

The climate security divide: Bridging human and national security in Africa

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The climate divide

Global climate change caused by the inexorable build-up of greenhouse gases in the earth's atmosphere is already disrupting ecosystems and causing about 150 000 additional deaths per year (Kovats & Haines 2005). Unless climate change is reversed, the public health burdens of climate change are likely to almost double by 2020 (ibid). Average global warming of 2 °C threatens millions of people with an increased risk of hunger, malaria, flooding and water shortages (Greenpeace 2007). In Africa these problems are likely to be

particularly severe. Climate change has already started to disrupt state capacity to generate wealth, to decrease the gross national product (GDP) and to affect human, and ultimately national, security and will continue to do so to an ever-increasing extent.

The African continent is characterised by a diverse range of climates: the wet tropical, dry tropical (many countries fall in this category), and alternating wet and dry climates, with the latter being the most common. Several factors make Africa more vulnerable to climate change processes: among these are volatile trade regimes, poor or lack of governance, widespread poverty, recurrent droughts, inequitable land distribution, and high dependence on rain-fed agriculture. This is exacerbated by an absence of sustained investment coupled with high population growth rates. The resulting pressures on the environment and prevalent poverty that hinders its adaptation capabilities make Africa the continent most susceptible to even small changes in climate (IPCC 2007).

Although Africa is responsible for only about 3,8 per cent of greenhouse gas emissions, there are three factors that make it one of the continents which is the most vulnerable to climate change. Because of its position on the globe, Africa already has a warm climate and is exposed to inconsistency in rainfall, prevalence of poor soils, and flood plains. Second, most economies are dependent on sectors that are susceptible to climate variations; and third and perhaps most importantly, the lack of good governance, widespread poverty, poor economic and social infrastructure, conflicts, and limited human, institutional and financial capacities mean that as a continent, it is least able to cope with the effects of climate change (IPCC 2007).

African states are largely dependent on economic sectors that are particularly susceptible to climate change, such as agriculture, fisheries, forestry and tourism. There are five areas in particular that represent security risks for Africa and can potentially undermine human and national security, namely its ecosystems, water supply, agriculture and food industries, coastal systems and public health (IPCC 2007). Disruptions of the natural patterns of any of these areas, but particularly the first three, may generate and intensify conflict. Climate change threatens sustainable development in Africa (ECOSOC 2008) and with regard to the five risk areas many, if not most, of the countries that would be most severely affected are in Africa, and of these a large number are in sub-Saharan Africa. The biggest concern with regard to each of the risk factors is that disruptions of the already fragile systems and sectors would have devastating consequences for national security and the wealth generation capability of the countries concerned, which would in turn threaten livelihoods and severely affect human security.

- *Ecosystems:* Forests and aquifers are threatened by population growth and overuse of such resources. As a result, loss of biodiversity is noticeable as is depletion of land cover due to desertification which is encroaching on previously fertile lands. A rise in temperature of more than 1 °C would cause significant changes in forest cover;

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species distribution, composition, and migration patterns; and biodiversity in general with loss of plant and animal species that are unable to adapt to warmer conditions. Particularly the regions around the Sahara desert and in eastern and southern Africa, already under threat from land degradation and desertification, are vulnerable. In conflict regions such as the eastern part of the Democratic Republic of Congo, the exploitation of minerals and other natural wealth contributes to pressures on the environment (IPCC 2007).

