

ADAPTATION TO CLIMATE CHANGE IN AFRICA AND THE EUROPEAN UNION'S DEVELOPMENT COOPERATION

Sven Harmeling, Christoph Bals & Jan Burck



Brief Summary

Africa is one of the regions of the world which are expected to be most affected by the negative consequences of climate change. Hence, it becomes more and more important to find ways for people and societies of our neighbouring continent to adapt to the expected consequences. For the European Union as a neighbour, as a major emitter of greenhouse gases and at the same time the most important donor for development projects, the challenge arises how to support Africa's adaptation efforts within development cooperation and other frameworks.

The background paper and the summary illustrate how adaptation to climate change is reflected in EU development cooperation. Furthermore, recommendations are given how the EU could contribute to effective progress in Africa's adaptation. Some of these recommendations could be implemented already before the UN climate summit in Bali (December 2007) and thus could create additional political momentum.

Imprint

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The authors thank Lwandle Mqadi (South Africa), Krystel Dossou (Benin), Gracian Banda (Malawi), Karim Harris (Brussels), Sally Nicholson (Brussels) and Richard Brand (Bonn) for their valuable comments on an earlier draft version of this paper.

Editing:

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Publisher:

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August 2007

Purchase order number: 07-2-21L

This publication and 4-page summaries in English, German and French are available at

<http://www.germanwatch.org/klima/euaf07.htm>

This publication has been produced with the financial assistance of the European Union and the Federal Ministry for Economic Cooperation and Development. The content of this publication is the sole responsibility of Germanwatch and can in no way be taken to reflect the views of the European Union nor the Federal Ministry for Economic Cooperation and Development.

It is part of the VENRO EU Presidency Project 2007 "Prospects for Africa - Europe's Policies". The project is critically and constructively accompanying the German EU Presidency by development NGOs from Africa and Germany. Further information: www.prospects-for-africa.de



PROSPECTS FOR AFRICA –
EUROPE'S POLICIES
The EU Presidency Project of VENRO

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Abbreviations

ACTS	African Centre for Technology Studies, Kenya
AFI	Adaptation Financing Index
AR4	Fourth Assessment Report of the IPCC
CBA	Community-based Adaptation
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP	Conference of the Parties (to the UNFCCC)
CRISTAL	Community-based Risk Screening Tool – Adaptation & Livelihoods
CSP	Country Strategy Papers
DAC	Development Assistance Committee of the OECD
EC	European Commission
EIB	European Investment Bank
EPA	Economic Partnership Agreement
ETS	Emission Trading Scheme
EU	European Union
EUR	Euro
GAERC	General Affairs and External Relations Council
GCCA	Global Climate Change Alliance
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse gas
IFI	International Financial Institutions
IISD	International Institute for Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
IPR	Intellectual Property Rights
LDC	Least Developed Countries
LDCF	Least Developed Countries Fund
MDGs	Millennium Development Goals
NAPA	National Adaptation Programmes of Action
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PCD	Policy Coherence for Development
PRSP	Poverty Reduction Strategy Paper
RSP	Regional Strategy Papers
SADC	South African Development Community
SCCF	Special Climate Change Fund
SIDS	Small Island Developing States
SPM	Summary for Policymakers of IPCC AR4
SSN	SouthSouthNorth
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VENRO	German Association of Non-governmental development organisations
WBGU	German Advisory Council on Global Environmental Change

Acknowledgements

This background paper has been written as part of the German EU Presidency project of the German Association of Non-governmental development organisations (VENRO). The project focused on the cooperation between the EU and Africa. Titled “Africa’s prospects – Europe’s policies”, it highlighted the responsibility of the EU in terms of a responsible and fair design of those external policies which affect Africa’s development, but also the positive impulses that could be created through coherent external policies. The key approach of the project was to share experience and views between African and German NGOs as much as possible, given the sometimes many thousands of miles lying between partner organisations. A highlight was the jointly produced manifesto which set out the joint expectations to the German EU presidency.¹

Climate change featured very high in public and political discussions throughout the German EU Presidency. Making it one of the priority issues of the VENRO project as early as in May 2006, when the first cornerstones of the project were fixed, proved to be a right decision. The Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC) released during the first half of 2007 made clear that climate change is already reality. Africa was identified to be one of the most affected regions by global warming. So throughout the project there has been an increasing interest in climate change as an issue of development cooperation. This background paper has been written with the objective to more closely analyse how adaptation to climate change in Africa is reflected in the development cooperation of the EU and its Member States. For this it was necessary to systematically gather and analyse information spread over many separate documents, such as the 4th National Communications of the Member States to the United Nations Framework Convention on Climate Change (UNFCCC), but also the National Adaptation Programmes of Action (NAPAs) of African Least Developed Countries (LDCs). The authors hope that it will have additional value for further policy debates as well as practical development cooperation, for example in the context of the review and follow-up of the EU Action Plan Climate Change in the context of Development Cooperation.

This paper was produced with fruitful and very valuable inputs from experts from the African continent, but also from people closely following European policies. Special thanks go to Lwandle Mqadi from South Africa (International Fellow of the International Institute for Environment and Development, IIED), Gracian Banda from Malawi (Centre for Environmental Policy and Advocacy) and Krystel Dossou from Benin (Organisation des Femmes pour la gestion de l’Energie, de l’Environnement et la promotion du Développement Intégré, OFEDI) Further thanks go to Karim Harris from Climate Action Network Europe (Brussels), Sally Nicholson from the European Policy Office of the World Wildlife Fund (WWF, Brussels) and Richard Brand from the German Protestant Development Service (EED).

¹ VENRO 2006

1 Introduction

Climate change featured very high on the agenda of the German EU Presidency in the first half of the year 2007. With its integrated climate and energy strategy adopted in the Spring Council on 8/9 March, the EU showed its will to take serious the challenges of climate change and energy security. The EU committed to reduce its greenhouse gas emissions by 30% by 2020 (compared to 1990) if a new global climate change agreement succeeding the Kyoto Protocol will be reached. The 1st commitment period of the Kyoto Protocol expires in 2012. The EU also adopted a unilateral target of 20% emission reductions even if no agreement will be reached. The EU also called for the need to limit global warming to 2°C above pre-industrial levels. Thus, the Heads of States adhered to the warnings of many scientists that passing this temperature threshold increases the risk of entering into non-linear and self-accelerating effects of climate change leading to harsh consequences for hundreds of million of people around the world. The EU agreement was a compromise which many would have not judged realistic only some months before. It was a decision taken after strong resistance of some Member States. Since the EU is the second most important causer of man-made global warming – in terms of cumulated emissions – it is expected to play the lead role in international policies to reduce greenhouse gas emissions, particularly since the United States of America as emitter no.1 still lack behind with serious commitments to reduce their climate impact.

An uncurbed global warming would severely impact vulnerable countries, such as the Least Developed Countries (LDCs) and the Small Island Developing States (SIDS), in the first place. The African continent is seen to be among the regions most vulnerable to the adverse impacts of climate change. Most of the LDCs are situated on the African continent. Thus, the mentioned EU targets also have their significance for the relationship with the neighbouring continent Africa, although they are not an issue of development cooperation in a closer sense. African people in principle would benefit significantly from an ambitious European climate policy.

The process to develop a Joint EU-Africa Strategy has evolved over the recent months and is expected to culminate in the adoption of the strategy at the EU-Africa Summit in Lisbon in December 2007. The draft strategy also contains wording on climate change and adaptation, which is an expression of the increased attention on the development impacts of climate change. The EU-Africa Energy Partnership also includes some reference to climate change impacts. However it has to be noted that beyond the mentioned EU climate policy commitments from March 2007 and the Energy Partnership, climate change in the development cooperation with Africa, in particular adaptation to its consequences, did not receive significant new impulses during the German EU presidency, although there were some opportunities.² However, there is still a lot of work to be done, and, according to the IPCC, adaptation to climate change for many people in Africa is not an option, but a compulsion.³ Since many adaptation options exist that bring about syner-

² Harmeling 2006

³ Boko et al. 2007

gies with efforts to achieve the Millennium Development Goals (MDGs), there is enough good reason to pay more attention to adaptation.

This background paper assesses how adaptation to climate change features in the EU development cooperation with Africa, primarily sub-Saharan Africa. After this short introduction, chapter 2 summarizes the expected development impacts of climate change on African societies, based on recent findings of climate change science. Chapter 3 tries to give an overview of the adaptation needs identified by African stakeholders, in particular through the development of NAPAs which are part of the UNFCCC work to assist LDCs in coping with climate change. Chapter 4 analyses how adaptation in Africa is reflected in the development cooperation of the EU and its Member States. Chapter 5 provides an outlook on key adaptation issues in the present and future UN climate change negotiations. Chapter 6 presents some conclusions and provides recommendations on how the EU development cooperation could better assist effective adaptation to climate change in Africa.

2 Climate Change as a development challenge for Africa

The effects of climate change are hitting poor countries and poor people most. Africa is already one of the areas of the world most affected by climate change. According to the Intergovernmental Panel on Climate Change (IPCC) *“the effects of climate change are expected to be greatest in developing countries in terms of loss of life and relative effects on investment and economy”*.⁴ The Summary for Policymakers (SPM) of IPCC Working Group II (AR4) highlights that *“observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases.”*⁵ The AR4 also concluded that most of the observed increase in global average temperatures during the last 50 years is very likely due to anthropogenic greenhouse gas emissions.⁶

2.1 Past climatic changes and future projections for Africa

Scientific studies show that climate change is already apparent on the African continent. The observations suggest that the average temperature has risen by about 1° C during the last 50 years (compared to the average 1906-1950) on the African continent.⁷ According to the UK Working Group on Development and Climate Change, *“the six warmest years in Africa have all been since 1987 and globally, 2005 was the hottest year on record. [...] The maximum temperature in Kericho, a highland area in the Rift Valley province where most of Kenya's tea exports are grown, has increased by 3.5°C during the past 20 years. In Lamu, on Kenya's north east coast near Somalia, the maximum temperature has increased by more than 3°C since the 1940s.”*⁸ Regarding precipitation, drying-up has been observed in the Sahel and in Southern Africa.⁹

Africa will likely face severe alterations of climatic conditions. Projections in the AR4 suggest a further increase in the median temperature of between 3°C and 4°C by the end of this century for a medium-high emissions scenario. This response is roughly 1.5 times as high as the global mean response (as compared to the average from 1980 to 1999). Values at the lower end of the range are expected for equatorial and coastal areas, while higher values are assumed for the West Sahara. High emission scenarios (A1F1) come to more drastic results, with temperature increases of up to 9°C for North Africa (Mediterranean coast) in June to August, and up to 7°C for southern Africa in September to November.¹⁰ It is important to note that the current global emission trend, with an increase in the

⁴ IPCC 2001

⁵ IPCC 2007b

⁶ IPCC 2007a

⁷ IPCC 2007a

⁸ Magrath/Simms 2006

⁹ IPCC 2007a

¹⁰ Boko et al. 2007

annual emission growth in the past five years compared to the 1990s, is more on track with the high-emission scenarios.¹¹

Regarding the projected changes in precipitation, the large-scale picture is one of drying in most of the subtropics, while a slight increase is expected for the tropics.¹² However, it is important to note that there are still significant shortcomings in the regional projection models, and due to the complex and diverse climatic situation on the African continent uncertainties remain.

Summary of projected climatic changes for Africa according to the IPCC

“All of Africa is very likely to warm during this century. Warming is very likely to be larger than the global annual mean warming throughout the continent and in all seasons, with drier subtropical regions warming more than the moister tropics. Annual rainfall is likely to decrease in much of Mediterranean Africa and the northern Sahara, with a greater likelihood of decreasing rainfall as the Mediterranean coast is approached. Rainfall in southern Africa is likely to decrease in much of the winter rainfall region and western margins. There is likely to be an increase in annual mean rainfall in East Africa. It is unclear how rainfall in the Sahel, the Guinean Coast and the southern Sahara will evolve.”¹³

2.2 Key vulnerabilities and impacts of climate change

Assessments of the possible impacts of climate change need to consider existing and future vulnerabilities of a country or a region, different sectors and different groups of the

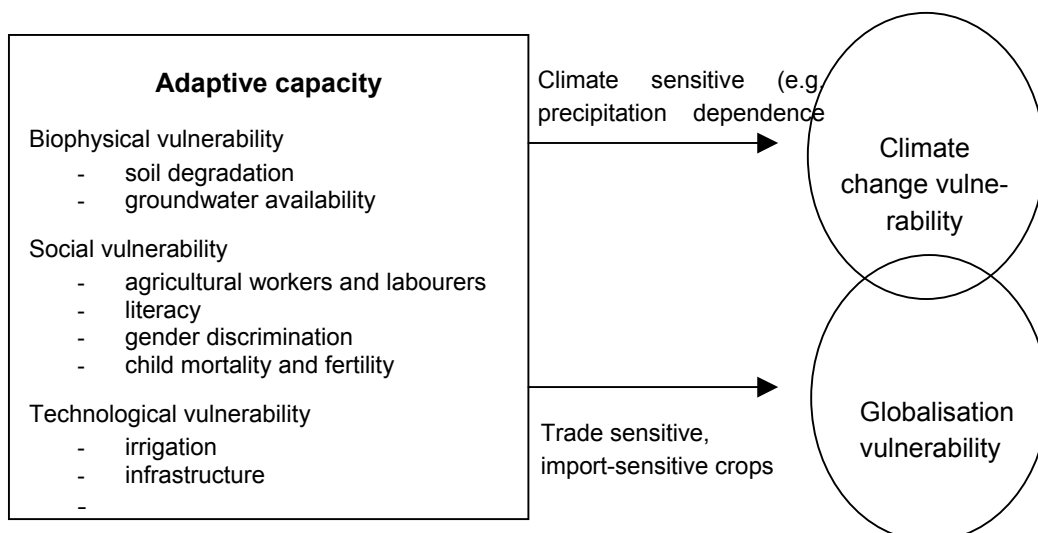


Figure 1: Linkages between climate change and globalisation vulnerabilities and adaptive capacity

Source: based on TERI 2003

¹¹ Raupach et al. 2007

¹² Christensen et al. 2007

¹³ Christensen et al. 2007

population in the areas investigated. Also, globalisation is seen to be an important factor since it also impacts on people's resilience. Figure 1 shows how vulnerabilities to climate change and to globalisation can intertwine with the adaptive capacity.

The conclusion of the IPCC that “non-climate stresses can increase vulnerability to climate change by reducing resilience and can also reduce adaptive capacity because of resource deployment to competing needs” is particularly valid for many parts of Africa.¹⁴ Africa is suffering heavily from such “non-climate stresses” like poverty and unequal access to resources, water stress, food insecurity, incidence of diseases such as HIV/AIDS or malaria (see figure 2).



Sources: Anna Ballance, 2002.

Figure 2: Climate change vulnerability in Africa

Source: <http://www.grida.no/climate/vitalafrica/english/28.htm>

¹⁴ IPCC 2007b

Most of African countries will most likely not achieve the Millennium Development Goals (MDGs). A recent update on regional progress in the MDGs concludes that “*although there have been major gains in several areas and the Goals remain achievable in most African nations, even the best governed countries on the continent have not been able to make sufficient progress in reducing extreme poverty in its many forms.*”¹⁵

No doubt that there are several reasons for this situation, but climate variability as such is increasingly seen to be one important factor undermining development progress in parts of Africa through its impacts in key development sectors: “*Africa’s variable climate is already contributing significantly to its development problems. The key development sectors of agriculture, water, energy, transport, and health are all particularly sensitive to climate variability.*”¹⁶ Table 1 shows how climatic changes may principally affect different economic sectors.

Table 1: Sectoral impacts of certain climate change phenomena

Phenomena and direction of trend: Likelihood of future trends based on projections for 21 st century using SRES scenarios	Examples of major projected impacts by sector			
	Agriculture, forestry and ecosystems	Water resources	Human health	Industry, settlements and society
Over most land areas, warmer and fewer cold days and nights, warmer and more frequent hot days and nights: VIRTUALLY CERTAIN	Increased yields in colder environments; decreased yields in warmer environments; increased insect outbreaks	Effects on water resources relying on snow melt; effects on some water supply	Reduced human mortality from decreased cold exposure	Reduced energy demand for heating; increased demand for cooling; declining air quality in cities; reduced disruption to transport due to snow, ice; effects on winter tourism
Warm spells/heatwaves. Frequency increases over most land areas: VERY LIKELY	Reduced yields in warmer regions due to heat stress; wild-fire danger increase	Increased water demand; water quality problems, e.g., algal blooms	Increased risk of heatrelated mortality, especially for the elderly, chronically sick, very young and socially isolated	Reduction in quality of life for people in warm areas without appropriate housing; impacts on elderly, very young and poor

¹⁵ UN 2007

¹⁶ Hellmuth et al. 2007: 8

Phenomena and direction of trend: Likelihood of future trends based on projections for 21 st century using SRES scenarios	Examples of major projected impacts by sector			
	Agriculture, forestry and ecosystems	Water resources	Human health	Industry, settlements and society
Heavy precipitation events. Frequency increases over most areas: VERY LIKELY	Damage to crops; soil erosion, inability to cultivate land due to waterlogging of soils	Adverse effects on quality of surface and groundwater; contamination of water supply; water stress may be relieved	Increased risk of deaths, injuries, infectious, respiratory and skin diseases	Disruption of settlements, commerce, transport and societies due to flooding; pressures on urban and rural infrastructures; loss of property
Area affected by drought increases: LIKELY	Land degradation, lower yields/crop damage and failure; increased livestock deaths; increased risk of wildfire	More widespread water stress	Increased risk of food and water shortage; increased risk of malnutrition; increased risk of water- and food-borne diseases	Water shortages for settlements, industry and societies; reduced hydropower generation potentials; potential for population migration
Intense tropical cyclone activity increases: LIKELY	Damage to crops; windthrow (uprooting) of trees; damage to coral reefs	Power outages cause disruption of public water supply	Increased risk of deaths, injuries, water and food-borne diseases; posttraumatic stress disorders	Disruption by flood and high winds; withdrawal of risk coverage in vulnerable areas by private insurers, potential for population migrations, loss of property
Increased incidence of extreme high sea level (excludes tsunamis): LIKELY	Salinisation of irrigation water, estuaries and freshwater systems	Decreased freshwater availability due to salt-water intrusion	Increased risk of deaths and injuries by drowning in floods; migration related health effects	Costs of coastal protection versus costs of land-use relocation; potential for movement of populations and infrastructure; also see tropical cyclones above

Source: IPCC 2007b¹⁷

Given the projections for climatic changes in Africa the situation is likely to worsen in many regions. This holds even if only the conclusions of the SPM of the IPCC AR4 are referred to (see figure 3). It summarises the scientifically most certain knowledge which has “survived” the political discussion of the draft reports of the IPCC.¹⁸

¹⁷ The likelihood description in column one does not refer to Africa in specific. However, most of the changes are also expected for parts of Africa.

¹⁸ The SPMs are negotiated with scientists and representatives of governments and eventually agreed on in a consensus.

Due to both the diverse climatic and different socio-economic vulnerability conditions, the expected impacts of climate change vary from region to region. Figure 4 gives an regional overview of some of the key impacts on Africa's development according to the findings of the IPCC.

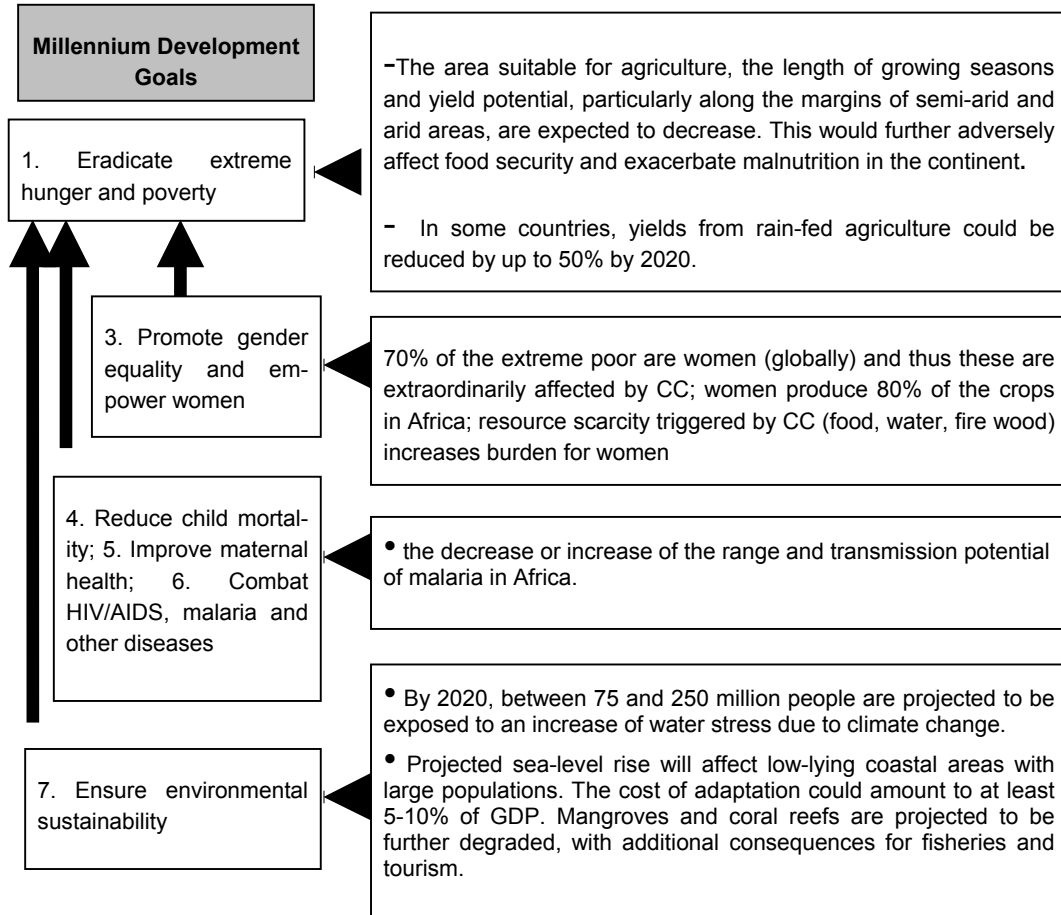


Figure 3: Climate change impacts on the MDGs in Africa

Source: Germanwatch illustration based on IPCC 2007b

The most certain scientific knowledge on Africa's prospects in the face of climate change is summarised by the IPCC as follows:¹⁹

- Africa is one of the continents most vulnerable to climate change and climate variability, a situation aggravated by the interaction of "multiple stresses", occurring at various levels;
- Agricultural production and food security (including access to food) in many African countries and regions will likely be severely compromised by climate change and climate variability;
- Climate change will aggravate the water stress currently faced by some countries while other countries which are not at risk will face risk of water stress;

¹⁹ Boko et al. 2007

- Changes in a variety of ecosystems are already being detected, particularly in southern African ecosystems, at a faster rate than anticipated;
- Climate variability and change could result in low-lying lands being inundated, with resultant impacts on coastal settlements;
- Human health, already compromised by a range of factors, could also be further negatively impacted by climate change and climate variability (e.g. malaria in southern Africa and the Eastern African highlands).

