UN CC-DARE DRAFT Policy Brief:
Climate Change Adaptation and Water Resources Management in Africa

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1. Introduction

There is now broad consensus amongst researchers, practitioners and decision-makers that human-induced climate change –often referred to as "global warming"– is not only unavoidable, but already observable. While global temperatures fluctuate from year to year, on average they have risen by almost 0.8ºC over the last century, and slightly higher than this in Africa, with a particularly sharp rise over last 50 years rise[1]. These accelerating trends are already impacting hydrological regimes. According to Conway (2009), over the next 100 years in Africa[2]:

- The drier subtropical regions will warm more than the moister tropics.
- Northern and southern Africa will become much hotter (as much as 4 °C or more) and drier (precipitation falling by 15% or more).
- Wheat production in the north and maize production in the south are likely to be adversely affected.
- In eastern Africa, including the Horn of Africa, and parts of central Africa average rainfall is likely to increase.
- Vector borne diseases such as malaria and dengue may spread and become more severe.

Managing water has always entailed trying to deal with natural variability and competing uses. But climate change threatens to make this variability greater by shifting and intensifying extremes, thereby increasing uncertainty in the quality and quantity of supply. While pressures resulting from increasing demands on water resources caused by population growth and economic development are far greater than those caused by climate change, the added complications that climate change brings cannot be ignored. As summarized by the Intergovernmental Panel on Climate Change (IPCC) in 2008, "Water and its availability and quality will be the main pressures on, and issues for, societies and the environment under climate change"[3].

Given the multiple uses of water (such as for agriculture, power generation, transport, industry, domestic purposes, ecosystems and livelihoods such as fishing), addressing the problems of adaptation that climate change poses cannot be achieved by those responsible for water management acting in isolation. Multi-sectoral and multi-disciplinary collaborative responses are needed. However, given that the greater proportion of Africans directly depend upon agriculture for their livelihoods, it is particularly important that the relationship between water resources management and land management is given special consideration. The kind of adaptation that will be required relies on a better understanding of the impacts of climate change and making informed decisions on measures to cope with it[4]. It is a continuous process that requires updating both long-term as well as short-term policy and planning thinking.

Box 1: Vulnerability and Adaptation in the Climate Context

1) **Vulnerability** is the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

2) **Adaptation** is the adjustment in natural or human systems in response to actual or expected climatic stimuli, or their effects. It involves taking steps to reduce the negative impact of climate change. For example, emphasizing new or different natural resource management practices, and improving governance institutions.

Source: After IPCC Assessment Report (2007)

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While predicting the exact consequences of climate change in specific geographies is not yet possible, countries that adopt a "wait and see" approach potentially risk the lives of their people, their ecosystems and their economies. As the Stern Review Report (2006) recognized, "ignoring climate change is not an option – inaction will be far more costly than adaptation"[5].

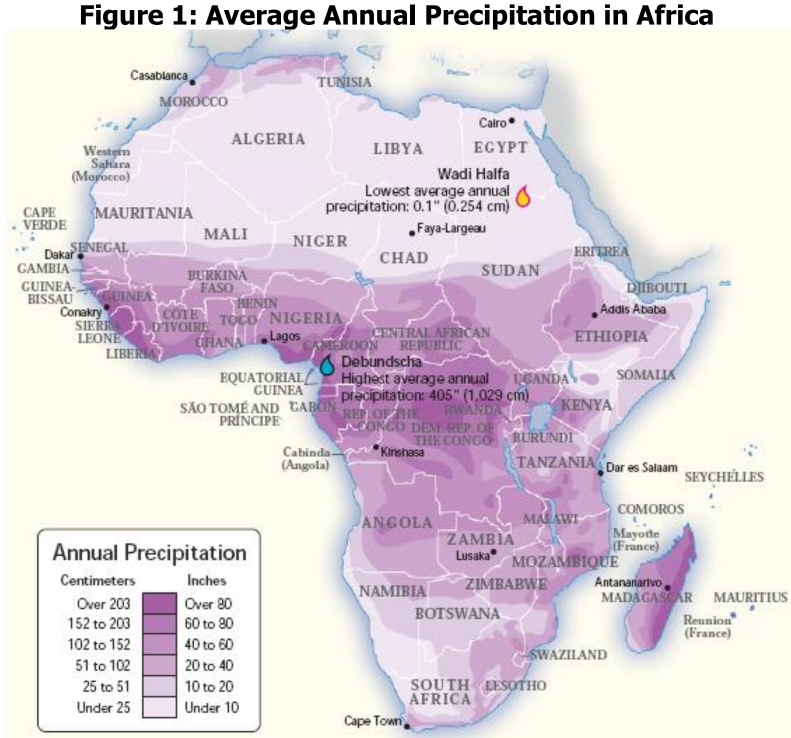
This brief, produced by the UN Climate Change and Development – Adaptation by Reducing Vulnerability Programme (CC-DARE), aims to provide an overview of current knowledge regarding climate change and water resources in Africa, the impacts and costs of adaptation, as well as recommended responses. These responses are directly based upon the conclusions from a series of international workshops and conferences called, "Dialogue on Land and Water Management for Adaptation to Climate Change" that concluded in 2009. The dialogue was initiated by the Danish Ministry of Foreign Affairs. The target audience is researchers, practitioners, policy and decision-makers. While the geographical focus of this note is on Africa, it is the expectation of the authors that this note will be of relevance in many of the world's other vulnerable regions.