- *Water:* A third of the world's population lives in the 19 countries currently classified as water-stressed. If the rainfall in the Sahel and southern Africa decreases and pollution of the water basins continues, it will aggravate the situation. For example, the melting of the glacier on Mount Kilimanjaro, where an estimated 82 per cent of the ice cap that it had in 1912 has melted, means that Kilimanjaro's glacier could disappear in the next 15 years (ECOSOC 2008). It goes without saying that this would have a negative effect on Tanzania's economy, particularly on its production of coffee and bananas, as well as tourism, and severely reduce the capacity of the country to generate wealth.
- *Agriculture and food industries:* Agriculture represents 20 to 30 per cent of the GDP in sub-Saharan Africa and 55 per cent of the total value of African exports. Between 60 and 90 per cent of the total labour force are employed in the agricultural sectors of countries in sub-Saharan Africa (ECOSOC 2008). However, African farming is dependent upon seasonal rainfall patterns, which means that droughts or floods could affect the availability of food. The result of such food insecurity is likely to be conflict, both within individual countries and between different countries in Africa.
- *Coastal systems:* Countries on the west coast of Africa that will be affected by rising sea levels include Senegal, Gambia, Sierra Leone, Nigeria, Cameroon, Gabon and Angola. Most of these countries have major and rapidly expanding coastal cities and this zone is usually pummelled by storms that increase the risk of erosion and inundation. The eastern coast of Africa will also be affected, but to a lesser extent. The area with the highest risk of inundation is a considerable portion of the northern Nile Delta, which will have substantial implications for agricultural and urban areas as well as a devastating effect on the Egyptian economy. Adaptation is possible but it would come at a great cost for each country's GDP (ECOSOC 2008). In countries that rely on agriculture in coastal zones, such as Kenya (mangoes, cashew nuts, and coconuts), Benin (coconuts and palm oil), Guinea (rice) and Nigeria, where coastal agricultural land accounts for about 75 per cent of total, rising sea levels will impact negatively on food supplies, putting at risk the lives of significant parts of their populations (ECOSOC 2008:4).
- *Public health:* Higher temperatures, changes in natural seasonality and a loss of biodiversity because of climate change impinging upon delicate ecosystems and upsetting the natural balance will increase the risk of the occurrence of vector-borne

diseases and lead to greater susceptibility to disease because of a poorer nutritional status. Vector-borne diseases such as yellow and dengue fever could be a leading cause of increases in the mortality rate which will have sweeping economic consequences, too. Most African countries do not have the capacity to tackle such health challenges and will be unable to attain health security without comprehensive multilateral cooperation and support. Management of pollution, sanitation, waste disposal and water supplies – all of which have a bearing on public health – as well as the provision of adequate infrastructure in urban areas could become more difficult and costly if the climate changes dramatically (ECOSOC 2008).

These influences combined would have a number of implications from a security point of view. Security has traditionally been viewed in terms of threats to the state territory and the population by a clearly defined enemy, which could be dealt with by having strong armed forces. Climate change effects have redefined this traditional understanding of security. The literature in international relations has been keeping pace with these changes since the end of the Cold War, by widening the scope of security. However, most states still prepare for traditional wars that are quite unlikely to occur: wars of annexation of territory and defensive postures. If sea levels do rise, however, huge portions of territories will be lost with grave accompanying losses in the GDP of those states. Territories in this century will not be lost by wars, but by forces of nature. States have only quite recently started to realise this and it will probably take many years before military postures are adapted in the quest for security.

Bridging national and human security

From the above it should be clear that climate change in the 21st century will link aspects that were previously seen as separate issues, namely national and human security. Climate change is the overarching peril to the security of nations, making all the other threats more likely, or exacerbating them. It will also come to constitute, in the coming years, a threat to people, especially those living in the states most likely to be seriously affected.

After the end of the Cold War, the concept of security broadened and deepened beyond its traditional focus on states and military defence. It grew to encompass a range of potential threats from economic and environmental issues to illicit arms trafficking and energy security. 'Deepening security' also includes the human aspect, namely the security of communities and individuals. Therefore security can no longer be defined exclusively in terms of the ability of the state to defend its territory and its principal values against military threats. The end of the post-Cold War era, too, brought sweeping changes, including the disintegration of the Soviet Union, the Gulf War, many devastating intrastate conflicts (in Rwanda and Bosnia, for example) and the rise of China as a world power. Most importantly, these changes extended to the emergence

of entirely new categories of security challenges and threats, such as environmental degradation (climate change), resource scarcities, transnational criminal activities and human migrations, resulting in a profound transformation in the security landscape (for analysis and criticism of the concept of human security, see Thomas & Wilkin 1999; Paris 2001:87–102).

The costs of Hurricane Katrina in the United States – a major natural disaster in one of the most powerful countries in the world – is a telling example of the financial havoc climate-related catastrophes can wreak. Insurance industry experts are refining their estimates and agree losses will far exceed US\$100 billion, making Katrina the United States' costliest natural disaster. Furthermore, more than 500 000 jobs were lost as a result of hurricanes Katrina and Rita (Wolk 2005). Because of Katrina and other climate-related disasters, states may be forced to realise that expenditure on costly military hardware, vessels, combat helicopters, tanks and armoury will not provide their populations with the security they have been promised.

