'on se retrouve dans cette difficulté de ratifier cette convention et de la mettre en œuvre. Il y a des discussions en ce moment sur les eaux souterraines transfrontalières : **on doit mettre la question de l'eau à un niveau politique suffisant pour que les hommes politiques prennent ce sujet à bras le corps**. Les conflits arriveront dès l'instant où il n'y a pas de concertation de coopération. L'eau n'était pas une source de conflits dans le passé mais elle contribuera dans le futur à créer des tensions. Il faut accepter la complexité de la gestion de cette ressource vitale. Est-ce qu'il faut une convention Internationale ? , est-ce qu'il faut un code de conduite accepté par tous ?

CCL : La notion de sécurité de l'eau est une réflexion importante dans d'autres cercles et cette réflexion doit être développée pour être prise en compte d'une façon extrêmement sérieuse par les hommes politiques.

- **Daniel Compagnon (Science Po Bordeaux)**

Structure of his presentation:

- Presentation of the concept (climate change and security)
- Explain the link between climate change and security
- Policy conclusions

Do not generalise the impact of climate change in Africa will be very different according to the regions and sub regions, for example: there is a team of scientists working on the monsoon

phenomenon in West Africa and they have established a model showing that the rainfalls will increase in certain parts of the coastal areas and at the same time, the rainfall will decrease in the North and the droughts will be even drier and hotter. Even at the sub regional level, you can find differences and sometimes quite unpredictable consequences. We have to understand that climate change is very difficult to analyse.

1/ Definitions

The concept of security:

- *The tradition national security approach*: in the middle of the '90, there was a discussion in the literature showing that there was no strong relationship between national security and environmental issues or climate change as such. This could change for a certain number of countries: for example, all the small islands states will disappear due to submersion. In that case the link is clear but in most cases it is not.
- *The large concept of security* as it is put forward by the Copenhagen School of security studies includes almost everything from living standards over the protection of economic growth to the protection of society. When we try to address climate change in this perspective, we have to tackle very different issues. Taking those two conceptions into consideration, we can say that the stakes are different, the places are different and one could argue that for many African countries today, underdevelopment is a much greater threat to their economic and social security than climate change!
- *Human security* (concept developed in the '90 with Koffi Anan and the former Canadian Minister) is a major concept within the UN-system that covers every aspect of life. It is a noteworthy long term goal but very difficult to apply in analyses and even as a policy roadmap it is not very useful.

The definition of conflicts: are we talking about traditional wars between states? There are not many examples of that in Africa except maybe the conflict between Ethiopia and Eritrea in the late nineties. Are we talking about civil wars, localised violence including violence exerted by the state or in broader perspective violence used as a political tool?
The problems we encounter in the definition of a conflict as a political tool are: how long does a conflict last? What is at stake in a conflict? This is very important with regard to climate change related conflicts: are we sure that a conflict broke out due to climate change or where there other dynamics at play?

The definition of actors: are we talking about militias, clans, warlords.

The ontology of conflict has a direct bearing on the issue of climate change; the way events will be qualified on the ground will have an influence on policy.

2/ The link between environment and conflict

The link between environment and conflict is elusive and highly problematic for international conflicts. On the issue of water in Africa there are more opportunities for cooperation in river basin management than there are sources for tension. If we look at the conflict between Mauritania and Senegal from 1989 to 1991, this conflict was very much linked to political tensions between the majority of the people in Mauritania and the government on one side and the black minority on the other. The water management in the river basin could have been the trigger of the conflict but not the origin of it. Internally, natural resources often play a role: they can be a prominent stake like the access to good arable land. It's also possibly sometimes a way for fighting and for carrying on fighting. However, it's really the dominant cause of conflict because conflict at the end is a political construct and we should take into account the main factors in conflict buildings. There are some works in the literature from Thomas Omert Dixon

trying to link resources scarcity and resources degradation to conflict and the conclusion of his work was mainly that these processes were always mediated by some social processes like ethnic base political mobilisation, migration, state policy interference and other political or social factors that were the real causes of the conflict. Therefore the environmental factor can trigger the crisis but it usually happens in an instable political situation such as in Ivory Coast in 1993.

The existing environmental causes like desertification or the biodiversity erosion are perhaps threatened or aggravated by the climate factors but I'm not sure that Climate change as such is creating a new threat for security concerns in Africa. I take the example of the climate refugees who are likely to be not refugees but internally displaced persons; these population movements do not necessarily lead to conflict and people do not migrate still to these days mainly for environmental reasons. Migrations are due to multifactor phenomenon and the globalisation is perhaps today more important and will remain more important than climate change.

3 / Conclusion

- It has become fashionable and very tempting to portray any environmental issues as climate related and it's unclear for me to be gained from roof in term of research and policy from supporting such issue framing. I understand why some African countries are tempted to jump on board because the donors feel to fulfil their previous commitments for the Agenda 21 and the Millennium Development Goals so if climate can bring more money, it's totally understandable. ¨What we are lucky perhaps; it's that consistent policies and more political will on both sides rather than a new glittering policy framework to recycle all ideas.
- Policies about politics: Climate change discourse is formulated in a very technical way perhaps because there is a dominant community of natural science and engineers in the Climate Science Community but it's unclear for me whether we can gain with this very technically de-contextualise debate and if we will tackle the traditional hurdle of weak statehood, legitimate policy making and defective accountability. That was of course the problem in traditional aid project.
- Long term strategies of capacity buildings and elite accountability fostering are still needed and they will demand more policy consistence than from and among the donor countries and agencies. We need to secure the African policy before we secure its environment.
- It's urgent to integrate national and regional environmental policies rather than just focus on climate change exclusively because lots of these problems are interacting and interpenetrating each other. A strict focus on climate change sometimes can blur the issues rather than clarify them.
- The security and conflict nexus is not necessarily the most conducive framework to address growing environmental problems in the South. The security discourse as noted by Barnett himself in an article in 2003, might promote traditional sovereignty based on security responses. For example, how do we protect our national economy, our society from effects of climate change? He would propose a shared burdened action and an extended cooperation. I'm not sure that this security approach is necessarily improving the understanding of the climate change risks and its impacts on society and economy in Africa. However, it might still be necessary to build a regional security community in Africa as a pre-condition to impulse more effective policies in other sectors. In other words, if we really want to work on regional strategies, we need to put these regions in order first

- **Dennis Tänzler (Senior project manager at Adelphi Research)**

His presentation is based on a study he realised for the German development cooperation entitled: "climate change and security: Challenge for German development cooperation". The purpose of this study was to find out what all the discussions and debates about the security and implications of climate change mean for development cooperation.

Structure of his speech

Dennis Taenzler wonders whether there are a new generation of environmental conflicts at the front door? Then, he will talk about climate security and the importance of converging trends. According to Taenzler, we need to consider the importance of other converting trends as well in order to talk about climate security risks. He also wants to outline some key pressures he sees in Africa and if that means that we move from human to possibly national or international security and he will close the speech with some new modes of governances that are needed.

1 / Climate Security: A new generation of environmental conflicts at the front door? SEE ILLUSTRATION 2

What about environmental conflicts in the past? (See the map). It's important to see that the road map shows more than 70 conflicts and the environment is one of the major causes but not the only one. We need to see that those are conflicts are also triggered by water scarcity or land degradations. We don't talk about water wars. We have a limited regional scope. In the German debate on climate security; this was more or less regarded as an old generation of environmental conflicts. There are some reasons to believe that the new generation will come up due to climate change. Climate Change is regarded as a threat multiplier and I like to refer to those figures on emission projections for the EU 25 because also climate change is happening. It's very clear that most of projected gaz emissions are still to come also of course due to large increase of certain developing countries and emerging economies. There are some reasons to believe that climate change will overstretch adaptive capacities of many societies. According to Taenzler, climate change will reduce capacity for peaceful conflict resolution in some parts of the world and increase the number and the intensity of conflicts. Climate change will lead to new lines of conflicts in the international area due to different responsibilities for creating gaz emissions. **SEE ILLUSTRATION 3**

The scientific advisors in Germany came up with another road map on future global and regional hot spots. When we look at Africa (see the map below), there are a number of conflict constellation, more or less 4, identified by the advisory council. We are talking about conflicts due to climate degradation, fresh water resources, climate induced decline in food production. We are also talking about climate induced increased of storms and floods. There is also a risk of environmentally induced migrations. **SEE ILLUSTRATION 4**

2/ Climate change and the importance of the converging trends

When we talk about climate security, I just want to give you a few examples on that to focus also on population dynamics:

- Until 2050, population growth will lead to a world population between 8.7 and 9.3 billion people
- In regional terms, according to the UN, this will be reflected particularly in the population dynamics in Africa, which is set to grow from 900 million (2005) to nearly 2 billion (2050)
- We have a large increase in resource consumption: in a long term rise in consumption of energy and resources: it is expected that by 2030 primary energy needs will increase by more than 50%.
- Urbanisation is advancing. Already today, more people live in cities and in urban areas. By 2030 up to 60% of the world's population could be living in cities. The largest growth in city populations – nearly 50% – will be in Africa and Asia.

⇨ As a result (also relevant to potential climate induced conflict), we need to consider a number of these destabilising and mutually amplifying factors. So we are talking about the security implications of climate change.

I try to figure everything in this figure here: We have to focus on different sectors: Water, agriculture, infrastructure and Urbanisation.

3/ Key pressures in Africa: From human to international security?

Already today, we see that water scarcity, desertification and salinisation are large problems in Africa. Poverty, demographic pressure, increasing urbanisation and economies are highly dependent on agriculture. At the same time, already today, there is a large number of violent conflict and post conflict countries combined with widespread governance insufficiencies. If we try to consider future climate change trends, we can see that the overall structural conditions will get worse and worse.

Trends in Middle East and North Africa: Temperatures are expected to increase by 2°C in 2040, leading to a reduction in available water resources of 20%- 30%. In 2025, per capita water availability region is expected to decrease to a little more than 500m³ due to population growth and economic use. On the Security trend, negative consequences for water-intensive agriculture, higher unemployment, coastal areas at risk, dependence on food imports are likely to increase. Will this lead to water and food conflicts?

Trends in the Sub-Saharan Africa: Regional increase in temperature will be higher in Africa than the global mean – in some cases up to 50%. An additional 250-550 million people could be affected by hunger if there is a temperature increase of 3°C; it is likely that, by 2050, 75% of all undernourished people will be concentrated in Africa In some countries, agricultural yields could decline by more than 50% by 2020 and incomes by more than 90% by 2100. Six of the ten largest African cities are located near the coasts. In West Africa, a roughly 500 km long metropolitan belt is developing between Accra and the Niger Delta, which will be highly vulnerable in the face of any rise in sea level. Within the security trends, drought, famines and flooding are major drivers of migration and further regional destabilization and the worst case could be a transcontinental belt consisting of reinforcing fragile states.

4/ New modes of governance that are needed

- It's very clear that the global community need to reduce greenhouse gaz emissions in order to limit the risks of climate change. To Build a Post-2012 agreement likely in Copenhagen at the end of the year including a comprehensive adaptation framework because this part of the story has been neglected for quite a long time.
- We need to increase dialogue between partner countries to develop - conflict sensitive - adaptation strategies (as many adaptation strategies will be implemented in conflictive areas)
- We need to set regional priorities in the field of adaptation in order to address the specific needs in fragile states and states in conflict and post-conflict situations
- There are some options for bilateral or EU regional approaches: (Niger delta, Sahel belt, Nil basin, Horn of Africa, East Africa). For those activities, we need to improve regional and local capacities for early warning & early action: This means to systematically integrate climate vulnerability data into existing early warning systems.
- Finally, we need to support regional arrangements for coordination and cooperation such as transboundary water institutions in different fragile regions in Africa.

- **François Jullien (AFD)**

Le sujet de François Jullien est lié à l'élevage mobile en Afrique sahélienne et saharienne. Mon propos sera relatif à des interventions concrètes financées par l'AFD, notamment au Tchad et au Niger. Ce sont des interventions qui visent fondamentalement à sécuriser et surtout à promouvoir la mobilité de l'élevage. Promouvoir la mobilité, c'est à notre sens contribuer de façon très importante à la lutte contre la désertification, à l'atténuation du changement climatique et cela contribue également à la prévention des conflits puisque les zones où nous travaillons sont des zones éminentes de conflits. L'AFD intervient depuis à peu près une quinzaine d'années dans ce domaine là et on a essayé de développer une approche originale qui était à ses débuts schismatique par rapport à ce que faisaient beaucoup de bailleurs de fonds en matière d'élevage. Les interventions traditionnelles en matière d'élevage consistaient en effet à sédentariser les élevages. Pour moderniser l'élevage, on essayait de sédentariser les éleveurs autours de points d'eau (souvent des forages mécanisés) ou en développant des cultures fourragères. Beaucoup de projets de la Banque mondiale et de la Banque africaine ont été initiés sur ces bases et contrairement à ces approches qui ont finalement produits des résultats extrêmement mitigés, nous avons essayé de développer une approche totalement différente qui visait à renforcer le système traditionnel mobile d'élevage en partant d'un certain nombre d'acquis de la recherche qui montraient que ces systèmes mobiles étaient extrêmement performants aussi bien sur le plan économique que sur le plan environnemental. Un pâturage qui n'est pas pâturé repousse beaucoup moins qu'un pâturage dans lequel il y a des animaux parce que les animaux pré-digèrent un certain nombre de graines qui ensuite peuvent croître par l'intermédiaire de l'estomac des animaux. Par le biais des déjections animales, il y a une meilleure fertilisation et une repousse plus importante des pâturages. L'effet de piétinement permet d'ameublir les sols pour favoriser la repousse des pâturages. Donc il est démontré que des pâturages dans lesquels il y a des animaux ont une croissance beaucoup plus rapide que les pâturages vierges et donc il est démontré que les systèmes d'élevage mobiles produisent trois fois plus de protéines animales à l'hectare que des systèmes sédentaires. Notre stratégie depuis 15 ans, ça a été d'essayer de renforcer les systèmes traditionnels éventuellement en les améliorant. Sur le plan technique, on crée des points d'eau traditionnels dans les zones de pâturages qui ne sont pas desservis par des points d'eau, c'est notamment le cas dans les zones nord du Tchad et du Niger. Cela permet d'ouvrir de nouveaux pâturages. Les éleveurs ne pouvaient pas créer ces puits qui étaient trop profonds à ces endroits là mais maintenant on a les moyens techniques de les faire. La deuxième idée, c'était de créer des points d'eau le long des parcours de transhumance qui permettent de sécuriser mais aussi de ralentir l'arrivée des troupeaux sur les zones cultivées au sud où il y a des conflits entre agriculture et élevage. Il s'agissait également de renforcer les parcours des animaux pour éviter les conflits entre agriculteurs et éleveurs. Il s'agissait d'investissements très simples mais qui dans la réalité étaient beaucoup plus complexes car un puit mal localisé peut engendre des conflits. Il faut faire extrêmement attention au système de localisation du puit et sur le choix de la localisation et son système de gestion. Les projets à la base technique, sont devenus des projets d'appui à la gouvernance locale parce qu'il fallait aider les éleveurs et les agriculteurs à dialoguer entre eux.
L'AFD est pratiquement une des seules à intervenir dans ce secteur là de façon massive. On a investit 70 millions d'euros depuis 15 ans dans ce domaine là, financé à peu près mille points d'eau. Ces sont des réalisations tout à fait considérables au travers de petits projets qui couvrent diverses régions du Tchad et du Niger. L'élevage au Niger représente 15 % du PIB EU AU Tchad l'élevage est la première exportation (15.000.000 de têtes de bétails). C'est la moitié de la population qui travaille dans ce secteur.