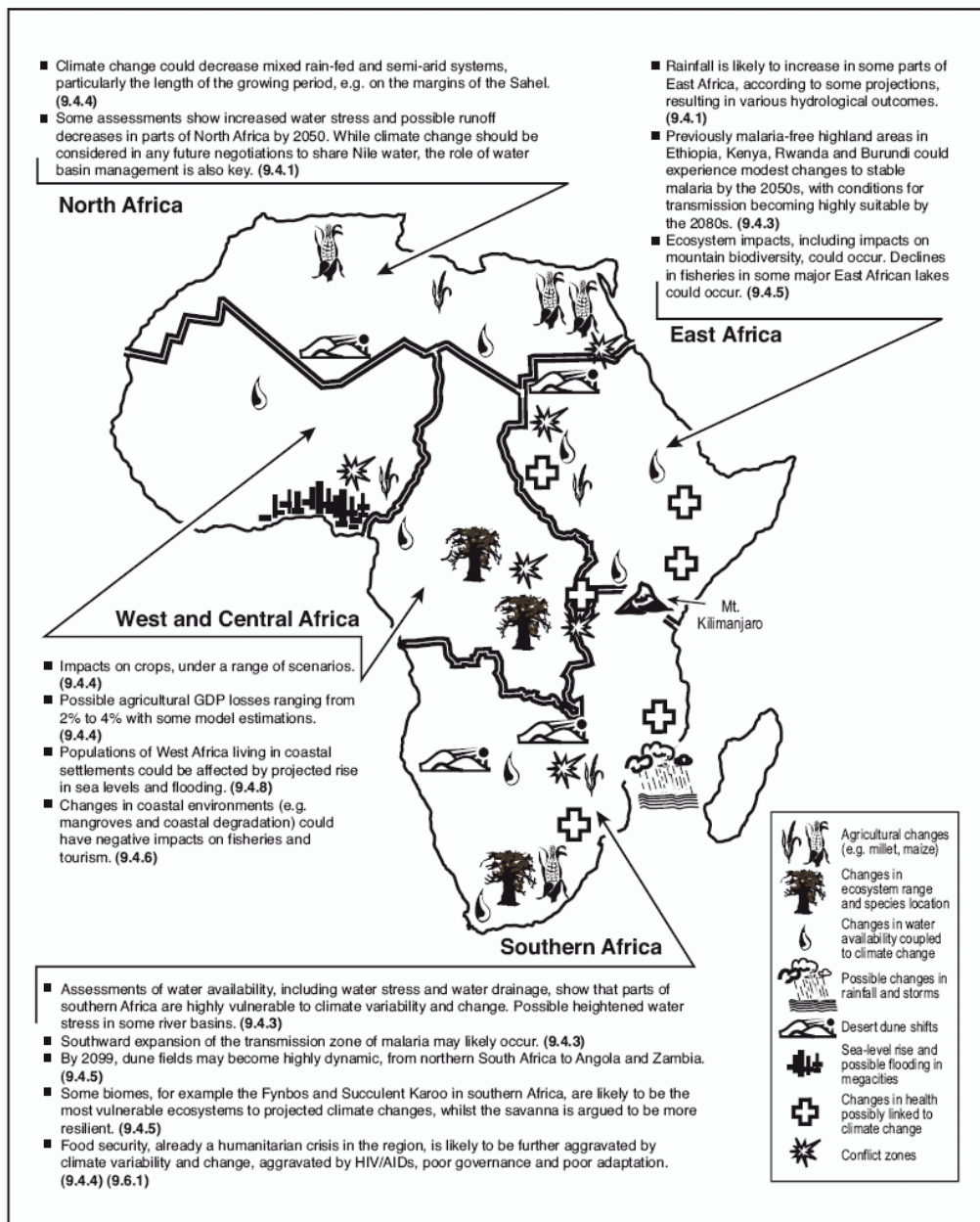


Figure 4: Examples of current and possible future impacts and vulnerabilities associated with climate variability and climate change for Africa (for details see sections highlighted in bold). Note that these are indications of possible change and are based on models that currently have recognised limitations.

Source: Boko et al. 2007

Megadeltas, coastal areas and sea-level rise

“The most vulnerable industries, settlements and societies are generally those in coastal and river flood plains, those whose economies are closely linked with climate-sensitive resources, and those in areas prone to extreme weather events, especially where rapid urbanisation is occurring.”²⁰

Also in Africa those big cities which lie in megadeltas face rapid urbanisation. For example, it is estimated that 40% of the population of West Africa live in coastal cities, and it is expected that the 500 km of coastline between Accra and the Niger delta will become a continuous urban megalopolis of more than 50 million inhabitants by 2020.²¹ Other important deltas include the Volta, Senegal, Moulouya, Sebou and the Nile delta.



Figure 5: Relative vulnerability of coastal deltas as shown by the indicative population potentially displaced by current sea-level trends to 2050

(Extreme = >1 million; High = 1 million to 50,000; Medium = 50,000 to 5,000; following Ericsson et al., 2006).

Source: Parry et al. 2007b

Sea-level rise is one of the most important impacts of climate change on coastal cities. Since many of these experience natural subsidence, relative sea-level rise rates are accelerated.²² Other climate-related threats include decreasing run-off rates of the rivers with declining precipitation in Africa’s interior regions. These risks combine with the pressure of millions of inhabitants and users of the coastal zones.

With continued growth of greenhouse gas emissions, the mean global sea-level is expected to rise by up to 1.4 m within this century.²³ Boko et al. list some estimations of economic impacts of sea-level rise in Africa and conclude that “these re-

²⁰ IPCC 2007b

²¹ Hewawasam 2002

²² Parry et al. 2007b

²³ Rahmstorf 2006

*sults confirm previous studies stressing the great socio-economic and physical vulnerability of settlements located in marginal areas*²⁴:

Kenya: 1 m sea-level rise could cost almost US\$ 500 million due to losses for three crops (mangoes, cashew nuts and coconuts);

Guinea: between 130 and 235 km² of rice fields (17% and 30% of the existing rice field area) could be lost as a result of permanent flooding, depending on the inundation level considered (between 5 and 6 m) by 2050.

Eritrea: a 1 m rise in sea level is estimated to cause damage of over US\$250 million as a result of the submergence of infrastructure and other economic installations in Massawa, one of the country's two port cities.

Egypt: a 1 m sea-level rise in the Atlantic Ocean will have damaging impacts on large coastal cities like Lagos or Alexandria. Egypt's second largest city could be lost, with an estimated loss of US\$ 32 billion in lost land, infrastructure and tourist revenue.²⁵

Other assessments of the impacts show that the costs of sea-level rise in coastal countries could amount to some 5-10% of the GDP.²⁶ Without adaptation these costs could rise up to 14% of the GDP.²⁷ However, most of the assessments only cover selected impacts and thus are not comprehensive.

In the longer term, the severity of the consequences will mostly depend on the level of global warming, which depends on the greenhouse gas emissions mankind continues to emit into, or starts to extract from, the atmosphere. According to the IPCC, this especially holds for low-latitude areas, which most of the African countries belong to (see figure 6).

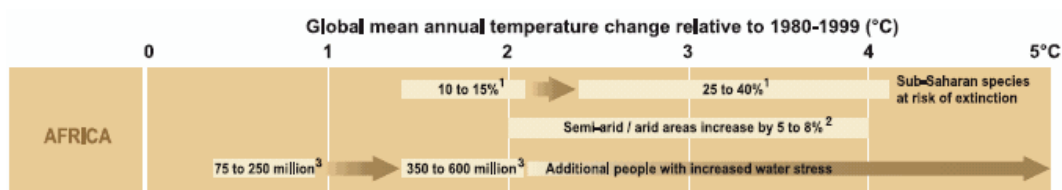


Figure 6: Examples of regional impacts dependent on the temperature change.

Source: Parry et al. 2007a

Adaptation to the unavoidable consequences is a must for the decades to come, but without drastic progress in global mitigation the “unmanageable consequences” will not be avoided. The implications for Africa would be harsh.

²⁴ Boko et al. 2007

²⁵ UNFCCC 2006

²⁶ Niang-Diop 2005

²⁷ Van Drunen et al. 2005

Climate change and security issues in Africa

Consequences of climate change like increased water scarcity or reduced food availability could trigger or at least contribute to conflicts, through an increased competition over scarce resources. This is already a factor for existing conflicts, as some experts conclude for example for the Darfur conflict, where a long-term decline in rainfall has significantly contributed to the scarcening of available fresh water.²⁸ A recent study by the German Advisory Council on Global Environmental Change (WBGU) concluded that Africa is likely to be particularly affected by climate change induced security risks.²⁹

In Northern Africa, the potential of political crises and the pressure from migration increase due to the intertwining of an increased number of droughts and water scarcity with high population growth, are weakening agricultural potentials and limiting political capabilities to solve the problem. The densely populated Nile delta is threatened by sea-level rise and the salination of agricultural areas.

In the Sahel, climate change causes additional environmental stress and social crises (e.g. droughts, harvest losses, fresh water scarcity) in a region which is already characterised by weak states (e.g. Somalia, Chad), civil wars (e.g. Sudan, Niger) and large streams of refugees (Sudan: more than 690,000 people; Somalia: more than 390,000 people).

In Southern Africa, climate change could further weaken the agricultural potentials of countries belonging to the poorest societies in the world. This would worsen the state of human security and overstrain the governments' capabilities.

2.3 The mitigation imperative: avoiding unmanageable risks

Climate change science has made significant progress in the past few years, also in the fields of vulnerability and impacts. Many conclusions of the AR4 show a higher degree of scientific certainty than the IPCC's 3rd Assessment Report published in 2001. Even the findings with high scientific certainty present a disturbing picture of the future climate in many African regions. At the same time, mankind's greenhouse gas emissions increase faster than the decade before, which could lead to even higher temperature increases than the high-emission scenarios of the IPCC project. However it has to be noted that additional risks exist which may even make the situation far worse than what is expected.

One example is a model result presented by the UK's Hadley Centre last year. It showed that the global surface of land affected by extreme drought could rise from today's 3% to 30% at the end of the century. Areas affected by strong drought could rise from 8% to

²⁸ Sachs 2006

²⁹ WBGU 2007

40%.³⁰ This would mean that nearly a third of the global surface of land could not be used for agriculture anymore. Africa, already containing a lot of drought areas, would be hit hard by such a scenario.

In addition, climate change researchers increasingly pay attention to the so-called “tipping elements” (fig. 7).³¹

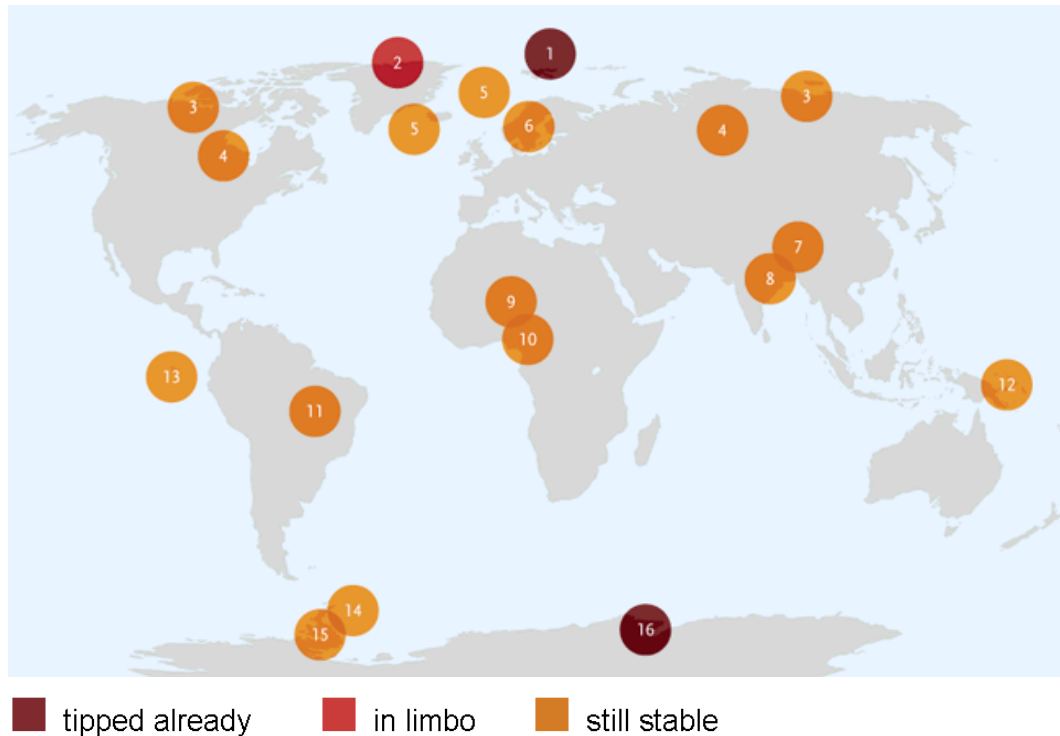


Figure 7: “Tipping elements” in the climate system

Source: Schellnhuber 2007

List of tipping elements

- | | |
|--|--|
| 1 Arctic Sea Ice Loss | 9 Re-Greening of the Sahara and Sealing of Dust Sources |
| 2 Melting of Greenland Ice Sheet | 10 West African Monsoon Shift |
| 3 Methane Escape from Thawing Permafrost Regions and Continental Shelves | 11 Dieback of Amazon Rainforest |
| 4 Boreal Forest Dieback | 12 Change in Southern Pacific Climate Oscillation |
| 5 Suppression of Atlantic Deep Water Formation | 13 Disruption of Marine Carbon Pump |
| 6 Climatic Change-Induced Ozone Hole over Northern Europe | 14 Suppression of Antarctic Deep Water Formation and Nutrients Upwelling |
| 7 Darkening of the Tibetan Plateau | 15 Collapse of the West Antarctic Ice Sheet |
| 8 Disruption of Indian Monsoon | 16 Antarctic Ozone Hole |

³⁰ McCarthy 2006, calculated according to the „Palmer Drought Severity Index (PDSI)“

³¹ see Schellnhuber 2007 for a short description of each of these tipping elements:

http://www.pik-potsdam.de/infodesk/tipping-points/index_html/view?set_language=en [28 August 2007]

These are certain processes in the climate system which could, if triggered, have massive and large-scale impacts on human and ecosystems. They are likely to occur beyond a certain threshold of temperature increase – the “tipping point”. They are of a non-linear nature, sometimes irreversible, and some of them have the potential to accelerate global warming due to feedback processes. For example, methane released from permafrost regions (like Siberia) leads to further global warming, since it is a greenhouse gas with a significantly higher Global Warming Potential than CO₂ (factor 23). The different “tipping elements” could build up to a run-away greenhouse effect. Africa would be one of the regions that would suffer most from such accelerated warming processes. According to the German Advisory Council for Global Environmental Change (WBGU), “beyond 2–3° C [temperature increase] the risk of additional, qualitative changes occurring in the climate system increases.”³² (see fig. 8)

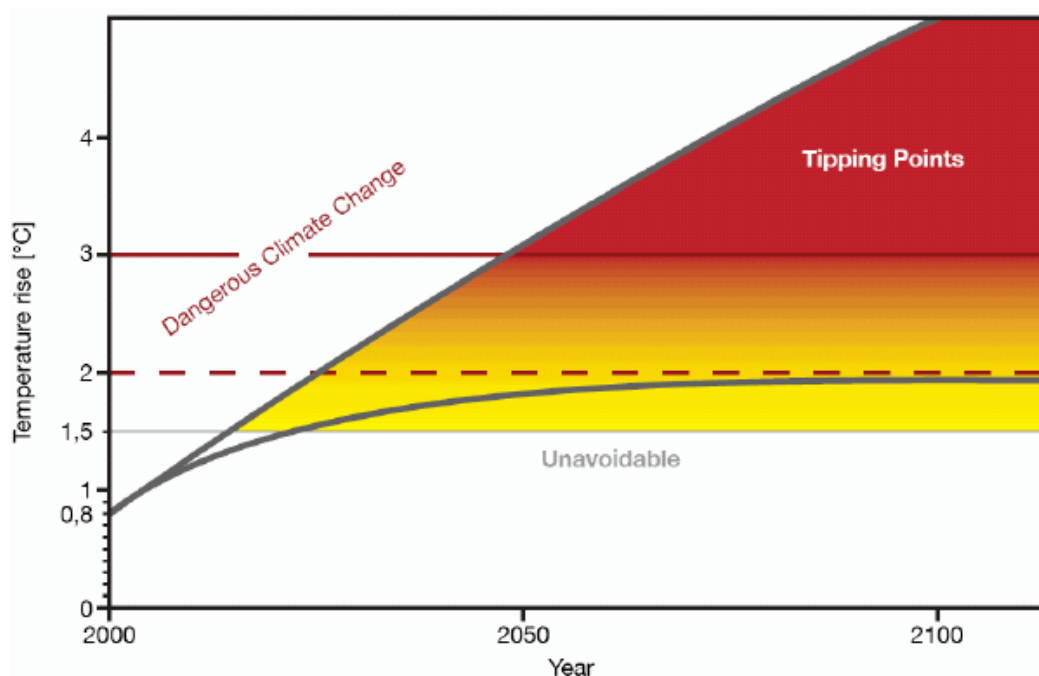


Figure 8: Global temperature increase and tipping points

Source: Bauer 2007

A temperature increase of 1.5° C above pre-industrial levels is no longer avoidable, due to inertia in the climate system. The lower grey line refers to the official political objective of the EU of limiting global warming to 2° C above pre-industrial levels. The upper grey line shows which temperature increase must be expected from the reference scenario of the International Energy Agency (IEA).

That is why many scientists, non-governmental development and environmental organisations call for efforts to limit global temperature increase to below 2° C compared with pre-industrial levels, since it is expected that the likelihood of these risks to occur increases significantly beyond this threshold. The EU decided in March 2007 on the 2°

³² WBGU 2007: 72

threshold to be the guard rail for their climate and energy policies. Staying below 2°C requires global greenhouse gas emission reductions in the order of at least 50% by the middle of the century compared to 1990, with the industrialised countries taking the lead.³³ As a consequence, the long-term global average per capita emissions should be reduced to below 2t per year.³⁴

One example of how certain “tipping elements” could “jointly” spur significant consequences is the case of sea-level rise which may increase considerably more than outlined in the AR4. The latter one creates the impression that the amount of sea-level rise that must be expected as a consequence of climate change is less than assumed in the Third Assessment Report (AR 3) published in 2001. But a careful look at the figures, in combination with other recent scientific publications on this issue, suggests a different interpretation. Given the expected population growth in coastal cities on the African continent sea-level rise is an important factor for coastal development. According to the different AR4 scenarios, a sea-level rise (global average) of 18 to 59 cm must be expected by the end of the century (compared to the average level of 1980 to 1999).³⁵ The AR3 estimated the range of sea-level rise between 12 and 88 cm.³⁶ The main reason for this difference is that the 2007 results exclude future rapid radical changes in ice flow. The acceleration of ice flow processes in both the West-Antarctic Ice Sheet (tipping element no. 15) and in Greenland (no. 2) has been observed by different experts. However, science does not understand these processes fully enough to include them into the IPCC scenarios. If the new dynamics are applied for the warming scenarios of the IPCC, a sea-level rise of 0.5 to 1.4 m by the end of this century compared to 1990 has to be taken into consideration.³⁷

At least two tipping elements are directly related to the African continent: the Re-Greening of the Sahara (no. 9) and a shift in the West African monsoon (no. 10). Intensive research on the causes of the “Sahel drought” in the 1970/80s has led to the conclusion that both phenomena are closely connected. The main cause for the significant decline in precipitation during the mentioned decades was a change in the West-African monsoon due to rising sea-surface temperatures along the African coast.³⁸ The formation of the monsoon is primarily influenced by the temperature difference between the northern part of the Atlantic Ocean and the southern part. The increase in the southern part was higher than in the northern part. This change was caused by man-made global warming in the first place, and as a consequence the monsoon's rainy winds shifted southwards and no longer reached the Sahel.³⁹ However, the increased transport of dust particles from the interior of the African continent, which was partly a consequence of man-made vegetation cover change, supported the stabilization of the drier precipitation regime.

In the previous years, the northern Atlantic warmed up faster than the southern part. Precipitation increased again in the Sahel. Regarding the future development, there is uncertainty about the direction of the trend. A number of scenarios expect the recent trend to

³³ IPCC 2007c

³⁴ IPCC 2007c

³⁵ IPCC 2007a

³⁶ IPCC 2001

³⁷ Rahmstorf 2006

³⁸ Christensen et al. 2007

³⁹ Bader/Latif 2003

continue. More frequent and more intense precipitation may support the “re-greening” of the Sahara neighbouring the Sahel in the north. However, *Schellnhuber* notes that this “re-greening” “*may be overridden by intensive land-use, especially grazing.*”⁴⁰ And other scenarios expect the contrary, possibly leading to a complete monsoon collapse by the end of the century.⁴¹ The latter direction has been the result of a model experiment run by *Held et al.* which described a “roller-coaster” scenario, with increased precipitation in the first half of this century and a drastic decline, even below the levels of the Sahel drought, in the second half.⁴² The frightening of this scenario is that it was the one that best simulated the development of the past. Long-term adaptation to such a development would be very challenging, if not nearly impossible.