Five years after September 2001, the US made provision for a total of US\$432 billion in annual and supplemental appropriations under the heading 'global war on terror'. This increase in US military spending has played a substantial part in budget deficits and government debt. Similarly, the overall past and future costs until year 2016 to the US of the war in Iraq have been estimated at US\$2 267 billion. This sum could have been employed to alleviate the threats and risks associated with climate change processes and challenges of adaptation to ongoing phenomena and mitigation of risks not only to the US itself, but also for transfer technology and capacity to Africa, the continent likely to be the worst hit.

Military expenditure worldwide in 2006 was estimated at US\$1 204 billion, a 3,5 per cent increase in real terms since 2005 and a 37 per cent increase over the ten-year period since 1997. Average spending per capita increased from US\$173 in 2005 to US\$184 in 2006. The ratio of military spending to social spending was found to be highest in those countries with the lowest per capita incomes (Stålenheim et al 2007). Based on a percentage of GDP spent on defence, some African countries surpassed even the US, with Eritrea having the third highest percentage worldwide at 9,2 per cent, followed by Burundi which is 12th on the list with 6,4 per cent, Zimbabwe (15th with 5,9 per cent), Botswana (23rd with 4 per cent) and Ethiopia (26th with 3,9 per cent). In comparison, the US is 28th on the list and spends 3,8 per cent of its GDP on defence (*The Economist* 2007).

The current defence expenditure could actually jeopardise security, for it diverts money to useless items that used to be part of statecraft and security but serve little purpose now. Improving security should entail spending based on a combination and multilayered strategy to achieve sustainable development or 'sustainable security' (Garcia

forthcoming), for example reducing reliance on highly polluting forms of energy such as coal and oil by finding alternative sources of energy.

In the world today, defence should focus less on military threats, to be countered by expenditure on military hardware, and more on the threats posed by climate changes which will place populations at risk and could threaten the very survival of the states and their people. The 2007 UNDP Human Development Report summarised the risks that threatened human survival if no action was taken, as follows: an additional 600 million people at risk of malnutrition because of the collapse of agricultural systems, especially in sub-Saharan Africa; an additional 1,8 billion people at risk from water scarcity by 2080; up to 333 million people living in coastal regions could be displaced by tropical storms and flooding; and hundreds of millions of people could be at increased risk from diseases such as malaria. In Africa between 75 and 250 million people could be exposed to increased water stress due to climate change and yields from rain-fed agriculture could be reduced by up to 50 per cent by 2020 (UNDP 2007).

Climate security and conflict

To truly understand the crisis in Darfur – and it has been profoundly misunderstood – you need to look back to the mid-1980s, before the violence between African and Arab began to simmer. Alex de Waal, now a program director at the Social Science Research Council, was there at that time, as a doctoral candidate doing anthropological fieldwork. Earlier this year, he told me a story that, he says, keeps coming back to him. De Waal was travelling through the dry scrub of Darfur, studying indigenous reactions to the drought that gripped the region. In a herders' camp near the desert's border, he met with a bedridden and nearly blind Arab sheikh named Hilal Abdalla, who said he was noticing things he had never seen before: Sand blew into fertile land, and the rare rain washed away alluvial soil. Farmers who had once hosted his tribe and his camels were now blocking their migration; the land could no longer support both herder and farmer. Many tribesmen had lost their stock and scratched at millet farming on marginal plots. The God-given order was broken, the sheikh said, and he feared the future. 'The way the world was set up since time immemorial was being disturbed,' recalled de Waal. 'And it was bewildering, depressing. And the consequences were terrible' (Faris 2007).

A recent long-term study undertaken by the United Nations Environment Programme revealed strong links between climate change processes and the crisis in Darfur. Environmental competition creates a volatile situation as a result of competition for resources such as oil, gas reserves, water from the Nile River and timber, as well as

land use. These are substantive causal elements in the initiation and persistence of the conflict in Sudan. The study points to 'a very strong link between land degradation, desertification and conflict in Darfur. Northern Darfur – where exponential population growth and related environmental stress have created the conditions for conflicts to be triggered and sustained by political, tribal or ethnic differences – can be considered a tragic example of the social breakdown that can result from ecological collapse. Long-term peace in the region will not be possible unless these underlying and closely linked environmental and livelihood issues are resolved' (UNEP 2007).

