

PERSPECTIVES

Political analysis and commentary from Southern Africa

ON THE ROAD TO COPENHAGEN

Dear Reader

What is sure to be a nail-biting 12 days of intense negotiations, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) will between 7 and 18 December 2009 conspire to shape the destiny of our world. At the 15th Conference of the Parties (COP-15) to the UNFCCC in Copenhagen delegates will attempt to thrash out a comprehensive international deal to limit global warming to 2 °C above pre-industrial levels and avoid dangerous climate change.

Experience tells us it will not be easy. It has taken 17 years of negotiations and advancement in climate science since the adoption of the UNFCCC in Rio de Janeiro in 1992 to get to this watershed. Along this journey has come the embracing of the Kyoto Protocol on Climate Change in 1997, the release of the Intergovernmental Panel on Climate Change's Fourth Assessment Report a decade later and the subsequent adoption of the Bali Roadmap in December 2007. The task in Copenhagen is to craft a legally binding international agreement to follow the end of the Kyoto Protocol's first commitment period, which ends in 2012.

Going to Copenhagen the Parties agree that a post-2012 climate change regime comprising enhanced action on climate change adaptation and mitigation, technology cooperation and climate financing is vital. However, among other issues, agreement on deep and binding emissions reduction targets for developed countries – as required by science – and the magnitude, source and destination of climate finance for adaptation and mitigation in developing countries remains elusive.

As a green political institution, the Heinrich Böll Foundation (HBF) has focused on climate change, and the political solutions to overcome it, for many years. In keeping with this objective and against the background of expected dire impacts of climate change in the Southern African region, this issue of *Perspectives* reflects on the winding road to Copenhagen, reviews the agenda at the Copenhagen negotiations, and considers some of the neglected issues at climate change negotiations to date.

Setting the scene, Lwandle Mqadi's article underlines the gravity of the climate change challenge to Southern Africa and the region's biggest economy, that of South Africa, as illustrated by the recent Intergovernmental Panel on Climate Change's Fourth Assessment Report. Mqadi also outlines the region's positions on the key issues being negotiated in Copenhagen, which are strongly informed by its historical and developmental imperatives.

In the second article, Masego Madzwamuse, argues that adaptation to climate change is a legitimate demand by developing countries at climate change negotiations and outlines why it has only recently begun to command proportionate attention in these negotiations. Against a long history of vulnerability to climate variability, compounded by additional stressors such as HIV/AIDS the article makes a case for the elevation of adaptation as a response to climate change in Southern Africa. Madzwamuse argues for a nuanced dialogue on adaptation at climate change negotiations and calls for the incorporation of civil society in enabling an effective response to climate change through this factor.

The final article by Leonie Joubert considers the threat posed by climate change to human and national security and interrogates why climate-related conflict, already evident in some parts of the African continent, does not feature on the agenda at climate change negotiations. The article makes the very important point that the climate change challenge should not be viewed as only bringing conflict and strife to the continent, but also ushering in new platforms for conflict resolution and broader cooperation.

As we approach the defining point for what has been a protracted process towards a post-2012 climate

regime, it is our hope that this issue of *Perspectives* will bring about a broader and deeper understanding of the issues at stake in Copenhagen, as well as some of the more salient concerns for the Southern African region in the global pursuit for a comprehensive response to climate change.

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Biography

Lwandle Mqadi

Lwandle holds a BSc Honours in Agricultural Economics (Agricultural Finance) and MSc in Agricultural Economics (Environmental Economics), from the University of Pretoria. She currently works for the Gold Standard Foundation (www.cdmgoldstandard.org) as a Local Expert for the Sub-Saharan Region.



Key issues being negotiated in Copenhagen

Implications for South Africa and other Southern African countries

“There are less than three months to go before delegates gather in Copenhagen, to meet the United Nations deadline of sealing a broad agreement on climate change, in a pact which is to replace the Kyoto Protocol. Despite the urgency, nobody seems to be ready. The most difficult task of the climate change negotiators is setting the targets for greenhouse gas (GHG) emission reductions for each country and for different industries. Another sticking point is the amount of compensatory funding poorer countries will receive for reducing GHG emissions and for adaptation to climate change – and South Africa and Southern Africa will be a beneficiary of this”¹.

In 2004, the world produced about 49 000 Mt CO₂-equiv, mainly from energy generation and deforestation. In comparison, South Africa produced about 440 Mt, or about 1% of the global figureⁱⁱ. At 10 tonnes per capita, South Africa’s GHG emissions are about twice as high as other developing countries while per capita emission rates are comparable to those of some developed countries – for example, Austria (7.8 tonnes), Spain (7.3 tonnes) and Iceland (7.7 tonnes). This is due to the fact that South Africa’s economy is highly dependent on fossil fuels such as coal. The majority of fossil fuel demand is for energy production and use, with 91% used for electricity generationⁱⁱⁱ. It should be noted that even though the average carbon footprint per South African is due to very high coal dependence, only 10% of the population is responsible for 90% of these emissions^{iv}. The majority of the South African population are in the poor-to-middle income groups and do not contribute to the majority of emissions. Thus, when it comes to issues of mitigating climate change and promoting sustainable

development, economic growth and a low carbon economy, the inequality of wealth within the South African society must be considered and factored into the climate change debate.

Climate change impacts will be greater in Africa than many other regions. In particular, Southern Africa is incredibly vulnerable to climate change impacts due to its limited capacity to adapt to the impacts, especially when facing other stressors such as poverty and HIV/AIDS. This has already threatened past development gains and constrained future economic progress and overall sustainable development.

The findings of the 4th Intergovernmental Panel on Climate Change (IPCC)¹ Assessment Report for the Southern African region specifically include:

- The drier sub-tropical regions will in general warm more than the moister tropics.
- Northern and Southern Africa will become much

¹ The IPCC, established by United Nations Environment Programme (UNEP) and World Meteorological Organisation (WMO) in 1988, provides important scientific input to the climate change process.

hotter (as much as 4–6 °C) and drier in the summer, with a much greater risk of drought,

- ❑ Wheat production in the north and maize production in the south will be adversely affected,
- ❑ As a result, vector borne diseases such as malaria and dengue fever may spread and become more severe; and
- ❑ Sea levels will rise, with serious consequences for marine production and tourism, especially in the coral reefs of East and southeast Africa.

climate change, which has to be agreed at COP–15 in Copenhagen, December 2009.

As a result, the Bali Action Plan was developed, which is a two-year roadmap detailing the key topics and a comprehensive agenda for what would be discussed and agreed to in Copenhagen. The key topics of the Bali Action Plan that were identified for discussion included mitigation, finance, adaptation, technology and the shared vision of parties for an

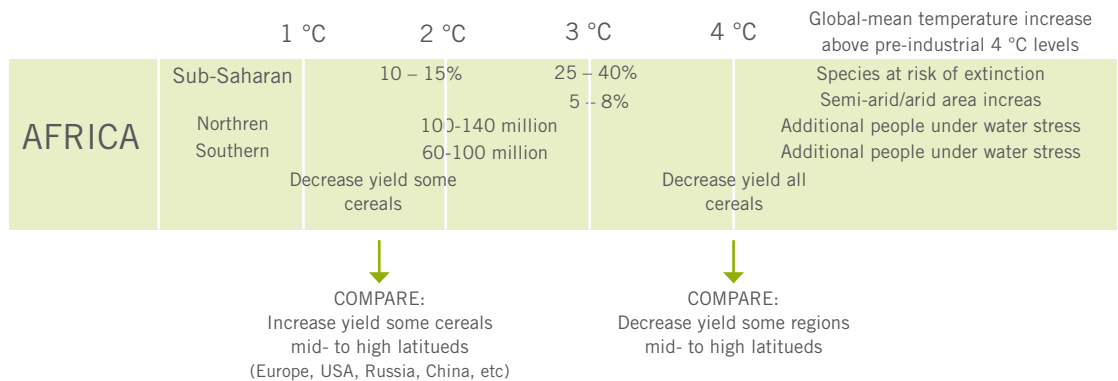


Figure 1: Summary of expected impacts in Africa as a result of global-mean temperature increase (Adapted from IPCC AR4 Synthesis Report Summary for Policy Makers, 2007).