Finally (to make it even more complex), the development in the Sahel would even have impacts on South American ecosystems, especially the Amazon rainforest. It has been found out that dust from the Sahel transported across the Atlantic is a large-scale fertilizer for this ecosystem. A re-greening could drastically reduce this dust transport, in turn contributing to a “die-back” of the Amazon rain forest and causing a positive carbon cycle feedback due to CO₂ released from the collapsing plants.

It has to be noted that there is still a lot of scientific debate about these risks, especially regarding the temperature threshold, the “tipping point”. However, it is important to further investigate these risks due to their massive interventions in natural and human systems if they would occur.

⁴⁰ Schellnhuber 2007

⁴¹ Schellnhuber 2007

⁴² Held et al.

3 Adaptation to climate change in Africa

Coping with the unavoidable consequences of anthropogenic climate change has to be the first priority for poor countries in the context of climate change. The IPCC concludes that *“the covariant mix of climate stresses and other factors in Africa means that for many in Africa adaptation is not an option, but a necessary compulsion”*.⁴³ There has been significant scientific progress in the last few years with regard to adaptation practices that are taking place already and how effective these have proven to be. According to the IPCC, *“adaptation practices refer to actual adjustments, or changes in decision environments, which might ultimately enhance resilience or reduce vulnerability to observed or expected changes in climate.”*⁴⁴ Consequently a large number of planned and unplanned adaptation options exist. They can be differentiated along several dimensions:⁴⁵

- by spatial scale: local, regional, national;
- by sector: water resources, agriculture, tourism, public health, and so on;
- by type of action: physical, technological, investment, regulatory, market;
- by actor: national or local government, international donors, private sector, NGOs, local communities and individuals;
- by climatic zone: dryland, floodplains, mountains, Arctic, and so on;
- by baseline income/development level of the systems in which they are implemented: least-developed countries, middleincome countries, and developed countries;
- or by some combination of these and other categories.

A different approach is to differentiate between proactive and reactive responses and inaction (table 2). However there is space for debate if food aid measures should be named adaptation to climate change.

While some priority actions need to be implemented urgently to adapt to the short-term consequences of climate change, adaptation must be viewed as a long-term challenge for societies. “Mainstreaming” this challenge into sectoral and other policies and programmes at different levels of decision-making will be necessary, and it means a focus on the reduction of vulnerability to climate change. *Hultman and Tompkins* even argue that *“the best approach to reducing vulnerability must be at the heart of any adaptation strategy and adaptation policy.”*⁴⁶ However, effective adaptation to climate change also requires specific activities related to climate change, such as , *“the ability to project climate impacts, monitor and respond to disease trends, or develop new technologies, for instance.”*⁴⁷ Adaptation might also include *“correcting maladaptations—for instance, by no*

⁴³ Adger et al. 2007

⁴⁴ Adger et al. 2007

⁴⁵ Adger et al. 2007

⁴⁶ Hultman/Tompkins 2007 : 4

⁴⁷ Burton et al. 2006: 10

*longer providing flood insurance in ways that encourage risky development in flood zones.*⁴⁸

Table 2: A typology of adaptive responses: examples from food production and food security

Response level	Proactive	Reactive	Inaction
International	<ul style="list-style-type: none"> - guidelines for national adaptation strategies - development of new crops 	<ul style="list-style-type: none"> - measures of food aid 	<ul style="list-style-type: none"> - no actions to initiate changes are being taken
National	<ul style="list-style-type: none"> - grain storage - agricultural policy to alter crops and farming practices 	<ul style="list-style-type: none"> - changes in taxes and dispenses to increase food imports and emergency aid 	<ul style="list-style-type: none"> - no small infrastructure investments are undertaken which only would profit local population
Local	<ul style="list-style-type: none"> - investments in rainwater harvesting, irrigation and protection from floodings - implementation of seed banks - local coordination 	<ul style="list-style-type: none"> - mutual support 	<ul style="list-style-type: none"> - migration as a response option is ignored
Individual	<ul style="list-style-type: none"> - diversification of income sources - investments in education - changes in agricultural practices 	<ul style="list-style-type: none"> - migration 	<ul style="list-style-type: none"> - accepting individual increased vulnerability and reduced well-being

Source: Adger et al. 2006

According to *Burton et al.*, “the international community faces a host of difficult issues stemming from the underlying characteristics of climate risk, the institutional contexts for adaptation decision-making and action, and inherent limits on available resources—all compounded by politically sensitive questions of responsibility and equity.”⁴⁹ These issues include:

- the appropriate balance between “reactive” and “proactive” approaches;
- the proper coupling of specific adaptations and stronger adaptive capacity;
- the difficulty of distinguishing climate change impacts from those due to natural climate variability; and
- adaptation’s intersection with a broad range of other policy areas and priorities.

The implementation of adaptation within African societies faces the same challenges.

Since Africa’s climate has always been erratic, especially in the semi-arid regions, African people have developed several strategies to cope with climate variability for many decades, and to some extent this prepares for future changes. “*Adaptation to current climate variability can also increase resilience to long-term climate change*”, as *Adger et al.* point out.⁵⁰ However, there are at least two reasons why the IPCC’s conclusion that “*African farmers have developed several adaptation options to cope with current climate variability but such adaptations may not be sufficient for future changes of climate*”⁵¹ may become valid. First, anthropogenic climate change is likely to also require actions

⁴⁸ Burton et al. 2006: 10

⁴⁹ Burton et al. 2006: 9

⁵⁰ Adger et al. 2007 : 721

⁵¹ Boko et al. 2007 : 435

that go beyond those to respond to current climate variability. For example, glacier retreat or sea-level rise produce new challenges.

Second, the changes in currently known climate variability may become too drastic given the multiple risks that are linked to a significant temperature rise, for example the “tipping elements” (see above).

3.1 Synergies between MDGs and adaptation measures

Against the background of the development challenges which African societies face, maximising the development benefit is an important requirement for adaptation measures. Reducing vulnerabilities and creating synergies between adaptation measures and development policy areas such as food security, water supply etc. should be at the heart of strategies which support “adaptive development”, rather than to distinguish adaptation from development.⁵² By summarising that “*adaptation measures are seldom undertaken in response to climate change alone but can be integrated within, for example, water resource management, coastal defence and risk-reduction strategies*”⁵³ the IPCC underlines this conclusion.

Research shows that climate interventions can generate benefits to the MDGs, including benefits of climate-sensitive development and planning (see table 3). If successful, adaptation can reduce “*vulnerability by building on and strengthening existing coping mechanisms and assets, targeting climate change vulnerability with specific measures, and integrating vulnerability reduction into wider policies.*”⁵⁴ At the same time, given the close linkages between climate change and the MDGs, it must also be noted that sustainable poverty reduction is a key adaptation strategy since in many cases it reduces the vulnerability of the poor, although some examples of conflicting objectives exist.

Table 3: Synergies between the MDGs and climate interventions

Goal	Impacts of Climate Variability	Role of Climate Interventions	Outcomes: Climate Sensitive Development Planning
Goal 1: Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> - Extreme climatic events trigger acute hunger from loss of agricultural production, cause loss of infrastructure. - Climatic uncertainty is a disincentive to investment, intensification, technology adoption, fertilizer use, and high value agricultural enterprises. - The poor are trapped in a downward, vicious cycle of increasing poverty and asset loss, because they never recover from climate shocks. 	<ul style="list-style-type: none"> - Short-term risk reduction - Climate-based food insecurity early warning increases lead-time, aids targeting of relief efforts. - Risk reduction in longer term planning - Climate information (monitoring and prediction) empowers poor farmers to better manage risk, and to exploit opportunity in favorable years. - Climate information provides opportunity to spread risk through social insurance schemes that provide a safety net for the poor dur- 	<ul style="list-style-type: none"> - Short-term risk reduction - Local capacity built to respond rapidly to disaster, crisis and pre-crisis conditions. - Fewer public resources spent on disaster rehabilitation and relief and on reconstruction; more public resources available for positive development progress. - Risk reduction in longer term planning - Small-holder agricultural practice is resilient to climate variability. - Stronger economic growth

⁵² see also Tompkins/Hultman 2007

⁵³ IPCC 2007b: 19

⁵⁴ Mitchell/Tanner 2006: 5

		<p>ing climatic shocks.</p> <ul style="list-style-type: none"> - Prediction of hydro-climatic extremes helps societies prepare and mitigate disasters, reducing losses in infrastructure and productive activities 	<p>due to resilient irrigation, land use, cropping and trade policies. Generates macroeconomic and investment strategies that minimize recessive impacts.</p>
<p>Goal 4: Reduce child mortality</p>	<ul style="list-style-type: none"> - Poor sanitation from both water shortages and flooding contribute to morbidity and mortality from diarrhoeal diseases. - Malaria (whose endemicity and epidemicity are impacted by climate) during pregnancy is associated with lower birth weight, increased infant mortality. 	<ul style="list-style-type: none"> - Climate monitoring and forecasts help identify high-risk areas prone to water contamination based on water shortages or flooding. - Climate forecasts can prompt malaria early warning, increasing lead-time for mobilization and distribution of resources to remote areas. 	<ul style="list-style-type: none"> - Plan for water storage and delivery implementation, investment, design and maintenance. - Develop national and regional capacities to plan for, anticipate and react to epidemics. - Understand long term implications of climate change on disease distribution and socioeconomic vulnerability.
<p>Goal 5: Improve maternal health</p>	<ul style="list-style-type: none"> - Climate variability impacts on food production and nutrition; affects pregnant women and the development of embryo and fetus. - Pregnant women are more likely to contract and die of malaria. 	<ul style="list-style-type: none"> - Climate-based food insecurity early warning increases lead-time for organizing interventions. - Climate prediction provides advance information for activating relevant aid and raising awareness on the ground (e.g., maternal education programs). 	<ul style="list-style-type: none"> - Develop resilience in food production, storage, and markets by taking into account comprehensive climate sensitive socioeconomic data. - Develop understanding of dynamic health distribution, socioeconomic impacts, capacity and resource needs in the face of changing climate conditions. Develop understanding of climate impacts on health distribution
<p>Goal 6: Combat HIV/AIDS, malaria and other diseases</p>	<ul style="list-style-type: none"> - Climate variability influences endemicity and epidemicity of malaria and other infectious diseases transmitted by insects. - Climate variability impacts on food production and nutrition; affects susceptibility to HIV/AIDS, malaria, and other diseases. 	<ul style="list-style-type: none"> - Climate monitoring supports targeting high-risk areas. - Climate-based early warning increases lead-time of epidemic detection, prevention, and control of climate sensitive diseases, e.g., malaria early warning can facilitate activation of funds for preventive measures and medicines and their distribution to remote areas. 	<ul style="list-style-type: none"> - Combined understanding of climate history, climate impacts and affected socioeconomic factors to be used in prioritizing, designing, implementing and maintaining health care investments. - Develop and maintain communication and response networks that use the best applied climate information.
<p>Goal 7: Ensure environmental sustainability</p>	<ul style="list-style-type: none"> - Climate variability constraints both quality and quantity of water supply. - Resource management regimes fail because they ignore the impact of climate variability, e.g. for water or pastures. - Resource degradation is blamed on people who are actually responding to climatic variations. 	<ul style="list-style-type: none"> - Water reservoirs can be managed more effectively for multiple purposes under both scarcity and surplus, using reliable climate forecasts. - Managing rangelands based on understanding of climate-human-livestock interactions enhances sustained productivity. 	<ul style="list-style-type: none"> - Long term sustainability and/or impact mitigation through adaptation to climate change policies, designs and applications. - Biodiversity conservation to take into account climate variability and change. - Improved designs of water infrastructure systems, using climate information, mitigate adverse environmental consequences of extreme climatic events.

Source: Germanwatch based on Columbia University 2007

3.2 Linking adaptation, mitigation and energy access

Climate change can influence the energy supply situation in different aspects. Changes in the hydrological cycle affect major water reservoirs which currently are an important source of electricity production in many African countries. The Volta River, for example, which produces electricity for the Ivory Coast, Benin, Ghana and other countries, has considerably dried up in the last years, limiting the production significantly and leading to shortages in electricity supply. For example, the Southeastern Akosombo Dam is Ghana's major source of electricity, and significant shortages have been reported in connection with fallen sea-levels.⁵⁵ Although climate change may not be the decisive source in this case, since population growth and increased water demand for agriculture also contribute to the decrease, this example shows how a potential further decrease of precipitation due to climate change may economically affect African societies. Lake Victoria, which is a water supply source for more than 30 million people, has also seen a considerable lowering of the sea level which also impacts heavily on the electricity production from hydro energy. Also, this risk is explicitly mentioned by Rwanda in its National Adaptation Programme of Action.⁵⁶

Biomass-based energy supply is also affected by changing climatic conditions. A lot of research has been paid in the past to the primarily man-made and not climate-related fuelwood crisis in many African countries. Still, about 80% of the African population rely on "traditional" biomass to cover their basic energy needs. Reduced precipitation and warming in Africa both contribute to limited availability of plants that are used for energetic purposes. Particular attention should be paid in this context to agricultural production dedicated to energetic purposes. There is a lot of debate on the benefits and the possible negative impacts of agrofuel production at the moment, with African countries also seeing economic opportunities in investing in it, either for agricultural exports or for the substitution of petroleum imports. The links with potential climate change impacts on agriculture are clear. For example, *Sugrue* discusses how South Africa's biofuels strategy may impact food security, combined with the expected reduction in precipitation in Southern Africa.⁵⁷

Finally it has to be noted that also fossil and nuclear fuel based power plants rely on a huge amount of water, as cooling water for nuclear power plants and condensation water to power the turbines of conventional fossil fuel plants.

At the same time, the effectiveness of many adaptation strategies will depend on energy access of relevant stakeholders which may further drive anthropogenic climate change if relying on fossil fuels. This points to the interconnection between mitigation and adaptation. *Klein et al.* list four different ways of these inter-relationships:

- Adaptation actions that have consequences for mitigation,
- Mitigation actions that have consequences for adaptation,
- Decisions that include trade-offs or synergies between adaptation and mitigation,
- Processes that have consequences for both adaptation and mitigation.⁵⁸

⁵⁵ Lambert 2007

⁵⁶ Rwanda 2007

⁵⁷ Sugrue 2007

⁵⁸ Klein et al. 2007b

A key conclusion of the IPCC in this regard is that “creating synergies between adaptation and mitigation can increase the cost-effectiveness of actions and make them more attractive to stakeholders, including potential funding agencies (medium confidence).”⁵⁹ So far only relatively little attention has been paid to possible synergies of technological approaches such as renewable energy in the overall climate change debate. However, many renewable energy project types exist which link mitigation with adaptation and thus could be called “hybrid” projects (table 4).

Table 4: Mitigation and adaptation benefits from different small-scale decentralised renewable energy technologies.

Types of Renewables	Application	Mitigative Benefits	Adaptive Benefits	Ancillary Benefits
Efficient use of biomass: Shells, peanuts, bagasse	Electricity generation Heat	Reduced use of charcoal and woodfuel and less pressure on natural resources	Reducing the likelihoods of deforestation through continued use of woodfuel and charcoal	Creation of jobs and livelihood opportunities Reduced drudgery therefore better quality of life Reduction of time spent on fuel collection Reduction of incidents related to indoor air pollution and respiratory infections prevalent with biomass
Wind pumps	Crop processing Irrigation Water pumping	Decreased dependence on biomass Avoidance of CO ₂ emissions	Greater resilience to climate related stresses through reduced vulnerability to water scarcity More adaptation choices i. e. through irrigated agriculture and not relying solely on rainfed agriculture	Increased access to energy and energy consumption Greater prospects for income generation Improved quality of life Reduced risks of vector borne diseases Improved water supply that is beneficial for agricultural productivity and livestock rearing Improved food security Reduced out migratory fluxes Improved performance and attendance level of school children particularly girls
Biogas plants	Production of sludge for fertilisers	Reduced use of biomass	Adapting to soil erosion, aridity and environmental degradation	Environmental sustainability; better prospects of agricultural productivity there more chances to generate income
Solar Home Systems	Water Heating Cooking	Reduced consumption of woodfuel, kerosene and dry cell batteries Reduced pressure on the environment and natural resources		Improved quality of life Reduced health risks
Solar panels, PVs	Lighting Water pumping Water desalination	Improved local air quality Reduction of CO ₂ and reduced dependency on kerosene, woodfuel and dry cell batteries	Build resilience and coping strategies of communities especially during drought periods Thus reduced vulnerability to water shortages	Improved access to water Reduced drudgery for women responsible for water collection Reduced risks of infected water therefore improved sanitation and health
Micro hydro	Lighting Access to information technology etc	Reduction of GHG Protection of land cover		Improved health (indoor air pollution and other respiratory illnesses) as kerosene lamps are not no longer used Greater school attendance with electrification at school Access to internet facilities with electrification

Source: Christensen et al. 2006

⁵⁹ Klein et al. 2007b

3.3 Indigenous knowledge systems and community-based adaptation

The adverse impacts of climate change are felt the most and the earliest by those communities and people who significantly rely on climate-dependent resources and who live in the high-risk areas of climate change. Thus, any adaptation strategies should in particular highlight the needs and also build on the strengths of these communities. Indigenous knowledge systems, described as “*knowledge systems developed by a community as opposed to the scientific knowledge that is generally referred to as ‘modern’ knowledge*”⁶⁰, have proven to be effective in coping with certain climatic conditions such as extreme events. Parry *et al.* list a number of examples which have been investigated by researchers:

- Nigeria: one study shows that farmers are able to use knowledge of weather systems such as rainfall, thunderstorms, windstorms and sunshine to prepare for future weather;
- Burkina Faso: one study shows that farmer's forecasting knowledge encompasses shared and selective experiences; elderly male farmers formulate hypotheses about seasonal rainfall by observing natural phenomena, while cultural and ritual specialists draw predictions from divination, visions or dreams;
- Sudan: Women preserve a spread of seed varieties of sorghum that will ensure resistance to the range conditions that may arise in any given growing season;

A report by the secretariat of the UNFCCC shows in a number of examples how people have developed traditional adaptation strategies to face the the great interannual climate variability and extreme events in Africa.⁶¹ According to UNFCCC 2006, “*communities who have faced harsh environmental conditions over prolonged periods, have consequently been trying, testing and adopting different types of coping strategies.*”⁶² Parry *et al.* see the “*enhancement of indigenous capacity [as] a key to the empowerment of local communities and their effective participation in the development process. People are better able to adopt new ideas when these can be seen in the context of existing practices.*”⁶³

Thus, the development of community-based adaptation projects (CBA) is of particular importance for strategies to respond to climate change in Africa. Especially the rural and urban poor suffer a lot from political and economic marginalisation and/or from a high degree of dependence of climate-sensitive economic activities. In general, the vulnerable communities are the main target group of the work of non-governmental development organisations from industrialised countries. The active participation by the target groups is of high relevance, since studies have shown that the neglect of local, indigenous knowledge can adversely impact cooperation on adaptation.⁶⁴ It is important that “*community-based adaptation recognises that environmental knowledge, vulnerability and resilience to climate impacts are embedded in societies and cultures. This means the fo-*

⁶⁰ Parry *et al.* 2007b: 865

⁶¹ UNFCCC 2006

⁶² UNFCCC 2006: 33

⁶³ Parry *et al.* 2007 : 866

⁶⁴ Twinomugisha 2005

cus is on empowering communities to themselves take action based on their own decision-making processes."⁶⁵

The primary aim of the CBA initiatives is to share the latest developments in adaptation programmes, priorities and solutions, through knowledge dissemination between participants. The specific objectives are

- to bring different stakeholders and practitioners to share and discuss knowledge of CBA practices from different parts of the developing world;
- to capture the latest learning from experience of CBA around the developing world;
- to enhance capacities of the most vulnerable groups and people, to improve livelihoods in developing countries and integrate these lessons into national and international development programmes;
- to compile papers and the findings of group discussion into workshop proceedings for further dissemination worldwide.

CBA lessons learnt

From those CBA activities that have already been taking place – in Asia, in Africa, in Latin America - , *Reid and Huq* conclude six lessons learnt:⁶⁶

1. Outsiders must first gain the trust of the communities they want to help, through long-term presence with the community or through the inclusion of, and the exchange with local trusted intermediaries (e.g. NGOs, community groups or government bodies).
2. Communication about the complex issue climate change must be understandable by the communities and be presented in their language, with traditional and/or modern communication methods (art and theatre, video).
3. Identifying local adaptation priorities requires initial learning about the indigenous capacities of the community and their experience of coping with climatic changes, before introducing new activities, technologies or practices.
4. Adaptation should not end in stand-alone projects, but rather make the communities understand climate risks, how they impact on their usual development activities and how they can integrate these new challenges.
5. Learning CBA requires the practice of implementing it, beyond theoretical experience. It is "action-research".
6. It is important now to speed-up the development and implementation of CBA pilot activities and to share the experience and knowledge gained from them, between practitioners, policymakers, researchers, funders and the communities at risk.

Different organisations have tried to promote CBA in the past few years. One example in Africa is SouthSouthNorth (SSN), which lists at least three projects in their portfolio of such adaptation projects in South Africa, Mozambique and Tanzania. These focus on

⁶⁵ <http://www.cba-exchange.org/>

⁶⁶ Reid/Huq 2007

water saving and supply.⁶⁷ The “Clean energy clean water” project in Mozambique can even be called a “hybrid” project which includes an adaptation as well as a mitigation (saving CO₂ emissions) element. PV-powered water pumps assist 100 small farms in sustainable water provision. SSN has also developed an “Adaptation Projects Protocol” for CBA (SSNAPP for CBA) which is designed to help establishing “hot spots” where adaptation projects are appropriate.⁶⁸

The African Centre for Technology Studies (ACTS)⁶⁹ is participating in a project to foster adaptation in Eastern and Southern Africa, with partners like UNEP, GEF or the International Institute for Sustainable Development (IISD). Projects being developed include community-based fire management in Central Mozambique, increasing community resilience to drought in Makueni District, Kenya, and reducing the vulnerability of Rwanda's energy sector to the impacts of climate change.

IISD and other research institutes have also developed a tool called “Community-based Risk Screening Tool – Adaptation & Livelihoods (CRISTAL)” which is designed to help project planners and managers to integrate risk reduction and climate change adaptation.⁷⁰

These are only some examples of CBA which may serve as a good starting point to develop further activities.