2. Climate Change and Water Resources in Africa

The climate of Africa is naturally highly variable and is characterised by a wide range of systems; from humid equatorial, through seasonally arid tropical, to sub-tropical Mediterranean. While the continent as a whole has an abundance of water resources, they are not evenly distributed throughout the continent and not located where demand is greatest[6].

As figure 1 illustrates, the disparity in precipitation rates between countries and regions in Africa are significant. For example, with more than 7500 km3/year, the central region receives 37% of all precipitation in an area that accounts for just 11% of the total population[7]. According to Goulden et al (2008), the intermediate regime (>40 <100 cm/yr) covering 25% of the continent attracts greater concern than the other regimes as changes in precipitation would seriously affect surface water supply. The intermediate regime shows high seasonality and includes three densely populated regions: Southern Africa, most of East Africa, and the East-West band stretching from Senegal to Sudan. These regions include a number of important river basins[8].

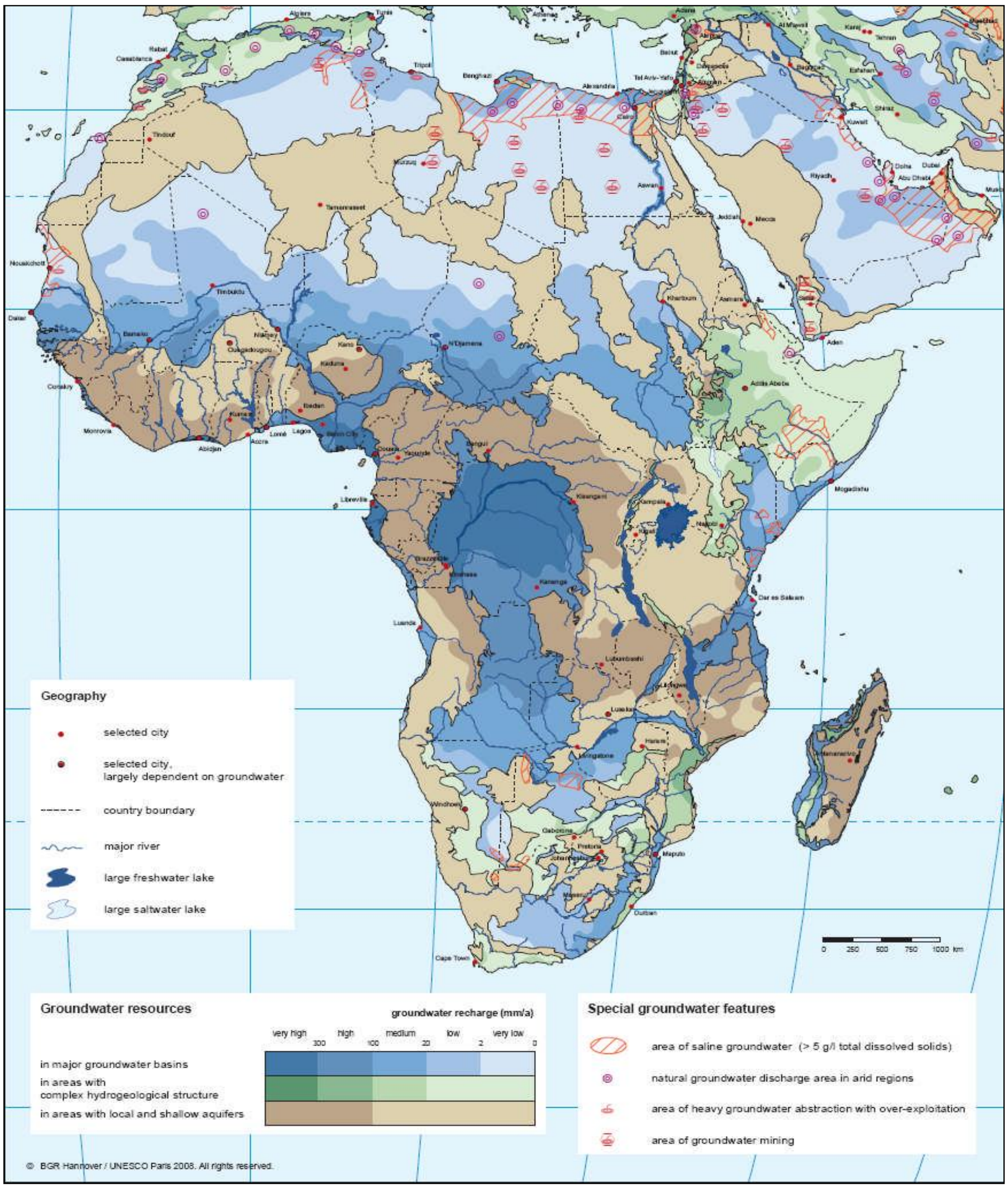
Figure 1: Average Annual Precipitation in Africa



Source: GeoNova Thematic Maps (2007)