Figure 1 summarizes some of the expected impacts under different levels of global-mean temperature increase. Especially important are the estimated decreases in surface-water availability and associated decreases in water security and agricultural yields. For Africa, the impacts are estimated to increase strongly when global warming exceeds 2 °C.

Based on these figures depicted above, more countries (including South Africa) support the goal that warming be limited to a maximum of 2 °C increase above pre-industrial levels. This has also been one of key basis points for climate change negotiations towards Copenhagen for South Africa and the Southern Africa region.

Climate change negotiations: Bali to Copenhagen²

With all countries deliberating over the years on how to tackle climate change, and the 4th IPCC Assessment Report (AR4) confirming extreme climate change impacts, countries reached a key milestone in Bali, in 2007. At this 13th Conference of Parties² (COP–13), all parties to the United Nations Framework Convention on Climate Change (UNFCCC) agreed to shape an ambitious and effective international response to

agreement. It has been envisaged that these negotiations will be built on the existing UN Convention and the Kyoto Protocol (i.e. focused on emission reductions from developed countries) to provide an international agreement to deliver global action at a scale and urgency proportionate to the global climate threat.

Also, within the Bali Action Plan, two parallel negotiating tracks were formed, namely the Ad Hoc Working Group on Further Commitments for Annex I Parties (i.e. developed countries) under the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA). The working groups are to present their results in Copenhagen to the COP, which is the ultimate decision making body.

Throughout 2009, the working groups have met at the following negotiating rounds:

- Bonn: 29 March–8 April 2009
- Bonn: 1–12 June 2009
- Bonn: 10–14 August 2009
- Bangkok: 28 September–9 October 2009
- Barcelona: 2–6 November 2009

Another round of negotiations is scheduled, namely: Copenhagen: December 7–18 2009

Currently, in the lead-up to Copenhagen, some of

² Parties to the Convention, i.e. those countries that have signed up to the UNFCCC meet annually, at the Conference of the Parties (COP), which is the highest level of decision-making under the United Nations Convention on Climate Change.

the key proposals^{vi} from developed/Annex 1 countries for limiting emissions by 2020 include (i) the EU's target of limiting industrial emissions to 20% below 1990 levels, and 30% below 1990 levels if other parties take on comparable obligations; (ii) the Waxman-Markey legislation that is under discussion in the USA, which may lead to a decrease of emissions to about 5% below 1990 levels (18% below 2005 levels); (iii) Japan's target to limit emissions to 25% below 1990 levels; and (iv) Russia's target to limit reductions to 10 or 15% below 1990 levels.

It should be highlighted that the proposals which have been made so far have been in response to the following key issues:

- ❑ How to agree on equitable binding, to measurable, reportable and verifiable targets for a global climate solution;
- ❑ Adaptation needs versus mitigation needs; and
- ❑ Financial obligations for urgent actions on mitigation and adaptation, and technological receptivity and transfer.

In terms of the questions outlined above, the measurable, reportable and verifiable (MRV) mitigation action agreement is a key component in the Bali Action Plan, which encompasses overall response to the questions and is likely to be central to the negotiations about the future of the climate regime. MRV is crucial in quantifying action on mitigation, and in ensuring balance between commitments and actions. It is to be applied in an enhanced way to developing countries' mitigation and to the means of implementation, namely technology and finance. What is not yet clear is whether parties will be ready to put numbers on mitigation commitments for all developed countries; confirm mitigation actions for developing countries; and put a technology finance package on the table to fill out the details in terms of this new architecture. However, it should be noted that before an agreement on numbers can take place, concurrence needs to be reached on the principles for MRV in the climate architecture.

South Africa and Southern Africa's position

South Africa and other Southern African countries have been making crucial inputs into this process individually; as Parties to the Convention and to the Kyoto Protocol; as members of the G77 and China³; as

3 This is a diverse group with differing interests on climate change issues, individual developing countries also intervene in debates, as do groups within the G-77, such as the African UN Regional Group, the Alliance of Small Island States and the group of Least Developed Countries.

part of the Africa Group; as members of the Alliance of Small Island States (AOSIS)⁴ and as members of the Least Developed Countries (LDCs)⁵ Group. These inputs include media reports such as "SADC leaders calling for urgent global action and local solutions to the climate menace"^{vii}.

At an international level and as a developing country (i.e. referred to as Non-Annex 1⁶), South Africa plays a key role within the climate change negotiations as a member of the Africa Group and as a member of G77 and China. Within Southern Africa, with the exception of South Africa, other member states in the region further belong to AOSIS (i.e. Mauritius) and the LDC Group (i.e. Mauritius, Mozambique, Tanzania, Angola and others).

One of the key objectives for South Africa within the negotiations has been to ensure that a global agreement which limits temperature increases to 20 °C above industrial levels is secured, while presenting best options for job creation and development in the carbon constrained future. While South Africa is the biggest economy and emitter in the Southern African region, the country is also plagued by high levels of poverty and social inequality. As such, a balance between the country's sustainable development needs (which include energy poverty, affordability and access to energy services to promote economic growth) and climate imperatives (focus on current high GHG emissions) is crucial. Thus, any successful position to be taken by South Africa would have to consider how to sustainably develop while reducing current GHG emissions through a low carbon economy. This places South Africa in a unique position within the region, and represents a significant challenge for policy makers.

The rest of Southern Africa has been calling on developed countries, through the LDC group, to cut their GHG emissions by no less than 45 % by 2020 to limit rising temperatures to 1.5 °C (compared to 2 °C generally agreed upon)^{viii}. LDC group and AOSIS have further released statements where they called for industrialised countries to collectively reduce their GHG emissions by at least 45% below 1990 levels by 2020^{ix}. One should note that in terms of GHG emissions, most populations in the region still rely

4 This is a coalition of some 43 low-lying and small island countries, most of which are members of the G-77 that are particularly vulnerable to sea-level rise. The AOSIS countries are united by the threat that climate change poses to their survival, and frequently adopt a common stance in negotiations.

5 This coalition has now become increasingly active also in the climate change process, often working together to defend their particular interests, for example with regard to vulnerability and adaptation to climate change.

6 Under the Kyoto Protocol, Non-Annex 1 countries have no caps on their GHG emissions.

on biomass for their energy needs and as such have negligible GHG emission contributions (compared to South Africa). Southern Africa (apart from South Africa) has also contributed very little to historical GHG emissions, and as such should not have to take on a huge degree of responsibility when it comes to reducing them. In addition, against the background of the IPCC predictions for the region and its low adaptive capacity, the countries of Southern Africa (except South Africa) have mainly focused on adaptation to climate change as their priority in dealing with this issue.

The next sections will thus focus on what has been put on the table by South Africa and by the Southern Africa region towards Copenhagen 2009; the key proposals in terms of mitigation of climate change, adaptation to climate change, technology development and transfer for mitigation and adaptation; the provision of financial resources and investments; and a shared vision for long-term cooperative action. The following analysis is based on publicly available statements made by G77 and China, the Africa Group, LDC Group, AOSIS and the individual countries in the Southern African region within the UNFCCC process towards Copenhagen 2009.

Action on mitigation of climate change

With the goal of limiting an increase between 1.5 and 2 °C, a clear negotiating strategy is thus required. As a result, Southern African countries, are asking themselves what negotiating strategy should be adopted in order to get the desired outcome from the climate change conference in Copenhagen in December 2009.

The latest IPCC Assessment Reports have highlighted that, in order to limit temperature increases to 2 °C, developed countries would need to cut their emissions between 25 and 40% below 1990 levels by 2020 and between 50 and 80% below 1990 levels by 2050. Thus immediate action on global emission reductions is essential to limit large negative climate change effects, while current large investments on adaptation to climate change are also necessary to cope with the climatic variability and changes that are expected in the near- to mid-future.

A general view so far from South Africa has been that once the developed nations take the lead with more ambitious emissions reduction targets, they will expect at least some developing countries to take a fair share of our common (albeit differentiated)

responsibility. It has also been a view of many civil society groups that pressing for total exemption from any mitigation effort is not an option for South Africa, especially considering its contribution to regional GHG emissions. Within the latest round of negotiations, South Africa has also been concerned that most of the proposals made by the parties have been outside the scope of the UNFCCC and that of the Bali Action Plan, which strictly calls for differentiation for developing countries. Thus, South Africa has advocated that the rules of the Kyoto Protocol should be the basis for comparability.