3.4 Examples of planned adaptation in Africa

An increasing number of research and implementation activities are taking place in different parts of the African continent to better understand the issue of adaptation, to define priorities and to test approaches. Some examples are shown below.

Hellmuth et al. describe examples of drought management in Ethiopia, flood management in Mozambique, drought insurance in Malawi and agriculture in Mali.⁷¹ Ethiopia established policies and planning for drought management, to better cope with the recurring droughts. An early warning system was developed in order to ensure that sufficient external food aid reaches the country. Inter alia, it contains early warning committees on all government levels.

UNFCCC lists other experience in different sectors, inter alia

- diversification of herds and incomes, e.g. the introduction of sheep in place of goats in the Bara province in Western Sudan;
- reliance on forest products as a buffer to climate-induced crop failure in climatically marginal agricultural areas;
- decentralization of local governance of resources i.e. the Community Based Natural Resource Management (CBNRM) approach to promote use of ecosystems goods and services as apposed to reliance on agriculture (in climatically marginal areas for agriculture); and

⁶⁷ SouthSouthNorth 2006

⁶⁸ <http://www.southsouthnorth.org/download.asp?name=SSNAPP%20for%20CBA.pdf&size=3080310&file=library/SSNAPP%20for%20CBA.pdf>

⁶⁹ www.acts.or.ke

⁷⁰ IISD et al. 2007

⁷¹ Hellmuth et al. 2007

- manipulation of land use leading to land use conversion (e.g. shift from livestock farming to game farming in Southern Africa).⁷²

The Global Environment Facility (GEF) also supports a few on-going projects (table 5).

The International Development Research Centre (IDRC) in Canada recently started financing for 10 projects in Africa in the order of 10 million Canadian dollars as part of the Climate Change Adaptation in Africa (CCAA) project. They focus on vulnerability and risk management in agricultural systems, capacity strengthening, river basin adaptation and food security as well as ecosystem management.⁷³ 18 countries in Sub-Sahara and Northern Africa are addressed, benefits for the most vulnerable communities are prioritised.

Table 5: Adaptation in Africa – projects financed by the GEF

Country	Project name	GEF grant (in million US\$)	Cofinancing amount (in million US\$)	Project cost (in million US\$)
Kenya	Adaptation to Climate Change in Arid Lands (KACCAL)	6.790	44.845	51.635
Kenya, Madagascar, Mozambique, Rwanda, Tanzania	Integrating Vulnerability and Adaptation to Climate change into sustainable development policy planning and implementation in Southern and Eastern Africa	1.000	1.265	2.265
Senegal, Gambia, Guinea-Bissau, Mauritania, Cape Verde	Adaptation to Climate Change – Responding to Coastline Change and its human dimensions in West Africa through integrated coastal area management	4.000	4.000	8.000
Niger, Morocco, Namibia (and 7 countries from other regions)	Community-based adaptation (CBA) programme	5.010	4.525	9.535

Source: GEF projects database⁷⁴

The project “Advancing capacity to support climate change adaptation (ACCCA)”⁷⁵ funds 14 pilot projects, mainly in Africa, which were selected out of 274 original applications, through a merit-based review process. The project’s database allows easy access to the most important information on these projects. Inter alia, these are funded by the European Commission. They will be explained in more detail in chapter 4.5.3.

In addition, capacity building and research activities like the “Capacity Strengthening of Least Developed Countries (LDCs) for Adaptation to Climate Change (CLACC)”⁷⁶ project or the “Assessments of Impacts and Adaptations to Climate Change in Multiple Regions and Sectors (AIACC)”⁷⁷ project contribute to develop a better understanding of how adaptation to climate change can effectively be designed for communities and at other levels.

⁷² UNFCCC 2006

⁷³ IDRC 2007

⁷⁴ <http://www.gefonline.org/home.cfm>

⁷⁵ www.acccaproject.org

⁷⁶ www.clacc.net

⁷⁷ www.aiaccproject.net

3.5 The NAPA process: Identifying short-term adaptation priorities

As part of the UNFCCC process, Least Developed Countries are assisted in developing programmes to identify short-term adaptation priorities, the so-called National Adaptation Programmes of Action (NAPA). The focus of the NAPAs is on urgent and “*immediate needs – those for which further delay could increase vulnerability or lead to increased costs at a later stage*”.⁷⁸ NAPAs should be action-oriented, country-driven and be based on national circumstances. Also, coherence and synergies with other strategies like Poverty Reduction Strategy Papers (PRSP) or Action Plans of other environmental conventions such as the UN Convention to Combat Desertification (UNCCD) are sought for. The steps for the preparation of the NAPAs include a synthesis of available information, participatory assessment of vulnerability to current climate variability and extreme events and of areas where risks would increase due to climate change, identification of key adaptation measures as well as criteria for prioritizing activities, and selection of a prioritized short list of activities.

Table 6: Overview of NAPAs submitted by African LDCs

Country	Most common climate risks	Examples of priority projects	Totalled costs in million US\$ (number of projects)
Burundi	<ul style="list-style-type: none"> - Rainfall deficit (drought) - Rainfall excess (floodings) - Excessive temperatures - Flashes, thunders and lightnings 	<ul style="list-style-type: none"> - Improvement of early warning forecasts - Rehabilitation of degraded areas, erosion control - Rainwater valorisation 	7.3 (12)
Congo, Democratic Republic of	<ul style="list-style-type: none"> - Intense rainfall events - Seasonal droughts - Floodings - Coastal erosion 	<ul style="list-style-type: none"> - Dissemination of improved maize seeds - Dissemination of improved rice seeds - Dissemination of improved manioc seedlings 	5.6 (3)
Djibouti	<ul style="list-style-type: none"> - Temperature and sea-level rise - Salination - floodings - droughts 	<ul style="list-style-type: none"> - Risk reduction for coastal production systems, wit community participation - Promotion of adaptation measures in water management 	6.6 (8)
Eritrea	<ul style="list-style-type: none"> - Increased climate variability - Sea-level rise - Recurring drought - Flash floodings 	<ul style="list-style-type: none"> - Introducing community based pilot rangeland improvement and management in selected agro-ecological areas - Encourage fforestation and agroforestry through community forestry initiative - Groundwater recharging for irrigation wells 	33 (5)
Lesotho	<ul style="list-style-type: none"> - drought - high temperature and heat waves - strong winds and dust storms - cold winters, early frost and heavy snowfall 	<ul style="list-style-type: none"> - Improve resilience of livestock production systems under extreme climatic conditions - Promoting sustainable crop based livelihood systems - Capacity building and policy reform to integrate climate change in sectoral development plans 	12.8 (11)
Madagascar	<ul style="list-style-type: none"> - Change in agricultural conditions - degradation of fresh water resources 	<ul style="list-style-type: none"> - Rehabilitation and/or construction of dykes to safeguard water resources - Implementation of water management committee 	3.9 (15)

⁷⁸ UNFCCC 2007a

	<ul style="list-style-type: none"> - soil degradation - saltwater intrusion - biodiversity loss - shoreline retreat 	<ul style="list-style-type: none"> - Combat erosion through soil conservation measures which stabilize dunes 	
Malawi	<ul style="list-style-type: none"> - floods - recurring droughts 	<ul style="list-style-type: none"> - Improving community resilience to climate change through the development of sustainable rural livelihoods - Restoring forests in the Shire River Basin to reduce siltation and the associated water flow problems - Improving agricultural production under erratic rains and changing climatic conditions 	22.9 (5)
Mauritania	<ul style="list-style-type: none"> - decrease in rainfall and droughts - wind and water erosion - sea-level and temperature rise in coastal areas - increased frequency of major storms leading to coastal erosion and floodings 	<ul style="list-style-type: none"> - Better knowledge of the cycle of the surface waters for 20 ponds - Construction of flooding breakdown dikes in pluvial and oasis zones - Promotion of water-saving techniques in oasis zones 	20.1 (28)
Niger	<ul style="list-style-type: none"> - Floods - Droughts - Sandstorms - extreme temperatures - Stormy winds. 	<ul style="list-style-type: none"> - Introducing fodder crops species in pastoral areas - Creating Livestock Food Banks - Restoring basins for crop irrigation - Diversifying and intensifying crop irrigation 	- (14)
Rwanda	<ul style="list-style-type: none"> - prolonged seasonal drought - short period droughts in rainy seasons (dry spell) - recurrent droughts in two or three successive years - rains with high intensities of more than 50mm/h - low precipitation 	<ul style="list-style-type: none"> - Mastering hydro meteorological information and early warning systems to control extreme phenomena due to climate change - Increase the adaptation capacity of imidugudu villages in vulnerable regions through the improvement of drinking water supply services and alternative energy - Improvement of food and medical modes of distribution to face extreme climate change phenomena. 	- (15)
Senegal	<ul style="list-style-type: none"> - Accelerated soil degradation through water deficits - salinisation of water and soils and mangrove degradation on coastal areas 	<ul style="list-style-type: none"> - Agroforestry Development - Promotion of technologies for droplet irrigation - Coastal protection measures - Sensibilisation and education of the public 	12.6
Sudan	<ul style="list-style-type: none"> - decreasing rainfall and increased annual rainfall variability - floodings and drought spells - increased malaria transmission 	<ul style="list-style-type: none"> - Enhancing resilience to increasing rainfall variability through rangeland rehabilitation and water harvesting in the Butana area of Gedarif State; - Reducing the vulnerability of communities in drought-prone areas of southern Darfur State through improved water harvesting practices; - Improving sustainable agricultural practices under increasing heat-stress in the River Nile State; - Environmental conservation and biodiversity restoration in northern Kordofan State - Strategies to adapt to drought-induced water shortages in highly vulnerable areas in Central Equatorial State 	17.05 (5)

Source: Germanwatch compilation based on Burundi 2007; Democratic Republic of Congo 2006; Djibouti 2006; Eritrea 2007; Lesotho 2007; Madagascar 2006; Malawi 2006; Mauritania 2004; Niger 2006; Rwanda 2006; Senegal 2006; Sudan 2007

In August 2007, the NAPAs of 12 African LDCs were available on the UNFCCC website (see table 6). In the other African LDCs, completion of the NAPAs is expected for the second half of 2007. An analysis of the NAPA processes in different countries in Eastern and Southern Africa gives an outline of strengths and weaknesses in the development of the NAPAs.⁷⁹ According to this analysis, the important role of the NAPA process has been underlined by many stakeholders, which is largely attributed to the following characteristics:

- emphasis on participatory processes;
- consideration of both vulnerability and adaptation to climate change;
- investigation of climate variability as well as climate change;
- the bottom-up approach; and
- capacity building and awareness raising.

Although a number of constraints are mentioned in the analysis - communication problems between the central offices and states; lack of sufficient technical capacities needed at local levels to play an active role in the assessment process; and insufficient financial resources and time, especially for large countries like Sudan and Ethiopia – it can be summarised that the NAPAs serve as a good starting point to assess which adaptation needs African countries and their civil societies have. They are indeed country-driven processes, and at least many of them have contributed significantly to raising awareness and building adaptive capacity among national stakeholders, as much as it has been possible in a time span of about 18 months which it usually takes to prepare a NAPA.⁸⁰

However, regarding the practical implementation of the projects identified and developed in the different countries, there is still a lot of uncertainty, if, how and by whom of the international community they will be financed. The first addressee usually is the Least Developed Countries Fund (LDCF) set up in the context of the UNFCCC and managed by the Global Environment Facility (GEF) (see 4.5). However the financial resources available at the moment are hardly sufficient to even finance the short-term adaptation needs, as they are defined in the NAPAs. That is only one reason why the Adaptation Fund of the Kyoto Protocol and additional measures are viewed as being extremely important to generate appropriate financing (see 5.).

3.6 Financing demand for adaptation in Africa

There is a lot of uncertainty in assessing the full costs of climate change impacts and of adapting to these. Some recent papers have tried to estimate the financing demand in developing countries as a whole, ranging in the order of some ten billions of dollars annually, depending on what aspects are included.⁸¹

⁷⁹ Osman-Elasha/Downing 2007

⁸⁰ Osman-Elasha/Downing 2007

⁸¹ see e.g. Oxfam 2007; World Bank 2006

For example, the World Bank's widely cited US\$ 10-40 billion annually only cover aspects like integrating adaptation into ongoing planning, policies and practices, and climate-proofing ongoing infrastructural investments done by "macro-actors". This assessment does not include

- *"the costs for 'macro actors' of climate-proofing the existing stock of natural and physical capital where no new investment had been planned, or the cost of financing new investments needed specifically because of climate change;*
- *the costs faced by 'community-level actors' (households, communities, and local NGOs) for the vast majority of their adaptation needs."*⁸²

Oxfam sees *"a minimum of US\$ 50 billion annually to build poor-country resilience to climate change"*. However, no specific date is given for this estimation, but generally the costs are expected to increase the higher the degree of temperature increase will be.

Oxfam underlines that this must be seen as a compensatory finance from those countries primarily responsible for the problem.⁸³ This implies that adaptation financing by the industrialised countries should be additional to existing ODA. Diversion of ODA should be avoided.

Since the overall availability of data related to climate variability and climate change is even more limited for sub-Saharan Africa than for the developing world as a whole, it is particularly difficult to assess costs related to adaptation. Some economic loss inventories have been undertaken, for example in the case of sea-level rise (see 2.2).

A recent report prepared by the UNFCCC secretariat tries to estimate the additional investment costs needed to adapt ("climate-proof") infrastructure to climate change risks in the year 2030, including regional breakdowns.⁸⁴ Assuming an increase of the costs of 5 to 20 % of the investment costs, the report results in additional costs of US\$ 22 to 371 million for Africa. However, this is also only a limited "cutout" of the overall adaptation costs.

A first step approach to identify at least the short-term costs could be to scale-up the financial needs assessments for the NAPA priority projects, although this is only a very rough estimate.⁸⁵ Table 7 shows the estimations for all African LDCs respectively for all sub-Saharan African countries, scaled-up from those 10 African NAPAs which quantified the financial needs for their priority projects.

⁸² Oxfam 2007: 18

⁸³ Oxfam 2007: 23

⁸⁴ UNFCCC 2007b

⁸⁵ see also Oxfam 2007

Table 7: Estimates of the cost of urgent and immediate adaptation needed, scaled up from the 10 African NAPA budgets

Grouping	Parameters		
	Population, millions	GDP US\$ bn (exchange course)	Land use, sq. km ⁸⁶
African NAPA 10	158.6	69.6	362,585
All African LDCs	449.0	173.9	1,792,667
All sub-Sahara Africa	743.1	621.9	3,194,056
Scaling up from NAPA budgets	On the basis of:		
	Population	GDP	Land use, sq. km
Scaling up for all African LDCs	\$401.6 million	\$354.4 million	\$701.3 million
All sub-Sahara Africa	\$664.6 million	\$1,267.5 million	\$1,249.6 million

Source: own calculations based on World Bank 2007; WRI 2007; Oxfam 2007

It is important that the resulting figures would only cover the cost of the most urgent activities of the next three to five years. In the long-term, the financing challenge for adaptation in African LDCs and other developing countries still remains huge, in the tenths of billions of US\$. Increasing contributions by the countries primarily responsible for anthropogenic climate change are rightly expected by those most affected, and this will be a key issue for the international negotiations on an agreement for the second commitment period of the Kyoto Protocol, hopefully starting in 2012, and beyond.⁸⁷

3.7 Early lessons learnt and important next steps

Although adaptation to anthropogenic climate change is still young in Africa (and in the rest of the world), different studies and workshops have tried to identify some early lessons. For example one regional workshop to discuss about early lessons from climate change adaptation projects in South-Eastern Africa was held in April 2007 in Maputo, Mozambique.⁸⁸ It was organised by IISD and SouthSouthNorth. More than 60 adaptation experts and practitioners from the region participated and shared their experience. Key findings include:

Coping with extreme events:

- The unpredictability of natural disasters contrasts with the short-term planning of local level policy.

⁸⁶ contains populated and agricultural land area, see WRI 2007

⁸⁷ Harmeling/Dossou 2007

⁸⁸ see <http://www.iisd.org/climate/vulnerability/lessons.asp> for the final workshop report and other information

- To understand the differences between and within adaptation to climate change projects, we need to attempt to define what is meant by 'adaptation'.
- There needs to be an understanding of how disaster relief fits into adaptation. The views expressed are towards future long-term adaptation of the communities affected, as well as a need for stakeholder engagement in collaboration.
- More funds go towards disaster relief instead of disaster preparedness. This fact could indicate that funders are not clear as to what action to take (relief vs. adaptation). There is also a clear distinction between what has happened (disaster relief) and what can be prevented from happening (is this adaptation?).
- There is still debate over whether adaptation is separate from development. Verification of inputs (data, needs, etc) could be a way to discern adaptation from development (if this is appropriate).
- Adaptation to climate change has more to do with social research and social institutions.
- Vulnerability is created by factors other than climate change, yet it is increased by climate change and variability. Social processes must be included in how we deal with adaptation.

General aspects:

- clear need across south-eastern Africa region (and globally) to form partnerships and understand vulnerabilities to climate change and variability, based on the affected community's perspectives;
- the sustainability of responses must be incorporated into planning;
- for disaster response, integration into development strategies is needed;
- better energy policy and regulation in light of climate change and adaptation is required to mitigate negative effects on this sector;
- more rigorous, participatory and socially-sensitive project processes (including learning assessments) are needed;
- understanding must reach the donor sectors to have more projects funded and the adaptive capacity of vulnerable communities ensured.

Although this was only a regional workshop it can be assumed that many of these lessons are valid for most of Africa.

The UNFCCC African regional workshop on adaptation which took place in Accra/Ghana from 21 to 23 September 2006 discussed shortcomings and important steps for further activities in three areas: Systematic observation, impact and vulnerability assessments, and adaptation planning and implementation. The results of this workshop which gathered adaptation experts from all over Africa can be judged as an important knowledge base on what is needed to advance the adaptation efforts and implementation in

Africa. Table 8 shows the proposed follow-up activities which have been clustered in the three above-mentioned areas.

Table 8: Examples of important next steps to advance climate change adaptation in Africa

Area of action	Proposed follow-up activities
Systematic observation	<ul style="list-style-type: none"> (a) Improving and sustaining operational observing networks, such as the GCOS Surface Network (GSN) and Upper Air Network (GUAN); (b) Rescuing historical meteorological data and supporting the GCOS Action Plan for Africa; (c) Generating awareness among different user communities of the usefulness of climate information and services; (d) Improving collaboration between the providers of climate information and the sectoral users of this information.
Impact and vulnerability assessments	<ul style="list-style-type: none"> (a) Developing regional climate models to provide fine-scale climate information for longterm impact studies and forecasting; (b) Linking climate change with socio-economic data; (c) Promoting integrated assessments, bottom-up assessments, and the use of the livelihood approach in the assessment process; (d) Continuing and enhancing capacity-building efforts following the outcomes of the Assessments of Impacts and Adaptations to Climate Change project and the climate modelling workshops conducted by the World Meteorological Organization and the Global Change SysTem for Analysis, Research and Training (START); (e) Facilitating the exchange of information and experiences between African institutions; (f) Promoting opportunities for further South–South cooperation and coordination in the impact and vulnerability assessment process, for example through enhancing the role of specialized centres such as the African Centre of Meteorological Application for Development in the areas of training modelling
Adaptation planning and implementation	<ul style="list-style-type: none"> (a) Implementing identified adaptation projects, including those proposed through the NAPA process; (b) Adopting the NAPA methodologies by non-LDCs given the good experiences with NAPA preparation; (c) Integrating climate change into educational curricula to increase awareness; (d) Creating awareness on adaptation among planners and political decision makers; (e) Enhancing and facilitating the sharing of experiences between users of traditional coping strategies, through a variety of mechanisms, for example through expanding the UNFCCC database on local coping strategies; (f) Building capacity for the development of project proposals and better access to adaptation funding; (g) Increasing adaptation funding in both the national budgets as well as in multilateral funds, possibly through the establishment of an Adaptation Fund for Africa; (h) Cooperating on adaptation, and mainstreaming it through:

	<p>(i) Establishing African partnerships to enhance South–South cooperation by:</p> <ul style="list-style-type: none"> – Building the capacity of climate change focal points, including through training and provision of equipment; – Developing inventories of successful experiences and expertise available; – Reinforcing links with the disaster risk reduction community, especially with regard to disaster preparedness rather than relief; – Integrating adaptation in sectoral policies and environmental impact assessments; – Creating climate change committees feeding into regional committees; – Collaborating and networking among African institutions active on climate change; – Holding annual forums, including one for francophone Africa, to exchange information on vulnerability assessments, adaptation planning and implementation at regional level; – Developing transboundary projects; <p>(ii) Creating partnerships to transfer experiences and to incorporate adaptation into projects and loans as part of North–South cooperation;</p> <p>(iii) Enhancing synergies between the Rio Conventions for purposes of sharing information and knowledge on assessment processes such as the NCSA programme.</p>
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Source: based on UNFCCC 2007a

Also, as part of the project “Climate Change in Africa”⁸⁹, three regional consultations (West&Central Africa, East&Central Africa, Southern Africa) were held in 2007. Besides sharing experience on lessons learnt, these consultations envisaged to support the formulation of civil society positions on adaptation priorities and on how these could be streamlined into the international agenda through certain mechanisms. The workshop summaries contain numerous recommendations to African governments and other stakeholders such as NGOs, parliaments etc. Since the role of the international community respectively the EU is of particular relevance in the context of this paper, key findings in this regard are summarised⁹⁰:

- Assist in ensuring that clear messages on climate change impacts, short term and long term adaptation options are articulated within the continent, regional levels and at national levels. Various existing institutions and platforms within the continent/regional levels and national levels could be co-ordinated and used for this purpose. This could also assist in coordinating all research, projects and initiatives and their findings within the continent, region and at national levels.
- Increasing support to African governments and all other relevant institutions (i.e. public sector, private sector and civil society) and raising high-level attention within the continent to Climate Change adaptation.
- Ensure and increase resources (financial, human and institutional) towards adaptation measures in Africa as a recognition of the difficult position that the continent and its various regions find itself in being uniquely and highly impacted by

⁸⁹ <http://www.climatechangeafrica.org>

⁹⁰ see workshop report on the Southern African Climate Change Consultation

climate change and increased climate variability due to its existing and complex vulnerabilities.