As can be seen in figure 2, the groundwater resources in Africa also show spatial variability and broadly follow general patterns of precipitation. While databases such as FAO's Aquastat contain information on water availability and extraction, there is a general paucity of information on groundwater resources in Africa. Despite the importance of groundwater resources, surprisingly little attention is given to them in comparison with lakes and river basins. The Groundwater and Climate in Africa - International Conference that took place in Kampala in 2008 also highlighted this situation. While steps are being taken (e.g. UNESCO's GRAPHIC (Groundwater Resources Assessment under the Pressures of Humanity and Climate Changes) 2008-13) much more needs to be done to fill the knowledge gaps.

Figure 2: Groundwater Resources in Africa



Between today and the 2080s conservative estimates predict temperature increases ranging from an approximate average of +3.2°C to +3.6°C[9]. This increase threatens to put further pressure on water resources due to an increase in evaporation and transpiration. Furthermore, climate forecasts predict a possible increase in the already high variability (space and time) in rainfall and river flows in some of the most populous regions; and an increase in extreme events, although projections remain uncertain[10].

The expected net result of this situation is that some areas will become drier, whilst others will become wetter[11]. Table 1 illustrates some of the expected changes that researchers have predicted between now and the end of the century.

Table 1: Summary of Studies on Climate Change Impacts on Surface Water Resources in Africa