In addition to this, the LDC group would like developed countries to take economy-wide, legally binding commitments in terms of quantified targets. South Africa and the region are currently advocating for both market-based approaches, (the Kyoto Protocol) and non-market based approaches where focus will be on domestic mitigation efforts and actions through Nationally Appropriate Mitigation Actions (NAMAs). The LDC group further believes that the more emissions developed countries have to cut, the more the scope for international offsets, especially under the Kyoto Protocol's financial mechanisms (i.e. the Clean Development Mechanism: CDM)⁷. So far, the CDM has not benefitted LDC countries* (i.e. especially those in Africa) as compared to other developing countries such as Brazil, India and China. A range of barriers have been outlined, which include that CDM:

- ❑ Has failed to attract capital finance for projects that assist in the shift to a more prosperous but less carbon-intensive economy;
- ❑ Has not been able to encourage and permit active participation of private and public sectors;
- ❑ Has not been an effective tool for technology transfer especially where investment is channelled into projects that replace old and inefficient fossil fuel technology or create new industries in environmentally sustainable technologies; and
- ❑ Has not been able to assist African countries to define investment priorities in projects that meet their sustainable development goals.

⁷ The CDM allows industrialised countries with emission reduction commitments to meet part of their commitments by investing in projects that reduce emissions in developing countries. These projects need to support sustainable development in the host countries and must lead to emission reductions that are real, measurable and long term. CDM projects are different because they include another type of input – carbon investment. The project generates carbon credits with a monetary value. This finance is distinct from the equity investments made for financial returns – even if they are made by the same investor.

With South Africa and the region advocating for the continuation and improvement of the Kyoto Protocol in addition to more domestic mitigation actions as one of the main actions for mitigation of climate change, the removal of the above mentioned barriers can go a long way in ensuring equitable market-based approaches which may further develop financial flows for South Africa and the region.

Southern African countries need to consider how to promote mitigation actions cost effectively in line with their developmental path and particular needs. This will have direct implications on their developments plans i.e. on how they deal with issues of access to reliable, affordable and sustainable energy while ensuring sustainable economic growth. Thus, reaching specific climate system targets through emission reductions by all relevant parties and providing appropriate means for all those willing to undertake action (i.e. mitigation and adaptation to climate change) is what is largely on the negotiating table towards Copenhagen, and is what is currently informing negotiations within the Bali Road Map.

Action on adaptation

As already stated above, the full extent of the impacts that Southern Africa will progressively experience through the 21st century will depend on how much the international community constrains their emissions. The more effective and binding the agreement, the more South Africa and the region will be protected from serious or even catastrophic climate impacts.

Some of the key elements which will hinder adaptation have been outlined as low local (site-based) human capacity to undertake adaptation planning, limited financial resources and competing priorities, and long-term adaptation strategies which may surpass typical political and development frameworks. It should be noted that these findings mostly cover the Southern Africa region (including South Africa), which has as a whole advocated for this acknowledgement within the UNFCCC process.

So far within the negotiations, the issue of how much adaptation funding is required, who will pay for adaptation and how financing for adaptation will be distributed has taken centre stage. For the LDC group, the lack of funding and capacity for the implementation of National Adaptation Plans of Action (NAPAs) are critical challenges. Within Southern Africa, with the exception of South Africa and Botswana, countries have finalised their NAPAs,

and are now focusing on their implementation, highlighting the importance of an agreement on adaptation financing.

Provision of financial resources and investment to support mitigation, adaptation and technology transfer

A number of government proposals on financing for mitigation, adaptation and technology transfer have emerged within the UNFCCC negotiations process. South Africa, on behalf of the Africa group, has proposed the scaling up of adaptation funding by more than 100 times what is currently available. This financing has been proposed to extend beyond existing funds within the UNFCCC.

It should be noted that parties are agreeing on some of the following principles^{xi}:

- Provision of scaled-up, new, additional and sustainable financial resources under the guidance of the COP to further enhance effective and sustained implementation of the UNFCCC and the fulfilment of the Bali Action;
- Coherence and coordination between financing under the COP and various financial mechanisms and individual mechanisms to reduce fragmentation;
- The existence of a substantial gap between financial resources required for enhanced action on adaptation, mitigation and technology transfer in developing countries and level of financial resources currently available;
- The requirement that financing should be derived from multiple sources;
- The requirement that the principles of equity and common but differentiated responsibilities should be upheld, with all developing countries eligible for funding and special consideration provided for vulnerable countries; and
- The requirement that all funds for adaptation, mitigation, technology transfer and capacity building, be allocated in a balanced manner.

However, there is still contention on how these funds will be defined and differentiated from existing climate funds; how developed countries will contribute to these funds; what system would be used for contribution; how these funds would differ from Official Development Assistance; who would manage the funds as well as the scale of the funds.

For South Africa and the region, an agreement on the logistics, management, scale and distribution for these funds is crucial. This will have direct implications

on activities undertaken in implementing the adaptation, mitigation and technology transfer activities within the region.

A shared vision for long-term cooperative action

As previously mentioned, the Bali Action Plan agreed upon a comprehensive process in order to reach an agreed outcome and adopt a decision at its 15th session (Copenhagen). This decision must represent “a shared vision for long-term cooperative action, including a long-term global goal for emission reductions, to achieve the ultimate objective of the convention, in accordance with the provisions and principles of the convention, in particular the principle of common but differentiated responsibilities and respective capabilities, and taking into account social and economic conditions and other relevant factors”.

This shared vision for long-term cooperative action is being discussed under Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA). South Africa, the region, and the LDC groups have concurred on this matter. In terms of what the shared vision should be, they stand firmly by the UNFCCC i.e. such a vision can only be guided by the principle of common but differentiated responsibilities, so maintaining the legal distinction between Annex 1 and non-Annex 1 countries. In addition to this, a demand has been made on Annex-1 countries, whereby they must take on mid-term emission reduction targets; a 25-40% reduction by 2020 with other countries demanding more than this from the 1990 baseline. To achieve these reductions, a clear MRV is fundamental to the balance between action on climate change and support. Winkler (2008)^{xii} has stressed that the Copenhagen deal will first need to build on the agreement to MRV in principle, elaborating it politically and conceptually in the agreed outcome and decision.

With South Africa and the region as a whole in clear support of this shared vision, their main issues at the negotiations would be to ensure that an equitable deal is reached.

Conclusions

This article has identified the key issues currently on the table towards Copenhagen 2009. These include South Africa's positions, what have informed it, the regions position through various alliances, as well as implications on possible outcomes at Copenhagen. In terms of mitigation, the current positions represent a range of negotiating strategies for both developed and developing countries. For developed countries, it is thus

imperative to take the lead in emission reductions, based on their historic responsibilities. From a least developing and vulnerable country perspective, especially with regards to Africa, leadership is paramount to ensure reductions in global emissions by the developed countries and some of the emerging economies among developing countries, including South Africa.

In conclusion, it should be noted that the mitigation challenge for South Africa, and the Southern African region as a whole, is not about reducing emissions. Rather, it is about not following the carbon-intensive development pathway of the industrialised countries, only to reduce GHG emissions later. By developing in a more sustainable manner from the outset, this can be avoided.

An effective response to climate change for the Southern African region would therefore focus on adaptation as well as mobilising financing and technology transfer to seize mitigation opportunities that can achieve a “win-win” solution by promoting low-carbon technologies and advancing development aims. In terms of adaptation to climate change and technology transfer, an agreement on the financial resources and their overall management is crucial for this region in terms of sustainable development and economic growth. Finally, it is clearly in this regions interest to ensure ambitious mid-term (2020) emission reduction targets for industrialized countries, as a critical prerequisite for an effective climate change deal.

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- ix Statement by LDC Group and AOSIS group, 14 August 2009. www.unfccc.org.
- x www.ied.org/pubs/pdfs/17047IIED.pdf.
- xi unfccc.int/files/meetings/ad_hoc_working.../finance140809.pdf.
- xii Winkler (2009), Measurable, reportable and verifiable: the keys to mitigation in the Copenhagen deal. Climate Policy 8 (2008) 534-547.