3.8 Preliminary conclusions

Climate change leaves Africa with an additional development and financial burden to which it has only contributed very little. An increasing number of adaptation initiatives is taking place. In most cases effective and successful adaptation requires investments, e.g. for “climate-proofing” infrastructure or other strategies. Capacity building must be at the heart of any strategy, since experience in practising adaptation is urgently needed. Although no clear figures are available, there is no doubt that the costs of adaptation will be significant in all its dimensions and likely overstrain many countries' capacities. Financing thus must be seen as a key constraint for successful adaptation on a broader scale. The international community, and the developed countries in particular, are expected to substantially contribute to covering the adaptation demand. Lessons from development assistance show that people and institutions do also need sufficient capacity to use financial flows from external sources effectively. In this regard capacity building is also important in order to increase the “absorptive capacity”.

Priority fields of action include improvements in systematic observation of climate variability and climate change, impact and vulnerability assessments on different scales, and adaptation planning and implementation in different, vulnerable sectors (agriculture, water, ecosystems, energy) and in cross-sectoral approaches. Those communities particularly affected should be given high priority when developing pilot projects.

4 Adaptation to climate change in the EU's development cooperation with Africa

Before analysing how adaptation to climate change features in the EU development cooperation with Africa, some general remarks on the EU development policy have to be made.

The EU as a whole, including all the Member States and the European Commission, is the world's largest donor of Official Development Assistance (ODA), donating an estimated US\$ 56 billion in 2006.⁹¹ However, there is criticism about the value of these figures. Development NGOs argue that this aid is inflated substantially by "non-aid items" such as debt cancellation, which accounted for about US\$ 11 billion in 2006.⁹² The European Commission itself disbursed some US\$ 10 billion in ODA in 2006 which makes this institution the "sixth largest donor amongst the members of the OECD's Development Assistance Committee (DAC)."⁹³ The OECD also remarks that the Commission "*plays a "federating" role for the institutions of the 27 Member States of the European Union*".⁹⁴ The aid for Africa accounted for € 48 billion in 2006, according to the European Commission.⁹⁵ The cooperation with Africa is expected to reach a new level with the Joint EU-Africa strategy, likely to be adopted in December 2007 during the EU-Africa summit in Lisbon.

The European Commission as well as most of the Member States adhered to the "Paris Declaration on Aid Effectiveness" in 2005. The 56 partnership commitments are organised around the five key principles: ownership, alignment, harmonisation, managing for results, and mutual accountability. Given the large number of countries playing in the field of EU development cooperation, an effective harmonisation and division of labour is seen to be crucial to increase the aid effectiveness of the EU. No doubt that this is also valid for the question on how the EU deals with adaptation to climate change in its development cooperation with Africa. Since adaptation to climate change is a relatively new field of development cooperation, it offers the opportunity for an effective division of labour "*from the start on*".⁹⁶

Reflecting the multiple policy issues that are relevant for external relations to Africa and other regions, coherence of the EU policies is also an important challenge affecting the EU development cooperation. The "12 Policy Coherence for Development (PCD) commitments", adopted in 2005 by the General Affairs and External Relations Council (GAERC), address this challenge. According to a recent report by the European Commission, coherence between EU policies and development objectives has improved, but further progress can be achieved.⁹⁷ Climate change is one of the areas investigated in this

⁹¹ OECD 2006c

⁹² CONCORD 2007

⁹³ OECD 2007

⁹⁴ OECD 2007

⁹⁵ EC 2007a

⁹⁶ Mürle 2007

⁹⁷ EC 2007b

report (see 4.7). However, still a number of cases exist, and sometimes new ones emerge, where coherence is obviously not achieved, as studies done by CONCORD show, for example in the fields of biofuels or Economic Partnership Agreements (EPAs). If the incoherence adversely affects the development prospects of the poor in particular, this increases their general vulnerability which in turn may reduce their adaptive capacity.

Within the EU development cooperation different fields of action exist where adaptation could be addressed. In its communication on "Climate Change in the context of development cooperation" (COM (2003) 85), adopted in March 2003, the European Commission inter alia lists the following ones:

- support adaptation measures to current climate and its variability, including extreme events, to strengthen knowledge and adaptive capacity in partner countries;
- identification of feasible cost-effective adaptation options in relevant sectors will be supported;
- the EU will support and promote mainstreaming of adaptation concerns and national action plans related to adaptation (e.g. National Adaptation Programmes of Action, NAPAs);
- support the development of tools and capacities for the integration of climate risk management/adaptation concerns into national and sectoral planning
- wide stakeholder involvement will be supported in order to ensure that formal interventions are compatible with informal "traditional" responses to risks posed by climate change;
- the EU will also ensure coherence and/or complementarity between actions aimed at adaptation and actions linked to relevant development cooperation sectors;
- support research and scientific and technological co-operation with developing countries in the 6th Framework Programme (FP6) for research (2002-2006).

In the "European Consensus for Development", the European Parliament, the Council and the Commission also highlighted that "*adaptation to the negative effects of climate change will be central in the Community's support to LDC's and small island developing states (SIDS).*"⁹⁸

The following analyses should contribute to the overall picture on adaptation in the EU development cooperation with Africa.

⁹⁸ EU 2006: 12

4.1 The EU Action Plan on Climate Change and development cooperation

The EU Action Plan on Climate Change in the context of Development Cooperation is a concretisation of the afore-mentioned communication from 2003 and was adopted in November 2004 by the General Affairs and External Relations Council (GAERC). It can be understood as the most important framework for how different actors – the Commission, the Member States, NGOs – could and should contribute to an improved integration of climate change related issues into the European development cooperation and the policy development processes of the partner countries themselves. It was an important initiative since it engaged a new policy level with the issue of climate change – the ministers for external relations and for development - , an issue which so far has only been dealt with by the environment ministers. The Plan stressed the development part of climate change. It is structured according to four strategic objectives:

1. Raising the policy profile of climate change

This aims at raising the political perception of climate change as a relevant issue in which especially the internal – meaning within the European Commission - impact on relevant strategies with regard to development cooperation is highlighted, e.g. in the “Country Strategy Papers” or the “Regional Strategy Papers”. Another aspect is to strengthen the climate change dialogue with the partner countries, a third one to enhance dialogue and cooperation on climate change with the World Bank (WB), the European Investment Bank (EIB) and other regional development banks, and other funding institutions.

2. Support for Adaptation

Support for adaptation includes sensitising for adaptation to climate change with non-governmental organisations in the EU and partner countries, encouraging cross-sectoral dialogues and the engagement of civil society organisations. Guidelines for the integration of climate change into development programmes should be developed. Furthermore, insurance-related instruments as a means to foster adaptation are said to be explored. The support in the development and the implementation of the NAPAs feature prominently in the proposed activities.

3. Support for mitigation and low GHG development paths

Mainstreaming and supporting tools for low-GHG development are important activities listed in this chapter. Evidence on the ancillary benefits of environmentally sound technologies should also be explored. Creating enabling frameworks for the Clean Development Mechanism (CDM) is also mentioned.

4. Capacity Development

Capacity development in the Action Plan inter alia includes awareness raising programmes and information campaigns on climate change, capacity building to assess vulnerability to climate change and to evaluate options for mitigation and adaptation in partner countries as well as the inclusion of outcomes of relevant UNFCCC activities on capacity building.

A major advancement of the Action Plan compared to the respective communication lies in the fact that it names responsibilities for the actions proposed within the EU's institutional system as well as among different policy levels in the Member States. It also gives time frames for the measures. However, a very important point has been omitted: clearly dedicated funding for the purposes envisaged. Although the Council underlined the will to provide US\$ 369 million annually for climate change related activities in developing countries from 2005 onwards, there is no specific information on the financial demand to fulfill the actions agreed on. This aspect somehow questions the practical relevance of the Plan. For the purpose of this paper it must also be noted that this figure has not been broken down into mitigation on the one hand and adaptation on the other hand.

The Action Plan lasts until 2008. A progress report is being prepared by external consultants at the time of writing this paper. The progress report shall, according to the Action Plan and the terms of reference, "*encourage feedback from partner governments, NGOs and the private sector, both in Member States and in partner countries, and other donors on the efficiency and effectiveness of implementation of the action plan.*"⁹⁹ The evaluation report and the feedback should form the basis to modify and update the Action Plan. The preparation of the progress report will also include field visits to selected partner countries to gain information about the practical relevance of the Action Plan.

Table 9: Preliminary conclusions of the Action Plan progress report

Areas of progress	Challenges	Improvements/Advancements suggested
<ul style="list-style-type: none"> - Climate change regular topic of high-level dialogue and outreach between the EU and other regions - Heightened awareness of climate change in EU agencies' headquarters; - Multitude of EU-funded activities in all four strategic areas; - Development and piloting of mainstreaming/ climate risk assessment tools ongoing. 	<ul style="list-style-type: none"> - Awareness at headquarters might be high; yet, lack of operational guidelines and human resources in development agencies - More awareness raising and dialogue between agencies and partners are needed at country level (national development plans, donor strategies); - Mainstreaming as main avenue needs to be taken better care of; present situation: specific climate change projects; - Sharing of experiences, tools, coordination of activities to be improved from the start, reporting mechanisms, including DAC reporting 	<ul style="list-style-type: none"> - Timeframes & responsibilities (who delivers what, by when) to be strengthened; - Better prioritisation, away from all-encompassing approach, e.g. Step-by-step guide to adaptation; differentiation by country group; - Action Plan to be used more strongly as reference document, also with partners; - Specific funds to be earmarked for implementation of the Action Plan (Bonn Declaration 2008?); - Need for Action Plan to cover EU 27

Source: Germanwatch based on Le Grand 2007

A recent presentation by a member of the European Commission points to some areas of progress as well as aspects that have to be strengthened or improved in the review process, according to the Commission's view (see table 9).¹⁰⁰

⁹⁹ EC 2007e

¹⁰⁰ Le Grand 2007

4.2 The policy profile of climate change adaptation

4.2.1 Communications and declarations

Climate Change has increasingly gained importance in the discussions about the development cooperation by the European Union and its Member States (MS). The mentioned Commission's communication was followed by the EU Action Plan. The EU also is aware of that climate change plays a central role when dealing with policy coherence in the European Union, which is indicated through the inclusion of both energy and climate change in the GAERC's "12 Policy Coherence for Development (PCD) commitments":

*"The EU recognizes that one of the greatest environmental and development challenges in the 21st century is that of mitigation and adapting to climate change, and lasting progress in achieving the MDGs will be enhanced by the success of the international community in implementing the Kyoto Protocol and reinvigorating the international negotiations to ensure a post 2012 arrangement in the context of the UN climate change process."*¹⁰¹

Also, climate change related policy commitments have been reiterated in the conclusions of the GAERC meeting on 10 April 2006.

In 2006, the OECD development ministers agreed on the "Declaration on Integrating Climate Change Adaptation into Development Co-Operation". Since most of the EU Member States also belong to the group of OECD countries, this is also important.

The Commission's recent communication "From Cairo to Lisbon – The EU-Africa Strategic partnership", which stands in the context of the development of a Joint EU-Africa Strategy, inter alia proposes an "EU-Africa Partnership on Climate Change" and highlights potential fields of intensified cooperation (see 4.2.3).

4.2.2 Strategy Papers for the cooperation with Africa

In the policy profile section 1.1.2 of the Action Plan the *"reinforcement of the dialogue and the cooperation of the European Union with the partner countries with regard to the climatic changes"* is called for as a subobjective. One of the measures proposed is to address climate change within the Country Strategy Papers (CSP) and Regional Strategy Papers (RSP) that are jointly developed by the EU and the partner countries.

A number of CSPs exists. However, those for countries in Sub-Saharan Africa have been in the review process at the time of writing this paper and were no longer publicly available. At least, preliminary conclusions of the Commission on the Action Plan progress mention how climate change (not only adaptation) is dealt with in the cooperation of Denmark (DK), Germany (DE), the Netherlands (NL) and United Kingdom (UK) with Mozambique and South Africa (table 10).

¹⁰¹ GAERC 2005: 1

Table 10: Climate change in two African Country Strategy Papers

Country	Climate change integrated as priority in CSP (EC + DK, DE, NL, UK)	Climate change projects funding (EC + DK, DE, NL, UK)	Priority country for development cooperation (DK, DE, NL)	Climate change integrated in national development plans	Period covered
Mozambique	No	DK, DE, NL, UK	DK	Yes	2004-2006
South Africa	No	DK, NL, UK	DK, DE, NL	No	2004-2006

Source: Le Grand 2007

This table indicates that the integration of adaptation into these strategy papers is only at the beginning. RSPs on Central Africa, Western Africa, Eastern and Southern Africa and the Southern Africa Development Community (SADC) cover the period from 2002 to 2007. A rough "wording analysis", screening the text for "climate change" and "adaptation", shows that at that time the climate change policy profile in the cooperation strategies with African regions was very low (table 11). This does not mean that no activities in these countries or regions are taking place. But the official strategy papers which are to set out the guidelines of the EU's cooperation with the respective regions so far have not paid significant attention to climate change and adaptation to its consequences so far.

Table 11: Analysis of climate change and adaptation policy profiles in Regional Strategy Papers

Region	Climate Change	Adaptation
Western Africa	No mentioning	No mentioning
Central Africa	<ul style="list-style-type: none"> - The impacts of actions in all fields of interventions regarding natural resources should be analysed in environmental impact assessments and included into the climate change plan; - the implementation of biodiversity action plans on national and regional level should take into account climate change aspects. 	No mentioning
Eastern and Southern Africa	<ul style="list-style-type: none"> - All countries of the region are parties to the Multilateral Environmental Agreements on climate change (and other issues); - Special emphasis should be given to strengthening the capacities of partners countries' institutions in order to allow them to participate in multilateral agreements dealing with the environment and to implement the obligations ensuing from these agreements; - It is also necessary to anticipate the potential effects of climate changes which represent a major threat to the low coastal zones where a large proportion of the population lives and where most industries (including main tourist resorts etc) are established. 	No explicit mentioning (see climate change column)
Southern Africa Development Community (SADC)	No mentioning	No mentioning

Source: Germanwatch compilation based on EC 2002a, b, c, d

4.2.3 Joint EU-Africa Strategy process

In June 2007, the European Commission launched its communication “From Cairo to Lisbon – The EU-Africa Strategic partnership”.¹⁰² It is directed towards the EU-Africa summit taking place in Lisbon in December 2007, where the Joint EU-Africa Strategy should be adopted. The communication builds on a policy development process, which included stakeholder consultation, other EC communications and papers as well as contributions from African policy fora. Another important document to mention in this context is the draft outline of the Joint EU-Africa Strategy, which is the concrete joint basis for finalising the negotiations on the strategy throughout 2007.¹⁰³ The outline lists four joint priority areas for action in the context of environment and climate change:

- Work together in the global arena and international fora to effectively respond and adapt to climate change and other global environmental challenges, such as desertification, deforestation, biodiversity, and issues related to toxic waste.
- Assist Africa’s fight against desertification, deforestation, and the loss of biodiversity, and support efforts to eliminate problems relating to toxic waste in Africa.
- Promote environmental sustainability and the integration of environmental considerations in the elaboration and implementation of development policies.
- Strengthen cooperation and support capacity building in the management of natural resources.¹⁰⁴

In its communication, the EU proposes several new partnerships between the EU and Africa, out of which the EU-Africa Partnership on Climate Change and that on Energy are the most relevant in the context of this paper. While the EU-Africa Partnership on Climate Change has a focus on the vulnerability of African countries to the consequences of climate change, the other partnership deals with the cooperation in the energy sector. The latter one is interesting in terms of clean, climate-friendly development, but also with regard to the adaptation needs in the energy sector and, last but not least, possible synergies between adaptation and mitigation which have been described before (see 3.2).

Sustainable energy has developed as an important pillar of the European Union’s development cooperation with Africa. The “EU Energy Initiative for Poverty Eradication and Sustainable Development (EUEI)” which was launched during the World Summit for Sustainable Development (WSSD) in 2002, seeks to promote renewable energy and energy efficiency in the EU cooperation with developing countries. The dialogue with African stakeholders – e.g. the Forum of Energy Minister of Africa (FEMA) or the New Partnership for Africa’s Development (NEPAD) – is an inherent element of the initiative.¹⁰⁵ The related Council Conclusions from March 2007 *inter alia* call for more emphasis on the development and use of renewable energy resources as a means to mainstream climate

¹⁰² EC 2007

¹⁰³ European Union/African Union 2007

¹⁰⁴ European Union/African Union 2007: 8

¹⁰⁵ http://ec.europa.eu/development/Policies/9Interventionareas/WaterEnergy/energy/initiative/index_en.htm

change mitigation in its development cooperation.¹⁰⁶ The Council also mentions the need to “climate-proof” investments in the energy infrastructure and thereby points to an important issue, the often high vulnerability to climate change. Thus, addressing this issue in the Joint EU-Africa strategy process is a logical and necessary consequence.

From an African perspective, it is important to have a look at how the priorities and demands expressed by African stakeholders fit to the proposals and priorities set out in the EC communication. For comparison, the Addis Abeba Declaration on Climate Change and Development in Africa, adopted by the African Union in January 2007, is referred to, since it is judged as the latest and most prominent Africa-wide policy document on climate change.¹⁰⁷ Integrating climate change into development strategies is envisaged. Although quite the same issues are addressed, the AU declaration is far more concrete and, as a matter of coherence, also calls upon the developed countries to meet their mitigation commitments. The AU's desire to build capacity for UNFCCC negotiations is not reflected in the latest EC communication, but in the outline of the Joint EU-Africa Strategy. Regarding the concreteness, it has to be noted that the Joint Strategy is supposed to be accompanied by additional and more specific action plans, and this leads back to the call for an effective review and follow-up of the EU Action Plan on Climate Change in the context of Development Cooperation.¹⁰⁸

From the perspective of international climate change policies it is remarkable that the EU, in its communication on the cooperation with Africa, indicates the announcement of a “Global Climate Change Alliance (GCCA)”, which puts emphasis on the cooperation between the EU and those countries vulnerable to climate change, the LDCs and the Small Island Developing States (SIDS) in particular. According to the draft document outlining the purpose and scope of the GCCA, key objectives are

- establishing a joint vision for the achievement of a comprehensive post-2012 international climate change agreement;
- helping the target countries to
 - o more comprehensively integrate climate change into development strategies and programmes;
 - o adapt to the effects of climate change without prejudice to achieving the Millennium Development Goals and prepare themselves to face an increase in weather-related natural disasters;
 - o take part in the global mitigation effort through tackling deforestation, and participating in the Clean Development Mechanism (CDM), where it benefits their poverty reduction priorities.¹⁰⁹

¹⁰⁶ EU Council 2007

¹⁰⁷ AU 2007

¹⁰⁸ VENRO 2006

¹⁰⁹ EC 2007

The announcement of the GCCA by the Commission is envisaged for the middle of September 2007. It should be discussed further during the European Development Days in Lisbon (November 2007) and also in the context of the EU-Africa summit.

Table 12: Issues and objectives of the proposed EU-Africa Partnership on Climate Change and the Addis Abeba Declaration on Climate Change and Development in Africa

	EU-Africa Partnership on Climate Change	Addis Abeba Declaration on Climate Change and Development in Africa
Problems addressed	<ul style="list-style-type: none"> - Africa is one of the most vulnerable continents to climate variability and change because of multiple stresses and low adaptive capacity. - The African continent will be particularly affected in terms of food security, sustainable water supply and extreme weather phenomena such as floods and droughts. - - If continuing unabated, climate change poses a serious risk to poverty reduction and threatens to undo years of development efforts. 	<ul style="list-style-type: none"> - climate change could endanger future well being of the population, ecosystems and socio-economic progress of Africa; - vulnerability of African economic and production systems to climate change and climate variability and the continent's low mitigation and response capacities
Objectives/proposed actions	<ul style="list-style-type: none"> - The partnership will also strengthen practical cooperation in the following areas: - adaptation, - disaster risk reduction, - halting deforestation, - promoting participation of developing countries in the global carbon market (including through the Clean Development Mechanism), - promoting and deploying environmentally friendly technologies, - as well as improving the monitoring of environmental effects of climate change, including through space-based systems. 	<ul style="list-style-type: none"> - BUILD capacity and strengthen the effective participation of African countries in the negotiations on the future of the UNFCCC and Kyoto Protocol processes. - INTEGRATE climate change and climate change adaptation strategies into national and sub-regional development policies, programmes and activities - UNDERTAKE targeted awareness raising amongst policy, decision makers and civil society with the view to ensuring that climate change considerations are taken into account in all sustainable development initiatives. - DEVELOP and/or strengthen research and development in climate change in Africa to increase the continent's resilience and adaptation to climate change. - DEMAND that developed countries undertake and meet their mitigation commitments, including the implementation of the "polluter pays" and "differentiated responsibilities principles"

Source: Germanwatch compilation based on EC 2007a; AU 2007

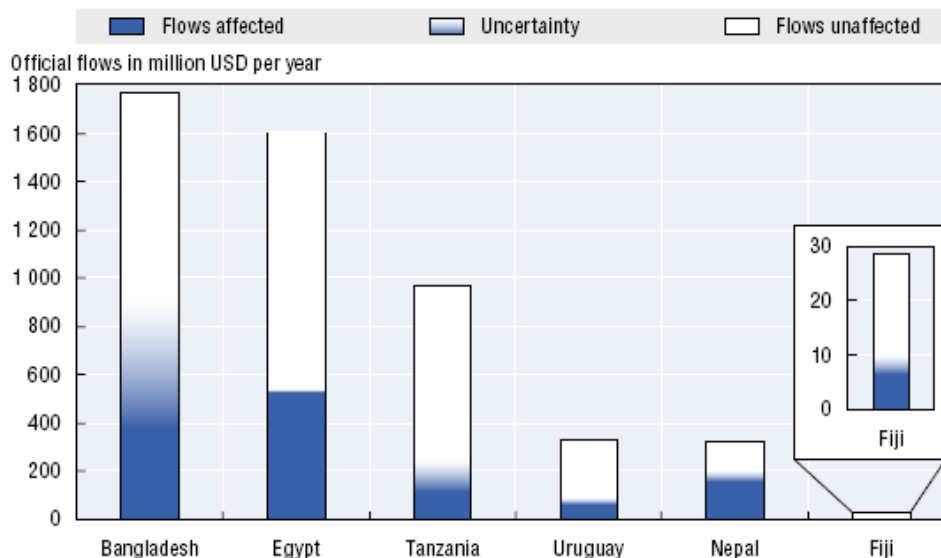
4.3 Integrating adaptation into development cooperation

Climate variability and climate change are increasingly recognised to affect development cooperation. An analysis by the OECD shows that a significant portion of the Official Development Assistance (ODA) is directed at activities which are potentially affected by climate risks (see figure 9).¹¹⁰

Klein distinguishes three ways in which adaptation is relevant for Official Development Assistance (ODA) projects:¹¹¹

- The risk of climate change to the ODA project and its deliverables (such as water supply, infrastructure, food security, human health, natural resources management and protection against natural hazards);
- The vulnerability to climate change of the community or ecosystem that is intended to benefit from the ODA project;
- The possible effects of the ODA project and its deliverables on the vulnerability of communities or ecosystems to climate change.