Les impacts de ces projets sont une façon originale de prévenir les conflits. On fait dialoguer les agriculteurs et les éleveurs. Pour gérer une ressource commune, ils y gagnent. C'est à partir de ces constructions physiques que se réalisent progressivement un consensus et un système de gouvernance et on va aussi essayer de renforcer nos interventions à la frontière du Soudan. Sur le

plan environnemental, ces projets jouent un rôle extrêmement positif. L'élevage, c'est 20 % des émissions de gaz à effet de serre, c'est autant que le transport. L'élevage qui émet beaucoup de gaz à effet de serre, ce sont les élevages industriels nourris à partir de production agricole. L'élevage sahélien, c'est le système mobile qui ont un avantage comparatif car ils sont beaucoup moins producteurs de gaz à effets de serre. On augmente aussi la fixation de carbone par le biais de la fixation des pâturages. Plus l'élevage est mobile et plus il résiste aux grandes sécheresses. Favoriser la mobilité, c'est aussi contribuer de façon décisive à l'adaptation aux risques climatiques. Ces projets atténuent également le risque climatique puisque ils favorisent la repousse de certains éléments tels les arbres.

- **Discussion on panel 1**

Ali Wario: We have to be a bit careful in jumping to conclusions that climate causes conflict. In pastoralism, you have to alternate between the existing ecological zones for one survivor and to coping mechanisms in terms of conflicts and bad weather. If you don't have pastor here and your movement will be forced by the lack of pasture, why do you say that climate do not cause conflict?

One of the speakers: I think we have to face and to accept the complexity of all situations and the question of development. We have to accept that we have to try to isolate one of the impacts of climate change and conflict. I think that there are so many roots and origins for conflicts and climate change will add a new one. What is also very important that was not mentioned enough is the capacity of research to anticipate the situation. When we talk about adaptation, it's interesting to help the governments (local and national) to take the good decision. We need more knowledge, more information, more research. In order to anticipate what to do with this situation and it's difficult to say what is the best solution. And as Taenzler said, there is a limit in the capacity to adapt: when the environment is destroyed, the people move and that create new tensions and new conflicts. We are not in the situation of fifty years ago where the land was open to everybody. The land is full in many places and we will be on earth 10 billion people, so it will be worst in the future. We have to accept the situation: the limit of adaptation is very close!

Daniel Compagnon: I didn't say that climate change will not create any conflict. What I meant is just to warn us about jumping to conclusions and saying that any conflict now taking place is climate change related just because it's fashionable. When you take pastoralism in certain regions of Africa, the pastoral groups had coping systems with droughts. There is a history of droughts in Somalia for which I had interest in the past. Somalia has a long history of droughts with coping mechanisms for the Somali people to deal with these droughts involving sometimes some conflicts with conflict resolution mechanisms. So, we should not focus on why this doesn't it work any longer and we should take into account the political situation in that country that has been developing since the '70 and with the long succession of conflicts which were not climate related but have an important impact on the social fabric and the way people perceive their own environment. So I'm not saying that there are no conflicts coming up from climate change because climate change will exacerbate some problems of this kind but sometimes conflicts are created by wrong policies from the states. There was a spot on the map of Mister Taenzler where you have Botswana in the middle of a red spot. If you take the grazing situation in Botswana and why there is now the absence of balance in terms of grazing rights and grazing movements and the impacts of the environment; this has been created by a policy of the state to promote cattle industry. These are complex issues; we can not generalize and we are missing the target if we are not asking the right question and that's not easy of course (much more easy to generalize).

Gwenola Possémé-Rageau (Groupe du Sahel et de l'Afrique de l'Ouest à l'OCDE): Si on regarde les conflits en Afrique de l'ouest, le changement climatique n'y est pour rien. On peut juste voir qu'il y a des plus en plus d'inondations sur les zones côtières et de sécheresses nord dans les zones sahéliennes mais les conflits qui existent aujourd'hui ne sont pas liés au changement climatique. Ce sont des conflits politiques comme disait Monsieur Compagnon, ce sont des conflits qui sont liés à la gouvernance et il y a des crises sociales qui peuvent être liées à la raréfaction des produits alimentaires mais même la raréfaction des produits alimentaires ne vient pas obligatoirement du climat. Ce sont des problèmes liés au marché, des problèmes liés aux importations des denrées alimentaires donc ce ne sont pas vraiment des problèmes liés à un changement climatique. En revanche, il est vrai que si l'Afrique veut s'adapter notamment en matière de nutrition, si elle veut développer son agriculture, les changements climatiques vont avoir des impacts importants sur le développement de cette agriculture et là on risque d'avoir des problèmes de malnutrition, des conflits sociaux, etc.

Ugo Guarnacci: Climate change is one of the factors that may interact with other elements (political, social and economical elements). But we have to be very careful in framing the climate change issues as security issues since its militarization of the topic. Do we really think that we can provoke a militarization of climate change?

Fabrice Renaud: I can imagine that this could be done with the consequences of climate change, the repeated droughts; the land degradation can be use for what you have mentioned. This could be one thing that happens. I agree also with your comment about framing climate change as a security issue. That's why I was careful in my presentation to talk about human security which is more linked to sustainable development which is more the perspective that we have.

Audience: Just one remark about climate change: I don't want to be a negationnist but if you look in Niger for example, the vegetation cover is much more developed now than it was 20 years ago. Is this the effects of project or of more rain? In the South of Sahara, maybe we will have more water than less water, it's not very clear. Desertification is progressing in this part.

Fabrice Renaud: I fully agree: When we talk about climate change, it's just a couple of word but the effects of climate change are multifaceted depending on the region where you are going to be exposed. There is now a lot of talks about the breeding of the Sahel. There is satellite imagery that shows that there is a higher amount of vegetation. There could be some beneficial effects from climate change in certain regions so it's true that we have a tendency to talk on climate change in negative terms but I fully agree with you that in some regions climate change may be actually beneficial.

Panel 2: *'Structural causes and mitigating factors of climate change : the case of food security'*

- **Introduction by facilitator: Vincent Foucher (Senior researcher at CEAN-IEP Bordeaux)**

When I read food insecurity, which is an international organisation's jargon, I think famine. As a social scientist I think of the works of Amartya Sen and Edward Thompson on famine, and their insistence that famine is never natural. Famine is primarily political, economical, commercial,

related to power. We will talk about structural causes, mitigating factors, but also aggravating factors. In politics, in the organization of trade, and in the organization of the State, there are lots of aggravating factors that we need to consider.

- **Gaëtan Vanloqueren (Advisor to the Special Rapporteur on the right to food - Olivier De Schutter)**

UN Special Rapporteur on the Right to Food has a three year mandate to promote the realization of the right to food, which is a human right, and the adoption of measures at the national, regional and international level. Currently there is no link within international organizations between climate change issues and human right. The Maldives Island has just started a few months ago an initiative within the human rights council to explore the relationships between climate change and human right, and the Special Rapporteur on the Right to Food will take care of these issues during this crucial year of 2009, because you know that Copenhagen will be a major international event for a post-Kyoto climate deal.

I will speak of three main issues:
1. Climate change impacts on the food situation in Africa
2. Why there is an added value of a rights-based approach to tackle climate-related security issues
3. Why climate change exacerbates the need for a paradigm shift in agriculture

Climate change impacts on the food situation in Africa

Climate change will have a massive impact on the food situation in Africa. The studies that are referred to in the IPCC last report are quite daunting:
- Yields could be reduced by up to 50% by 2020
- Arid and semi-arid areas are projected to increase by 60-90 M ha by 2080 (5-8%), even if this will not apply to every region as it was stated this morning
- Greater erosion, reductions in crop growth period
- Overall, reduction of agricultural output could exceed 15%

On a worldwide scale, there is a risk of increase in the number of hungry people: + 50 M by 2020, + 182 by 2050, + 600 M by 2080. Threats to security would be consequences of these negative impacts: conflict over resources, loss of territory and border disputes, environmentally-induced migration, situations of fragility and radicalization, etc. Those impacts will come on top of a severe food situation. You all know that 2008 saw a dramatic increase of the hungry, with high food prices; we went back away from an improvement of food security in the world. There are about 975 million people undernourished today. In Sub-Saharan Africa, although the relative percentage has slightly decreased, the overall number of undernourished people increased by 43 million, from 169 million in 1990-92 to 212 million in 2003-05. It is quite sure that the Millennium Development Goal 1 of cutting by half hunger on the planet will not be realized by 2015.

Who are the hungry people today? 50% of undernourished people are small-scale farmers, living with less than 2 acres; 20% are rural landless, such as agricultural laborers; 10% are pastoralists, fishers and forest-dependant folks; and the 20% remaining are the urban poor, those who made the headlines at the beginning of last year. So 80%, all of those living in rural areas, will be massively impacted by climate change and mostly in Africa because this is the continent where most people are directly linked to agriculture. **SEE ILLUSTRATION 5**

Why is there an added value of a rights-based approach to tackle climate-related security issues?

The right to food is not the right to receive food, it is not about charity. It is a human right, on which there has been tremendous progress over the last decades. Forty years ago, 159 States signed the International Covenant on Economic, Social and Cultural Rights, but recently, in the last decade, in 1999 and 2004, two UN bodies (UN Committee on economic, social and cultural rights and the FAO) have defined legal texts that give a concrete meaning to what is the right to food. Ninety States have chosen to put the right to food in their constitution, and some of them have implemented national mechanisms to give possibilities to those who do not have the right to food to complain, like in India.

The right to good has different components. It is the right to:
- Adequacy: nutritionally adequate diet, safe food, culturally acceptable
- Accessibility: physically, economically, in dignity; it is much more the right to feed yourself, rather than to be fed.
- Sustainability: ecological, economical, social

According to the human-rights approach, States as duty bearers are obliged to *respect*, *protect*, and *fulfill* (facilitate) human rights. If you adapt those to the food question, States must respect the existing access; they must not take any measure that prevent or destroy the access of people to food or food producing resources. Protect means that States must take necessary measures to ensure that third parties (such as individuals, companies, or other countries) do not deprive people of their access to adequate food. Then, States must pro-actively engage in activities intended to strengthen people's access to food and food producing resources with maximum efforts.

The most common violations are well-known. For example:
- Dam, mining, oil exploration projects conduce to force eviction by the States of those people who lose their right to food
- Inadequate regulation of corporations leading to the pollution or capture of water and other resources
- Labour rights abuses (minimum wage, dismissal)
- Inadequate protection against local landlords
- Lack of implementation or irregularities in land reform programs (access to land)
- Malfunctioning of social transfer programs
- Inadequate post-disaster resettlement (natural disaster or conflict)

The international community recognizes that not all States have similar resources, so there is a focus on progressive realization. Yet all States have obligations:
- Using maximum of available resources to realize rights
- Taking immediate steps for implementation
- Starting with the most vulnerable people/individuals
- Non-discrimination & transparency

Why is there an added value to use this in climate change talks, this year before Copenhagen?
- Because it is a shift of focus on the effect of climate change on people's lives, particularly the most vulnerable, which we need to tackle the real impact of climate change: it empowers the vulnerable as rights holders (avoid further marginalization); it prioritises actions to assist most vulnerable populations (budget and policies)
- Because it provides an additional accountability framework (complaint procedures)
- Because it helps to set up procedural guarantees for the affected communities: Access to information, Participation
- Because it reduces the accountability-gap: it stimulates the analysis of the causes of entitlements-failures and a more precise description of roles, obligations and responsibilities of the different actors

- Because it derives from widely accepted international human rights

Why climate change exacerbates the need for a paradigm shift in agriculture

There is currently two main ways of thinking about agriculture:
- The Green Revolution model has been influencing the entire planet for forty year
- Last year, a body of 400 government experts gathered and concluded that there is a need of a shift in the way agriculture is thought, to face climate change and environmental degradation; although this was signed by 60 States, this has not been followed by acts; the model of Green Revolution is still influential, represented by initiatives such as AGRA backed by Gates and Rockefeller foundation.

We need to recognize and acknowledge that there is another paradigm which is agro-ecology. Some of the projects presented this morning are linked to this, which is the application of the ecological science to agriculture, and there are real potentials to build resilient systems, and resilience is what is needed for climate change. Resilience is the ability of a system to go back to normal functioning after a stress, such as drought or floods, and we should scale up these projects, and not only focus on technologies such as plant breeding or fertilizers which are until now the mainstream approach, if we want to build resilient systems, and to limit the manageable impact of climate change and improve the situation of most vulnerable people.