Biography

Masego Madzwamuse

Masego has over 10 years experience in conservation and development in Southern Africa. She worked for the International Union for Conservation of Nature (IUCN) as the Botswana Country Programme Coordinator (2001–2006) then later as Regional Programme Development Officer with IUCN Regional Office for Southern Africa and United Nations Development Programme (UNDP) on the TerrAfrica Programme promoting sustainable land management in sub-Saharan Africa. Masego's main focus has been on community-based natural resource management and rural livelihood strategies in Southern Africa. Her research interests are on indigenous knowledge systems and the interface between conservation and rural livelihood security, particularly looking into the plight of ethnic minorities, local communities and other marginalised peoples. She is currently an independent consultant and researcher based in South Africa.



Adaptation

Rational or sticky point for climate change negotiations?

Introduction

Alongside food security and energy, economic and financial crises, climate change is emerging as one of the most important challenges of the 21st century. Cumulative research and reports of the Intergovernmental Panel on Climate Change (IPCC) over the years puts the reality of human-induced global warming and climate change beyond any reasonable doubt. Perhaps the most influential and convincing report is the fourth report of the IPCC. Rising temperatures will have serious consequences on rainfall patterns, extreme weather events, sea levels, biodiversity resulting in negative impacts on the world's economy, livelihoods and development in general.

Although Africa contributes little to the global GHG emissions responsible for climate change, the continent is most vulnerable to the impacts of climate change and climate variability due to limited financial, institutional and technological capacity to adapt. Ironically, climate change will punish the very people that are least responsible for GHG emissions and increase their vulnerability to disasters due to potential massive increases in poverty and inequality¹.

Rural livelihoods in Africa will be the hardest hit by the impacts of climate change. Declining economic growth in the wake of global warming will result in reduced income opportunities for the rural poor, worsen poverty and will directly undermine the achievement of the Millennium Development Goals (MDG 1 aimed at eradicating poverty and hunger and 7 on ensuring environmental sustainability by 2015). Generally, climate change will reverse gains towards achieving sustainable development goals. The situation in Africa is aggravated by multiple stressors at various levels². These include the high poverty rates, high HIV/AIDS prevalence rates, low economic development, political instability and resource-governance challenges.

Africa is expected to face a decline in both food security and agricultural production systems, especially subsistence agriculture³ as the bulk of agriculture is rain fed. In some countries yields are

1 Oxfam. 2007.

2 Boko, M., Niang, A., Vogel, C., Githeko, A., Medamy, M., Osman, Elasha., Tabo, R., Yanda, P. 2007. 'Africa: Climate change'. Parry, M.L., Canziani, O. F., Palutikof, J.P., van der Linden, P.J., Hanson, C.E. eds. *Impacts, Adaptation and Vulnerability. Contributions of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on climate Change*.

3 IFAD and GEF, 2008. 'IFAD/GEF partnership on climate change: fighting a global challenge at the local level'. Rome, Italy.

expected to fall by 50% by 2050. The land suitable for agriculture will be reduced by 6% and the total agricultural GDP will go down by 9%. Mean rainfall is predicted to decline in most parts of sub-Saharan Africa, particularly Southern Africa, while it will increase in parts of Eastern and Central Africa. Predictions are more variable in Western Africa. Even in areas where rainfall is expected to increase, high temperatures will shorten growing periods for crops. These projections present a major challenge for a continent that is already struggling to feed itself.

The link between climate change and socio-economic impacts render adaptation critical at various levels of society. Although traditional adaptation strategies already exist among local communities who are accustomed to living with climate variability and resource scarcity, it is widely argued that their adaptive capacity may be overstretched due to a lack of economic alternatives and safety nets. One of the main reasons that indigenous strategies are not adequate is the fact that they largely operate without any formal government support or facilitation⁴. A number of policies tend to undermine traditional adaptation strategies and local institutions for adaptation.

While the scale of the climate change impact on the poor is acknowledged, investments in supporting adaptation to climate change remain low. Adaptation does not receive the attention it deserves in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations. This paper argues that this is due to firstly the development in research and publications of the IPCC, secondly political interests on the part of member states and negotiators and finally the marginalisation of the most vulnerable peoples in the UNFCCC foray. The article explores implications of the above issues on the Southern African region.

A summary on the impacts of climate change in Southern Africa

Southern Africa is faced with a high risk of negative impacts of climate change due to a variety of factors. The poor, least developed, arid areas and countries highly dependent on natural resources are said to be the most vulnerable to climate change and most countries in Southern Africa fall within this category. As it is, more than 50% of Southern Africa's

4 Eriksen, S., O'Brien, K and Resentrater, L. 2007. 'Climate change in Eastern and Southern Africa'. *Global Environmental Change and Human Security*.

population lives below the poverty datum line and in 2007 about 1 in 7 people in the region faced starvation⁵. The prevalence of children under the age of 5 who are underweight is relatively high with 42% in Angola, 30% in Malawi and 26% in Mozambique⁶. The majority of the poor live in arid and semi-arid regions of Southern Africa, which have already been highlighted as highly vulnerable to climate change impacts. Over 40% of Southern Africa's population resides in dryland ecosystems. The underlying causes of poverty range from historical consequences of colonialism, poor governance, unfair terms of trade, inequity and natural factors such as poor soil conditions and unfavourable climatic conditions.

In addition to the above, the regional economy is highly fragile considering that a significant proportion of the economy is climate dependent. In fact general observations are that the economy of the region has declined considerably in both qualitative and quantitative terms over the years⁷. Over 50% of the GDP of Southern Africa is drawn from primary sectors of production such as agriculture, mining, forestry and wildlife-based tourism. These sectors are, according to the IPCC's fourth assessment report, highly vulnerable to climate change impacts. Tourism (mostly wildlife-based), for instance, is one of the region's priority economic sectors that has been identified as vulnerable to climate change impacts. The sector accounts for 2.9% and 4.9% GDP in South Africa and Mauritius respectively⁸.

An additional challenge is the high HIV/AIDS prevalence rates in the region, which will negatively impact on the region's capacity to adapt to climate change. HIV/AIDS has eroded Southern Africa's human capital, which is critical for the institutional capacity for adaptation and sustaining economic production systems.

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6 Murombedzi, J. 2007. 'Climate change, natural resource and adaptation in Southern Africa'. Situational analysis report produced for Resource Africa and FFI.

7 See Murombedzi (2007).

8 Spencely, A. 2008. *Responsible Tourism: Critical Issues for Conservation and Development*. IUCN

BOX 1

Ecosystem services that are important to the poor as identified per country

Namibia – water, wetlands, woodland products and wildlife;

South Africa – woodland products, plantations and water;

Botswana – water, veld products, rangelands, scenic landscapes to support tourism, wildlife, fish and crops;

Zimbabwe – woodland products, rangelands, crops and wildlife;

Mozambique – crops (subsistence agriculture), water, biodiversity, woodland products and flood regulation.

Source: Shackleton, et al (2008)

Climate change is already affecting poor communities in Southern Africa. The impacts of climate change are particularly acute in places where there is poverty and livelihoods are directly dependent of the use of forest, marine, land, wildlife and riverine resources. While the livelihoods of the poor are directly dependent on natural resources, the very same resources and the linked productive systems are in turn vulnerable to climate change (see Box 1 for ecosystem services that are important to the poor). Changes in a variety of ecosystems are already being detected in several ecosystems, particularly in Southern Africa, at a faster rate than originally predicted⁹. Climate change brings incremental stress to ecosystems and natural resources already under pressure and in turn negatively impacts the livelihoods of rural communities and their capacity to adapt. The region is already facing environmental degradation due to increase in population, high levels of poverty, perverse incentives, land degradation, unsustainable land-use practices and endemic droughts. The following observations have been made:

- Local food supplies will be negatively affected by decreased fisheries resources, especially in large lakes, due to increased water temperatures, also exacerbated by current unsustainable fishing practices;
- Some countries in Southern Africa, such as Namibia, Mozambique and South Africa have significant agricultural products from coastal zones. These are threatened by sea-level rise and

increasing temperatures¹⁰;

- The proportion of arid and semi-arid lands is estimated to grow at 5–8%. Currently countries that fall under the arid and semi-arid ecoregions in Southern Africa include Botswana, Namibia, South Africa, Zimbabwe, Mozambique and Swaziland.
- By 2050, a projected 75 million people in Africa will be exposed to water stress due to climate change. Southern Africa is already faced with water scarcity, for instance predictions are that South Africa will reach limits of water supply by 2025.