The encroaching and expanding Sahara results in a diminishing operational territory for farmers and rangers. An estimated 50 to 200 kilometres southward advance of the boundary between semi-desert and desert has occurred since 1930s and this is likely to continue, with a concomitant decrease in food production capabilities. Furthermore, a decline in precipitation due to regional climate change acted as a stressor on pastoral societies in Darfur and Kordofan, too, which contributed to conflict (UNEP 2007). There is general consensus that the conflict in Darfur is partly associated with constrained and disturbed natural migration patterns of herders (ECOSOC 2008).

There are several river basins – the Congo, Zambezi, Okavango, Volta, Niger and Nile – that are shared by a number of countries (Pumphrey 2008). The water equation in these regions is complicated by numerous inter- and intrastate conflicts, lack of cooperative regimes for water sharing, or antiquated international laws, as in the case of the Nile in terms of which Egypt receives the bulk of the resources.

The effects of climate change could lead to migration, which could in turn result in conflict in the competition for scarce resources such as water and land. Since the 1970s, 35 million people have been affected by drought. Lake Chad has lost over 50 per cent of its water between 1973 and 2002. Several rivers only run intermittently and are dry during the summer months. Even major rivers such as the Nile, Niger and Zambezi have declining water levels, and the river flow in the Nile region will decrease by 75 per cent by 2100, which will have a devastating effect on irrigation practices. By 2020, between 75 and 250 million people in Africa would be exposed to increased water stress and by 2050 the area of sub-Saharan Africa area which is water-stressed will have increased by 29 per cent.

Climate change will work as a threat multiplier (Military Advisory Board 2007:7). From a human security point of view, it is likely to aggravate already precarious living conditions in Africa. From a national security point of view, an inability to pursue wealth will lead to instability and ultimately failed states, which will in turn be breeding grounds for conflicts over resources and large population movements. Climate change has displaced two pillars of traditional security thinking, the first being that protection against conventional military threats is the primary obligation and the second that these threats will involve one single enemy or entity (Military Advisory Board 2007).

This is substantiated by conflicts not only in Darfur, but also in Ethiopia, Eritrea, Somalia, Angola, Nigeria, Cameroon, Western Sahara and Rwanda, where the conflicts can at least in part be ascribed to environmental causes. Conflicts are often triggered by loss or difficulty to sustain traditional livelihoods (Military Advisory Board 2007; Charlery de la Masseliere 1996; Persival & Dixon 1996), upholding the argument that climate change will increase the chances of conflict because it will intensify resource wars (Klare 2007:355–361). A study entitled *Africa's missing billions* represents the first-ever estimate on the overall cost of conflict on GDPs across the continent, and according to Oxfam International, IANSA and Saferworld (2006) amounted to approximately US\$300 billion between 1990 and 2005. Conflicts weaken the African economy by 15 per cent per annum, which translates to an average of US\$18 billion lost annually as a result of conflict.

Links between human and national security can be amplified by three sets of dynamics. First, more than 30 per cent of the world's refugees and internally displaced people live in Africa. The food shortages that already affect 25 African countries and 200 million people will exacerbate the situation. Second, the rise of sea levels may cause large movements of people because 25 per cent of the African population live within 100 kilometers of the coast and six of Africa's ten largest cities are on the coast. The two cyclones that hit Mozambique in 2000, which displaced 500 000 people with 950 000 people becoming dependent on humanitarian assistance, illustrate the vulnerability of coastal populations. Third, health challenges associated with climate change will become a major burden for several countries, because of epidemics, especially of malaria and dengue fever, while cholera may occur in areas that are flooded (Military Advisory Board 2007:23).

In a study by Hendrix and Glaser (2007:695–715) the relationship between climate change processes and the onset of conflict was examined from two perspectives. The authors first estimated the impact of both long-term climate trends and short-term climatic variance (operationalised as change in annual rainfall) on civil conflict onset in sub-Saharan Africa. They found that more temperate climates and fertile areas are associated with a decreased likelihood of conflict and conversely that a decrease in rainfall is associated with an increased likelihood of conflict during the next year. Second, they focused on strategies for avoiding conflict for the period 1980–2059 and concluded that the objective should be to break dependence of subsistence agriculturalists on rainfall as a source of crop water, as this resource is not predicted to increase in the future.