- **Gilles Hirzel (Alliés, member of the International Alliance against Hunger)**

The problem of world food insecurity is much more linked to political and economic problems that to climate changes, at least for now. Of course, one should not prevent from speaking about the possible impact of climate changes, especially on the evolution on agricultures in Africa. But we should also stress the inequitable balances in the production sector and in international exchange and trade over agricultural products. The inequity in the systems of agricultural production approximately dates back to the 19th century. At that time, production varied from 1 to 5, between European and African farmers, because it was still the time of manual work, to the best the beginning of mechanisation. Today, after the Green Revolution that was just mentioned, the ratio has become 1 to 2000 in terms of agricultural production, between a farmer from Mali for example, or from sub-Saharan Africa in any case, who would keep working with a hoe, in competition with a farmer either from Europe or the United States, who is mechanized and benefits from all the advantages of the Green Revolution. A Green Revolution that made it possible for the greater part of the Asian continent to emerge. Not completely, indeed, but at least it made great steps forward. Unfortunately, the African continent did not benefit from this Green Revolution or from its effects, this for many reasons, which are at the same time problems of technological transfers, but also of political will from the part of former colonial countries, which wished that exchanges remain unilateral, i.e. that we can assist a number of African countries unable to produce their own food or to meet their own food sovereignty, in exchange of what some products would be exchanged, etc. This is a true neo-colonialist approach, that we know very well (I simplify of course).

The outcome of today's situation is also the decrease in investments, for the past thirty years, in the agricultural sector, in particular in the level of international aid with a decrease in the ratio dedicated to agriculture, especially for Africa. We do not know any economic sector that progresses when such disinvestment is undertaken. So there is a responsibility of both international donors and of governments from the South, which have not granted sufficient care to agriculture which nevertheless concerns 80% of the population. This is an overview, simplified indeed…

It is important to remind in which context we stand before discussing issues of climate change. We have approximately thirty years of delay in terms of investment in African agriculture, agriculture taken in its large meaning, i.e. including fishing, forestry, agriculture of course but also rural infrastructure, roads: what is the point of producing more if it is impossible to transport products; what is the point of producing more if it is impossible to stock in proper manner? Today there are losses of up to 60% of agricultural production in some countries. What is the point of producing more if one cannot commercialize, if people are too poor to buy, and if we are not able to have products which are sold at a price that make it possible for farmers to make a decent living? We come back to problems of the inequity of international trade (cf. negotiations at the WTO). Exchanges must be done in a context that makes it possible for African agricultures to develop decently.

Climate change has already had consequences on African agricultures. 'Agricultures' as we could say 'Africas'. One should not talk about Africa as a unique country, as much at a cultural level, as geographically, in terms of ways of life and of agricultural production. This is also true concerning the issue of access to water. Trade over agricultural and food products is actually a water market. We consume 2000 times more water everyday by eating than drinking. So water is at the centre of our concerns, so is food, and both are linked to energetic challenges. We will need, in the context of climate change, to tackle at the same level problems of energetic resources and of food security at a national level.

This overview makes the situation look grim; however there are also technical solutions. We know how to do, but what lacks is the political will for implementation. One should not say that climate changes are not at the origin of contemporary food insecurity. They are certainly a major cause for world food insecurity in mid and long-term. There are indeed major climate-induced disasters which become recurrent and make things worst. But as far as the current food crisis, climate changes have a very little impact. If we want to fight against the impact of climate change as far as agriculture is concerned in Africa, we face two problems: infrastructure problems (we will need to reinvest especially in terms of rural infrastructure and in terms of road network to link food security and food access in urban centres, which are growing steadfastly); build the capacity of farmers to make a living of their production and of their work, so that they stay in rural areas; try to promote some types of adaptation strategies to change (adaptation is not sufficient, one should also anticipate, and identity practical solutions, for instance through participatory approaches among most vulnerable populations); increase the resistance of vulnerable populations (with various methods, such as improving plants and animals, to make them more resilient to change, promote agroforestry, improve soil and water management). This means that we will be able to intensify further agricultural production in Africa, which needs it (nb: this doesn't mean a productivist approach is required…).

To conclude, adaptation to climate change implies a process of risk management, which includes both adaptation and mitigation of the impact of changes, and which also takes into consideration as much the damages resulting from these climate changes, as the shared advantages, since there will also be advantages, and how to share them in a more equitable manner? In brief, I have repeated the term equity at several occasions. I actually mentioned inequity more often, so I am glad to conclude with the term equity.

- **Victor Onenchan (ACTED) The effects of precipitation and reduced vegetation cover on food security and conflict dynamics in Karamoja pastoral area, Uganda**

Karamoja is one of the areas that have some evidence of climate changes. My presentation will give you some ideas of relationships between reduced precipitation and vegetation cover on food security and conflict dynamics in Karamoja.

Karamoja is a region north-east of Uganda; it borders Kenya from the West, up north is South Sudan, to the extreme east is a tribe known as the Luo (Acholis and Langis), to the south are the Tesos. It has been administratively divided into five districts; Kaabong, Abim, Kotido, Moroto and Nakapiriprit. Karamoja has a total landmass of 27,400 square kilometres, which is approximately 10% of the country landmass. It is a semi-arid area. The most striking physical features of the region are: a vast major erosion surface known as the Karamoja plain; Mountain Masses (mainly volcanic) that abruptly emerge from this plain; and the broad sandy beds of fast rising intermittent rivers that form the drainage system of the plain and the scattered vegetation. Karamoja has three agro-ecological zones: **SEE ILLUSTRATION 6**
- The first one is the pastoral zone, also called the red belt, to the extreme east of Karamoja and which borders Kenya; in the pastoral zone they receive in average 300 mm and 700 mm of rain per annum; people's livelihood depends entirely on livestock;
- The second one is the central pastoral or transitional zone, also known as yellow belt; this place receives between 500 mm and 800 mm of rain per annum; it has fairly good soil and people can both do cultivation and rear livestock;
- The third one is the green belt or agricultural zone, to the extreme west of Karamoja.

In Karamoja, rainfall is unpredictable. It is erratic and there are torrential down pours. There are very short rainy seasons and long dry spells. There is no permanent surface water. During rainy seasons, temperatures range from 18-20C minimum and 28-30C maximum. During dry season, temperatures go well beyond 38 C sometimes up to 42 C.

There has been drastic reduction in the vegetation cover, by 4 to 8% in the last 10 years. Throughout the century, it has changed from savannah grassland to steppe to thickets and shrubs. When you go to Karamoja, you see massive soil erosion and deep gullies. This gives you a picture of the weather and climate in Karamoja.

Food security, based on the definition from the 1996 World Food Security Summit, is defined as *when all the people, at all the time, have physical and economic access to sufficient, safe and nutritious food that meet their dietary needs and food preferences for an active and healthy life.* There are so many components of food security, but I will confine myself to food productivity and market prices.

Crop production is restricted to the green belt and the yellow belt, and livestock production to the red and yellow belts. Unfortunately, the green belt which is supposed to produce enough food remains limited in terms of space. Part of the green belt is gazetted as national parks (ex: Kidepo national park), instead of using it for cultivation: land for cultivation is quite minimal. If you have been to Karamoja, we have seen mountain masses like Kadam, or near Iriri, but these are taken up.

There is single cropping season (April-September) with inter space of dry season (June and July) which reduces drastically the time duration when rain comes in. WFP has distributed food since 1963, when it became an organization of its own due to occurrences of emergencies. One of the first operations that WFP did in Africa was when it organized a rescue operation in Karamoja in 1963. Then, there have been recurrences of droughts in 1982, 83, 86, 87, 91, 92, 97, 98, 99, 2000, 2001, 2003, 2005, 2006/7, expected in 2009: just enormous. When there is such long prolonged

drought period, there is no way people can survive, because there are so many consequences associated to drought. WFP has actually made a permanent base of Karamoja since that period, that is for 45 years. In 2002/2003, there was the El Niño phenomenon (effect of climate change causing rains from Indian Ocean), Karamoja was affected by floods, which caused a big issue of food insecurity, people had nothing to eat. Then, an outbreak of Peste des Petits Ruminants (PPR) wiped out a large number of livestock in 2007, severely affecting the livelihood of people.

We have seen the green belt that produces crops is quite little, this leads us to think that probably people need to get food from outside Karamoja. But there are so many issues related to food from outside Karamoja. Let's look at the markets: most goods, fresh food especially, come from outside Karamoja, but there is high insecurity on the roads. So prices are exorbitantly high (for instance 1kg of beans costs 1 euro, and only 50 cents in other places like Mbale). Households, without livestock to sell, are suffering, and can't buy any items. There is high malnutrition rate, high infant mortality rates. You get very young girls, aged 14-15, getting married for the bride price and get animals; families slaughter animals and sell it to get food and survive. There are high outmigration rates. Basically, research carried out in Kampala reveals that close to 60% of beggars in Kampala come from Karamoja, this tells you how bad the situation is.

Security in Karamoja: I want to talk about conflict over natural resources and banditry. Conflicts over natural resources can be looked in terms of cattle raiding. Karamoja suffers a lot from cattle raiding but it has changed tremendously in the past decades, and currently it has taken a different direction. In the past, raiding was mainly a survival response, taking place when disease and famine struck a community. To restock depleted livestock, they went and raided others' livestock. But these days, it is basically done at any time and perpetrated for commercial gain. People do raiding to get income. Previously, it used to be an internal phenomenon: it was mainly from community to community: the Jie went to raid the Bokora, the Bokora went to raid the Matheniko; the Matheniko the Pian, etc. But currently raiding has changed. People raid neighbours, the Pian raid in Tesoland, the Jie in Kitgum or in Pader. Raiding used to be controlled by the Council of Elders but currently armed youth think they can control a crowd, you have gang leaders. In the past, raiding was using small weapons, like spears and bows and arrows, but currently people use sophisticated weapons, like machine guns. Raiding was not self-centred like today, it used to be a communal thing, people from one community went to take livestock from another community.

The situation with guns in Karamoja is ridiculous. Many people move with guns. Government has tried to disarm with cordon and search operations; it has established an independent Ministry in charge of Karamoja, called the Ministry for Karamoja Affairs; there is the KIDDP, Karamoja Integrated Development and Disarmament Programme; WFP has been doing food distribution; and donors, like EC/ECHO, have come up with very nice programmes, like the drought management initiative, ACTED is implementing some of the activities.

But there are also setbacks. Rapid population growth: in sub-saharan Africa, the rate is 2,4%, but Karamoja has a rate of up to 3,2%. If you look at limited resources with population growth, there is a big problem. There is also limited government budgetary allocation to the Ministry of Karamoja. There is no contingency plan in place for Karamoja. So when a disaster strikes, people are very vulnerable. The policies that govern pastoralism in other pastoralist areas of Uganda (like Mbarara) cannot be compared to Karamoja: so I think specific policies should be drawn for Karamoja. The society is very conservative so policy implementation takes time.

What can be done?
- Seek sustainable solutions to Karamoja problem (engaged in regional solution for the gun paradox)
- Environmental decision making processes needs to be effected from the grass roots

- Develop a contingency plan in place for Karamoja
- Partners should look for more sustainable solutions rather than food aid

- **Comments by facilitator Vincent Foucher**

Thank you Victor; that was quite a performance! From the field, things are connected together: you speak about the market, about guns, about what the government is doing. All that connects to the issues we are discussing.

- **Discussion on panel 2**

François Jullien: a complement to Gaëtan's speech, who was mentioning agro-ecology. I want to say that AFD is developing with big investment these new techniques, which develop agriculture without ploughing, but just seeding directly in a permanent cover. It has big advantages: it limits the use of water; it drastically limits erosion, as the soils are being destroyed currently with the Green Revolution with deep ploughing and sowing. What I want to stress is that these new techniques of agro-ecology are some form of ecological intensification: ploughing is done by plants. These techniques are already quite developed, with hundred millions of hectares, mainly in South America, like Brasil, or Australia. The big challenge for developing countries is to try to adapt these techniques for small farmers, since currently they are adapted to large farms. These techniques are very interesting because they have a role in the adaptation to climate change, because you need less water. As far as the environment is concerned, they are very important, they can protect the soils, suppress erosion, and they are able to sequestrate carbon, in large quantities. One hectare can sequestrate one ton of carbon, and can contribute to the limitation of climate change. I think more financers should be interested in developing these techniques.

Gaëtan Vanloqueren: It seems there is a consensus between you, me and Gilles Hirzel on the fact that there are current solutions to drastically improve the food situation in Africa. We have the solutions, we have projects everywhere, they need to be scaled up. But the major problem today is that within the mainstream bodies there is still a focus on genetic improvement, while it is proven today that we can double the yields and the agricultural production with the current genetic database. This doesn't mean we do not need to improve plant breeding; there are many cases when it is necessary, but we need to do so in an agro-ecological framework. And it is not the case: the international community will gather next week in Madrid as a follow-up to the food crisis and it is mainly coordination of policies for improvement of food production, and it is still a productivist approach and not the major shift that was requested at this intergovernmental panel for agriculture.

Ugo Guarnacci (LSE): I would like to recall what Jacques Diouf, director of FAO, said during the FAO high-level conference on 'climate change, bio-energy and food security'. He actually stressed how climate change may affect the four dimensions of food security: availability, access, stability and utilisation of food. However, on the other hand, the international community is trying to face climate change by focusing on bio-energy as a possible strategy in the mitigation plan for climate change. So my question is: shouldn't the international community also consider the negative effects that bio-energy may have on the right to food, and therefore on the capacity of poor people to feed themselves in dignity, especially in Africa?

Gaëtan Vanloqueren: You are perfectly right; I think the possible negative impact of some types of agro-fuel is well-known today. It is a matter of political will and of different political

forces that try to implement a stricter regulation of these agro-fuels to make sure that their negative impacts are either forbidden or reduced. It is just a matter of political will. One of the problems of agro-fuel is that their massive increase has been driven by subsidies; the EU and US have created a market for agro-fuel where massive investments were made, and this investments would not have been made if there was not such a long-term environment of trust for corporate to invest in it. We need now to differentiate between agro-fuel: between large-scale agro-fuel plantations that raise many problems in Latin America, Africa and other countries where it is contrary to the rights of small-holder farmers, who lose the right to their lands, and other types of agro-fuel, that might be really interesting; it is also a question of scale; you can actually imagine the production of agro-fuel within a system of small-holder farmers, but that is not the mainstream approach today, I agree with you.