The mainstreaming of adaptation to climate change into development cooperation is a challenging task, which the OECD countries and thus many of the EU Member States have agreed on to pursue in 2006.¹¹²



Source: *Bridge Over Troubled Waters: Linking Climate Change and Development* (Paris, OECD, 2005).

Figure 9: Annual ODA flows and share of activities potentially affected by climate change

Source: OECD 2005

¹¹⁰ OECD 2005

¹¹¹ Klein 2001

¹¹² OECD 2006b

Actions at different levels are needed to progress with it. In a recent report, the OECD distinguishes five key dimensions of mainstreaming:¹¹³

1. The level of effort in awareness raising on the risks posed by climate change, both internally within donor agencies and International Financial Institutions (IFIs) and in consultations with partner countries;
2. The degree of high-level policy endorsement within donor agencies and IFIs for the need to integrate adaptation into development co-operation activities;
3. Progress on the assessment of the implications of climate change on development cooperation activities.
4. Progress on the development of operational measures to integrate adaptation considerations into development activities. This could, for example, include specific tools and instruments to screen for climate risks and to evaluate adaptation options, as well as practical guidance on how to integrate adaptation considerations within core activities; and
5. The degree of cross-fertilisation and collaboration between various agencies and institutions, including the sharing of experiences, joint projects, and harmonisation of approaches in this area.

To some extent, climate considerations are routinely taken into account in a wide range of development activities. In 2006, OECD experts mentioned examples like crop selection, the design of highways or energy generation facilities.¹¹⁴ But not all climate risks are systematically addressed in development planning and decision-making. And only in rare cases are the projections on future climate change being analysed to guide the design and implementation of development activities.

The need for a better integration of climate change adaptation into development cooperation has been stressed by development ministers of the EU in different circumstances. For example, in April 2006 development and environment ministers from OECD countries, of which many are also EU Member States, agreed the “Declaration on Integrating Climate Change Adaptation into Development Co-Operation.”¹¹⁵ This declaration attaches particular importance to identifying and using appropriate entry-points for integration, such as country assistance strategies and long-term investment plans; assisting developing countries to integrate climate change adaptation following the principles of the Paris Declaration on Aid Effectiveness; and developing and applying tools to address climate risks in development activities.

¹¹³ Gigli/Agrawala 2007

¹¹⁴ OECD 2006a

¹¹⁵ OECD 2006b

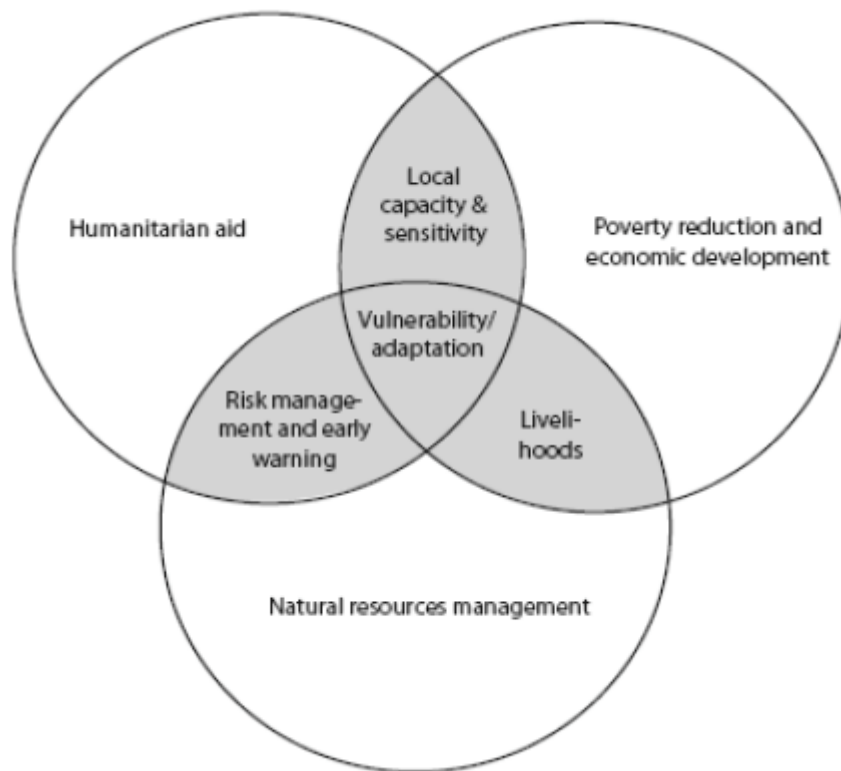


Figure 10: Interfaces between strategic areas of development co-operation representing entry points for adaptation

Source: Eriksen/Næss 2003

In order to integrate adaptation to climate change into development cooperation, it is helpful to identify fields of action already relevant for cooperation activities and their linkages, like poverty reduction, humanitarian aid or natural resources management. These can serve as entry points for the implementation of adaptation strategies (figure 10).

In its recent “stocktaking” of the mainstreaming activities, the experts from the OECD conclude that “*Donor agencies and International Financial Institutions (IFI) have made considerable progress on awareness raising on the risks posed by climate change.*”¹¹⁶ Also, activities to develop mainstreaming tools and the exchange between agencies on these tools likewise have increased.

A couple of donors have systematically carried out so-called “portfolio screenings” of their development cooperation activities in the past few years. These can be seen as a prerequisite for a consistent integration.¹¹⁷ According to *Klein et al.*, the UK (2004, 2007) and Germany (2001, 2003) are the only countries in the European Union that have done a systematical screening of their development cooperation activities so far.¹¹⁸ Table 13 summarises how different adaptation challenges were assessed in these screenings.

¹¹⁶ Gigli/Agrawala 2007

¹¹⁷ see Klein et al. 2007 for an overview and analysis

¹¹⁸ Klein et al. 2007

According to Gigli/Agrawala, the Netherlands development cooperation agency DGIS is currently carrying out a similar screening.

France's Agence Française de Développement (AFD), Irish Aid and the African Development Bank (AfDB) indicate that they are planning to commence climate change impact assessments in the near future or provide financial support to programmes that would do so, for example, under the Global Climate Observing System (GCOS) Climate and Development in Africa project. Other country-level agencies have made assessments on climate change implications for certain partner countries, such as DANIDA, the Danish agency for development cooperation.

Table 13: Overview of portfolio screenings

Type of portfolio screening	Review of policies and strategies [Norad]	Programme and project review [World Bank, GTZ, SDC, DFID, (OECD)]	Country case studies [OECD, (World Bank)]
Challenges			
Range of adaptation options considered	++	+	++
Link to political processes	+	+	+++
Identification of synergies and conflicts/contradictions between poverty reduction and vulnerability reduction	++	+	+++
Identification of new challenges due to climate change	+	+	+
Enabling proactive strategies	++	+	++
Attention to process of mainstreaming adaptation	+	+	+
Link to practical ODA activities	+	+++	++
Awareness raising on climate-development links	++	+++	++

Note: +++ = high level of attention; + = low/negligible level of attention.

Source: Klein et al. 2007a

However, that only two countries have done systematic portfolio screenings so far is not really a lot given the much larger number of countries within the EU. *Gigli and Agrawala* conclude for the OECD countries:

“Much of the progress thus far, however, has been at the level of high-level policy declarations, or efforts initiated by climate specialists in the headquarters of certain donor agencies and IFIs. Actual implementation (via pilot projects) is still at an early stage, or absent altogether.”

The analyses made here for the European Union and its Member States (see also 4.4) support this conclusion. According to their survey, *“lack of awareness of climate change within the development community and limitations on resources for implementation are the most frequently cited reasons for difficulties with integrating climate change adaptation within development activity.”*¹¹⁹

¹¹⁹ Gigli/Agrawala 2007: 41

4.4 Member States' adaptation activities in the development cooperation with Africa

A number of Member States have set up projects and activities to support adaptation in Africa. The 4th National Communications under the UNFCCC are used as the primary source of information on these activities in this chapter. Most of them were published in 2006 and therefore are relatively up-to-date.

The following analysis should give an overview but does not claim to be all-encompassing. It only covers the Member States of the EU15 except for Luxembourg which has not submitted a national communication so far. Out of the new Member States, only the Czech Republic, Cyprus and Malta have African countries as priority partners of development cooperation, but without any adaptation activities mentioned.¹²⁰

However, in many cases the Member States do not provide information in sufficient detail to estimate the share of adaptation-related fundings. On the one hand this may be due to the cross-sectoral nature of adaptation as such, with water, agriculture and nature conservation being the most important sectors. On the other hand, one reason may also be the still limited awareness of the need of adaptation among donor countries as well as recipient countries. Most countries mention only a very limited number of adaptation activities. The overall picture of the countries' activities also underlines the conclusions of the previous chapter regarding the (lack of) comprehensive integration of adaptation into development cooperation.

Almost all countries mention their contributions to the GEF and the UNFCCC Funds - Special Climate Change Fund (SCCF) and Least Developed Countries Fund (LDCF) which are addressed later on in this paper (see 4.5). Austria, Belgium and Greece are the only countries who have not made any contributions to the SCCF and the LDCF.

4.4.1 Austria

In its Fourth National Communication, Austria explicitly lists its spendings in the years 2000-2004 for adaptation related projects in developing countries. Among those are numerous African countries:

- Burkina Faso: 0.75 million US\$
- Cape Verde: 0.70 million US\$
- Ethiopia: 1.03 million US\$
- Kenya: 2.01 million US\$
- Mozambique: 0.27 million US\$
- Senegal: 4.94 million US\$

¹²⁰ Bucar et al. 2007

Water development, agriculture and soil conservation are mentioned to be the priority sectors.¹²¹

4.4.2 Belgium

In its 4th National Communication under the UNFCCC, Belgium mentions its contributions of about EUR 720,000 (in 2003) and EUR 1.47 million (in 2004) for a Special Programme for Africa under the International Fund for Agricultural Development (IFAD).¹²² Field projects in this programme comprise rural development, water management, forestation and soil deterioration in those areas of sub-Saharan Africa that are especially vulnerable to climate change. According to the communication which was released in early 2006, a new Memorandum of Understanding had already been signed and new projects were in preparation.

4.4.3 Denmark

Denmark gives relatively detailed information on its financial contributions for the implementation of the UNFCCC (table 14). Seven African countries have received bilateral financial support for adaptation with a total amount of DKK 176.2 million (approx. EUR 29 million) during the years 2000-2004, with South Africa, Mozambique and Egypt receiving the major share.

Table 14: Danish bilateral assistance for adaptation in Africa (figures in million DKK¹²³)

Country	2000	2001	2002	2003	2004
Benin					18.6
Botswana			13.0		
Burkina Faso				1.5	
Egypt	13.0	17.0		4.5	
Malawi					7.2
Mozambique			39.0		7.2
Namibia				2.2	
South Africa	9.0	27.0	8.0	3.3	1.1
Zambia			3.0	1.6	
Total amount spent for adaptation in Africa	22.0	44.0	63.0	13.1	34.1
Total amount spent for adaptation in development cooperation	80.9	113.9	214.6	145.3	106.9

Source: Denmark 2005

¹²¹ Austria 2006

¹²² Belgium National Climate Commission 2006

¹²³ Exchange rates in August 2007: 1 € = 7.45 DKK

4.4.4 Finland

Finland names some African LDCs being long-term partner countries: Tanzania, Ethiopia, Mozambique, Kenya and Zambia.¹²⁴ According to the communication, Finland altogether had 13 projects related to climate change between 2001 and 2003. Those in Africa contained financial resources of EUR 2.56 million in 2001, EUR 2.81 million in 2002 and EUR 1.93 million in 2003. The African share in total bilateral assistance to UNFCCC focal areas fell from 51% (2001) to 40% in 2003. Climate change adaptation projects made up about 30% of the financial resources from 2001 to 2005, with 28% for capacity building.

4.4.5 France

In its Fourth National Communication, France mentions the will to systematically “climate-proof” the projects of the French development cooperation agency (Afd) and the Ministry for International cooperation and Development (DGICD). Another project mentioned is a research project on interactions between ecosystems, climate and West African societies. Also worth mentioning is the Multidisciplinary Analysis Programme of the African Monsoon (AMMA), a research project to better understand and cope with climate change related variabilities of the monsoon, which is the primary source of precipitation in the Sahel region. An important tool of the French development cooperation with regard to climate change is the French Global Environmental Fund (FFEM). Of the EUR 162 million, 43.6 million have been earmarked for climate change projects. About 31% of these contributed to projects in sub-Saharan Africa. However, no detailed information is given on the scale of financing for adaptation projects. The fact that a project list in the Annexes only mentions mitigation projects in Africa suggests that adaptation so far still plays a very minor role in the French development cooperation with Africa.

4.4.6 Germany

The German Ministry for Economic Cooperation and Development (BMZ) in April 2007 announced to set up a special research programme on adaptation in African agriculture with EUR 10 million. Also, the Ministry decided to donate an extra EUR 25 million for the LDCF for the year 2007.¹²⁵ However, the Fourth National Communication of Germany does not provide detailed information on financing adaptation activities in Africa.¹²⁶ In addition to the contribution to the GEF and the UNFCCC Funds, the report mentions a programme to promote the improved utilisation of natural resources in Benin, projects aimed at improving disaster preparedness (Mozambique, Nicaragua) and a separate bilateral project to help Tunisia adjust to climate change. Also, financial resources that have been allocated for food and emergency aid programmes are mentioned in the context of adaptation, which is rather unusual compared to other national communications. In 2003 EUR 124.04 million were spent for this purpose, and EUR 135 million in 2004. Such activities help coping with the consequences of climate-related disasters after they appear, but counting them as adaptation is questionable.

¹²⁴ Finland 2006

¹²⁵ BMZ 2007

¹²⁶ Germany 2006

4.4.7 Greece

According to the Fourth National Communication, the major part (80%) of the development aid of Greece is provided to countries in South-Eastern Europe.¹²⁷ Regarding aid spent for adaptation purposes, expenses in Egypt (7.900 US\$ for vulnerability analyses in 2003) and Kenya (27.300 US\$ for infrastructure development in 2002/2003) are relevant for the purpose of this study.

4.4.8 Ireland

Ireland has bilateral development programmes with some African LDCs, namely Lesotho, Ethiopia, Mozambique, Tanzania, Uganda and Zambia.¹²⁸ In its national communication, Ireland reports on three adaptation-related projects in the bilateral assistance to Africa:

- Tanga Coastal Zone and Conservation Development Programme in Tanzania, lasting for several years, includes mangroves replanting and seaweed production, to diversify incomes and protect the coastline;
- The Productive Safety Nets programme in Ethiopia, with a financial contribution of US\$ 6.9 million in 2005, targets food insecurity of vulnerable communities;
- The Ethiopian Bale Eco-region Sustainable Management Programme aims at improving planning and management of the largest area of Afroalpine habitat on the African Continent; the project covers six years and started with a financial support of US\$ 404,000 in 2005.

4.4.9 Italy

Italy, an important contributor to the SCCF, does not give any detailed information on activities related to adaptation to climate change in Africa in its report on demonstrable progress under article 3.2 of the Kyoto Protocol.¹²⁹

4.4.10 The Netherlands

According to their Fourth National Communication, the Netherlands have spent about EUR 31.2 million for adaptation in their development cooperation in the years 2001-2004.¹³⁰ The support for mitigation was nine times higher in the same period. There is no specific breakdown of this budget available for African countries. However, some of the projects mentioned directly or indirectly support these, like the Least Developed Country Expert Group (LEG) or the National Climate Change Assistance Programme (NCCAP). Ghana, Mali, Mozambique, Senegal and Tanzania are target countries in Africa in the second phase of the NCCAP (2003-2007).

¹²⁷ Greece 2006

¹²⁸ Ireland 2007

¹²⁹ Italy 2006; no Fourth National Communication under the UNFCCC has been published so far.

¹³⁰ Netherlands 2005

4.4.11 Portugal

A particular focus group of the Portuguese development cooperation are the five Portuguese-speaking African Countries (PSAC), which include Angola, Cape Verde, Guinea-Bissau, Mozambique and Sao Tome and Principe.¹³¹ The financial contributions are neither broken down to adaptation-related measures nor to the single countries. But they support the work of the Portuguese Speaking Countries Climate Change Network (RELAC), which inter alia has some adaptation components in its portfolio, e.g. the support in the development of NAPAs.

4.4.12 Spain

Although the Spanish development cooperation in general has a focus on countries from Latin America, in addition to the GEF and the UNFCCC funds adaptation activities, capacity building activities in particular, were supported in some African countries. The Fourth National Communication lists contributions in bilateral assistance to Egypt (EUR 8,175), Maroc (EUR 24,527) and Mauritania (EUR 28,372).¹³² However, these are rather insignificant compared to resources spent for other purposes such as mitigation activities, for example.

4.4.13 Sweden

Sweden has constantly supported a number of African countries in their adaptation efforts throughout the last years, as can be seen in table 15.

Table 15: Swedish bilateral and regional financial support related to adaptation in Africa 2000-2003 (SEK ¹³³million)

Country	2000	2001	2002	2003
Ethiopia	31.45	37.61	45.45	70.06
Ghana	9.75	3.45	-	-
Mozambique	120.06	65.74	93.54	118.46
Tanzania	60.27	73.35	70.69	53.43
Uganda		31.48	38.51	19.57
Zambia	37.19	33.98	46.94	41.27
Zimbabwe	17.54	-	-	-
Africa regional	54.71	88.41	123.32	132.28

Source: Sweden 2005

Projects that support African LDCs are explicitly mentioned in the Fourth National Communication:

¹³¹ Portugal 2006

¹³² Spain 2006

¹³³ Exchange rate in August 2007: 1 € = 9.16

- Agriculture Support Programme (ASP) and Policy Support in Zambia, a 5-year programme which started in 2003 with an overall volumen of SEK 240 million;
- Amhara Rural Development Programme in Ethiopia, which started in 2002 with an overall budget of SEK 50 million;
- Different activities in Mozambique and
- a multiyear programme in the water sector in the Pungue River in Zimbabwe and Mozambique.

4.4.14 United Kingdom

In addition to its significant pledges to the UNFCCC funds, the United Kingdom in its Fourth National Communication explicitly mentions three activities which are related to adaptation in Africa:¹³⁴

- Mapping climate vulnerability and poverty, £ financed with 99,000 in 2005;
- Support to the integration of climate risk information in decision making processes and increase availability of climate observations, financed with £ 5 million in 2005-2010;
- Linking local adaptation needs to policy and institutional structures (Asia/Africa), financed with £ 990,000 in the years 2004-2006.

4.5 EU financing for adaptation in Africa

Given their role as donor countries, an important part of the debate is the issue of which financial contributions the EU Member States give to assist African partner countries in adaptation to climate change. In 2001, during the Bonn COP6b, the EU pledged to assist non-Annex I countries in the implementation of the UNFCCC – both mitigation and adaptation - with US\$ 369 million annually by the year 2005. There are different levels that need to be taken into account in order to get a broader picture of the state of financing by the EU, and often information is only available on climate change activities in general, rather than adaptation-related financing alone.

4.5.1 Member States' contributions to the Global Environment Facility (GEF)

The Global Environmental Facility supports adaptation projects and programmes through the Strategic Priority on Adaptation (SPA). US\$ 50 million had initially been allocated to the SPA, some projects in Africa have been financed. With about 41% in the fourth replenishment (2006-2010), the GEF is financed to a large extent by EU Member States.

¹³⁴ United Kingdom 2006

Table 16: Share of contributions by EU Member States to the GEF Trust Fund (GEF-4)

Country	Share 2006-2010 (GEF-4): total US\$ 3.1 billion	Share 2002-2006 (GEF-3): total US\$ 3 billion
Austria	0.90	0.94
Belgium	1.55	1.74
Czech Republic	-	0.24
Denmark	1.30	1.48
Finland	1.00	1.11
France	6.81	6.81
Germany	11.00	11.00
Greece	0.05	0.24
Ireland	0.11	0.11
Italy	4.39	4.39
Luxembourg	0.05	0.21
Netherlands	3.30	3.30
Portugal	0.12	0.21
Slovenia	0.03	0.06
Spain	1.00	0.80
Sweden	2.62	3.01
United Kingdom	6.92	7.93
Total EU	41.15	43.58
<i>Japan</i>	<i>17.63</i>	<i>17.63</i>
<i>USA</i>	<i>20.86</i>	<i>20.86</i>

Source: GEF 2006a

Major contributors are Germany (11.00%), United Kingdom (6.92%), France (6.81%) and Italy (4.39%) (see table 16).¹³⁵ However, it has to be underlined that the general distribution of the GEF resources is not in favour of African countries or the LDCs. While about 30% of the resources have supported projects in China and India, only about 1% went to LDCs. South Africa with 3% is the only African country appearing in the top class of the recipients.¹³⁶

¹³⁵ GEF 2006a

¹³⁶ Mueller 2007

4.5.2 Member States' contributions to the UNFCCC Funds

In the UNFCCC context, there are two financial funds that were set up to assist developing countries (non-Annex I countries) *inter alia* in their efforts to adapt to the consequences of climate change. Thus, there are only partly dedicated to the financing of adaptation. They are managed by the GEF.