Security stressors

The challenge for Africa is to reduce the convergence of multiple stressors such as the impact of widespread health pandemics like HIV/Aids and poor governance, as well as conflict and the excessive availability and proliferation of arms (Fields 2005:A534–A537). As a result of the convergence of the stressors like these, climate change has an even

bigger security impact in the region, because it is more difficult to put in place strategies for adaptation and it is costly to pay for mitigation. If a state is already weakened by such other factors, it will in all likelihood have less capacity to cope with the consequences of a climate-related disaster. In the previous section, I dealt with the relationship between conflict and climate change. In this part I will briefly examine the HIV/Aids pandemic, poor governance and the availability of arms as key security stressors contributing to increased volatility of the security scenario in Africa when combined with climate change.

In 2006, almost two thirds of all persons infected with HIV, totalling 24,7 million, lived in sub-Saharan Africa. An estimated 2,8 million adults and children became infected with HIV in 2006, more than in all other regions of the world combined. The 2,1 million Aids deaths in sub-Saharan Africa represent 72 per cent of global Aids deaths. Southern Africa is the focal point of the global HIV epidemic, with 32 per cent of people with HIV living in this sub-region and 34 per cent of Aids deaths globally occurring there (UNAIDS/WHO AIDS 2006).

The full exploration of the security implications and wider impacts of HIV/Aids will probably take many years. Only after several decades did the international community start to take comprehensive action and recognise the wider implications (Garrett 2005:51–64). Even in 2000, while millions were dying, ‘action’ by the Security Council was limited to discussing the matter. When the pandemic started to take its toll in the countries in sub-Saharan Africa, few acknowledged that there was a link between HIV/Aids and national security. In addition, the distinction between national and international health problems is blurred in an increasingly globalised world.

A number of authors have started to examine the link between HIV/Aids pandemic in sub-Saharan Africa and insecurity and how the securitisation of this issue took place in the context of the human security situation in the sub-region (O’Manique 2005), while others have investigated the spread of HIV/Aids and the impact this has had and is still having on military and peacekeeping operations as well as on social stability (Ban 2003). From his examination of the HIV/Aids pandemic in South Africa, Hudson (2005) contends that making a distinction between human and national security is invalid because the pandemic affects such large portions of society.

As far back as 2003 observers such as Brundtland (2003) asserted that public health issues are an underlying determinant of development, security and international stability. In the light of the devastating effect of HIV/Aids in Africa, the perils of neglecting public health are evident in the weakened fabric of societies.

Clearly, few countries in the sub-Saharan region of the continent fare well on the provision of security. The lack of security also extends to the issue of small arms, with

Africa being notorious for the proliferation and availability of arms. The general attitude is that if you have weapons, you will have more power over scarce resources and will be better able to maintain a livelihood (Boot 2008). However, the presence of arms weakens fragile post-conflict situations, jeopardises peace, and in general increases the security threats to communities. There is a blurred line between conflict and crime in most conflict situations in Africa. Arms are easy to access and widespread violations occur of UN Security Council embargoes in the Great Lakes region and southern Africa. This was particularly prevalent in the 1990s but still continues at present. Enforcement poses many challenges due to lack of capacity and porous borders (Lamb 2007). Child soldiers is a prime security problem which disrupts the normal fabric of societies (Gislesen 2007), while armed groups also contribute to the indistinct line between conflict and crime (Small Arms Survey 2006). Both these groups pose major problems for disarmament, demobilisation and reintegration.

Africa itself has very little capacity to produce arms, so the problem is mainly in-country and in-region circulation of arms (Garcia 2006). This problem should be dealt with by strengthening legal controls on arms exports to Africa and between the countries on the continent, reducing arms brokering and trafficking, and building capacity to address the availability and misuse of weapons within Africa (Small Arms Survey 2005).

The role of the weapons trade has often been ignored in the study of conflict, particularly in Africa. Arms transfers may serve as to predict where conflict is likely to break out. Therefore multilateral and individual state restraints on suppliers and recipients are essential to break the causal link between arms and conflict in sub-Saharan Africa (Craft & Smaldone 2002:693–710). This would benefit human security throughout the region.