Gilles Hirzel: La FAO insiste aussi sur le fait qu'on ne confonde pas trop vite bioénergie et agro-fuel. Le développement des bioénergies, notamment pour les pays en développement, peuvent être des choses très positives, toujours en regard des besoins de la sécurité alimentaire nationale. La FAO prépare en ce moment, en discussion avec les Etats membres, des outils d'aide à la décision pour les gouvernements de manière à ce que puisse se mettre en œuvre au niveau national une analyse des réels besoins énergétiques du pays, des sources disponibles, et qu'en face, on fasse la même analyse pour la sécurité alimentaire nationale. De manière à ce que les problèmes de compétition d'usage des sols à destination en particulier d'agro-fuel, c'est-à-dire de carburants pour les transports, ne viennent pas en compétition avec les problèmes de sécurité alimentaire nationale.

Daniel Compagnon: I am glad that Mr Onenchan's presentation at the end brought us back to politics, as you got a feeling this morning that it is my line of argument… I will come back to the food security debate and would like to ask specifically to the presenters, especially Mr Vanloqueren: how do you implement this right to food? I have a clear example in mind, which is the food crisis in Zimbabwe, which has nothing to do with climate change, has little to do with the regional spell of drought, has much to do with government policies to destroy the agricultural sector for political expediency. The question is, if the international community currently, and specifically the African neighbours who are the first concerned, are not able to implement a right to food in a country which was perfectly viable and perfectly self-sufficient for food production previously, how are we going to do that in the future with the occurrence of climate change and potential impact on food security?

Gaëtan Vanloqueren: Obviously I don't think that the right to food will solve Zimbabwe's problem, I think the issue is much bigger, and I don't think it is the right approach to be used in such countries such as Zimbabwe or Burma. You ask specifically how we could implement this? In South Africa, in India, in Brazil, there have been specific policies or mechanism to allow the most vulnerable people to use even judicial mechanisms to be able to have their rights, for example the right to food is linked to land rights, and if a State, in India for instance, or a company, makes moves which are detrimental to the access of people to those natural resources, there have been the establishment of mechanisms so that affected people can complain and have their rights back in a few cases. It is the beginning of a process, it has been implemented in a few countries such as India, but it is still new. As you saw in my presentation, the FAO guidelines are voluntary and were defined only four years ago. But it has a big potential. So the right to food will not solve the food crisis in Zimbabwe. But if it is used in other spheres such at the WTO (as mentioned by Gilles Hirzel, the current permanent food crisis is not new, not linked to climate change, but linked to structural unbalances in the global food systems), if we bring the right to food in those spheres, it empowers the vulnerable countries, and the vulnerable communities in those countries, to balance the mainstream trade approach today within the human right framework.

Bertrand Charrier: Just to add on Mr Compagnon. The right based approach was used also for the access to drinking water, and it is quite recent. Some States recognized the right to water as a human right in their Constitution or national legislation, and sometimes it is used by vulnerable populations to request access to drinking water (and for food or housing it is the same approach). As Mr Compagnon said, it is very important to have good governance at State level, so politics come back behind all the things we are saying. If the States don't have the tools, or political will, or the capacity to implement what makes good sense, we will fail all the time. What happened in some countries is so terrible… The question is about State sovereignty. What are the limits of sovereignty? When people are dying? When the environment is destroyed? The question for the future is this one: the limits of sovereignty. I would like to ask you a question about reservoirs. In the future, to cope with climate change in Africa, it will be necessary to build new large dams, everywhere. The right-based approach, to food or to water, may be opposed to that movement of investment in infrastructures of reservoirs. But you know, in the end, we can also say that reservoirs will help for agricultural and food production. I don't know if you know how this right-based approach can also help in the construction of reservoirs.

Gaëtan Vanloqueren: Maybe two things… First the right-based approach in the case of the construction of reservoirs or dams will offer a process in which the people affected by the construction will be able to give their voice and to be heard. That is very important. Secondly, - I am sure you implement this in your projects - the water issue is not only about irrigation and reservoirs, it is also about conservation of water, and building systems that retain water in the fields. There have been examples of simple methods, such as barriers of stones or *zaïs* (petits trous) that can increase by ten times the amount of water that is retained in the soil, and these are used in West Africa. I just want to mention there are two ways to increase the water situation for agriculture: either improve irrigation with reservoirs, dams and large irrigation systems, or improve rain-fed systems, and there should be a balance of investment between the two approaches. Sometimes the second approach receives limited resources, while its potential is really larger when we use it.

Panel 3: '*The multifaceted impact of climate change: the case of pastoralism*'

- **Introduction by Sacha Kagan (Leuphana University of Lüneburg)**

Presentation of speakers

- **Nene Mburu (independent):** ***Ilemi triangle: the complexity of disarming 'fragmentary' societies***

For more information: Nene Mburu, *Ilemi Triangle: Bandit Frontier Claimed by Sudan, Kenya and Ethiopia (Vita House: 2007).*

The gap in our understanding of organized violence which occurs in pastoral communities of northeastern Africa could be attributed to stereotypical studies on the subject particularly the suggestion by earlier scholars, among whom Max Gluckman's studies of the 1950s and 1960s come to mind, that pastoral conflicts are primarily motivated by ecological factors and competition for scarce resources of nature. At the surface, the seasonal character of livestock rustlings under consideration gives credibility to this line of thinking, because organized raids for

livestock and predatory expansion increase during famine and time of scarcity, and decrease during the rainy season when there are alternative sources for sustenance. Disarmament by the state has in the past been in response to the periodic nature of organized violence. But ascribing organized violence only to climatic changes and material want could lead to a simplistic analysis of the complex pastoral institution of raiding. In any case, recent research has undermined the materialist school of thought by finding that Maasai pastoralists can accumulate as much livestock through raiding as through peaceful animal husbandry. Hence, we should also explore other factors that create the climate conducive to raiding particularly in fragmentary societies for whom transhumance is a life necessity and ipso facto, the lack of security from the polyethnic state necessitates the possession of a loaded gun to protect families and livelihood. My presentation explores the multifaceted impact of climate change on pastoralism and security in the context of the disputed Ilemi Triangle.

My presentation will posit that the practice of arms bearing predates the creation of the modern State but its entrenchment is the tragic synthesis of various factors. These include; the insecure social relationships among pastoral communities where the traditional instruments of intercommunity conflict management are weak, and primordial cultural practices place a big obstacle to young males' *rite de passage* making raiding for livestock an integral element of actualizing manliness. Second; there is a symbiotic relationship between security and economic development, in the sense that as climate change degrades the productivity of the land, raiding becomes a coping mechanism. Third, the increase of small arms in the arid pastoral lands of the Ilemi triangle and by extension, the Horn of Africa, is the domino effect of external instabilities, in particular civil conflicts from failed democracies but also the outcome of internal manipulation by irresponsible African leaders.

The Ilemi Triangle is a disputed territory that sits where the border of South-Eastern Sudan joins with North-Western Kenya, and South-Western Ethiopia. In the triangle and surrounding areas, organized raiding from across international boundaries is common. A brief explanation of the indigenous conception of pastoralism is necessary to elucidate the subject of raiding. During their seasonal migration in search for pasture and water, pastoral people cannot respect invisible meridians that describe the international boundaries, because frontiers for them cannot be permanent, static and dead. Frontiers for them are elastic, and dynamic, and being responsive to the need of transhumance, boundaries will close in or expand for various factors. These factors could include a need to accommodate an increase in pastoral productivity; correspond with new demographic pressures; respond to climate change; or cater for the political space required by a neighbour who suddenly becomes more powerful. Long before the establishment of the poly-ethnic State, ethnic communities of the Ilemi triangle lived alongside each other, yet they also interacted violently, and grazed in the contested pastures through intercommunity arrangements. Raiding was then a cultural institution that served several functions; for example it was a strategy for coping with natural disasters and a right of passage for young warriors. In those days, raiding was controlled by poly-ethnic councils of elders, whose authority was undermined by colonial intrusion in the nineteenth century. At the turn of the nineteenth century, the raiders of Ilemi prosecuted their raids mainly using traditional hand-held weapons; they also used guns they had obtained for many years from Ethiopian gun-runners, in slave and ivory trading centres, the most notorious being Maji in Southern Ethiopia where ammunition was so common that it was used as the local currency.

Ilemi triangle is the seasonal home for five ethnic communities, mainly the Turkana, the Toposa, Dodoth, Inyangatom and Dassanetch. Each is a fragment of a larger ethno-linguistic group of Ethiopia, Kenya, Uganda or Sudan, from where they traditionally break away to graze their livestock in the contested triangle for long periods. The pastoral Turkana live near Kenya, Uganda and Sudan boundaries. With its hostile geography, Turkana land is a tough place to make a living, hence the community copes by adopting a mode of subsistence that is described as

multi-resource nomadism, for combining pastoralism, gathering, raiding and fishing. Having been armed by the Kenyan authorities in the past, the Turkana have expanded into areas that are strictly speaking not their ancestral pastures, but the expansion has been erratic, because the rhythm of pastoralism has been disrupted by harsh ecological changes. The basic social unit for the Turkana is the nuclear family, that is organized around a man, his wife, his sons and daughters. It is both a polygenous family, and a patrilineal expanded family in the sense that daughters leave their social unit after getting married, and are absorbed in the husband's family. However, for as long as the father lives, sons do not leave the *awi*, meaning the livestock owning unit, to start life independently, even after the family's herd has expanded, and transmuted into geographically dispersed agnatic kinship. In this patriarchal community, sons are expected to strengthen their expanded social unit with their animal wealth, and populate it with their wives and children. After initiation, the warrior is allowed to marry by paying an appropriate bride price, which ranges from 50 to 100 cattle, or, these days, a few AK47 Kalashnikovs in lieu. The dowry places enormous pressure on young men, whose choice is between accumulating livestock through traditional animal husbandry, which could take many years, or resorting to a quick fix, and that is raiding.
The traditional pastures for the Toposa are the better drained higher grounds of Northern-Western Ilemi, but the hunting pushes further to the east of the disputed Ilemi triangle. As part of the initiation into adulthood, young boys are sent to live in cattle kraals, tens of miles away from home where they learn to fend for themselves and protect cattle, with their lives if necessary. In the context of ethnic culture, such initiation is a necessary spiritual enlightenment, and from a practical point of view, it prepares a young man to face life. But it also produces a gun man, who ignores the order prescribed by the poly-ethnic State. Cattle are the most significant measure of status and wealth in the Toposa society, and initiation into manhood makes security of livestock, which involves the possession of a loaded gun, an integral definition of manliness. Hungry, decentralized and heavily armed, the Toposa have been caught up between the proverbial rock and a hard place, in the sense that the Sudanese Liberation Army has used some Toposa as unpaid labourers in the past, and the government in Khartoum has armed them collectively to destabilize the areas controlled by the SPLA, and that is most of southern Sudan.

I would like to touch on a few factors to demonstrate how climate change has affected pastoral relationships. It is important to look at the whole of the Horn of Africa and generalize examples because they have very common characteristics. Most herders from the Horn of Africa pursue nomadic pastoralism in that they consistently use their habitat to conform to ecological and demographical imperatives, and not, as often implied, to live as uncertain wanderers. In these border lands, people live in cleavages: ethnicity, territorial sections, clans, and bond partnerships mark their political and economic contexts. The habitat is extremely harsh and underdeveloped. Homesteads must be simple to construct and easy to dismantle as it is necessary to move every so often, which leads to a significant population dispersal. Elsewhere people live in fragmented pockets of low population density, because the availability of resources of nature and the need for physical security influences human settlements, making them characteristically impermanent. Hardly any pastoral community develops sentimental attachments to particular localities, although certain pastures and portions of land may be associated with particular clan or ethnic community. A similar informal code of practice applies to rights over water, which is claimed by a particular group only when there is scarcity. The importance of water cannot be overstated, considering that drilling is a time-consuming task as people use basic hand tools to dig and scoop out the soil, most of the wells are on dry-river beds, where the water surface is near. Their maintenance through disilting is critical; hence such boreholes and water catchments temporarily become the property of the ethnic community, territorial section or clan who built them.

According to the FAO, 70% of Africa's carbon emission is through deforestation. Persistent drought in the Horn of Africa region since the 1990s is both a natural phenomena but also the outcome of the lack of security which has led to overcrowding on safe pastures. Pastoralists are

increasingly burning charcoal for sale as a more secure livelihood than herding, which nevertheless damages the ecology through deforestation, reduces the rainfall and further degrades the productivity of the land. Previously investment in renewable source of energy such as wind and solar power, reforestation and environmental conservation for the region has not featured prominently in any government's economic policies. The region is too dry for sedentary cultivation; roads are impermanent; and it lacks infrastructure that could generate foreign exchange, or create employment to support the local pastoral economy.

How has climate change affected social reciprocity in the Ilemi triangle? The Inyangatom, for example, has maintained its linguistic and ethnic connection with its pastoral neighbours through intermarriage, and a customary migratory pattern, where it spends long periods as the guest of the Toposa after the long rains. This social and economic squatting is erratic nowadays because global warming and other climate changes in the past decade make rains short, unreliable and unseasonal. Another example is the fractured relationship of the Dodoth and the Turkana people. Traditionally, they had social reciprocity which functioned well and was dependent on unwritten norms and values where the Turkana were allowed to use Dodoth pastures and water in exchange for an agreed quantity of cattle. Increasingly, the Turkana failed to keep their word of honour, thus compelling the Dodoth to attack them with their AK47 Kalashnikov to collect the debt. And bearing in mind that collecting the debt in this way is not directed at named individuals, families or clans, it often triggers a vicious cycle of counter-raids that is difficult to break.

Disarmament has failed in the past for not being anchored to economic development among other reasons. For instance, in Karamoja, the Dodoth pastoralists collectively barter their livestock for guns, although they are not as well armed as the Matheniko, Jie or Turkana. But in 2001, they stubbornly resisted Ugandan government's disarmament programme, claiming that disarmament would not satisfy their economic needs, or address their security concerns. Instead, it would increase their vulnerability to better armed neighbours.