The Special Climate Change Fund (SCCF) is meant to finance projects in the context of adaptation, technology transfer and capacity building, particularly in the energy, transport, industry and agroforestry and waste disposal sectors, and for economic diversification. By April 2007, the SCCF was pledged with about US\$ 62 million, of which 53 million had already been paid to the GEF.¹³⁷

The Least Developed Countries Fund (LDCF) was established in order to assist the LDCs with adaptation to climate change. Like the SCCF it is also financed by voluntary contributions by Annex-I countries. An important financing purpose has been, and still is for some countries, the development of National Adaptation Programmes of Action (NAPAs). For each LDC, US\$ 200,000 were earmarked for this process. The total amount of money already pledged for the LDCF summed up to US\$ 115 million by April 2007, of which 61 million had already been paid. Given the fact that 32 of the 49 LDCs are countries from Sub-Sahara Africa, this fund and the contributions by EU Member States are of particular importance in the context of this paper.

Table 17 analyses the contributions by EU Member States to the SCCF and the LDCF in more detail; it is based on GEF figures in its pledging report from April 2007.¹³⁸ The GEF distinguishes between contributions being pledged and those that have already been paid. This analysis shows that some countries have made far greater pledges than they have so far actually paid to the Funds, for example Germany and the UK. However, this may change over time when the pledges made are being fulfilled.

The contributions by the different states are also shown in comparison to the results of the Adaptation Financing Index (AFI) which was developed by Oxfam and has been published in May 2007. Based on absolute and per-capita emissions during the years 1992-2003, and on the countries capabilities to give financial support, the AFI is calculated as a means of showing who should pay for developing countries' adaptation according to responsibility and capability.

Some conclusions can be drawn from the table:

- Member States of the European Union are the major contributors to the two UNFCCC funds, both in terms of contributions pledged and paid. However, there is a huge gap in the financing of the LDCF, where so far less than 50% of the money pledged had been paid by the Member States;
- Four countries give more than 70% of the contributions already paid and pledged: Denmark, Germany, the Netherlands and United Kingdom.

¹³⁷ GEF 2006b

¹³⁸ GEF 2007a

- Some EU Member States so far have contributed nothing to the two funds, although they have a financing responsibility according to the AFI. This especially holds for Austria and Belgium, whose responsibility is calculated to be 2.2 respectively 3.2 % of the EU's contribution.

Table 17: Contributions by EU Member States to the UNFCC funds

Country	Special Climate Change Fund ¹³⁹		Least Developed Countries Fund		Share paid (pledged) of EU contributions (in %)	Share of EU responsibility for adaptation financing ¹⁴⁰
	Pledged	Paid	Pledged	Paid		
Denmark	3,298,646	3,298,646	15,543,580	8,234,841	14.3 (13.2)	1.6
Finland	973,642	973,642	2,680,760	2,680,760	4.5 (2.6)	1.9
France	-	-	14,682,722	1,069,130	1.3 (10.3)	14.2
Germany	6,626,177	2,542,100	20,420,388	19,341,477	27.3 (19.0)	22.5
Ireland	645,000	645,000	4,647,894	4,647,894	6.6 (3.3)	1.6
Italy	5,000,000	-	1,000,000	1,000,000	1.2 (4.2)	14.6
Luxembourg	-	-	4,120,000	2,060,000	2.6 (2.9)	0.3
Netherlands	3,128,880	3,128,880	15,813,963	6,756,698	12.3 (13.3)	5.3
Portugal	1,299,099	1,299,099	64,065	64,605	1.7 (1.0)	0.6
Spain	1,299,000	1,299,000	727,081	727,081	2.5 (1.4)	9.8
Sweden	1,002,506	1,002,506	886,747	886,747	2.3 (1.3)	2.5
UK	18,619,372	18,619,372	19,979,621	0	23.1 (27.1)	16.8
Sum EU countries (% of sum total)	41,892,323 (81.3)	32,808,246 (77.4)	100,566,821 (86.8)	47,469,233 (70.6)	~100 (~100)	91.7¹⁴¹
Sum total	51,498,080	42,414,003	115,806,139	67,174,214		

Source: GEF 2007a; Oxfam 2007

- Some countries have given a significantly higher share of the EU's contribution to the fund than their responsibility is according to the AFI - especially Denmark, Finland and the Netherlands – while others have contributed significantly less (France, Italy, Spain).

However it has to be underlined that this only relates to the shares of the EU. The overall amount of adaptation financing needed is much higher than the contributions made so far, and all of these are counted as ODA.

4.5.3 Financing by the European Commission

In its Fourth National Communication, the Commission on behalf of the European Community lists “*financial resources relevant to climate change*”, where some projects under different headings may have a climate element (see table 18).

The European Commission underlines that this picture gives “*a clear indication of the increase between 2002 and 2003*”.¹⁴² The communication also lists contributions of EUR 182 million to multilateral institutions like the World Bank, UNDP or UNEP.

¹³⁹ The table contains only the contributions to the Program for Adaptation within the SCCF. For the Program for Transfer of Technology, another 10.6 million US\$ have already been paid by Denmark, Finland, Ireland, Italy, Norway, Spain, Sweden, Switzerland.

¹⁴⁰ According to the Oxfam Adaptation Financing Index; see Oxfam 2007

¹⁴¹ The sum is not 100% because some countries have not pledged money to the funds so far.

Table 18: European Commission financial resources relevant to climate change (million Euro)

Official Development Aid	2001	2002	2003
Economic infrastructure and services			
Transport	200.16	318.72	884.74
Energy generation and supply	134.12	104.9	233.19
Agriculture, forest and fishing			
Forestry	Not available	29.54	5.06
General environmental protection	132.57	85.13	115.58
Water supply and sanitation	224.27	100.9	332.28
Total	691.12	639.19	1570.85

Source: EC 2006a

In its communication, the Commission provides a table listing about 200 projects (from 2001 to 2003) which are related to the implementation of the UNFCCC. Their total project value is summed with EUR 300 million. The list contains 23 projects in Africa with a total project value of EUR 39.9 million. 10 out of these 23 are said to have an adaptation component, mostly capacity-building (table 17).

Table 19: Projects in Africa funded by the European Commission and related to the implementation of the UNFCCC

Year	Country	Total project value (EUR million)	Number of projects	Mitigation ¹⁴³	Adaptation		
					Capacity-building	Coastal zone management	Other vulnerability assessment
2002	Africa-Latin America	1.6	1		0.8		
2001	Multiple Africa	6.1	3	X	X		X
2002	Africa	0.9	1		X		
2002	Cameroon	1.2	1	X			X
2002	Ethiopia	1.2	1	X	X		
2002	Sub-Saharan Africa	1.6	1				X
2002	Tanzania	1.8	1		X		
2003	Africa	6.3	3	X	X		X
2003	Cameroon	0.5	1	X			X
2003	Tanzania, Zambia	2.1	1		X		X

Source: EC 2006

¹⁴² EC 2006a: 111

¹⁴³ Includes the areas of energy, transport, forestry, waste management and industry.

At present, no updated overview on adaptation-related projects funded by the EC exists. Possibly the progress report on the EU Action Plan will give more information.

A relatively recent project, "Advancing capacity to support climate change adaptation (ACCCA)", has started to support adaptation projects in 2007, so far mainly in Africa. Table 20 lists those projects which are co-funded by the European Commission and the UK government. No information on the financial scale of the whole project portfolio could be obtained, but it could be judged as one result of the increased awareness for the need to adapt in development cooperation.

Table 20: Adaptation projects in Africa funded by the EC as part of the ACCCA project

Project name	Country/region	Thematic area	Target population
Community-led climate adaptation programme for sustainable livelihoods in coastal areas of South-Western Nigeria	Nigeria	Agriculture/food security; fisheries; livelihood	25 fishing communities
Food Security and adaptation to climate change in the Afram Plains	Ghana	Agriculture/food security; livelihood	Small-scale, poor marginal land users, extension agents, national researchers and policy decision-makers
Analysis of adaptation strategies to climate variability in the Sahelian Zone	Niger, Tunisia	Disaster management	Residents of rural communities
Audiovisual tools for community-based adaptation: bridging the Meteorological Service and the Red Cross' work in Malawi	Malawi	Disaster management; health	Rural communities vulnerable to droughts and floods, Red Cross staff, Ministry of Agriculture offices and other institutions
Livelihoods Under Climate Variability and Change: An Analysis of the Adaptive Capacity of Rural Poor to Water Scarcity in Kenya's Drylands	Kenya	Agriculture/food security; livelihood	Rural poor in Kenya's arid and semi-arid drylands
Strengthening Community-Based Adaptation to Climate-Sensitive Malaria in the Western Kenyan Highlands	Kenya	Disaster Management; health	Rural poor, subsistence farmers
Adaptation Strategies and Challenges Associated with Climate and Ecological Changes to the Lake Victoria Community in Tanzania	Tanzania	Fisheries; livelihood	Fishing communities

Source: <http://www.acccaproject.org>

4.6 Division of labour in adaptation to climate change

These analyses show that there are number of initiatives undertaken by several Member States. However, given the size of the challenge, it needs to be asked if not a clearer strategy to develop an effective division of labour is necessary and should be pursued by the Member States and the European Commission. An effective division of labour in development cooperation is a challenge, as has been recognized by the EU before. In February 2007, the Commission released a communication on an “EU Code of Conduct on Division of labour in Development Policy” which mentions three major challenges which often impeded an effective division¹⁴⁴:

1. Politics and visibility: Donor countries may be reluctant to give up cooperation in a given sector or country, as it may lead to reduced visibility for their action.
2. Operational challenges: An optimal division of labour, even when politically desired by donors, still entails operational challenges. Experiences exist where commitments were made in partner countries and donor harmonisation envisaged by the donors, but this did not necessarily lead to much practical progress because of the operational difficulties involved.
3. Use of existing expertise: Between the EU donors there exist significant differences regarding the volume of ODA, cultural and political ties from their colonial past etc; division of labour should leave room for flexibility.

In particular, since adaptation is a relatively new field of development cooperation, there is a good chance to leave behind the obstacles that exist in other areas to a certain extent. Such a strategy could be developed based on a division of labour relatively “*from the start on*”, jointly with African governments and other stakeholders.¹⁴⁵ This could be approached along several dimensions: capacity building, financing, experience in certain sectoral policies, relationship to certain countries, but also responsibility for the causing of climate change. Some Member States may have certain sectoral strengths (e.g. food, water sector) which should be built on in this context. While the integration of adaptation into the project portfolios is a task for each of the national development agencies, different fields of action qualify for divided labour. For example, the setting-up or extension of regional climate change adaptation research centers, which would benefit a number of target countries, could be financed jointly by a certain number of Member States. Scientific assessments on a regional scale could be supported by other Member States.

Another approach could for example be a “NAPA fast track initiative” in which the EU Member countries commit themselves to fast track financing and other support for the implementation of the priority activities identified in the NAPAs. Table 21 shows which EU Member States have certain relationships to those African LDCs which have already finalised their NAPAs. Eventually, this table could be expanded to all African LDCs once they have finished their NAPA formulation. These relationships could serve as a good starting point for a division of labour in supporting the implementation of the NAPAs.

¹⁴⁴ EC 2007c

¹⁴⁵ Mürle 2007

Table 21: African LDCs, their NAPAs and relation to EU donor countries

Country	Totalled costs in million US\$ (number of proj- ects)	Core priority country	Other priority country
Burundi	7.3 (12)	Belgium, France, Italy	Austria, Germany, Lux- embourg
Congo, Democratic Republic of	5.6 (3)	Belgium, France, UK	-
Djibouti	6.6 (8)	France	-
Eritrea	33 (5)	France, Greece, Italy, Netherlands	Denmark, Germany, UK
Lesotho	12.8 (11)	Ireland, UK	Germany
Madagascar	3.9 (15)	France	Germany
Malawi	22.9 (5)	Germany, Sweden, UK	-
Mauritania	20.1 (28)	France, Spain	Germany
Niger	- (14)	Belgium, France, Luxem- bourg	Germany, Spain
Rwanda	- (15)	Belgium, France, Ger- many, Italy, Netherlands, Sweden, UK	Austria, Luxembourg
Senegal	12.6	Belgium, France, Ger- many, Luxembourg, Spain	Austria, Netherlands, UK
Sudan	17.05 (5)	France, Greece, Italy, UK	Finland, Spain

Source: Germanwatch based on Mürle 2007

4.7 Coherence for development and adaptation to climate change

Coherence is one of the key challenges for the EU development cooperation in general, but also for climate change related policies in specific. Figure 11 shows how the European Commission understands the coherence challenge of climate change.

As has been introduced earlier, ambitious targets for the reduction of greenhouse gas emissions is one side of the coin, since with unstopped global warming the development prospects for Africa are bleak. The probability of occurrence of large-scale risks like the “tipping elements” would increase. That is why African decision-makers and NGOs appeal to the developed countries to drastically reduce their emissions, e.g. the AU.¹⁴⁶ Thus, the EU targets adopted in March 2007 during the German EU Presidency – 30% reduction by 2020 compared to 1990 if a new international climate change agreement will be achieved, and a 20% unilateral target – have been an important signal that the EU takes serious the 2° C challenge from the mitigation side.¹⁴⁷ They should pave the way for more drastic reductions in the long-term.

¹⁴⁶ AU 2007

¹⁴⁷ EU Council 2007

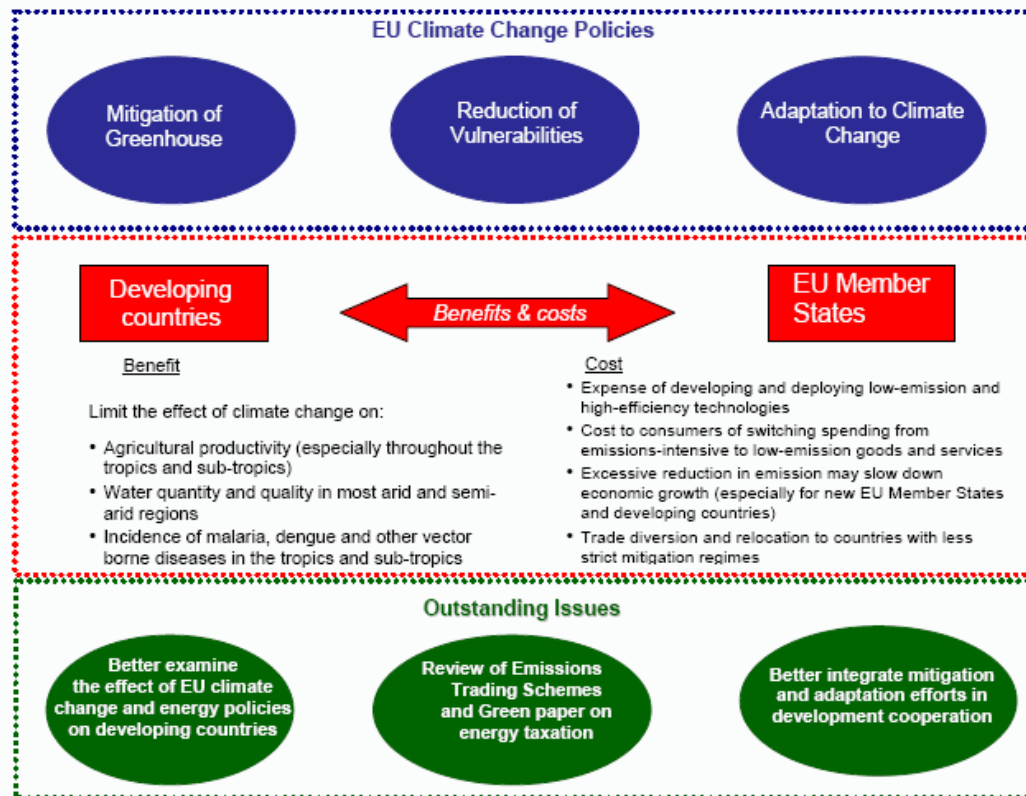


Figure 11: Climate change and policy coherence for development

Source: EC 2007c

However it has to be noted that figure 11 lacks answers to one important aspect related to the overall development policy coherence. A key factor for adaptation is the vulnerability of people in Africa to the adverse impacts of climate change or, to put it more positively, their adaptive capacity. The reduction of vulnerability – mentioned in the figure – also requires coherence with development objectives in areas like trade and agricultural or also Intellectual Property Rights (IPR) policies which may significantly affect the livelihoods of Africans.

One example is the role of agrofuels. As one subtarget to reach its climate change commitments the EU agreed to expand the use of agrofuels to 10% in 2020. These are said to mitigate emissions in the transport sector while at the same time reducing the import dependency on fossil fuels. However, this was decided without a thorough assessment of the development impacts that this development can have. There is no doubt that the EU would only fulfill these targets with a large share of agrofuels imports from developing countries. Although this may create some economic opportunities for African farmers – for example by planting *Jatropha* -, at present most of the discussions circle around the negative consequences of the “agrofuels rush”. Since this rush focuses on agrofuels made of food crops such as maize, soy or sorghum, the increased demand has pushed world market prices for these commodities to almost record levels. Those who suffer first are the poor whose nutrition is based on such crops. Linking this situation with the projected impacts of climate change on African agriculture and other factors, like population growth, raises serious questions about the beneficial role of agrofuels that is often advocated. The EU and certain member states are trying to find ways to guarantee a sustain-

able origin of agrofuel imports, but if this will eventually divert the negative market trends is highly questionable.

Case studies also reveal for example a lack of coherence in policies on access to medicines for illnesses such as malaria, diarrhoea or HIV/Aids:

“There is little coherence in policy when the Directorate General for Development gives priority to access to affordable medicines for developing countries, while the Directorate General for Trade is in favour of a regulation that will not lead to increased access to affordable drugs.”¹⁴⁸

The limited access to medicines to cure or at least slow down these illnesses is a major development deficit in many African countries and negatively affects the adaptive capacity of the people. In addition, the spreading of these illnesses is projected to increase in certain African regions as a consequence of climate change.

These are just two examples which show that general policy coherence for development is a crucial aspect in the adaptation and vulnerability debate.

¹⁴⁸ CONCORD 2007b

5 Adaptation in Bali and the Post-2012 policy framework discussions

There is no doubt that adaptation has gained much more attention in the climate policy discussions than it had 10 or five years ago. Some issues are still being discussed in the context of the implementation of the Kyoto Protocol. However, since the UNFCCC conference in Bali later this year is expected to come up with a mandate for negotiations for a post-2012 policy framework, after the expiration of the first commitment period of the Kyoto Protocol, one has to look beyond the mere implementation of the Kyoto rules.

Adaptation – “managing the unavoidable” - is closely connected to the mitigation challenge. Without limiting global warming to levels which avoid dangerous climate change, the adaptive capacity of whole regions in the developing world may be strained, especially if tipping points are passed and feedback processes in the earth system lead to a run-away greenhouse effect. “Avoiding the unmanageable” is absolutely crucial and a key challenge for industrialised countries in particular, but increasingly also for rapidly developing countries. Thus, agreeing on emission reductions which keep global warming below 2°C, in the order of at least 50% by 2050 compared to 1990 at the global level, with the appropriate intermediate steps, is also a key demand for a post-2012 framework from an adaptation point of view. At the same time, efforts of sustainable poverty reduction must be continued and heavily increased, to strengthen the adaptive capacity of the poor (see figure 12).

Manage the unavoidable:

Adaptation to the unavoidable consequences of climate change



Avoid the unmanageable:

Limit global warming to below 2°C, need for drastical reduction of emissions with industrialised countries taking the lead

Climate Change threatens poverty reduction

Sustainable poverty reduction as a key strategy to increase adaptive capacity

Figure 12: Mitigation, adaptation and poverty reduction.

Source: Germanwatch

A number of principles and parameters are relevant in order to design an equitable post-2012 agreement. These include aspects like

- the “polluter pays” principle,
- historical responsibility,

- common but differentiated responsibilities and capabilities,
- intergenerational equity or
- the precautionary principle.

However, it has to be noted that the concrete operationalisation of these principles in a manner which is politically applicable still remains a challenge and leaves space for discussion. For example, the Oxfam Adaptation Financing Index (AFI) calculates the historical responsibility based on the emissions from 1992 on, when those countries that signed the UNFCCC officially declared that they were aware of that these emissions lead to global warming. However, especially the industrialised countries emitted substantial shares of the global emissions for several decades longer, when there was only very limited scientific knowledge of the possible consequences. The AFI also includes the capability of countries to contribute to adaptation financing by analysing the state of development according to the Human Development Index (HDI), which shows that some countries who produce an increasing share of emissions – like China – are not seen to be capable due to their significantly lower HDI.

However, despite the vagueness of the principles laid out above, Germanwatch has clear expectations what the Post-2012 regime must provide regarding adaptation. This coincides with the demands of many other NGOs from developing and developed countries:

1. Consistent and sufficient funding linked to the cost of adaptation and damages for the most vulnerable countries, inter alia provided through innovative financing mechanisms;
2. Prioritisation to the most vulnerable and to solutions developed on the community-level to the existing and projected impacts of human induced climate change;
3. Science and technical support for capacity building for adaptation planning and implementation;
4. Linking support with incentives instruments in order to maximise the effectiveness of adaptation strategies;
5. Recognition of the direct link between mitigation and adaptation.

In terms of international cooperation and the responsibility of the EU, adaptation financing is seen to be a key issue for the entire climate policy debate. The adaptation financing analyses by the British development NGO Oxfam come to a clear conclusion which is reaffirmed by the considerations in this paper:

*“The seriousness of the climate threat, the scale of adaptation needed, and the clear responsibility of rich countries to finance adaptation all call urgently for innovative approaches to raising international funds for adaptation.”*¹⁴⁹

Thus, increasing the transfer of financial resources for adaptation in developing countries will be a key issue for an equitable post-2012 climate change agreement. However, it is not only the scale of financing that matters but also who decides over the financial means

¹⁴⁹ Oxfam 2007: 33

available and how can the most vulnerable communities be placed at the center of the discussion, both in terms of directing the money to community-based projects and increasing their capabilities to expend it appropriately.