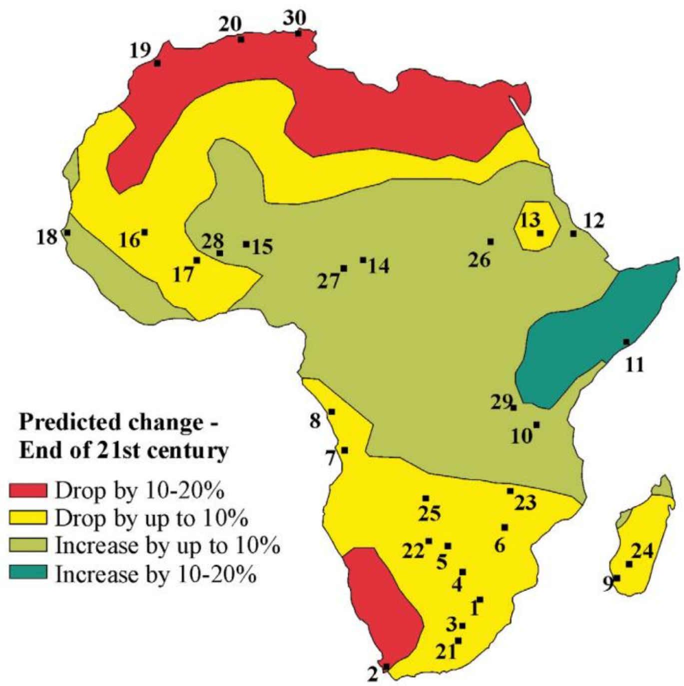
Region	Projected changes in water resources[5]	Authors
Africa	By 2050, water stress will increase over 62.0–75.8% of total river basin area and will decrease over 19.7–29.0% of this area.	Alcamo *et al.*, 2007
	Decrease in perennial drainage will significantly affect present surface water access across 25% of Africa by 2100.	de Wit & Stankiewicz, 2006
East Africa	Runoff in Eastern Africa is projected to possibly increase by 2050.	Arnell, 2003; Strzepek & McCluskey, 2006
	Increase in runoff of 20 to 40% by 2050 in Eastern equatorial Africa.	Milly *et al.*, 2005
	Except during the 2001-2005 period, the total average annual inflow volume of the **Lake Ziway** might decline up to 19.47% for A2a- and 27.43% for B2a-scenarios.	Abraham, 2006
	Future **Nile** discharge (up to 2100) will decrease slightly (-2%) or will remain relatively stable compared to the current situation (average over 1750–2000 AD).	Aerts *et al.*, 2006
	Lake Tana: if the temperature is increased by 2°C and: 1) no change in rainfall → decrease in annual flow by 11.3%; 2) decrease in rainfall by 10% to 20% → decrease in runoff by 29.3% to 44.6%; 3) increase in rainfall by 10% to 20% → increase in runoff by 6.6% to 32.5%.	Tarekegn, 2000
	Reduction in runoff in **Nile** by 2050 (around 3%)	Manabe *et al.*, 2004
	Increase in water withdrawals in the **Nile** by 2025 mainly because of population and economic growth (Application to a business-as-usual scenario)	Alcamo *et al.*, 2003
Southern Africa	Decrease in runoff of 10 to 30% by 2050 in Southern Africa.	Arnell, 2003; Milly *et al.*, 2005
	Change in discharge relatively small in the **Zambezi** by 2050.	Manabe *et al.*, 2004
	Increase in water withdrawals in the **Limpopo** mainly because of population and economic growth (for a business-as-usual scenario).	Alcamo *et al.*, 2003
	Decrease in annual mean water flow in **Okavango** River by 14% (B2 scenario) or 20% (A2 scenario)	Andersson *et al.*, 2006
North Africa	Runoff is projected to possibly decrease by 2050.	Arnell, 2003
	Most of North Africa: stabilization or decrease in water withdrawals between 1995 and 2025.	Alcamo *et al.*, 2003
Central Africa	Runoff is projected to possibly decrease by 2050.	Arnell, 2003
	Increase in runoff of 12% in **Congo** by 2099 compared to the recent discharge values.	Aerts *et al.*, 2006
	Increase in water withdrawals in the **Congo** mainly because of population and economic growth (for a business-as-usual scenario).	Alcamo *et al.*, 2003
West Africa	Significant increase in runoff in regions of heavy rainfall (e.g. coastal region of Africa around the Gulf of Guinea) by 2050.	Manabe *et al.*, 2004
	Increase in runoff of 61% in **Volta** by 2099 compared to the recent discharge values.	Aerts *et al.*, 2006

N.B. These studies use a number of different climate change scenarios

Source: Goulden et al (2008)[12]

Figure 3 illustrates the predicted results in terms of surface water supply by the end of the century. These results are broadly in line with nearly all climate models[13 & 14].