To conclude, the international society's lack of concern over prolific banditry, rustlings for livestock, and inter-community violence that occur daily in the Ilemi Triangle and the entire Horn of Africa lends weight to the view that there is a gap in our knowledge of pastoral peoples and their environment. On the surface, the periodic nature of organized violence supports the materialist school of thought, because raids increase during drought and famine, and reduce during the wet season, when milk and wildlife are available, and people can substitute their diet of meat and milk, with wild vegetables, sorghum and millet. Nevertheless, the dynamics of livestock rustling and predatory expansion are too complex to be only explained by the rationale of materialism or ecological factors. Hence the phenomenon has also been anchored to cultural traditions embedded with rites of passage and the lack of empowerment of the elders, and other traditional intercommunity institutions of maintaining order. In addition, it can be added that political and economic marginalization of pastoralists, manipulation of the institution of raiding by irresponsible leaders through covert arming, and the domino effect of failed States have undermined the authority of the poly-ethnic State. The immediate challenge for the State is to connect with the pastoralists, in order to bolster security along sustainable economic development that could empower pastoralists to survive and contribute to any meaningful way of combating climate change.

- **Neil Clarke (Minority Rights Group International)**

For more information: www.minorityrights.org

Key minority rights issues for pastoralists include famine, drought, food security, recognition and participation, conflict issues, and the impacts of extreme weather. Two key issues came to line from local partners: one was the lack of political recognition at high level and secondly the need for more effective and accountable leadership. Three years ago, it was decided that we need to rebuild traditional leadership systems and reequip them with the capacity to address contemporary issues. As a resort, a regional council of elders was established in 2007, legally registered in Kenya, with representatives from Tanzania, Kenya, Uganda and Ethiopia.

We are working very closely with marginalized communities about issues of climate change. With all our pastoral partners, climate change is the key issue that was overwhelmingly raised when we organized a survey 18 months ago. Two general points about minority rights regarding climate change:
- Minorities and indigenous groups suffer more from the effect of climate change and at the same time contribute the least to it, particularly in urban areas where minority groups live in poverty, near river banks (ex: Roma on the Danube, affected by floods); pastoralists and indigenous groups are based in rural areas where they are affected by environmental degradation with great impact on their livelihoods.
- Secondly, minorities are often more excluded from political processes, and are poorly represented by States at international level; in the current international discussions, conclusions often seem to advance the cause of climate change but at the same time often minimize the role of minorities within that process and do not have the most positive impact.

Impact of climate change on pastoralism includes: desertification, biosphere degradation, reduction in pastoral areas, drought, famine, and the reduction in waterways and lakes, which affects the fisher folks in particular. All are caused, or at least exacerbated by climate change, and can increase the level of conflict. If we add to the marginalization to which the minorities are already subject to, in particular in the Horn of Africa, pastoralists are increasingly vulnerable, and the number of communities we are working with are saying that they do believe that if the effects of climate change keep increasing, they could face extinction as an ethnic community in a very short period of time.

Three points I would like to stress: cultural heritage, traditional knowledge and the role of traditional leadership. Climate change affects the migratory pattern of animals that provide subsistence to pastoralists. Songs and oral histories that relate the history of communities to the present become less relevant to new generations, as there is less evidence of these patterns taking place. It is less related to the world in which the young generation is living in. Traditional knowledge is based on their knowledge of the environment, on their understanding of seeds, of migration and of agriculture; sudden and unpredictable changes of the environment displace that knowledge, which becomes less effective, and therefore younger generation respect less and less the elders, which in turn diminishes traditional forms of leadership. The loss of livelihood has often seen the result of young people migrating to urban areas. But also those who remain seek for their own form of leadership, community and livelihoods. Traditional conflict resolution systems become less effective.

Some of the challenges linked to climate change are that cultural heritage and traditional knowledge are dimensions of minority rights, and are part of their identity, and when these are lost as well, these communities lose themselves in effect. So it is not only the loss of income and livelihood which is being lost as a result of climate change. The aim is not only to preserve these

communities, but also it is that cultural heritage and traditional knowledge can form solutions and way to manage adaptation. Minorities themselves are open to some forms of adaptation of both their heritage and traditional knowledge, if it is for their survival.

For the international organizations working on climate change, we advocate that they should consider these dimensions of minority rights and traditional leadership to address these issues.

- **Ben Knighton (Oxford Center for Mission Studies): *Security and the Incidence of Rainfall in Karamoja: The problems with "peace"***

For more information: Ben Knighton, *The* Vitality *of Karamojong Religion: Dying Tradition or Living Faith (Ashgate, 2005)*

I have been disagreeing for the past twenty-years with people saying that the elders' power is declining. For most of my Karamojong research, I conclude this is a distortion. I went to Karamoja last month, and updated myself, and saw something very interesting: that is the problem with peace. I also saw something interesting in terms of climate and ecology. I am used to Karamoja being very well-grazed area, apart from the no man's lands between tribes who raid each other.

Reminder: Karamoja was put into the British sphere of influence, but they never agreed to be governed by anybody, least of all independent Uganda. They said they wanted to stay with the British, as the lesser evils to begin with. The borders of Karamoja are colonially determined, with the Dodoth in the North, the Jie in the Middle, etc.

In Karamoja, there is little rain, little shade… Ecology is very variable and access to ecological niches is very important for grazing. But today, rain often comes at the wrong time; droughts are followed by heavy rain at harvest time: as a result there is no crop. Traditional burning of grass is not possible because it is too wet at the wrong time. In Karamoja you need at least 700 mm of rain at the growing season to grow crop. But statistics deviate so much, with either too much or too little rain.

Climate change: people say that seasons have changed, they have gone back of two months. The problem is that the rain doesn't 'cooperate' with that, since it comes at the wrong season. The gap in the growing season has become unpredictable.

Rainfall is problematic anyway in Karamoja due to heavy run-off and soil erosion that may be caused by soil compaction. In a vicious cycle, erosion itself may cause more run-off. However one should not underestimate the capacity of the soil to recuperate under different circumstances. There is also a lot of water evaporation. Besides, there is evidence that there are higher temperatures or falling rain fall. It is certainly the distribution of rainfall which is certainly changing with more exceptional events happening.

The Bokora have been disarmed; they deliberated among themselves and decided not to fight the government as many other Karamojong do, for two reasons:
- First of all, they thought women and children would be too vulnerable to recrimination by the UDPF;
- Secondly, they said they live in flat plains; they have no rocks or mountains in which to hide their guns. The cordon and search have been finding guns in homes.

As a result, without guns, they had no cattle, which were taken by their neighbours and the UPDF. The remaining cattle and goats left are very few and kept at UPDF camp. Some elders told me they became Christian because they had no cattle. The sons are employed herders outside Karamoja. All guns were given up. "The only thing to do is to depend on government; if it fails, you perish".

Raiding statistics: it is said to be peace in Karamoja, but in South Karamoja there were 326 incidents of raiding, 4587 cattle taken, 1727 sheep in goats, 110 people were killed and 31 guns were taken by the army. There is a peace with problems… Is it a peace we are working for? If so, it is an ethnocide…

- **Romain Benicchio (OXFAM):** ***Presentation of OXFAM report 'Survival of the Fittest, Pastoralism and climate change in East Africa'***

Full report on: www.oxfam.org/files/bp116-pastoralism-climate-change-eafrica-0808.pdf

The report is focused on pastoralism in Kenya, Uganda and Tanzania. Pastoralism is predominantly practiced in arid and semi-arid areas with low, erratic rainfall. Dry and pastoralist areas occupy about 70% of the Horn of Africa. Some figures about pastoralist populations: they represent 10% of the total population in Kenya, 20% in Uganda, 10% in Tanzania, so a great part of the population. Some of the benefits from pastoralism include: livestock production if properly managed, efficient use of land and production system in drylands, conservation of biodiversity, etc.

A note on poverty in pastoralist communities: all too often the direct and indirect economic value of pastoralists is not rewarded or acknowledged by decision makers. In Kenya, pastoralists areas have the highest incidence of poverty and least access to basic services in the country. Poverty level in pastoralist communities is around 90% compared to 50% for the national average. More recent studies indicate that pastoralist wealth in North-East Kenya has decreased by more than 50% in the past 10 years (same picture across the region).

Some of the challenges associated to pastoralists in the region are that the value generated by pastoralist communities is not translated into prosperity, despite the suitability of pastoralism to the environment. Why so? There are four main reasons (climate change, political and economic marginalisation, inappropriate development policies, increasing resource competition).

Pastoralists have been managing climate variability for millennia; however the unprecedented scale and rate of human-induced climate change will cause many problems. Climate variability that pastoralists have seen for the past years will continue. The main climate-related vulnerability has been successive poor rains. In North-East Uganda, communities have reported that the long rains starting March to August are now beginning as late as May. Unpredictable and heavy rainfall events such as floods can destroy crops and infrastructure and result in higher incident of human and animal diseases. Drought related shocks which used to occur every ten years now occur every five years or even less. The long term challenge with climate: according to IPCC, after 15 years the weather patterns will change with slightly increasing temperatures, and increase will increase to 1,5 degrees by 2050; more rain is predicted to fall in the short rain period, as soon as 2020s.
The impact of climate change is multifaceted. Substantial increase in rainfall will bring longer access to pastures and longer period to recover between droughts. But there will also be significant negative consequences: increase of land speculation and conflicts between farmers and pastoralists.

Years of political and economic marginalization, inappropriate development policies, increase on resource competition, increase in abnormal climatic events and misunderstanding of social and economic value has reduced the ability of pastoralists to maintain a sustainable livelihood. Climate change is an additional factor to an already stressed environment. How should it be addressed? It includes:
- Increased investment
- Improved market access and marketing opportunities
- Weather insurance
- Improved communication networks
- Microfinance
- Weather forecast information
- Cash transfer for those who are out of pastoralism (social welfare system)
- Regional integration (cross-border issues)
- Improved representation

Adaptation activities need to be promoted:
- Herd management
- Labour sharing
- Disease management
- Loan sharing
- Tree planting
- Etc.

To conclude, climate change is by no means the end of pastoralism. On the contrary, if it comes to the survival of the fittest, pastoralism could succeed where other less adaptable livelihood systems fail. Many members of the pastoralist communities could have a sustainable and predictive system in a world affected by climate change, given the right enabling environment.

- **Jérôme Tubiana (independent): *Climate change and war in Darfur and Chad***

Remark : in Darfur, the distinction between farmers and pastoralists is far from being obvious. Is Darfur the first conflict directly caused by climate changed? This is the thesis defended by, among others, Ban Ki-Moon, for whom the Darfur crisis began as an ecological crisis caused by at least in part by climate change (same argument was raised by Al Gore in his film An inconvenient Truth). These statements are based on climatic models, and on the region's history: in the last forty years, Darfur faced repeated periods of drought, more and more erratic rainfall, an overall reduction of the duration of the rainy season and more and more unpredictable meteorological events, such as heavy precipitation causing harvest destruction. It is estimated that in Darfur temperatures increased by 0,7 degrees between 1990 and 2005 and that in forty years rains have reduced by 16% to 30%. Climatologists have linked those symptoms to an elevation of temperatures in the Indian Ocean due to climate change. So consequences of these phenomena in Darfur as well as Chad are well-known. Fauna and flora, in particular, have declined and/or moved southwards. Wildlife, including elephants, giraffes, lions, antelopes, used to be present up to northern Darfur (it has to be noted that apart from climate, hunting had a great negative impact on the presence of wildlife). For human populations, the most striking consequence is that many had to be displaced to survive. The 1984 famines has been particularly analyzed; it had been foreseen that several hundred of thousands would die, but in the end, 'only' an estimated one hundred thousand did, since overall people were able to adapt, through solidarity, consumption of wild plants and displacement. We know that in the 60s-70s-80s, during periods of drought, tens of thousand pastoralists and farming communities left their lands in northern Darfur and Chad, some toward other countries or towards urban centres where they looked for

work, others, above all, to less arid areas to the south (up to 1000 kilometers away). These newcomers usually adapted relatively well, as farmers collected improved harvests, and pastoralists also benefited from another phenomenon, which was the migration southwards of tsetse fly. On the contrary, their arrival of those lands were not without negative consequences, especially on the environment, since they 'opened the land' thus causing deforestation, creating conflicts with original settlers, over trade control, land, management of natural resources trade control and political influence. The most known example is the one of Arab pastoralists who sedentarized on the lands of non-Arab farming communities in the South, which is one of the major cause of conflict in Darfur as well as in Dar Sila in south-eastern Chad. The most well-known example is the one of the Abbala Arabs (camel-keepers) who lived in the North and who got displaced in the South and towards the Jebel Marra mountains in Central Darfur. Therefore climate is a cause of conflicts which are happening between Abbala Arabs and other Arab or non-Arab communities in almost all parts of Darfur.

These conflicts have been utilized by government, which explains the massive recruitment of Abbala among the Janjaweed, especially since 2003, at the time of the launch of the repression against rebels and non-Arab civilians in Darfur. Militarization is by itself an aggravating factor, since Arabs were at the first place more armed than other populations. The example of the 1969 conflict over water in Jinek, in North Darfur, is often cited to illustrate drought-induced conflicts but in reality it was the armament of the pastoralists around which directly caused it. Water points, especially when they become scarce, represent more than a cause of conflict itself a meeting point for different communities, which potentially causes conflicts. Other example: in the east of Chad, there have also been displacements southwards, and populations settled in Dar Sila, which was at that time little populated, and since 2006 has become a fighting ground between first settlers and 'climate refugees', both Arabs and non-Arabs.

Today, the dominant point of view is that Darfur can serve as a warning and that the contemporary situation can represent a preview of what the region or neighbouring Sahel-regions could face in the near future, due to the aggravation of climate change, especially if its consequences are not taken into consideration. Models foresee that in Darfur temperatures will raise from 1,4 to 5,8 degrees by 2100, and that the duration of agricultural season will decrease by 20% by 2020, in North Darfur, leading to more and more frequent crop failure.

As a consequence, it is not possible to say that there will be no further wave of displacement and that the three millions people already displaced will be able to return home. Of course, there will be other factors – social, political and economical – that may aggravate or not these climatic challenges.