In Africa, arms as a security stressor affect two main areas, namely peace and security, and governance. Obviously, the most direct impact of the spread of small arms is that it has a negative effect on the curtailment of conflict in the pursuit of peace and security. Small arms have been used in all African conflicts outlined above. Furthermore the use of arms by dissenting groups can derail and upset the establishment of legitimate governance in post-election situations where fragile democracies are being established. In the process it disrupts the provision of a secure environment where sustainable economic activities can flourish. Some countries in Africa have a wealth of natural resources, but the conflict sometimes fuelled by their exploitation is deleterious to governance. Groups manipulating the extraction of resources have an interest in prolonging conflicts that enable unlawful appropriation of resources. Under normal circumstances of good governance this would not be possible. Therefore, reducing the availability and ease of access to arms throughout Africa as well as channelling the vast natural resources to the benefit of good governance are key requirements if Africa is to be ready to adapt to and mitigate climate change.

The security equation in Africa: In search of ‘sustainable security’¹

There are four components to the security equation in Africa: breaking the reliance on non-renewable sources such as coal and oil which are used to the detriment of the environment; the pursuit of multi-layered sustainable energy based upon renewable sources of energy, together with conservation of forests; increased measures of governance to ensure community development and eradicate poverty; and resolution of conflicts by means of a strong commitment to ridding Africa of the scourge of weapons proliferation.

Unless something is done, and done quickly, the present situation will turn into climate chaos. Although Africa contributes less than 4 per cent to greenhouse gas emissions and most climate change processes are being generated by the developed world, Africa will be the first to suffer serious consequences. At the same time it has little capacity to mitigate the effects or adapt to them. Therefore the position of the ‘Africa group’ within the UN Framework Convention on Climate Change (UNFCCC) negotiations should mirror its priorities of development to attain millennium goals and eradicate poverty. There is a need for a regional preparatory process to strengthen Africa’s negotiating position regarding post-2012 issues during the Kyoto Protocol review. Africa could ally with the Alliance of Small Island States (AOSIS) to attain a strong position on emissions reductions coupled with the transfer of technology and capacity to developing nations. In view of these goals the Economic Commission for Africa has created an African Climate Policy Centre to manage knowledge and consolidate efforts in the quest for sustainable development on the continent (ECOSOC 2008).

According to the influential Stern Review (2007), climate change processes contribute to squandering of wealth and national finances, increased illness and death rates and declining agricultural income sources in developing countries. The impact will spill over national borders, leading to conflict and thus exacerbating the situation. Climate-related disasters have sparked violent conflict in the past and conflict is a serious risk in areas such as West Africa and the Nile basin (Stern 2007).

In Bali, countries agreed upon a framework to allow the comprehensive implementation of UNFCCC through long-term cooperative action, from the present and beyond 2012, to develop policy approaches and positive incentives to reduce emissions from deforestation and forest degradation and enhance conservation and sustainable management of forests and forest carbon stocks in developing countries. One decision was to double the limit in size of small-scale afforestation/deforestation project activities to 16 kilotonnes of CO₂ per year. This move will expand the number and geographical reach of the Kyoto clean development mechanism. The clean development mechanism makes provision for trading off carbon emissions with sustainable projects in developing

countries and is particularly relevant to Africa, as the continent has very few clean development mechanism projects.

Disentangling the energy section of the equation from security will be important for Africa and crucial for the world. The key goal of the International Conference on Renewable Energy in Africa, which was held from 16 to 18 April 2008 with the theme, ‘making renewable energy markets work for Africa: policies, industries and finance for scaling up’, was to assess the potential of renewable energy in addressing Africa’s energy challenges. There was an agreement to raise renewable energy investments to US\$10 billion between 2009 and 2014 in collaboration with international development partners, non-government organisations and the private sector (IISD 2008).

Multilateral processes and Africa

The structure of the international climate change regime is based on UNFCCC, which was adopted in 1992, and the Kyoto Protocol to UNFCCC, which was negotiated in 1997. There is no specific mention of Africa in the latter, but in article 4(e), ‘Commitments’, UNFCCC requires that states ‘cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods’. In article 4(4) the developed member states are also mandated to assist the developing member states that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.

The UNFCCC political negotiating coalitions are based on the common interest or cultural, economic or geographic affinities of their members, and vary considerably in their degree of cohesion, objectives and modes of operation. There are three coalitions, namely Group of 77 and China, AOSIS, and the Africa Group (Yamin & Depledge 2004:33–39). AOSIS is the strongest and most progressive coalition and advocates the largest cuts in emissions. Pursuing a sustainable development path can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience in Africa. At present, however, few plans for promoting sustainability have explicitly included these two aspects (ECOSOC 2008).