Figure 3: Changes in Surface Water Supply Across Africa with Predicted Climate Change



Urban areas
1 Johannesburg, South Africa
2 Cape Town, South Africa
3 Bloemfontein, South Africa
4 Gaborone, Botswana
5 Maun, Botswana
6 Harare, Zimbabwe
7 Catete-Sede, Angola
8 Cabinda, Angola
9 Tulear, Madagascar
10 Dodoma, Tanzania
11 Mogadisu, Somalia
12 Adi Ugri, Eritrea
13 Gedaref, Sudan
14 Ndjamena, Chad
15 Niamey, Niger
16 Mourdiah, Mali
17 Ouagadougou, Burkina Faso
18 Dakar, Senegal
19 Rabat, Morocco
20 Algiers, Algeria

Rural areas
21 Zastron, South Africa
22 Okavango, Botswana
23 Chipata, E. Zambia
24 Isalo-Ihosy, Madagascar
25 Western W. Zambia
26 S. Kordofan, Sudan
27 Marona, Cameroon
28 Foda Ngourma, Burkina Faso
29 Northwest Tanzania
30 Jendouba, Tunisia

Source: Maartin de Wit and Jacek Stankiewicz (2006)[15]

However, while there is general consensus that drier conditions will prevail in Southern and Northern Africa and wetter conditions in East Africa including the Horn of Africa, over much of the rest of Africa, including the Sahel, there is much uncertainty about how rainfall will evolve. Furthermore, it is important to stress that these are large scale predictions which provide a poor guide to local climates. For example, even though as predicted in figure 3 Southern Africa is generally expected to become drier, an empirical downscaled model for South Africa indicates increasing summer rainfall in the eastern part of the country[16].

3. Climate Change Impacts and Costs of Adaptation

Many areas in Africa are recognized as having climates that are among the most variable in the world on seasonal and decadal time scales. The challenges caused by climate variability further compound the challenges related to growing demands on water resources as a result of economic development and population increases. Floods and droughts can occur in the same area within months of each other leading to famine and negatively impacting socio-economic well-being through the disruption of livelihoods (particularly agriculture and fisheries-based) and food security[17].

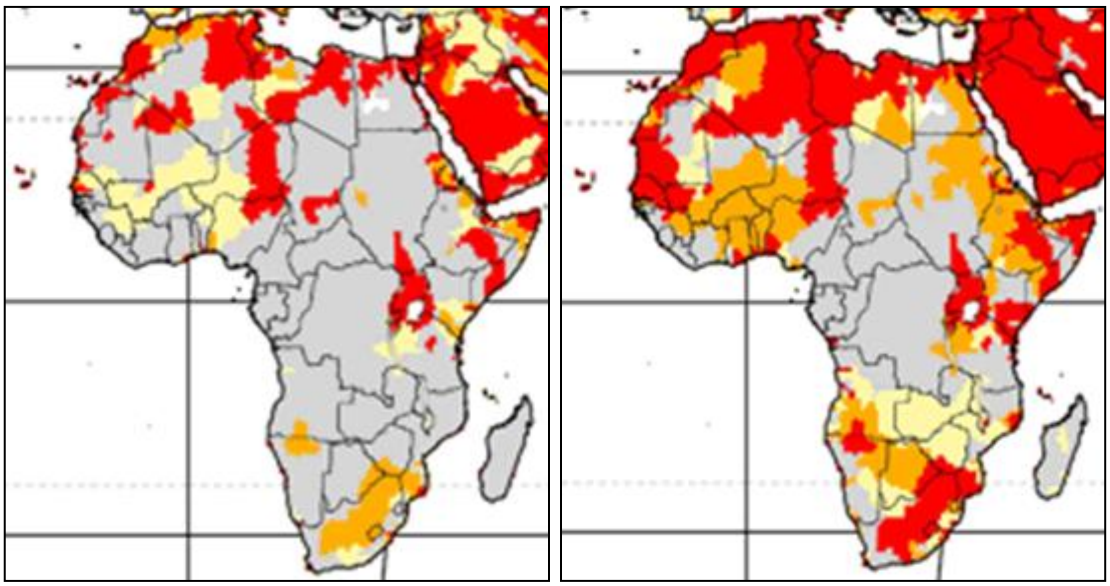
Understanding the impacts of climate change requires an understanding of the interaction of climate and socio-economic conditions (usually population and GDP) that produces the final impacts. Since 1950 Africa's population has quadrupled to just 1 billion people today, and is expected to eventually stabilise after 2100 at about 2.85 billion[18].