To conclude, the links between conflict and climate change in Darfur have caused many problems or dilemmas and it is therefore interesting to analyze the position of different actors. Firstly, it is obvious that the staging of climate change suits the Sudanese government because it largely takes away Khartoum's responsibility. It is certainly for that reason that Ban Ki-Moon put it forward in the hope to revive dialogue between the West and the Sudanese government. In other contexts, such as Ethiopia, the same argument of climate change has been put forward to justify food aid which was in reality chronic for several decades. Nevertheless, to deny the role of climate and opt for a purely political vision of the Darfur conflict would be a simplification, and one should accept the accumulation of factors in such a complex conflict, including climate. On the other side, Western activists who are in favour of a military intervention have first not put forward climate change. But some realized it could also a Western intervention, using the idea that climate change is caused by Western countries, which would have therefore a responsibility to act in conflicts like Darfur, not only because of the universality of the human rights abuses committed, but because of their own responsibility in such 'climate wars'. Can this idea raise a new 'climatic right to intervene' in Darfur or elsewhere? This remains an open question.

- **Discussion on panel 3**

Ali Wario: Thank you to the speakers. My question is the following: I have seen a pile of grass [*in Ben Knighton's presentation*], which people are dying for, and which is not utilized, why and where are the livestock? Two: the UPDF approach to disarmament, is it the best approach? If not, how do we communicate 'what you are doing is not the best thing, you are forcing people into destitution'?

Nene Mburu: My question is also directed to Ben and I thought his presentation quite intriguing. You ended up by saying that Karamoja is a place with 'peace with a problem'. But in designing the appropriate solution to help this peace along, it seems to me that it is possible with the appropriate technologies to support both agriculture and pastoralism. For example, given these rainfall figures that you presented, isn't it possible to institute supplementary irrigation and help the peace along? Similarly, for pastoralism, in terms of water for the livestock, it strikes me that it is also possible to design water dams and valley tanks to help both agriculture and pastoralism. I would like you to throw some light on this.

Elizabeth Paula Napeyok: Just a comment, thank you for the presentation. Of course I have heard issues about Karamoja all my life. At school, on the bus, on the road… But I just wanted to say that I am intrigued by the interest in Karamoja, and I hope this will encourage even the people who are working in Karamoja. My comment was on Ben's presentation. It is true that the leadership in Karamoja, the elders' leadership, is still respected. I still respect my elder siblings. They are not working with government, they are not ambassadors, but I still know that they are my elders, they tell me things I am bound to listen. Our own educated men still go through the initiation, along the age sets, which means we still practice it, it is still there. It is just that the gun that came; from the outside of course, you don't see the inside things and you don't think the elders role is completely eroded. It has been affected, yes, but it is still working. I just wanted to tell Ben that I think the Karamojong are realizing that government is there now, and that they must work with government. I know that the UPDF in the past have been accused of high-handedness, but in the recent past, they have helped to really reduce the raids within Karamoja itself, by helping them to herd to cattle, it is not the right way, the best way, but somehow it has saved some of our young men also, it has helped them to curb the raiding within, and UDPF had to come because our people are using the gun both for defence and for offense. They go to neighbouring districts, kill people, abduct, rape, so government had to come in the best way it could, of course it was not the best way, I think the government is now learning to try and do it in different way. The first time was forced, the second time was voluntary, and of course because government could not provide that security people needed, then people rearmed. Now, these cordon and search which still affect people… But somehow, people realize now they cannot fight government forever. The dilemma now is on both sides; people do not know what to do, what we can do to stop cattle raiding so the Karamojong can develop their cattle and live a better life. That is where the dilemma is.

Victor Onenchan: Thank you very much Ben, I really appreciated your presentation, it was quite good. My issue is when it comes to the aspect of the council of elder and respect, there is no doubt about it. But when it comes to the component of banditry, there the elders are not respected. Someone just picks his gun, goes by the roadside, and shoots a car, he doesn't get the consent of the elders. But about the other component of raids, elders are consulted in most cases. And to what I know, most elders do not agree these days, but it was a practice that was common. So those are the two aspects that we should separate: banditry to pick money and to shoot for fun (or to put marks on the arm and become a man).

Panel 4: *'Climate change and security in Africa: What are the consequences for the relations EU-Africa?'*

- **Introduction by Facilitator: Koen Vlassenroot (Director of the Central Africa Programme of EGMONT)**

We have first of all Mr Ali Wario, Chair of the Specialist Task Force for the AU Pastoralist Policy Framework for Africa. Another speaker is Bwango Apuuli who is currently working as Deputy Director of IGAD Climate prediction and applications centre, based in Nairobi, Kenya. We are also glad to introduce you to Mr Torsten Ahren, who is presently the political adviser at the EC office for Sudan, and who has worked for the Swedish Ministry of Foreign Affairs, at the Africa Unit. And finally we have Mr Richard Crowder who is a UK Diplomat, based in the policy unit in Javier Solana office since 2007. He has worked for several other organizations and has been involved in the recent review of the European Security Strategy as one of the joint commission high representative report on climate change and security.

The one issue that has not been dealt with in details so far is how the international security architecture is currently dealing with challenges of climate change. Is the international security architecture ready to deal with these challenges? We have been discussing about several processes, in order to deal with the effects of climate change, such as adaptation, mitigation and capacity building. One question we should raise today is to which extent these processes which are largely seen as development-oriented, can also be helped by security-based approaches?

- **Ali Wario (Chair of the Specialist Task Force for the AU Pastoralist Policy Framework for Africa): *Climate change: impact on pastoralists, security, food, livelihood and conflict in the Horn of Africa***

The estimated number of people involved in the pastoral economy in Africa is 100 million people today **SEE ILLUSTRATION 7**. Climate change has a direct impact on the food and livelihood security of pastoralists in the Horn of Africa. Recurrent climate shocks, like drought and floods, lead to competition for land and other natural resources, conflict for scarce resources and pasture for livestock.

The pressure on scarce resources, like water and pasture, has become the trigger of most conflicts in pastoralist regions of Africa. Desertification has added significantly to stresses on livelihood, causing armed conflict.

Droughts are not new among pastoralists in the arid and semi-arid lands in the Horn of Africa. Unfortunately, many of the strategies that have served affected communities are becoming inadequate, in light of frequent occurrences of drought, the rapid social and economic and long-term climatic changes.

Pastoral poverty has special characteristics linked to climate variability. What characterizes both the poor and the rich pastoralist is vulnerability. A major drought or animal disease outbreak, can reduce arid pastoralists to destitutions in a very few days.

The frequency of drought, added to pastoralists' reduced coping mechanisms and their socio-economic marginalization, is a cause of major stresses on pastoralist livelihood. Lack of rains or

unpredictable rains, lack of resources such as water, lack of pasture or struggle for resources hence demand for arms to protect the resources or for cattle-raiding.

Which are the factors that compound the impact of climate change on pastoralism in the Horn of Africa? The wrong perceptions of pastoralism as an unsustainable way of life; many policy planners in Africa perceive pastoralism as a way of life that is not sustainable.

Religious books, such as Koran or Bible, give evidence of all the prophets being pastoralists. All of them have had some animals in a way. So how did we manage without scientific advice, without resource allocation, without proper funding? How did it manage from the prophets to Ali Wario's generation?

There is a long history of economic and socio-economic marginalization from central authority. In the case of Karamoja in Uganda, arms are used to give solutions to conflict between communities. If you look at the broader picture, one needs to take into consideration cross-border issues of conflict. If a group is armed, and another group across remains armed: isn't very easy for them to raid and take all animals?

Pastoral lands are often encroached for other development activities:
- Tourism
- Wild life
- Sun harvesting
- Mining, etc

Due to myths and misconceptions, pastoralist lands are used by government, and pastoralists are displaced by military; and new phenomena are introduced. The people displaced will go down into towns as urban poor – they are being forced into poverty.

The proliferation of small arms is present in almost all pastoralist communities – every individual needs one. Why arms? This is because the local government doesn't provide security to the people. The other question is who makes these guns? Where are they manufactured? Pastoralists are the end-users, what do you do about the market? What are the safety belts? How do you address the influx of small arms into pastoral areas?

The Africa Union, in collaboration with UNOCHA, initiated the Pastoralist Policy Framework for Africa to mitigate the humanitarian impact of climate change. This policy initiative has been taken to protect life, securing livelihoods, build sustainable communities in pastoral areas of Africa, and address the root causes of socio-economic and political security of pastoralist communities.

Who is part of the partnership?
The Africa Union Department of Rural Economy and Agriculture; Inter-African Bureau for Animal Resources; UNOCHA; pastoralists and their organizations. Key to success is pastoralist participation in the formulation of a policy framework.

What are the processes involved? The development of concept note; inception of planning workshops; assessment and analysis of pastoral issues; regional/continental stakeholder consultations; drafting of policy framework; and adaptation of framework by AU political organs.

What is the agenda for the policy framework? Climate change and the question of Early Warning System; risk and vulnerability reduction; increasing resilience; the question of governance, what is the appropriate system of governance in pastoral communities? Is it the elders? Is it the military team who have been sent there to go and harass poor pastoralists? Is it a combination of the two?

Regarding access to land, 40% of Africa's land is under pastoralism, e.g. 80% of Kenya. Unfortunately, Kenya recognizes only two land use systems: one is town planning; second is farming. Pastoralism, despite the fact that it manages 8O% of the landmass, is not recognized as land use system. How do we plan for them? How do they share the land? How to see the future if their way of life is not recognized as land use system?

Is the current education system meant for a pastoralist child? Why the poorest enrolment or retention rates are in those areas? Simply because the current education system is not meant for a pastoralist child. At the end of the day, will the pastoralist child seat and take exam with a child who is permanently settled at a given area? This child's fate is determined by the environmental conditions he lives in. If the parents are moving due to lack of pasture, then the child needs to move with his parents. Are we building the right man-powered base for pastoral communities, and with which type of education system?

About access to market and financial services and the question of animal market: there are many challenges of diseases, lack of accurate and timely market information, lack of infrastructures development: This is the agenda.

About reduction of conflict: pastoralists as a community have their own system; do we build on this? Do we use military to resolve conflict? How do we go forward?

There is no research going on in terms of breed development, genetic issues and property rights.

- **Bwango Apuuli (Deputy Director of IGAD Climate prediction and applications centre)**

My presentation is on climate change and security in Africa, with a focus on the Great Horn of Africa. The area of my focus is the IGAD region, that is the 7 IGAD countries, but we also add Rwanda, Burundi and Tanzania. That area is prone to extreme climate events, which take the form of drought and floods, which have negative socio-economic impact. More than half of this region is either arid or semi-arid, and most livelihoods are tied to climate-sensitive natural resources; these natural resources are shared, across borders and across countries. Most of the livelihoods have either to do with agriculture or pastoralism. Agriculture itself is generally rain-fed, there is no irrigation. Droughts come with lack of pasture, lack of food, lack of water that affect energy production and generally leads of loss of livelihoods. There are also many attendant consequences, such as loss of life and property, forced large-scale population displacement, poverty and many other miseries. There have been several conflicts in the region, ranging from inter-state tensions, to cross-border conflicts over water or grazing lands, and generally food security is a common phenomenon in this region. Women tend to bear the largest disproportionate burden; they are forced to migrate. Others take arms to fend for their livelihoods, using all types of sophisticated weapons, e.g. AK47 (**SEE ILLUSTRATION 8**), and in general climate change affects security in three distinct ways:
- Warming and drying in some regions which reduces agricultural potential and undermines ecosystem services;
- Extreme increases of weather events, such as floods and droughts, result in migration;
- Potential for low-lying coastal areas to be submerged, resulting again in relocation.

Failed harvests caused by floods lead to frustration. Whole urban areas get submerged in water, disrupting all kinds of economical activities. Usually, floods follow or precede droughts, so it is a vicious cycle. **SEE ILLUSTRATION 9**

As we have heard, climate change will affect agriculture. We use a number of tools to monitor and evaluate some of these changes, such as vegetation health indices from satellite data (**SEE ILLUSTRATION 10**). From this data, we provide advice to government and planners. Over the last 25 years, we have seen reduced rainfall in some areas while it has not changed much in other areas. So climate change affects different parts of the region differently. In some areas, there has been reduced maize production, which is the major staple food in some areas. However, climate change is only one stress out of many that affect agriculture, conflicts, etc. One needs to look where in the region these consequences are more serious; what systems are affected; by how much; and develop scenarios. There are a number of socio-economic responses that can then be developed. The question always comes up of how the climate will look like in the future. Are the patterns likely to change? What we have seen in the region is that extreme events have increased, both in frequency and in intensity. The causes vary: some are mesoscale circulations such as El Nina. They lead to a number of impacts.

Clearly, climate change is in place, and will probably get worse before it gets better. What needs to be done is for communities to be helped to live with and adapt to climate change. There are many cost-effective adaptation strategies that can be done at different levels. At the national level, such strategies include water harvesting at the household level, supplementary irrigation, introduction of pest-resistant crops, energy efficiency, use of renewable energy sources such as solar or wind. At regional level, there is need to harmonize policies. In East Africa for example, we are talking of power pooling, like having water release policies, on shared water basins, such as Lake Victoria, where droughts have reduced the water level so low that it is affecting hydro-power production, water pumping and so on. There is need to harmonize these policies that impact negatively on some of the shared resources at a regional level. Regulation is another regional policy adaptation that could be done. In terms of fishing for example, in Kenya and Uganda there are always conflicts between fishermen who cross from one country, following the fish into the territory of the other country. This has lead to overfishing, leading to the reduction in catches. There is need to regulate, to ensure that there is optimum use and protection of trans-boundary waters, such as River Nile and others.

This session is also supposed to address the consequences for EU-Africa relations, in view of the climate change and its impacts on security. Clearly, development resources will continue to be diverted to conflict resolution and management. So, governments and partners need to increase budgets to support conflict resolution and management. The EU will therefore be expected to support these programmes as conflicts increase in the future. But also the two partners will be expected to increase their budget to support adaptation. Since climate change is here, we need to help communities to live with it, by supporting adaptation strategies, providing appropriate technologies such as supplementary irrigation. I know that the EU is already working with Africa on the global monitoring of the environment for security (the GMES programme, *www.gmes.info*). They are also supporting national adaptation programmes of action, under the United Nations Framework on Climate Change.

In conclusion, climate change will get worse; we will get more frequent and severe extreme events, in the form of floods and droughts. This will exacerbate conflicts, famine, food insecurity, and governments need to adopt appropriate policies to support adaptation, and to mainstream climate change adaptation into national planning.