As noted in the introduction, agriculture is one of the most vulnerable sectors in Africa. Rainfall is predicted to fall by 5–15% during the cultivation season. Of direct relevance to Southern Africa is the influence of climate change on the variety of crops. An increase in cultivation of drought resistant crops is required. At the moment maize is the most dominant crop and a preferred staple food for most of the rural dwellers in Southern Africa, however it is not a drought resistant crop. The Livestock sector is also vulnerable to climate change due to predicted increases in droughts. Experience has shown that livestock is often severely impacted by drought, resulting in a high loss of livestock due to a deterioration in pasture. Such losses in turn result in a negative impact on the food security of the poor as they lose draught power and a valuable source of capital stock and food. Most rural communities use livestock as a safety net for livelihoods.

At the same time the poor tend to have low adaptive capacity due to weak local institutions and limited livelihood options. Most of the poor communities, particularly in drylands, have lived and coped with climatic variability and resource scarcity, however their traditional coping strategies have been largely undermined or completely wiped out by state policies. Certain policy directions in the region are highlighted as presenting challenges that will undermine the adaptive capacity of local communities. One such policy is the centralisation of resource management of high value resources, such as fisheries and forestry, in response to increasing demands from emerging markets such as China, India and more recently the carbon-trade market. A similar trend has been observed with wildlife whereby some governments (such as Botswana) in the region are

9 See Boko, et al. (2007)

10 Murombedzi, J. 2007. 'Climate change, natural resource and adaptation in Southern Africa'. Situational analysis report produced for Resource Africa and FFI.

re-centralising the management of wildlife resources, thereby reversing the gains of community-based natural resource management (CBNRM) programmes.

The drivers for the adaptation agenda in the UNFCCC negotiations

In recognition of the direct and immediate impacts of climate change on the poor and their livelihoods, the UNFCCC is increasingly highlighting adaptation as a key response to climate change alongside mitigation measures. There are a number of agenda items that address vulnerability and adaptation, particularly with reference to article 4.8 and 4.9 within the context of the UNFCCC negotiations. However, mitigation and carbon financing continues to dominate the climate change agenda. Little attention has been paid to adaptation even though this is where the focus of Africa and other developing countries ought to be, at least in terms of facilitating efforts towards meeting several MDGs, reducing poverty and enhancing food security. One of the main reasons for this lies in the research outcomes of the technical arm of the convention the IPCC and its central role in determining the policy outcomes of the climate change convention. A second lies in the outcomes of political interests between the north and south and the influence that parties have in yielding favourable policy outcomes at a global level. A third could be explained by a lack of strong civic engagement on climate change in Southern Africa.

IPCC policy directions

Adaptation did not feature much in the UNFCCC before 2000. Negotiations focused solely on mitigation partly due to the dominating narrative at the time that was influenced by the focus of the first IPCC report which alerted the world to the problem of escalating GHGs and their effect. An additional influential factor was the second IPCC report which led to the negotiation of the Kyoto protocol. The first two reports of the IPCC made a strong case for mitigation as a strategy for reducing and capping GHG emissions. It was not until the third report of the IPCC, released in 2001, that adaptation gained prominence. The report alerted the world to the unavoidable impacts of climate change in the immediate future and highlighted the importance of coping with climate change through adaptation. In particular, the IPCC pointed out that poor countries would be more vulnerable and thus require assistance

from developed countries to adapt¹¹. Another milestone for putting adaptation at the centre of the UNFCCC is the Nairobi work programme on adaptation (2005–2010) aimed at helping all countries to improve their understanding and assessment of the impacts of climate change and implement practical adaptation measures.

Some commentators note that an inadequate focus on adaptation prior to 2000 reflected a limited understanding of what constitutes adaptation which in turn resulted in the limited attention accorded to it by scientists studying the impacts of climate change¹². Gaps in knowledge continue to hamper the extent to which adaptation can be convincingly tackled in the context of the UNFCCC negotiations. Evidence for vulnerability and adaptation is highly localised and the IPCC, in its fourth assessment report, is calling for better models and methods for improving the understanding of multiple stresses, particularly at a range of various scales, national, regional and global. Practical implementation of climate change adaptation requires a deeper understanding of the barriers for adaptation, both by African governments and the donor community, which is currently lacking. African countries need such information in order to upscale issues for consideration at the UNFCCC negotiations and inform the growing body of knowledge on this issue.

Key barriers include¹³:

- ❑ Lack of adequate human and institutional capacity to deal with uncertainty;
- ❑ Lack of guidance and political will;
- ❑ Conflicts with competing development agendas and needs; and
- ❑ Aversion to change.

Perhaps the political will to address adaptation will follow if such gaps in knowledge are filled.

North–south political interests

It is not only the science that is driving the adaptation agenda and the political will of the UNFCCC parties to address it, but also geo-politics as reflected in the north–south divide that characterises the negotiations. Adaptation is an issue for poorer developing

11 Nepad and APF Support Unit. 2007. 'Climate Change and Africa': Key political messages and action points. Prepared for eighth Meeting of the Africa Partnership Forum, 22–23 May 2007. Bonn, Germany.

12 Klein, R., Lisa, E., Schipper, L.F and Dessai, S. 2003. 'Integrating mitigation into adaptation policy: Three research questions'. In *Environmental Science and Policy* No. 8. 2005. pg 579–588.

13 See Nepad and APF (2007).

countries, most of which are in the south (Africa in particular). Mitigation on the other hand responds to the needs of the more powerful north. The dominance of mitigation over adaptation in the earlier years of the UNFCCC negotiations reflected concerns from some parties that adaptation would weaken society's willingness to mitigate climate change while others felt that mitigation efforts would adequately facilitate adaptation. However, even within the south there are divisions/differences particularly, between Africa and Asia which fragment the power base of this group in negotiations.

Another barrier to climate change adaptation, reflecting the lack of political will to address climate change adaptation, lies in the level of funding for vulnerability assessments and adaptation studies. Observers have noted that funds availed for adaptation do not reflect the scale of the problem. Only 1% of Official Development Assistance (ODA) and concessional lending is specifically directed to adaptation¹⁴. Furthermore, the adaptation fund (see Box 2 below) is voluntary, and by 2008 only \$67 billion dollars had been raised for adaptation funds. African governments have recently indicated that \$67 billion is what is required per year to compensate Africa alone for climate change impacts¹⁵. Other observations pertain to two of the funding criteria of the Global Environment Facility Fund's (GEF's) UNFCCC financial mechanism. The requirements for projects to have incremental costs and global benefit do not match the nature of adaptation (adaptation is largely a local response), and the current layout of funds supports sector specific adaptation rather than societal adaptation¹⁶. In addition, carbon finance funds which could be used for adaptation are difficult to access, particularly for local communities and small-holder farmers. Civil society organisations have also complained about a general lack of information on available funds and criteria for accessing them.

14 See Nepad and APF (2007).

15 See Chege, K. 2009. Africa puts a price on climate adaptation aid. Science Development Network News 27 August, 2007. www.scidev.net/en/news/africa-puts-price-on-climate-adaptation-aid-1.html.

16 See Klein, et al. (2003).

BOX 2

List of key adaptation funds

The UN has set up an adaptation fund to help finance adaptation to climate change among poor countries – funds are generated out of a 2% levy on revenues generated by the Clean Development Mechanism under the Kyoto protocol. Several funds have been set up by development partners to support ongoing adaptation projects. These include:

- The Global Environmental Facility Trust Fund – strategic priority on adaptation;
- The Special Climate Change Fund;
- The Least Developed Countries Fund.
- International Development for Action Research (IDRC) Canada and the UK Department for International Development (DFID) have funded a Climate Change Adaptation Support Programme for Action Research and Capacity Building (CCAA).