Water supply and quality

Some estimates have indicated that one third of African people already live in drought-prone areas and 220 million are exposed to drought each year[19]. Figure 4 illustrates the predicted growth in water scarcity in Africa by comparing statistics from 1961-91 with projections for the 2070s. The construction of reservoirs, pollution from multiple sources and changes in land use and land cover will all add to the complexity of the problem.

Arnell (2004) estimates that the African population exposed to increase water stress will have risen to 350 million people by the 2020s and 600 million people by the 2050s.

Figure 4: The Growth of Water Scarcity in Africa



1961-1990 **2070s**

Million litres available per person, per year
- Less than 0.5 - Extreme stress
- 0.5 to >1.0 - High stress
- 1.0 to >1.7 - Moderate stress
- 1.7 and over - No stress
- No data

N.B. measurements of water stress based on average annual availability should be treated with caution as they only indicate an annual average. For example, they may mask extreme events such as floods and droughts occurring in the same place within months of each other.

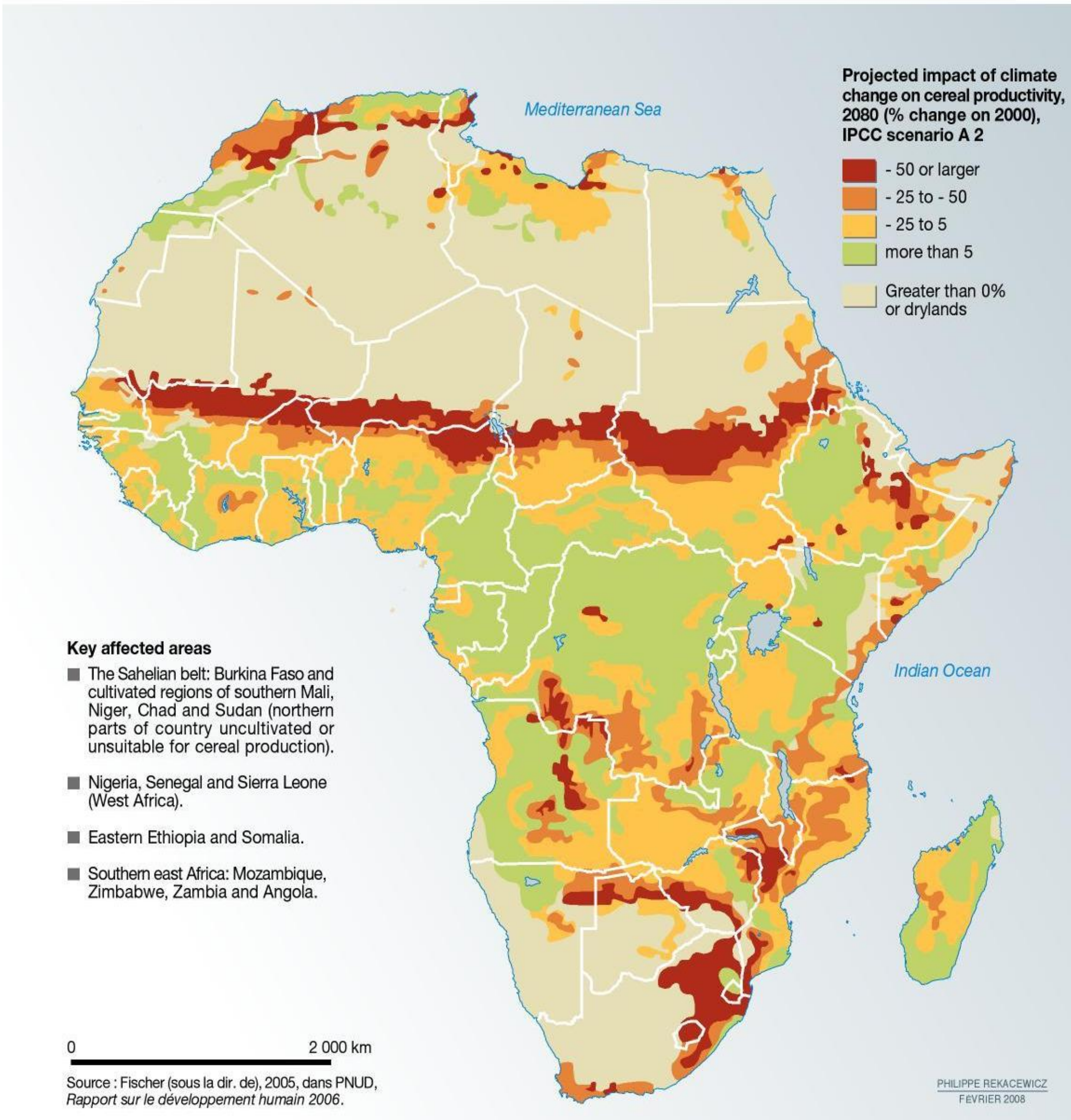
Source: Centre for Environmental Systems Research, University of Kassel (2007/2009)[20]