5.1 Operationalising the Adaptation Fund of the Kyoto Protocol

The Adaptation Fund (AF) is another instrument which already has been established to finance concrete adaptation projects and programmes in developing countries which have ratified the Kyoto Protocol. Non-Kyoto ratifiers, like the USA or Australia, have no direct influence on it. The AF is not financed by voluntary contributions by donor countries, but by a 2% levy on Certified Emission Reductions (CERs) traded under the CDM. Thus, it is the only instrument that generates financing truly additional to ODA. Expecting a growing CDM market, the size of funding is likely to also grow significantly. According to *Müller*, the size of the AF is projected to be between US\$ 160 million and US\$ 950 million.¹⁵⁰

Some important decisions on the AF have been taken in COP12/MOP2 in Nairobi in November 2006. It was agreed in Decision 5/CMP2 that “the Adaptation Fund should operate under the authority and guidance of and be accountable to the COP/MOP [Art 1(e)], and that the membership of the governing body of the Adaptation Fund shall:

- (i) be from Parties to the Kyoto Protocol
- (ii) follow a one-country-one-vote rule and
- (iii) have a majority of Parties not included in Annex I to the Convention”. [Article 3].

The developing countries are in a majority position. However, that does not solve all questions related to the governing of the AF, and further discussions will form the Bali agenda before the AF can become fully operational. This includes the decision-making structure as well as the question which institution will govern the AF. Both issues are relevant regarding the roles of the EU and African countries. The EU is the most powerful Kyoto ratifier, and the African countries are likely to be a key target country of the AF.

An appropriate decision-making structure should include an appropriate representation of those countries particularly affected by climate change, like suggested by African negotiators. In addition to representatives of the UN regions, Annex-1 and Non-Annex-1 representatives, the LDCs and the Alliance of Small Island States (AOSIS) should also be given a seat in the executive board of the AF.¹⁵¹

The GEF is seen to be the prioritised institutional option by many industrialised countries, inter alia the EU, since it already governs the UNFCCC Funds, and establishing a new body is not welcomed. However, many developing countries disfavour the GEF, due to

¹⁵⁰ Müller 2006

¹⁵¹ see Müller 2007b for more details on the governing structure

its close links with the donor-dominated World Bank and an unsatisfactory governing of the UNFCCC Funds.¹⁵² Some observers from African countries even argue *“that [the AF] is sufficiently different from the other funds to necessitate the creation of a ‘stand-alone’ governance structure with an entirely new operating body.”*¹⁵³ African negotiators underlined that the principles of governing the AF are more important than the decision on the operating entity and thus should be agreed on first.¹⁵⁴ They called for final decisions in Bali, but also pointed to the need for trade-offs:

*“African countries do experience problems with the GEF, but negotiations on another entity are likely to be long and quite possibly inconclusive, working against Africa’s priority to start funding practical adaptation activities as soon as possible.”*¹⁵⁵

Although increased adaptation financing is needed urgently, it is important to agree on the right structures and principles first, given the unique nature of the AF and its potential size. Further negotiations on these issues would perhaps be even worth a delay in the full operationalisation. Once set the governing structures will not be easy to change.

Another discussion point which is particularly relevant for African countries is the regional or country focus of the AF. African negotiators but also NGOs like Germanwatch see the need to focus on those countries highly vulnerable to the adverse impacts of climate change, like the LDCs and also the Small Island Developing States.¹⁵⁶ If for example China would be eligible in the same way it could absorb large parts of the money due to its mere size. This will also lead to the question of some kind of regional earmarking of certain volumes of financing, in order to avoid that African projects will be competing with Asian or Caribbean ones. Finally, the AF must also deliver financing for those communities most affected by climate change, and not only for activities on the national level (see 5.4).

Finally, it will also be important to strictly separate measures to adapt to the adverse impacts of climate change from adverse impacts of policy reactions to climate change. The latter interpretation is often advocated by countries like Saudi-Arabia or recently by South Africa and refers to economic adverse impacts if for example industrialised countries reduce the oil imports from Saudi Arabia because of energy saving strategies. However it is very unlikely that an Adaptation Fund which finances the latter type of adaptation would gain sufficient political acceptance in e.g. the parliaments in industrialised countries that it could generate the financing in the necessary order.

5.2 Additional financing instruments under discussion

Increasing adaptation financing by industrialised countries is key for a post-2012 agreement. It is not likely that the LDCs would cooperate if such an agreement will not provide them with substantially increased financial resources, additional to existing ODA com-

¹⁵² Müller 2007a

¹⁵³ Sapoaga et al. 2007

¹⁵⁴ Africa 2006

¹⁵⁵ Africa 2006: 6

mitments. Different innovative financial approaches are being discussed by experts in order to start with filling the huge financing gap, like the introduction of an international air-travel adaptation levy (IATAL), carbon taxes or levies on carbon trading and auctioning.¹⁵⁷ In principle, means generated through these instruments could be channelled into the AF, but do not necessarily need to be.

5.2.1 Extending the CDM Adaptation Fund levy

One option discussed and advocated for inter alia by German and African NGOs is to extend the Adaptation Fund levy to the other Kyoto mechanisms, in particular Joint Implementation (JI).¹⁵⁸ Increasing the levy would be an additional approach in order to increase the financing available.¹⁵⁹ However, those countries that benefit from JI would probably not benefit from the AF in the first place since they are usually not counted as particularly vulnerable countries. These countries will likely be hesitant towards this idea. No calculations do exist on how much additional financing this would generate.

5.2.2 Auctioning of certificates in emission trading schemes

In the EU context, one option deserves particular attention since it has already been fed into official debates by the European Commission: the use of auctioning revenues in the EU Emission Trading Scheme (EU ETS). At present, it is being discussed if and how aviation should be included in the EU ETS. In its directive proposal for the inclusion, the EC proposed that *“the use of auctioning proceeds should in particular fund contributions to the Global Energy Efficiency and Renewable Energy Fund (GEEREF), and measures to avoid deforestation and facilitate adaptation in developing countries.”*¹⁶⁰ This is a proposal of strategic importance. It could generate funds in the order of hundreds of millions, but not out of the national budgets but from companies that produce significant amounts of greenhouse gas emissions. Thus, it links mitigation and support for adaptation. At the time of writing it was not clear how this proposal would perform in the further negotiations in the parliament and between the Member States. The parliamentary voting is expected for November 2007. A subsequent question would be if the EU Member States would count such spendings as ODA, feed it into the UNFCCC or the AF Fund etc. By the end of 2007, the European Commission is expected to come up with proposals for the review of the EU ETS for the time after 2012. This would offer the opportunity to extend the proposal mentioned above to the whole ETS.

The German government, after the Parliament decided to enter into auctioning for the years 2008 to 2012, has agreed on using parts of the revenues (estimated to be about EUR 400 million in 2008) for adaptation measures in development cooperation. These will likely be counted for as ODA. At the time of writing this paper, it has not been clear what the money would be used for, for bilateral activities or for feeding the UNFCCC funds.

¹⁵⁶ see Africa 2006; Bals et al. 2006

¹⁵⁷ see Oxfam 2007 for more details

¹⁵⁸ VENRO 2006

¹⁵⁹ Bals et al. 2006

¹⁶⁰ EC 2006b

The introduction of emission trading schemes is also being discussed in non-EU Annex-1 countries such as Norway or New Zealand, and federal states of the USA, like California, New York or New Mexico. In principle, these regions could also use parts of the revenues for adaptation financing.

5.2.3 Taxes/levies on international aviation

For many years it has been discussed to introduce taxes or levies on international aviation in order to create incentives for greenhouse gas mitigation on the one hand, and to finance environmental and development policies on the other hand. A number of countries, inter alia France, Luxembourg and Cyprus, has introduced a ticket tax to generate financing for development policies. The proposal of an International Air-travel Adaptation Levy (IA-TAL) builds on these approaches, but connects it directly with adaptation financing. According to *Müller/Hepburn*, a levy of US\$ 10 on each ticket could raise US\$ 8 billion for adaptation each year.¹⁶¹ Differentiating the levies according to the flight distance and the climate impact produced would also make sense. However it has to be noted that a global consensus on this instrument is not in sight, so it would rely on some countries moving forward. But this holds for most of the other financing instruments being discussed. On a voluntary basis, the German project *atmosfair*¹⁶² offers a kind of aviation levy which finances CDM Gold Standard projects in developing countries and indirectly the AF, through the CDM levy.

5.2.4 Insurance-related mechanisms

Article 4.8 of the UNFCCC and Article 3.14 of the Kyoto Protocol specifically call upon Annex-II Parties to consider actions, "including insurance," to meet the specific needs and concerns of developing countries in adapting to climate change. A new network of researchers, insurers, NGO and development practitioners, the Munich Climate Insurance Initiative (MCII)¹⁶³, is increasingly investigating how insurance-related mechanisms could support and incentivize adaptation measures in developing countries - and those, which can't afford a private insurance.

With the advent of novel mechanisms for pricing and transferring catastrophe risks to the global financial markets, public-private insurance instruments have emerged as a promising opportunity for developing countries in their concurrent efforts to reduce poverty and adapt to climate change. Insurance plays an increasing role in developing countries, and donor-supported schemes are already demonstrating their potential to provide safety nets against the economic losses from climate-related and other extremes. But scaling up these promising schemes will prove costly, especially since disaster risks, unlike health or accident, affect whole regions at the same time and thus require reinsurance or spatial diversification – both out of reach for most local insurers. Moreover, LDCs can hardly afford the technical analyses and other start-up costs for insurance systems. In sum, the market alone will not provide these climate insurance instruments. International Co-

¹⁶¹ Müller/Hepburn

¹⁶² <http://www.atmosfair.de>

¹⁶³ <http://www.climate-insurance.org>

Financing, e.g. for access to insurance instruments, for the availability of risk related data or reinsurance is a precondition for rapid scaling up.

It is important, that insurance instruments are designed in a way, that they generate an incentive for adaptation, not for maladaptation ("moral hazard"). From an African point of view it is interesting that the MCII has developed a proposal for an African Climate-Insurance Facility, mainly to support climate related micro-insurance, for discussions in the context of the Gleneagles Dialogue during the German G8 presidency.¹⁶⁴ Such a regional African facility could be an important signal to show that industrialised countries are serious in scaling up their support for adaptation processes in developing countries. Although the direct support would probably be counted as ODA, it could help with generating additional private sector investments.

5.3 Implementation of the Nairobi work programme

The Nairobi Work Programme on impacts, vulnerability and adaptation to climate change (NWP) was a remarkable outcome of the 2006 UN climate conference in Nairobi. It was developed to assist countries to improve their understanding of climate change impacts and vulnerability and to increase their ability to make informed decisions on how to adapt successfully. According to the UNFCCC, it is *"an international framework implemented by Parties, intergovernmental and non-governmental organizations, the private sector, communities and other stakeholders. Its implementation follows a comprehensive plan of activities up to mid-2008 that specifies expected outcomes, timing and deliverables."*¹⁶⁵

A number of activities relevant to adaptation and vulnerability issues has taken place since November 2006, for example workshops on climate related risks and extreme events or on adaptation planning and practices. The first phase of the NWP is scheduled until mid-2008, a second phase is envisaged from mid-2008 to the UN climate conference in the end of 2010. No specific decisions on the NWP are expected for the Bali agenda, but there will be a report by the UNFCCC secretariat on the activities taken and the progress made so far. Given the fact that insufficient capacity and knowledge are seen to be a key constraint for adaptation in Africa, the NWP is important in order to increase the understanding of adaptation practices and policies.

5.4 Center community-based and poverty-oriented adaptation activities

Since the communities in those areas particularly affected by the adverse consequences of climate change are those who feel these impacts first, a post-2012 framework will need to support activities on such levels. Also, national activities should seek for effectively increasing the adaptive capacity of the communities at risk, reducing their vulnerability and building on their strengths. In this regard, it is important that the eligibility criteria of the

¹⁶⁴ Linneroth-Bayer/Bals 2007

AF also include activities on the community level. However, this does not necessarily mean that in the end communities will be at the heart of adaptation strategies.

And it is important to note that the most vulnerable communities are not only vulnerable to climate change but also to other stressors, thus *“any assistance from the government to help them solely adapt to climate change hazards is unlikely to take them out of poverty or make them less vulnerable, unless the assistance also addresses the causes of their poverty.”*¹⁶⁶ Adaptive development is needed, rather than paralleling development projects and adaptation projects.

However, [as *Tompkins/Hultman* argue, the adaptation approach dominating the UNFCCC discussions and also the implementing policy of GEF is one focusing on incremental adaptation costs attributed to anthropogenic climate change, which produced a two-fold challenge:

*“First, it required demonstrating an expected climate change impact attributable to human activities only, a task both impossible and undesirable. Second, it required demonstrating the fraction of a given project that is required for adaptation.”*¹⁶⁷

Consequently, the authors conclude that *“for many projects that appropriately link adaptation with development such a requirement would be nearly impossible.”*¹⁶⁸

Even in cases where this is possible – e.g. in reactions to sea-level rise - it is very complex and requires appropriate capacities that probably many communities do not have or only could gain through extensive capacity building. This limits their opportunities to successfully apply for project funding.

The discussions in the context of the post-2012 framework about this obstacle are only at the beginning, but solutions to this institutional challenge are absolutely necessary to avoid a neglect of those who are most adversely affected by climate change, also in Africa. Thus, the proposal of *Hultman/Tompkins* seems worth being discussed, namely to distribute the AF through two streams: one stream with a development focus which addresses multiple goals, and a second one which would be directed to specifically support climate change adaptation projects.¹⁶⁹ The authors also propose to spend some of the AF as budget support to recipient countries for local level capacity building, with *“some of these funds could be used for project-based activities with priority determined by the host country, and some could be used for increased utilization of insurance or financial hedging mechanisms.”*¹⁷⁰

Capacity building must be seen as a key issue for community-based adaptation, on the one hand to increasingly develop and test approaches of adaptive development. On the other hand it is also necessary to increase the “absorptive capacity” of the people, having the skills to spend money generated through the mechanisms discussed.

¹⁶⁵ http://unfccc.int/adaptation/sbsta_agenda_item_adaptation/items/3633.php [29 August 2007]

¹⁶⁶ *Tompkins/Hultman* 2007: 6

¹⁶⁷ *Tompkins/Hultman* 2007: 9

¹⁶⁸ *Tompkins/Hultman* 2007: 9

¹⁶⁹ *Tompkins/Hultman* 2007

¹⁷⁰ *Tompkins/Hultman* 2007: 14

6 Conclusions and recommendations

A number of conclusions and recommendations emerge from the overall analysis of this paper. Their implementation could hopefully further support the joint development and implementation of adaptation strategies, policies and projects in Africa. Some of these suggestions could create additional dynamics on the way for a strong UNFCCC negotiation mandate being adopted in Bali in December 2007.

6.1 Review and follow-up of the EU Action Plan on Climate Change in the Context of Development Cooperation

The EU Action Plan, adopted in 2004, is an important guiding framework for how adaptation to climate change is being addressed in the development cooperation of the EU. It is about to be reviewed in late 2007 and during 2008. The review should reflect the latest scientific results indicating an increasing sense of urgency to take action on climate change, it should be transparent and comprehensive and actively encourage the civil society in both the EU and target countries to participate.¹⁷¹ The European Commission itself has recognized the need for strengthening certain aspects of the Action Plan as part of the review, inter alia strengthening timeframes and responsibilities, a better prioritisation and a clearer financial earmarking to implement the Action Plan. Given the process of the Joint EU-Africa Strategy, an effective follow-up of the Action Plan will be important for the cooperation with Africa, since the draft strategy points to the fact that the more general framework of the strategy should be accompanied by specific action plans.¹⁷² Since both mitigation and adaptation activities are part of the Action Plan, possible synergies like those described in the case of renewable energies should be increasingly assessed and realised.

6.2 Improve coordination and division of labour

An improved coordination and division of labour between the EU Member States is an important challenge to increasing aid effectiveness. Since adaptation to climate change is a relatively new field of development cooperation, it offers the opportunity for an effective division of labour “from the start on”.¹⁷³ It can be envisaged in different respects. For example, regional studies financed by one donor can significantly improve the knowledge base of a number of countries. The same holds for the support or setting-up of research centers. In this sense, the EU should seek to develop a clear strategy, together with its African partners, on how Africa can be assisted most effectively, based on an efficient division of labour. Due to the huge lack of knowledge, research is still of utmost importance, combined with pilot projects to gain experience, for example in community-based

¹⁷¹ VENRO 2006

¹⁷² European Union/African Union 2007

¹⁷³ Mürle 2007

adaptation (CBA). In conclusion, the most affected communities have the most urgent need to adapt.

6.3 Commit to increased adaptation financing

Given the EU's responsibility as a causer of climate change, stepping forward with financially supporting the efforts of LDCs to adapt to climate change would set an important signal: It would show the LDCs that their needs are taken seriously and that their NAPA work is appreciated. Also, it would signalise other industrialised countries that the EU recognizes its responsibility for assistance and that it regards this support as a strategic investment in reaching an equitable post-2012 agreement. African LDCs could be substantially assisted in the implementation of the NAPAs they elaborated, and the need for division of labor could be recognised. For example, a "NAPA fast track initiative" could be set up, in which the Member States commit to financing the NAPA priority projects, according to the Member States' relationship to certain countries and the responsibility for climate change. Since climate change is an additional burden primarily produced by the industrialised countries, many civil society organisations argue that financial resources, additional to existing ODA commitments and to the "mainstreaming" of adaptation in development cooperation, are needed to finance adaptation. This claim is legitimate even if a clear distinction between adaptation and development costs in many cases will not be possible and even not desirable since integrated strategies are needed. Also the co-financing of an African Climate Insurance Facility would be a promising option. Innovative financing instruments, such as the auctioning of certificates in the EU Emissions Trading Scheme (EU ETS), could be applied to generate financing, independently from national budgets and from other industrialised countries' decisions.

6.4 Increase „mainstreaming“ efforts and share experience

The EU Commission itself identifies the need for increased dialogue between agencies and partners at the country level as an important lesson of the past experience with the afore mentioned Action Plan. Only few Member States have started systematic integration of the issue. "Mainstreaming" should be taken better care of in the work of development agencies, and the sharing of experiences, tools and the coordination of activities should be improved.¹⁷⁴ The need to integrate climate change considerations in development programmes and budgets, and also in development cooperation and disaster relief, was also reaffirmed in the so-called "Midnight Sun Dialogue on Climate Change" which was held in June 2007 in Sweden. High-level negotiators from 30 countries, both high-emitting and particular vulnerable ones, met to discuss key issues of future climate poli-

¹⁷⁴ Le Grand 2007

cies. Thus, if the EU intensifies its efforts for a consequent integration, it is also on track with demands expressed by many countries.¹⁷⁵

6.5 Improve coherence for development

The adaptation debate can not be seen isolated from other important development debates. This is especially true since the adaptive capacity of people is, inter alia, significantly affected by their livelihood prospects. Trade relations, globalisation, health policies etc. are all important factors, and progress in adaptation could be vitiated by detrimental development policies in other fields. This can even be the case in the EU mitigation policies, with regard to the critical role of agrofuels. Thus, the EU must also improve its coherence in all policies relevant for the development prospects of Africa.

6.6 The Post-2012 context: Build a political alliance with vulnerable countries

In its Joint EU-Africa Strategy, both partners envisage closer cooperation in international policy fora. This could be of particular importance in the UNFCCC context, since both parties have an eminent interest in a new international climate change agreement.

The EU has committed itself to initiating and implementing new emission reduction strategies with the objective to limit global warming to below 2°C above pre-industrial levels. Countries vulnerable to climate change, inter alia those in Africa, have a strong interest in this objective, since climate destabilisation beyond that level increases the risks for vulnerable countries in the first place. That is why they call for more ambitious mitigation commitments by industrialised countries, *“both due to its vulnerability to the impacts of climate change and to secure carbon markets, including the Clean Development Mechanism.”*¹⁷⁶

Regarding the negotiations as such, the LDCs are disadvantaged due to very limited capacities. So far, they have not made the way within the negotiating group of the G77 to constantly express their concerns. Thus, it is an important signal that both the EU as well as African policymakers have recognized the need for increased capacity-building for the negotiations. Initiatives like the European Capacity Building Initiative (ECBI), which is supported by the governments of Denmark, France, Germany, Sweden and the UK, play an important role in this regard. The prime objective of the ECBI is to *“promote a more level playing field between government delegations to the international climate change negotiations, and facilitate mutual understanding and trust - above all between European and developing countries.”*¹⁷⁷

¹⁷⁵ The Midnight Sun Dialogue on Climate Change 2007

¹⁷⁶ Africa 2006: 15

¹⁷⁷ <http://www.eurocapacity.org>

However, beyond such capacity building, the EU has to show that it takes serious its commitments to support vulnerable countries in adaptation to climate change, and trust building requires additional action. More and more is known about the adaptation needs of African countries and people. The NAPAs are an important brick in the “adaptation wall”, community based approaches are another one. The EU has to put something on the table to build up a joint coalition with the vulnerable countries.

The establishment of a joint alliance between the EU and vulnerable countries, which has already been announced by the European Commission titled “Global Climate Change Alliance (GCCA)”¹⁷⁸, could become such an important political impulse if managed well, including a strong focus on the target countries' interests. As there are huge capacity constraints, capacity support (financing of studies, translation, legal and economic staff etc.) is one precondition for a successful coalition with LDCs. The EU will also have to better respect positions of the LDCs, for example in the discussion about the governing of the Adaptation Fund of the Kyoto Protocol (see above). Given the particular vulnerability of Africa, even a special fund, an Adaptation Fund for Africa, could be an idea worth to assess.¹⁷⁹ The extension of the Adaptation Levy to other Kyoto mechanisms, not only the Clean Development Mechanism (CDM), would structurally improve the financial fundament of the Adaptation Fund. Direct financial contributions will also be important, for example to finance NAPAs. There is currently a strong focus on the emitters in the international policy arena, leaving the affected at risk of being neglected. In order to accelerate the building of an alliance with a view to move forward to the UNFCCC negotiations, initiatives such as a conference of vulnerable countries could be very helpful. Key objectives would be to develop a common understanding of expectations to, and strategies towards the UNFCCC post-2012 negotiations, but also where further consideration of possible joint positions is needed.

¹⁷⁸ EC 2007a

¹⁷⁹ UNFCCC 2007a

7 Web resources and references

7.1 Key web resources

Intergovernmental Panel on Climate Change: <http://www.ipcc.ch>

Linking Climate Adaptation Network: <http://www.linkingclimateadaptation.org/>

Civil society consultation on responses to climate change: <http://www.climatechangeafrica.org/>

Science and Development Network: <http://www.scidev.net>

UNFCCC adaptation work: <http://unfccc.int/adaptation/items/2973.php>

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