- **Torsten Ahren (Political Advisor to the EU Special Representative for Sudan BRYLLE)**

I have been working as political adviser to the special representative for Sudan and EUFOR in Chad and RCA. I will talk about practical experiences of having a big EU security military mission in an area which is environmentally very fragile and where the conflicts we are trying to deal with are partly caused by environmental stress and climate change.

We are taking climate change into account in our policy-making. We are aware in this region of the dualism between agriculturalists and pastoral nomads. We know the long-term causes of the conflict in Darfur and Chad, and that nomads are well adapted to change. This explains quick population movements following drought and lack of pastures.

EUFOR has been tasked by the United Nations in Eastern Chad to create security conditions for the return on IDPs from Chad and refugees in Sudan. It has a mandate of one year and we will hand over to a UN force after March 5th. This mission is very big from European standards, so it is important for EU to make sure it is a success for their own internal reasons, but also because we have overall policies of dealing with the regional aspect of the Darfur crisis. One year is very short; we see it as a mission that opens the door for the UN to come in, and we will support UN in terms of troops and budget. This is a start of a new presence of the UN in the region, for at least 5-10 years.

We are trying to increase security for the population in this area. The one thing I would say is that not only do we need to tackle threats such as attacks by rebels and banditry for the population to feel more secure, but people also increasingly talk about problems in terms of rain fall whose variation is one of the main concerns for the population in the Sahel area.

Regarding the conflict in Darfur, it is a centro-peripheric conflict. There is a sense of political, economical and social marginalisation, and that does also apply to Dar Silla. There is a motivation for people to take up arms and take power in their respective capitals. This is, expressed in a simplified manner, a trigger for the conflict. Climate problems have exacerbated the tensions and have increased the willingness to act on behalf of the rebellions. Secondly, especially in Darfur, the response from the government side to the rebellion, in 2003, was very harsh, and it acted within an environmental logic. They tried not only to blame climate change for all problems in Darfur, but also systematically destroyed livelihoods: farms lands, scorched earth techniques; we are even talking about genocide; they destroyed water wells by throwing dead bodies in them, which exacerbates the problems for the population. This illustrates the lack of political will to deal with the problems.

Another example comes from the conflict in Dar Silla, which is a hotspot of the conflict in Eastern Chad. From the eighties, there have been movements from North-West into Dar Silla. This has increased tensions, made people feel that their basic needs are threatened, especially people who have been there for a long time. The result of this increase in fear is that when there was spill-over effect from Darfur, with Janjaweed who chased Darfuri into Chad, they also attacked the mostly non-Arab population. The combination of that threat and the earlier environmental threat triggered an even greater response from the population. The Dajus, who are the main ethnic group in this area, organized militias and were very brutal in their response. This contributed to the feeling that there was an interethnic conflict. So the environmental change lifted up the problems and made it more acute.

In brief, we have long term trends of desertification, population movements; we have short-term strategies by actors, including government, to use environment stress as another tool in the

conflict. We also have sometimes unintended feedbacks from the conflict on the environment. One of these is the change in the set-up of the population, with an increase of urbanization in Darfur and Eastern Chad; IDPs spring up next to urban centres. This is problematic because it takes away the best cultivable lands, because urban centres developed in areas where it was possible to feed a great number of people. There is also to some extent an irreversibility of these demographic changes; there is willingness to return, and from the EU side, we try to encourage it, but the fact is that people often want to stay in these areas, and many camps become semi-permanent. Besides, people say that return is not always feasible when villages have been burnt down, destroyed and where many things need to be rebuilt, which requires resources such as wood, thorns, etc. If all IDPs would return in Sudan it would destroy remaining trees, and exacerbate the conflict even more.

When it comes to EUFOR, I would illustrate how the military thought of the environmental effect of the mission in the planning stages. EUFOR was very careful to have its own boreholes and placed its camps where it doesn't share water table with the population; where this was not possible, they are shipping in water from abroad – this is very costly but it mitigates the effects locally. They also insist to set standards on water-supply for soldiers. In some countries, it is 90 litres per day (nb: it is only 15 litres for IDP according to Sphere standards)… Of course, we don't know the effect of these boreholes in the long term. When we leave at some point, will there be more competition over these, etc? Also, the UN will not have the same capabilities to be self-sustainable afterwards. So, several questions remain unanswered about the effects of such an intervention. To conclude, we do recognize that we have to make sure that environment impact of future missions is low; we have to use some kind of benchmarks; it has been costly but in order to fulfil our mandate and increase security conditions, it is necessary to do this. But I think we can do a better job in mainstreaming environmental thinking in all our interventions.

So, there has been conflict over control of natural resources… There have been environmental-induced migrations, to some certain extent… There have been increased fragility and uncertainty due to change in the environment… The international presence has exacerbated the environmental problems but only marginally and it is probably the price to pay for the other benefits that we get out of such a presence… Climate change is probably not the only factor for the conflict, the situation is very political and we know that the environment is used by actors.

- **Richard Crowder (Policy Unit, General Secretariat of the Council of the EU)**

When high representative Javier Solana brought up his report on the subject last year, I think one of the intentions was to stimulate more discussion in the academic and research community, and this conference is exactly the type of events which is very useful to follow on to that. This is a great privilege to be here. In my remarks, I would like to say a few words about some of the things that have happened in Brussels for the past eighteen months. I have been there working in the Council Secretariat, and I would like to say a few words about some of the aspects which I think make this a particularly complicated and difficult issue, and it struck me even more so hearing the discussions today. Then, I will also say something about what the EU hopes to achieve working with the AU and individual African Countries, through the EU-Africa Strategy.

In terms of the last eighteen months, it is true to say that the issues of climate change and security have acquired a new importance and political profile, and I think there is genuine sense of political momentum and significance attached to it. It really began in April 2007 with the debate that we organized at the UN Security Council on the issue, and then the European Council, which met in June that year, agreed a package on measures to mitigate climate change, a commitment to reduce the emission by 20% by 2020, or 30% as part of the global agreement in

succession to Kyoto. And they also agreed that the High Representative Javier Solana and the Commission to look at the issue of security consequences of climate change in more details and report back to them, and that is what Javier Solana did with Commissioner Ferrero-Waldner for External Relations, in March last year. The report was referred to in the introduction of today's conference. The key message of this report was to highlight the way in which climate change is not a distinct security threat but that we have to think about it as a risk or threat multiplier, that is exacerbating existing tensions and driving situations of instability over the edge. In follow-up to that, in December this year, Javier Solana came forward with a further set of recommendations on how we might address this at the European level. It focused on three areas of the world: Africa, Middle-East and Central Asia, and it set out areas of action with each region, and then ideas at European level to increase early warning systems, and also how to raise the global debate on this in the sense of significance in the run-up to the negotiations in Copenhagen, in December this year, in succession to Kyoto agreements. It is very important that there has been that sort of political significance attached to it, and I think that has been significant in pushing the issue ahead, but as I said it is an extremely complicated problem, and I don't think we should be under any illusion, that just because heads of government are able to say something about it, and highlight it, that it settles the problem or opens up a new way to go. Just hearing the discussions I was struck today for instance at the kind of cross-cutting issue this is, in the sense that it doesn't fit into any of the traditional boxes in which we think about foreign or security policy. It has development aspects, environmental aspects. It goes deeper than that, and when you are looking at these individual, very specific case studies, then there is a very specific cocktail of policy responses which you need to try and address the problems. And it also takes us into new ways of thinking about security. Twenty years ago in the context of the Cold War, we thought of security in terms of territorial defence; then during the 1990s and over the last decade, we thought of security more in terms of the threat which instability in other countries throughout the world may export through globalisation, e.g. crime, terrorism, drugs, illegal migration, etc. These problems still very much define our security environment today and the review of the European Security Strategy which was conducted at the end of the year highlighted that, but it also highlighted climate change and energy issues as a new context, and it makes it much more difficult to go and address these issues, because we are not just dealing with hard security threats, but with socio-economic contexts, and environmental contexts that lead to them. I think also it is a difficult issue because there isn't perhaps a single defining framing moment, in the sense that the Berlin Airlift was a defining moment for the Cold War or perhaps 9/11 has been a defining moment in addressing radical Islamic terrorism. Climate change and security is an issue that is growing in significance but this is yet to have that sort of headlines issues. And most significantly, there is a question of how we work at the micro-level and the micro-level: with the kind of work I have been involved in within Brussels, we said things at the general strategic global level about what European countries and our partners should be doing in addressing this, and coming here today I have heard very interesting ideas about what we do in very specific situations in different communities round the world. And I think the challenge for the policy-making community now, is to think about what the set of action we can do are, which fill the gap in between those, and somehow mean that we are able to carry out our global commitments at a local level.

In Javier Solana paper, four hotspots are picked out around the continent, which have particular significance not just for African security but wider European and global security. We have covered them today, so it is not intended to be exclusive because the issue raises different problems in different places all over the continent. But it identifies issues around the Sahel, around the Nile, both the Nile Basin and the whole Nile river system, and the States bordering it and ways to share water resources in that; around East Africa, including the Rift valley as we heard, but also risks of extreme weather events from the Indian Ocean; and finding areas which we have talked about less today, but I think it is very important, that is what can be the consequences of climate change may be in Nigeria, especially in the Delta region, where oil supply accounts for 10% of US supply at the moment and as Europe tries to diversity its energy resources, it might become more important for Europe too.

What is the European Union seeking to do in response to this? Our context is working through the joint EU-Africa strategy which was set out in November 2007 at the summit between leaders from Africa and Europe, and set to define the way our continents will work together for the 5-10 years to come. This covers 8-9 areas, but climate change and security span at least three of them (climate change, peace and security architecture, migration). Again, climate change and security appear to be cross-cutting problems.

The aspects which we wish to proceed in detail in following this, include firstly to intensify the institutional dialogue; it is very important that the kind of architecture for security adjusts to thinking about these issues as part of security implications; therefore we have in Brussels the political and security committee, which is the central policy-decision making body for Europe's foreign security policy, and there is an equivalent body for the African Union. They had a first meeting in the autumn, and there will be further meetings but I think it would be useful if one of these meetings talked about climate change and security specifically. It would be a preparatory and follow-up structure that gave to some of its work an institutional base. There is an area of initiative around strengthening our early warning mechanisms which I think are very important: so much we have been hearing today is how much our knowledge base is incomplete on this and how data is really everything in understanding the problems. So we need to strengthen the way we can see these issues before they get to a critical point, and perhaps identify cases where local communities have been able to respond effectively where situations have become more dangerous.

As part of the EU-Africa joint strategy, there is work on supporting the development of a situation room based in Addis Ababa as part of the crisis management structures; and also an observation network for gathering things on climate data and also on migration data; and a scope to bring these together, and also develop more regional early warning stations, so the countries are able to pull resource information about their evidence of their seeing of the impact of climate change on their communities, and perhaps spot situations before they reach critical stage. And then there is an area of work about encouraging greater regional cooperation, which we heard many speakers refer to today. Clearly, a lot of these issues, like the Nile Basin, like river systems in West Africa, perhaps like potential coastal weather events in East Africa, will need more than one country work together. Although the emphasis throughout in the EU-Africa strategy is that African problems need African solutions, and that is obviously central to it; I think there can be a role for the EU too in acting as an outside source of advice, and catalyst, and helping countries to talk together about these problems. Lastly, I think it is very important that African voices are heard in the negotiations in Copenhagen over a new global climate change agreement, and it is very important that the security aspect is one of the arguments to try to reach that argument. I do not want to argue that security is somehow is new debating point which we are making, because it clearly goes to much more fundamental issues than that. But it is important that we try, in shaping global views about what climate change means, to encourage policy-makers to think about the security consequences as one of the economic and environmental consequences, and these are huge not just for Africa but also China, Latin America and so on.

In conclusion, it is a very complicated problem but the key issue that I take away from here today is that there is a gap between policy at a macro-level and policy at a micro-level, and it concerns all of us, both those working in government in European institutions but also more generally in the policy and research community to think how we work in filling that gap.

- **Discussion on panel 4**

Nene Mburu: I would like to comment about pastoralist education, in response to what was said by Ali Wario. I have been researching on the Somali for quite some time, and I know some model they have been using in North-East Kenya: instead of pastoralist kids to go to school, the school comes to them, in the person of a teacher with a board. But that reduces education to very basic levels. How do you resolve in your view the contradiction of giving education that is relevant to local needs, and at the same time, expose the pastoralist child to education that is relevant; that is competitive; that is global in perspective, so that it is not different from the mainstream society.

Second intervention: Not recorded

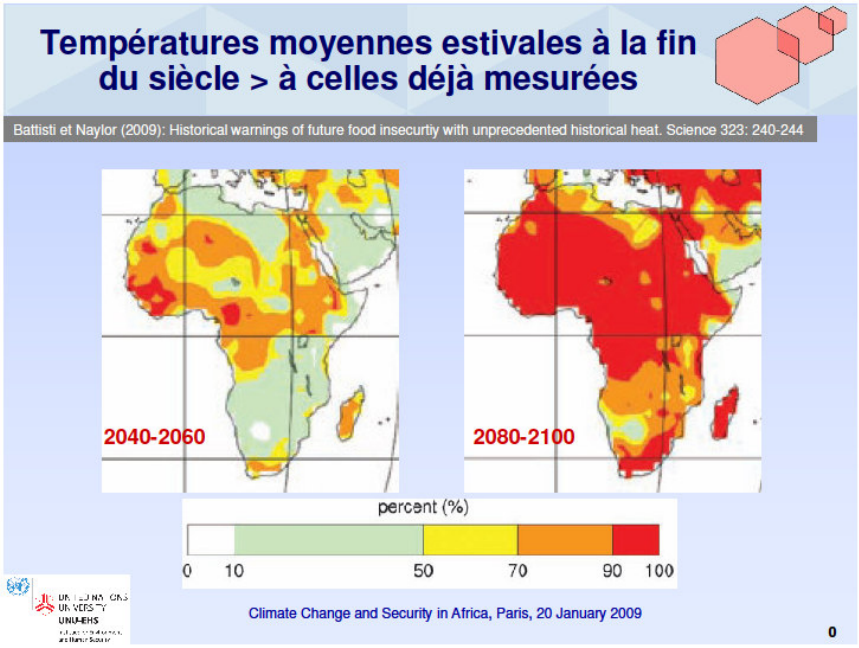
Jérôme Spinoza: It is a question to the EU representative. If I got you well, we are quite involved in building up early warning systems and perhaps tackling climates changes and ecological issues while deploying peace-keeping missions. But one point that was not mentioned is the question of supporting capacity-building. If I am not wrong, let's say in Sahel countries, State security services run civilian and military and usually it is the military which has the capacity but are not in a very good shape because of quantitative problems, not to talk about training and so on.