Funding and improving the science alone will not guarantee the prominence of adaptation on the UNFCCC agenda. Leadership and political will is required on the part of African governments to champion this issue. Currently the governments of Africa seem to be responding more to the macro-economic needs of the state. They are therefore pushing an aggressive agenda on the development of clean energy and focusing on technological and managerial responses to climate change rather than adaptation issues, which are more micro level concerns. Business interests are dominating this drive; the state and private sector in Africa are more interested in the commercial opportunities of climate change negotiations as presented by carbon finance mechanisms. Where state interests are demonstrated, governments often push for technological responses and capacity building initiatives targeted at government agencies and sectors, ignoring local adaptation capacity needs of vulnerable communities. Adaptation, which is mainly an issue for the poor, does not have real influential champions in the policy formulation and priority setting domain. To a large degree this is as a result of weak civil society engagement with the UNFCCC processes at national, regional and global levels.

Addressing climate change vulnerability and adaptation is an uncomfortable issue for African governments and other parties to the UNFCCC. It calls for a new order at both a global level and on the domestic front. That is, the need to deal with the underlying causes of Africa's vulnerability as

a continent and those who are most vulnerable to climate change. It points to the structural causes of poverty, poor economic and agricultural performance and other variables that make Africa vulnerable to climate change. At the core is the issue of resource tenure and the need to revisit land policy and land governance in order to address questions surrounding access to land natural resources for local communities and tenure security in general.

The land question is a highly political and complex matter for Africa but also one that has to be dealt with in order to build the resilience of African communities to climate change. Currently the resource and land rights, as well as benefits of local communities, are recognised as long as there is no economic demand on the land¹⁷. As it is, the world is on verge of a global land rush due to an increase in demand emanating from the food crises, energy crises and the emerging carbon finance markets. The demands for land are forwarded through sovereign funds and inter-state negotiations on transnational companies and commercial investors¹⁸. The interests and rights of the poor are marginalised in such deals. African governments are reluctant to deal with the land issue and at the same time the developed world is apprehensive about land reform policies in Africa. The focus on the land reform policy of Zimbabwe and the international outcry is a case in point.

Another fundamental issue is recognising the value of dryland ecosystems goods and services and investing in improving understanding on climate change adaptation. Currently, dryland ecosystems are largely ignored by both national governments and donors although they are more vulnerable to climate change and are areas of deep rural poverty¹⁹. Among the major world ecosystems drylands, especially in poor countries, have received less scientific and developmental attention in proportion to their size, population and importance to global sustainability²⁰. As indicated earlier, 40% of the Southern African population resides in drylands.

17 See Murombedzi (2007). on the effects of China and Africa trade relations on the poor and access to land.

18 Taylor, M. 2008. Presentation on securing access to land for food security. Conference on land governance and emerging development agendas: Legal empowerment, climate change and food security. 24-25 November 2008. Oslo. UNDP (OGC, DDC and the Legal Empowerment of the Poor Programme) and TerrAfrica Partnership.

19 See Shackleton, C., Shackleton, S., Gambiaza, J., Nel, E., Rowntree, K., and Urguhart, P. 2007. 'Links between ecosystem services and poverty alleviation: Situation analysis for arid and semi arid lands in Southern Africa'. DFID; Mortimore, M. 2009. 'Opportunities for drylands'. IUCN; and Madzwamuse, M., Schuster, B., Nherera, B. 2007. The real jewels of the Kalahari: Dryland ecosystem goods and services in Kgalagadi south, Botswana. IUCN.

20 See Madzwamuse, et al 2007; Shackleton et al. 2008; and Mortimore, 2009.

Marginal civic voices

The impacts of climate change will be felt at a local level and for this reason responses to climate change must integrate issues from the grassroots to national and regional levels. However, the most affected communities do not have a space for dialogue in the UNFCCC or to influence climate change policy decisions at the global, regional and national levels. Several studies have noted that communities are normally aware that climatic changes will affect crop production as they have observed the changes in climate in recent times. Communities in arid lands have been adapting to climate variability for decades and yet despite the fact that their governments have been representing them in the global negotiations they are not aware of these global debates and even less aware of the of the opportunities regarding carbon markets²¹. So far, indications from the region reveal that local participation and accounting for household coping strategies remains a real challenge in the development of adaptation policies because there is a tendency to focus on sectional transfers of technology based on projected physical changes in climate²².

While local coping strategies are critical for adaptation to climate change most government policies tend to undermine these, thereby weakening the resilience of local communities to the impacts of climate change. The local knowledge, social networks, traditional institutions and local biodiversity that are often used for coping are often ignored by the formal financial, technological and institutional frameworks of most countries. Certain critical elements of local adaptation strategies employed by local communities, such as flexibility and seasonal mobility, are undermined. This through promoting specialised agricultural production of single crops for export at the expense of crop diversification by small-scale farmers; privatisation of land restricting mobility of pastoralists and other communities whose livelihoods are directly dependent of natural resources, parcelling out the best arable land to commercial framers; and restricting access through protected areas thereby restricting access to areas that local communities use during drought periods or reducing access to high ground plots in times of floods²³.

21 Riche, B. 2008. 'Urgent need for climate change adaptation'. In Kamotho, S., Strahm, W and Wolfangel, C. 2008. The nature of drylands: Diverse ecosystems, diverse solutions.

22 See Erikse, et al. (2007)

23 See (Eriksen, et al. 2007; Mortimore, 2009 and Madzwamuse, M.2009. *Adaptive Livelihood Strategies of Basarwa Communities: Ngamiland Botswana*. Lambert Academic Publishing. Germany)

Civil society organisations (CSOs) work directly with rural communities and smallholder farmers. They are aware of local realities on vulnerabilities that communities are facing on a daily basis. Civil society is therefore in a better place to advocate for pro-poor adaptation strategies and climate change policies in general. They also have a potential role to play in raising awareness about climate change impacts, opportunities for funding local initiatives and together with local communities designing appropriate interventions. Playing this role successfully, however, depends on the extent to which governments regard CSOs as partners in tackling the challenge of climate change. State and CSO relationships have in the past proven to be difficult. Without the involvement of local communities and CSOs, implementation of national adaptation strategies will fail at a local level.

Which way for climate change adaptation in Southern Africa?

Southern African governments need to provide leadership on adaptation to ensure that it gains the prominence it deserves on the UNFCCC negotiations. The livelihoods of rural communities are at risk due to climate change and therefore pro-poor adaptation is an urgent matter for the region.

If adaptation is not addressed within the negotiations of the UNFCCC there will be little funding committed towards it. As noted by Soren et al (2008), development cooperation provides practical support to increase adaptive capacity of partner countries and to reduce the vulnerability of exposed people and ecosystems. Development cooperation can assist in:

- ❑ Regional and local climate impacts assessment;
- ❑ Assessment of social and economic vulnerabilities of a countries population;
- ❑ Setting priorities for action based on impact

and vulnerability assessments working with governments, NGOs and civil society;

- ❑ Implementation of priority measures in specific sectors; and
- ❑ Mainstreaming climate change in all areas of decision making processes and national development planning.

However, the above interventions are often guided by and respond to the priorities set by national governments. Therefore if the national development agenda does not prioritise adaptation funding will not follow. This translates to allocation of internal funds at a national level and setting of national development priorities. A commitment of local resources to address climate change adaptation together with funding from development partners and other climate change sources is important. Adaptation needs to be mainstreamed into the regional and national development frameworks. While sector-based adaptation strategies are critical, a more integrated approach would be more relevant for the challenges that communities are facing at a local level.

Furthermore, the debates on adaptation at the UNFCCC negotiations need to be nuanced by real issues on the ground; the challenges that local communities are facing as a result of climate change impacts. The involvement of civil society and local researchers in assessing vulnerabilities in-depth, developing adaptation strategies and raising awareness about the impacts of climate change is therefore critical. Governments need to forge a closer working relationship with civil society and improve broader participation and engagement in the design of appropriate responses. Civil society is better placed to reach out to the vulnerable groups and upscale local level experiences for the benefit of effective national policies.

Biography

Leonie Joubert

Leonie is a freelance science journalist, columnist and author. She received an Honorary 2007 *Sunday Times* Alan Paton Non-Fiction Award, was the 2007 Ruth First Fellow, and was listed in the *Mail & Guardian's* 200 Young South Africans You Must Take To Lunch (2008). She has been published widely, including in the *Sunday Independent*, *Sunday Argus*, *Sunday Tribune*, *African Decisions*, *Africa Geographic*, *Getaway*, *Progress*, *EarthYear*, *Farmer's Weekly*, *Engineering News*, *Cape Times*, *SA4x4*, *Xplore* and the German daily *Sueddeutsche Zeitung*, amongst others. She was a regular columnist for the *Mail & Guardian*.