In article 4(1), UNFCCC commits countries to prepare for and facilitate adequate adaptation to climate change. Furthermore, in terms of article 4(8) states are required to take actions to fund, insure and transfer technology, to meet the specific needs and concerns of developing states. In addition, member states must take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology (article 4.9). Ultimately issues

pertinent to Africa, such as financial resources, vulnerability and adaptation assessments, adaptation planning and implementation; risk management and risk reduction; regional collaboration; capacity building, education, training and public awareness; and data collection, systematic observation and monitoring, are still being negotiated in the context of the UNFCCC (2007).

The UNFCCC held a Conference of the Parties in Bali in December 2007. One of the decisions taken at the Bali conference that is of special concern to Africa was to create an adaptation fund in terms of article 4(4) of UNFCCC. This will be the principal instrument for assisting developing countries with adaptation to climate change (Subsidiary Body for Implementation 2007). A key question for African countries, particularly in the sub-Saharan region, concerns the reduction of deforestation. In this regard, countries will during the next two years decide on action to reduce emissions from deforestation and forest degradation in developing countries; address the drivers of deforestation, with a view to reducing emissions from deforestation and forest degradation and thus enhancing forest carbon sinks as a result of sustainable management of forests; and create positive incentives on issues relating to reduction of emissions from deforestation and forest degradation in developing countries. The role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries will also come under the spotlight (ECOSOC 2008).

The executive secretary of UNFCCC stressed (De Boer 2008):

... the Bali Action Plan calls for the road to Copenhagen to be an open process – open to the private sector, international organizations and civil society. This offers opportunities for the business community, along with international financial institutions, to contribute. With private investments constituting 86 per cent of investment and financial flows related to climate change, businesses are key to the solution. Furthermore, multilateral organizations can spur green, low carbon growth in developing countries by mainstreaming climate change into the development agenda. Here, UN organizations such as the World Bank and UNDP are called upon to provide input. Other UN agencies will for example need to say what is required in areas of disaster risk assessment and disaster strategy management.

Conclusions

Africa emits about 3,8 per cent of global greenhouse gases, but is the most vulnerable to climate change effects. In the 21st century climate change correlates with national and human security, areas previously thought to have no link with the climate. The challenge

for Africa is to reduce the convergence of multiple stressors such as the impact of widespread health pandemics like HIV/Aids, poor governance, conflict and the excessive availability and proliferation of arms. It is the convergence of all such stressors which exacerbates the security impact of climate change on the continent, mainly because it is more difficult to put in place strategies for adaptation under such circumstances. Furthermore, money that could have been used to mitigate its effects, have to be spent on those other stressors. If a state is already weakened by corruption, bad governance and other problems, a climate-related disaster is likely to have a more severe effect and capacity to cope is limited, ultimately diminishing human security.

Security was traditionally defined in terms of threats to national territory and to the population from a clearly defined enemy. Such threats could be tackled by strong armed forces and military capacity. Even in the face of the very real dangers posed by climate change, most states are still preparing for traditional wars – based on annexation and defence of territory – that are quite unlikely to occur. However, higher sea levels are more likely to be the cause of loss of territories, a fact that states have only quite recently started to realise.

Climate change should be redefining traditionally understood security because it poses unique challenges to the regional security in Africa, and to global security in general: it is a non-temporal threat, with no clearly defined parameters, and cannot be tackled by military means. It is a risk to national and human security, for it is also disrupting the capacity of states to generate wealth and will decrease their GDPs. Territories in this century will not be lost by wars, but by the forces of nature. It will probably take many years for an adaptation of postures, from a military quest for security to one that seeks to address environmental insecurity.

In Africa and in the world in general, the current forms of defence spending actually increase the security risk of states. Government spending on defence items that used to form part of statecraft and security now serve little purpose. In the present world, military threats and expenditure on military hardware have little relevance to defence and security. The real challenge that states today have to address is one of populations at peril not from military menace but from climate change, and these are threats to the very survival of the state and of its people.

Climate change will act as a threat multiplier: From a human security point of view, it will aggravate uncertain living conditions in Africa. And from a national security standpoint, a breakdown in the ability to pursue wealth on a massive scale may lead to instability and ultimately failed states, and this will become the breeding grounds for conflicts over resources, large population movements and resulting pressures.

Note

1 The arguments in this section are based on Garcia (forthcoming).

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