Ali Wario: There is no special school for pastoralists maybe what we need is a fully-fledged boarding school or mobile school which has been very wanted in terms of quality of education But fully-fledged, well-equipped, modern standard boarding school, will solve that problem, if provided in every pastoral district.

Richard Crowder: I can't really comment on the Karamoja case, I have learnt much more today than I knew before, it has been very interesting. But more generally, the EU has quite a strong approach towards the problem of small arms worldwide, but the specific application in Uganda, I can't say… On capacity-building, I should have mentioned this is not an aspect of the EU-Africa strategy and specifically the development of standing peace-keeping forces through the African Union, and security structures… But it is clearly part of the same issues.

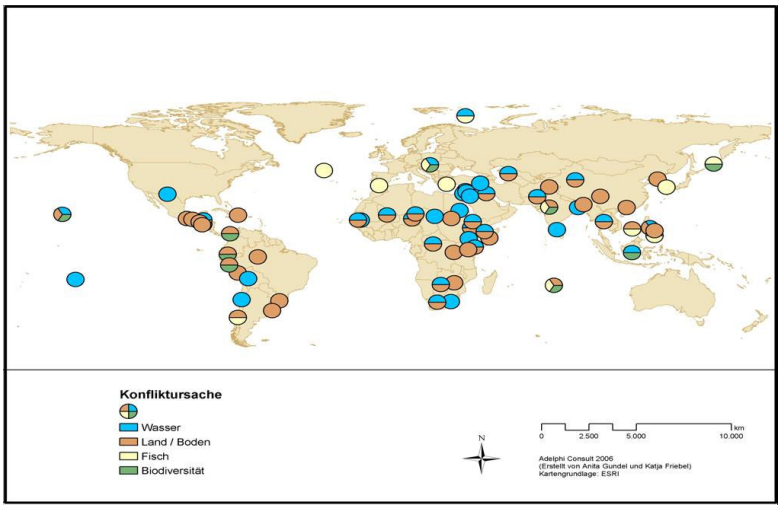
Concluding remarks (Jérôme Spinoza, DAS): I will speak on behalf of the director of Délégation des Affaires Stratégiques (DAS), which is the policy directorate of the French Ministry of Defence and which has founded the programme Observatoire de l'Afrique. First of all, I would like to thank all the speakers for their stimulating insight and having made the journey to Paris. Thank you to the public listening to the conference and to all the staff; to Jean-Christophe from Egmont; thanks to CEAN, CERI, ACTED. I take the opportunity to say that there is a website which has been recently upgraded: www.obsafrique.eu. This was the third major seminar of the observatory. There will be a fourth one on Addis Ababa. The topic will be about the APSA: African Peace and Security Architecture.

ILLUSTRATION 1



Battist et Naylor, 2009

ILLUSTRATION 2



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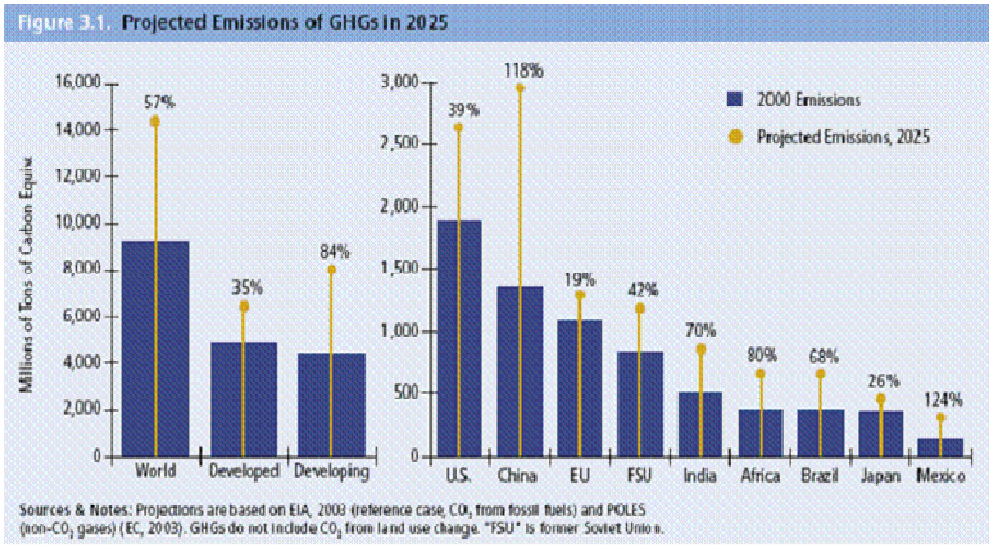

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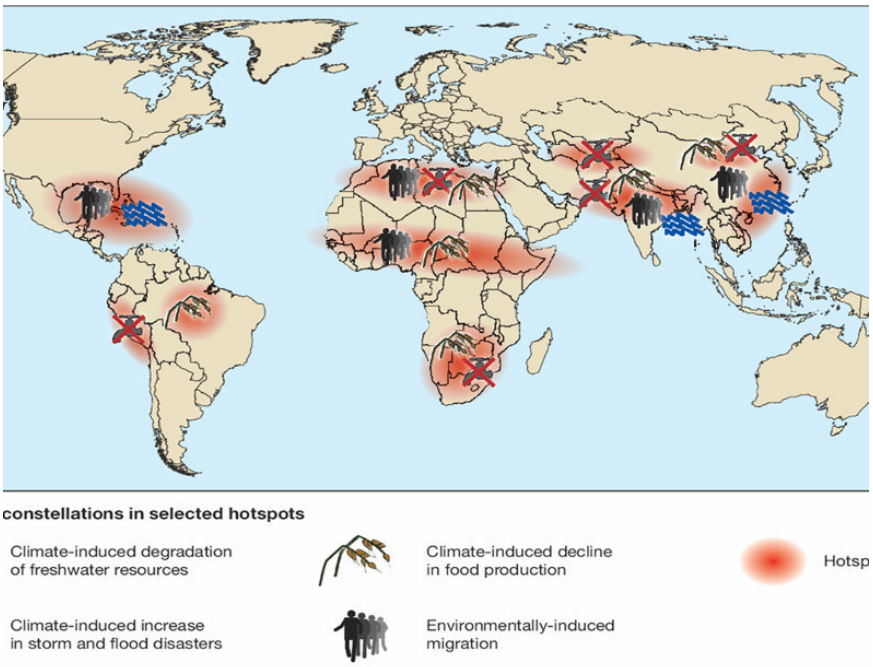

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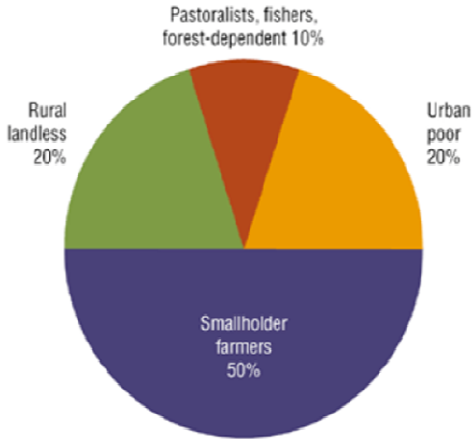
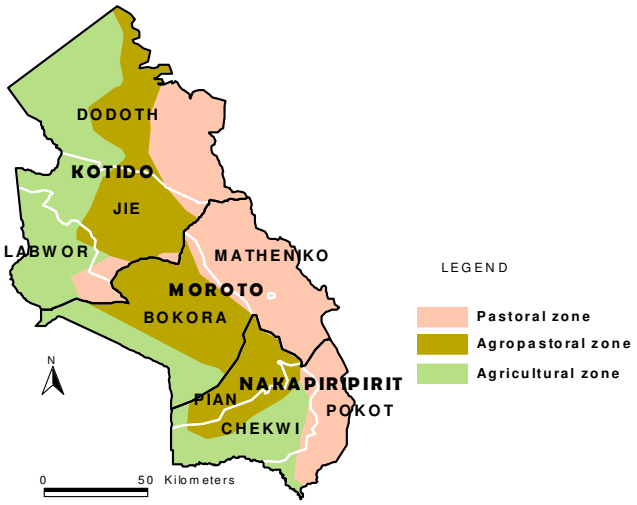


Who are the hungry? (©Vanloqueren)

ILLUSTRATION 6:



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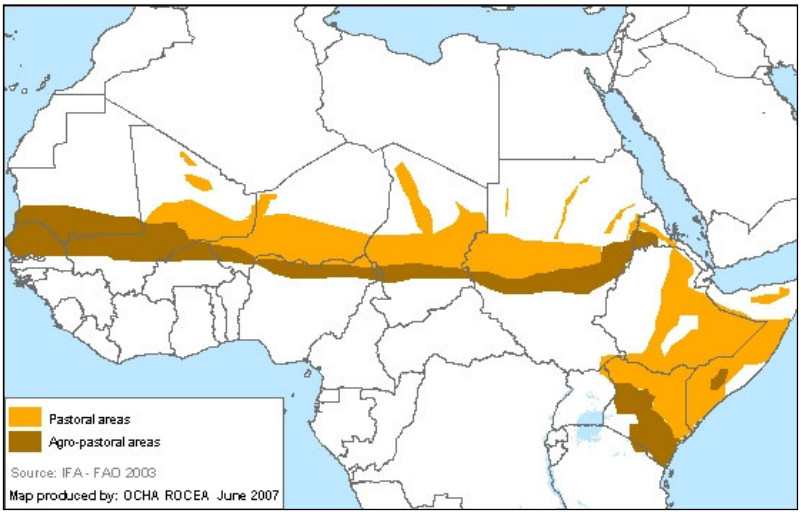

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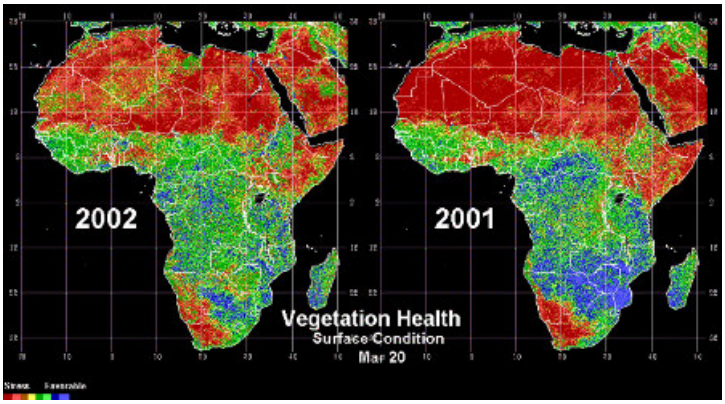
ILLUSTRATION 9

ILLUSTRATION 10



Africa vegetation health (VH - index)
Vegetation health: **Red – stressed**, **Green – fair**, **Blue – favorable**
Source: NOAA/NESDIS

About the organizers:

Observatoire de l'Afrique:

The Observatoire de l'Afrique is a network of independent institutes and experts based in Europe and in Africa. It aims at encouraging discussion between African and European experts on African security and political issues. The overall objective is to create a forum for open, constructive dialogue and debate, and provide useful conclusions to a wide range of policy makers. This conference is organized with the support of the Délégation aux affaires stratégiques (DAS).

EGMONT – Royal Institute for International Relations:

The Royal Institute for International Relations - EGMONT (former IRRI-KIIB) - is an independent think-tank based in Brussels. Its interdisciplinary research is conducted in a spirit of total academic freedom. A platform of quality information, a forum for debate and analysis, a melting pot of ideas in the field of international politics, the Institute's ambition - through its publications, colloquia, seminars and recommendations - is to make a useful contribution to the political decision-making process.

ACTED – Agency for Technical Cooperation and Development

The Agency for Technical Cooperation and Development is an apolitical, and non-confessional international relief agency created in 1993. It is an associate member of Alliance2015. As of today, ACTED is active in 25 countries (Afghanistan, Kyrgyzstan, Uzbekistan, Tajikistan, Nicaragua, Congo-Brazzaville, DRC, Iraq, Chad, Haiti, Sudan, India, Indonesia, Sri Lanka, Pakistan, Jordan, Lebanon, the Palestinian Territories, Central African Republic, Uganda, Kenya, Somalia, Myanmar). The organization employs approximately 150 international staff and more than 2600 national staff. The headquarters for the organization are located in Paris, France. ACTED organizes this conference as part of the Karamoja campaign, that raises awareness in Europe about the situation in pastoral areas of East Africa (see www.karamoja.eu).

CERI – Centre d'études et de recherches internationales

The CERI, founded in 1952, within the *Fondation Nationale des Sciences Politiques* (FNSP), is France's foremost center for research on the international political system. As a joint FNSP-CNRS research unit, the CERI is made up of some sixty researchers and about fifteen support staff who handle financial management, documentation, publications and communication. The CERI's mission is to bring together area studies specialists and international relations experts. It analyzes the contemporary political world, with a strong emphasis on an interdisciplinary approach: its research fellows include not only political scientists but also economists, sociologists, historians and anthropologists.

CEAN – Centre d'études d'Afrique Noire (Sciences po Bordeaux)

Founded in 1958, the Centre d'étude d'Afrique noire (CEAN) is one of the foremost centre of analysis of African politics. As a joint FNSP-CNRS research unit, the CEAN is also part of the Insitut d'études politiques of Bordeaux (Montesquieu University). Research, teaching and documentation centre, the CEAN gather a pluridisciplinary team (political analysts, sociologists, economists, lawyers, historians, anthropologists, geographs) around the analysis of politics in contemporary Africa.

www.obsafrique.eu
www.acted.org
www.karamoja.eu