War mongering and weather making

Climate change is equivalent to unleashing “low intensity biological or chemical warfare” on the developing world. That’s how Namibian ambassador to the United Nations (UN) Kaire Mbuende described the consequences of changes which greenhouse gas (GHG) emissions are bringing to global weather patterns. He was speaking at the first ever hearing on climate change before the UN’s Security Council in April 2007, and his choice of words reflected a critical shift in the way the world was viewing this modern environmental crisis.

Earlier that year Ugandan president Yoweri Museveni told the African Union that he regarded climate change an “act of aggression by the developed world against the developing”. American economist and writer Paul Krugman called it an “existential threat to the United States”. UN Secretary General, Ban Ki-Moon, called it “the pre-eminent geopolitical and economic issue of the 21st century. It rewrites the global equation for development, peace and security.”

International Institute for Sustainable Development (IISD) programme manager Oli Brown said, during an interview in October, that strong language like this represented a significant milestone in society’s response to climate change.

In the 1980s, climate change was seen as an environmental issue. This shifted as awareness grew over the realisation that climate change was the consequence of global energy use, and therefore responding to it had wide reaching economic implications. But since then, concerns have been

ratcheted up in urgency as global leaders have become increasingly aware that climate change has national and regional security implications as its impacts threaten to push communities into conflict over resources, bringing about large-scale distressed migration, and undermining weak states.

“A failing climate means more failing states,” United Kingdom Foreign Secretary Margaret Beckett told a meeting of European Union leaders in Finland in 2006.

Indeed, this new way of framing the issue “takes on the language of a military threat assessment” for the first time, said Brown.

“When you start talking about climate change in terms of chemical warfare or as a threat multiplier or as weather of mass destruction, it really changes the way we view (global warming).”

Earlier this year, delegates at the Heinrich Böll Foundation’s (HBF’s) *Climate change, resources, migration: old and new sources of conflict* conference in Cape Town, South Africa, heard how this deliberate escalation of climate change rhetoric, based on concerns around national security, was politically motivated. It is a deliberate effort to inject a greater sense of urgency into global attempts to reduce GHG emissions and avoid dangerous climate change.

Brown, who attended the conference, said then that if “environment ministers talk about climate change, it’s forgotten. If energy ministers or trade ministers talk about it, it gets some attention. But the people who talk about security issues are prime

ministers and presidents. Talking about climate change in security terms raises it to the realm of high politics.”

But as global leaders rally, ahead of the negotiations scheduled to take place in Copenhagen under the ambit of the UN Framework Convention on Climate Change (UNFCCC) this December, the question has emerged from some quarters: if climate-related conflict poses such a threat to the stability of nations and communities, why does it not feature on the agenda at these very negotiations?

The big amplifier

The conflict between farmers and nomadic herders in the west Sudanese province of Darfur looks, on the surface, to be a purely ethnic-centred conflict which has manifested itself in a slow victimisation of black Africans by government-supported, Arab *janjawid* militias. Over 400 000 people have died since the civil war first sparked in 2003, along with extraordinary violence and rape of women. It's been called genocide in slow motion.

But what underlies the ongoing unrest is a struggle for resources. And the Darfur case illustrates well why the security implications of climate change are now driving the global conversation around the issue: because climate change amplifies existing stresses – be they environmental, political or socio-economic – in such a way that some may well spill over into out-and-out conflict.

The Darfur crisis started with the severe droughts that swept through the Horn of Africa in the 1970s and 1980s. The swelling population's need for timber and grazing, along with the relentless pressure of drought, began to denude much of northern Darfur, causing the natural veld to yield to man-made desertification. Nomadic Arab northerners began pressing their herds south in search of grazing and water. In the past, they would pass through communities of settled black African farmers without conflict. Now they found themselves competing for increasingly scarce resources with farmers, some even settling down permanently alongside black farmers.

African farmers began protesting the loss of their land to “outsiders”, and the mostly Arab administration in Khartoum came down in support of the side of Arab nomads. That, along with other pre-existing regional security threats (for instance, that the region had been deliberately militarised in the 1980s when the government gave the Baqqara tribe in southern Darfur firearms to protect themselves against the Sudan People's Liberation Army), erupted in what

came to look like ethnic-based civil war. But it was drought and the spreading desert that pushed these communities into proximity and into competition for livelihoods. Ethnicity became a fault line along which the violence broke out.

This case led the UN, in November 2006, to ask whether desertification was underscoring other hostile clashes in parts of Sudan, Ethiopia and Kenya.

“Is Darfur the first climate-change conflict?” asked the Christian Science Monitor's Scott Baldauf at the time. “The conflict between herders and farmers in Sudan's Darfur region, where farm and grazing lands are being lost to desert, may be a harbinger of the future conflicts.”

Rising temperatures across the continent will drive changes in rainfall patterns, and bring about more severe and intense extreme weather events (such as droughts, heat waves, lightning events, conditions favourable for fires, intense rainfall events and, hence, flooding). As a result, climate change is expected to be a powerful amplifier for existing environmental crises: water shortages, failing food crops and rising food prices, desertification, land degradation, and fisheries depletion, to name a few.

Trusha Reddy, corruption and governance researcher at South Africa's Institute for Security Studies (ISS), told the HBF's *Climate change, resources, migration* conference that converging crises such as failing energy supply, peak oil, food and water-related crises, increased pressure for declining natural resources and the global economic recession were all existing stresses which now threaten to intersect with, and be amplified by, changes in regional weather patterns as a result of global GHG emissions.

However environmental pressures, amplified by climate change, are not the sole possible source of conflict – other factors like poverty, local governance, institutional capacity and community leadership also play into whether or not such stresses erupt into violence.

A UN General Assembly report from September 2009 states that Africa is “often seen as a continent where climate change could potentially intensify or trigger conflict... (because of its) reliance on climate-dependent sectors (such as rain-fed agriculture), recent ethnic and political conflict, and fragile states.”

Oli Brown and Alec Crawford (also with the IISD) write that this vulnerability is a consequence of how climate change interacts with “socio-economic challenges like endemic poverty; poor governance; limited access to capital and global markets; ecosystem

degradation; complex disasters and conflicts; and urbanization”.

The UN Security Council recently laid out five areas in which climate change is expected to be a “threat multiplier”:

- ❑ Pressure on food security and human health, and exposure to extreme weather events will increase communities’ vulnerability;
- ❑ It could slow, or even reverse development advances made in emerging communities in recent decades;
- ❑ Competition over resources, and distressed migration in response to environmental crisis, could spark regional conflict;
- ❑ The “implications for rights, security and sovereignty of the loss of statehood” could result as territories disappear; and
- ❑ International conflict might occur as people struggle over “shared or undemarkated (*sic*) international resources”.

“The often thin line between security and insecurity,” write Brown and Crawford, “will be determined by three broad factors: first, the extent and speed of climate change (structural conditions); second, the ability of countries and communities to adapt to those changes (institutional capacity); and third, how individuals, communities and governments react to the challenges that arise (responsiveness).”

Global pollution, African outcome

Africa’s average temperature is already showing signs of climbing – by about half a degree during the previous century, but with regional differences – and according to the UNFCCC’s Intergovernmental Panel on Climate Change (IPCC), this will continue climbing at a rate of one and a half times the global warming trend.

By 2100, the continent could warm, on average, by as much as 6 °C, but a 3– 4°C climb is the middle-of-the-road projection. Drier subtropical areas will warm more than wetter tropical areas.

Most significantly, rising temperatures mean changes in rainfall – not just in how much rain falls (some parts of the continent will get wetter, others drier), but when it falls, and how predictable its arrival is. Projecting exactly how rainfall changes, is the most difficult aspect of climate-change modelling, and there are no precise forecasts. However, eastern and tropical Africa may see a slight increase in rainfall during the next century. Meanwhile the

Mediterranean coast, and the extreme southwest of the continent, will see dangerous levels of drying, according to the IPCC. Meanwhile the World Bank notes that “sub-Saharan Africa suffers from natural fragility (two-thirds of its surface area is desert or dry land) and high exposure to droughts and floods, which are forecast to increase with further climate change”.

Overall, extreme weather events such as droughts, floods and heatwaves will occur with greater frequency and intensity. Drying out of air and soils will have significant implications for plant health. The sea level will creep up by as much as 0.6 m in the next century, and flat coastal areas with high population densities will be most vulnerable to flooding, salt intrusion into ground water, and loss of coastal and delta homes, livelihoods and agriculture. High-risk coastal areas include the Nile Delta, the coastline between the Niger Delta and Accra, parts of Ghana’s coastal belt, and parts of the Madagascan and Mozambican coastlines.

The footprint of rain-fed cereal crops is expected to shrink. Within the next century, the IPCC anticipates that arid or semi-arid land will encroach by another 5–8%, amounting to as much as 60–90 million hectares by the 2080s. By this time, “wheat production is likely to disappear from Africa”. By as soon as 2020, some African countries may see a decline in yields of “rain-fed agriculture... by up to 50%”, according to the UN General Assembly report, which states that “food security is likely to suffer and the risk of hunger to increase. Poor people in developing countries are particularly vulnerable given their dependence on agriculture for their livelihoods, often farming marginal lands. Among them, women, children, elderly and disabled as well as indigenous minorities are disproportionately affected since they usually represent the most economically and socially marginalised groupings.”

According to the UN, Africa’s vulnerability to a disrupted climate is heightened because of a lack of adaptive capacity (technologies, institutions and financial resources) and it also has the highest number of Least Developed Countries (LDCs) of any continent. Even though certain practices and indigenous knowledge skills have been used by some African communities in the past to respond effectively to environmental change and crisis (migration is a typical example of successful adaptation on the continent), communities may not be able to keep pace with the speed with which these changes happen.

Conflict may erupt over water as available resources becoming increasingly stressed, overused, polluted and unreliable (due to unpredictable rain patterns). Egyptian President Anwar Sadat said, during the signing of the 1979 peace treaty with Israel, that the next time it went to war, it would be over water. Declining crop yields aren't, in themselves, necessarily a trigger for conflict – but when they result in rising food prices, and come together with a growing divide between rich and poor, or existing ethnic or socio-political tensions, flashpoints might arise.

All these factors could push communities to migrate in order to escape hardship. The International Organization for Migration (IOM) predicts that by 2050, some 200 million people around the world may be pushed to move as climate change amplifies the existing causes of migration, like environmental stress and conflict over resources.

Greenpeace puts forward a much bigger number: by the middle of this century, one in nine people will be forced to migrate due to climate change (one billion of the expected nine billion-strong human population).

Inevitably, these shifts will redraw the map of the continent as sea-level rise reshapes coastlines, and changes in long-term weather patterns modify disease prevalence, change where rain falls, and alter where people can find water, grow food and live. When previously separate groups find themselves in similar proximity and struggling over increasingly over-stretched resources, in a situation with weak institutional structures, this could also result in conflict.

Conflict or cooperation?

There are some thinkers who challenge these notions that climate change augmented stresses will lead inevitably to conflict. A World Development Report (WDR) from the World Bank points out that “the link between violent conflict and resource scarcity (water wars) or degradation has rarely been substantiated (poverty and dysfunctional institutions have more explanatory power).”

There haven't been any water wars in recent centuries, the Worldwatch Institute wrote in 2005, saying that because water is so critical to health and survival, historically it has prevented wars rather than sparked them.

“International water disputes – even among fierce enemies – are resolved peacefully, even as conflicts erupt over other issues.”

This view is supported by the UN General Assembly, which points out how scarcity of shared

resources like water has given greater incentive for “trans-boundary cooperation”.

With international efforts to reduce GHG emissions reaching a peak at Copenhagen this year, the opportunity arises for even greater levels of international cooperation around a rigorous framework for emissions reduction. But there are also opportunities to cooperate around funding for developing countries and technology transfer as nations work to find solutions to both emissions reduction and to adapting to life in an altered climate.

“Tackling the immense and multidimensional challenge of climate change demands extraordinary ingenuity and cooperation,” states the World Bank's WDR, “for example, through pooling efforts to improve the production of climate information and its broad availability and through sharing best practices to cope with the changing and more variable climate... a ‘climate-smart’ world is possible in our time – yet effecting such a transformation requires us to act now, act together, and act differently.”

Climate conflict and the Copenhagen negotiations

Given the mounting sense of urgency about the intersection between climate change and security-related issues, why are they not on the agenda at the UNFCCC's climate negotiations taking place in Copenhagen this year?

IISD's Oli Brown said these matters aren't part of the negotiations, and that they shouldn't be.

“(These) negotiations are around how we produce and use energy, how many GHGs we produce. They're not around security issues,” he maintained.

“The UNFCCC doesn't have a mandate to deal with security. Obviously security's the central responsibility of the UN's system but there are already established organs of the UN that deal with security, specifically the UN Security Council. There are also concerns about the UNFCCC overstepping its mandate.”

It's sufficient, he said, that concerns over climate-related conflict inform all the rhetoric around climate change, and add a sense of urgency to the negotiations themselves.

“Whenever anyone talks about the need for action on climate change they preface it with a reference to the fact that it has security implications.”

The negotiations are about drawing up an international agreement that sets out specific ways in which countries can begin reducing GHGs (so-called “mitigation”, required by developed countries), and how

to help developing world communities to respond to and survive climate change-related impacts (so-called “adaptation”).

International security is also a highly contentious issue – because it means different things to different communities.

“One person’s security is another person’s danger. Israeli security doesn’t equate to Palestinian security, for example. So by adding that into the negotiations, if there was some way of doing so, and I’m not sure there is, it would risk making the negotiations even more contentious. There’s already more heat than light in the negotiations as it is.”

Another way of framing the issue, though, is to consider that by addressing adaptation-related issues, the negotiations are already targeting the root causes of conflict. Bolstering food and water security in a community might buffer it against climatic extremes, or planting mangroves along a vulnerable coastline might save a community from storm surges exacerbated by sea level rise.

Once the causes are addressed, it’s up to UN and other international bodies to manage conflicts. The African Union and Arab League, for example, are already mandated and organised in such a way as to include elements of conflict intervention, peace building and conflict management in their operations.

However, even as mitigation and adaptation responses emerge down the line, they too might be a possible source of conflict between communities and nations in which international peacekeepers may be required to mediate.

“Take an example: Country A gets funding to build a dam that stops water flowing downhill to Country B. That’s an adaption project for Country A but it could raise tensions between the neighbours,” said Brown.

Something similar has occurred between Burkina Faso and Ghana, resulting in mounting tension between formerly strong allies.

“Burkina Faso has built a large dam, the Bagré, across the Volta River. In 2007 there were heavy rains and the Burkinabes opened the dam quickly. It caused serious flooding in northern Ghana. There’s some distrust now between countries that have a history of relatively good relations, in terms of the control that the Burkinabes now have over the water supply coming into northern Ghana. That’s what a dam does, it creates a tap that you can turn on or off.”

With the UNFCCC mandated to deal with reducing GHG emissions, and other structures within the UN tasked with handling conflict and its fallout (the Security Council, for instance), there doesn’t seem to be the need to create a new UN body, or retool an existing one, to deal specifically with climate change-related conflict.

However, the matter of environmental protection – underlying so many of the problems in Africa – needs far greater priority within the international community.

“The position of the environment in the international system is very weak,” Brown argued, “it’s always been an add-on, a bolt-on, it’s something that’s nice if we can manage it if we have enough funds, or time or attention. It’s never seen as a core concern of the international community.”

“That’s why the UN Environment Programme (UNEP) is a programme, not an agency. It doesn’t have the same status as the UN Refugee Agency (UNHCR), for example. Environmental issues are core to human wellbeing and we need an institutional champion for those at an international level. UNEP just don’t have the position, funds, profile or clout to do that.”

So while the UNFCCC tackles issues of emissions reduction and adaptation, and the Security Council handles conflict, perhaps it is time for the UN to fashion a stronger, more robust organisation to deal with environmental crisis, in the knowledge of how the fallout of climate change will undermine human health, wellbeing and security.

Perspectives is published by the HBS Southern Africa Office in Cape Town.

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