Approximately 75% of Africa's nearly one billion inhabitants rely upon groundwater for their daily water supply[21]. Because of the importance of groundwater at the local scale, the impact on human well-being may be disproportionately large[22]. As total water use increase the demand for groundwater can be expected to increase, and may also increase as a response to changes in surface water ability. Groundwater levels are also directly affected by climate change in terms of levels and recharge rates, as well as by salinisation due to rising sea levels in coastal areas. Increasing water stress can be expected to lead to the use of poorer sources of water, lower efficiency of local sewerage supplies and greater proliferation of pathogens in raw water supplies.

Agriculture and food security

As illustrated in figure 5, with climate change large areas which are currently marginal could become unsuitable for agriculture in the future due in particular to prolonged higher temperatures and greater incidence of drought. This is likely to further adversely affect food security and exacerbate malnutrition.

Figure 5: Projected Impact on Cereal Productivity in Africa between 2000-2080



Health

Major impacts of climate change on human health are likely to occur via changes in magnitude and frequency of extreme events. For example, floods can result in death or injury, spread of communicable diseases such as cholera, and hepatitis A. Whereas droughts can result in malnutrition springing from food shortages and lack of water availability for hygiene, thereby increasing the risk of diseases such as diarrhoea. Furthermore, insect or tick vectors that spread many serious diseases, such as malaria, dengue, yellow fever, encephalitis, and sleeping sickness are highly sensitive to temperature, humidity, and rainfall patterns[23]. For example, according to Conway (2009), the 0.5°C increase in the East Africa Highlands since 1980 (much faster than the global average) has been accompanied by a sharp increase in mosquito populations that may be a result of the warmer weather and increased rainfall from September to November.

Ecosystems

Changing temperatures, rainfall, and land-use patterns will increase stresses on aquatic ecosystems leading to a contraction of suitable habitats for endangered plant and animal species and even the loss of endemic species. For example, wetlands can become increasingly saline[24] and the loss of forests in catchment areas more soil erosion, increased run off, floods, and reduced water quality (as well as less rainfall).

Environmental Conflicts and Migration

Resource-scarcity induced conflicts ranging from high intensity civil wars, to skirmishes between livelihood groups (such as those between pastoralists and sedentary farmers) are nothing new to Africa. However, in situations where climatic conditions are becoming increasingly variable, water is becoming increasingly scarce, and resources are being increasingly degraded, it seems likely that incidences of resource scarcity induced conflicts will increase as tensions within and among groups grow. A study by the European Climate Forum in 2004 concluded that a temperature increase of somewhere in the range of 2ºC by 2050 could exacerbate low food security, poverty and water stress, leading to large scale environmental or climate refugees[25]. It is estimated that today there are 24-50 million such refugees worldwide, with a majority of Africans. Future predictions vary widely, but 150-200 million by the year 2050 are numbers which are often cited[26].

Costs of Adaptation

The costs of adapting to climate change vary because they depend on future greenhouse gas emissions, mitigation measures and assumptions about human-induced climate change, and how well countries will adapt to it. Assessments of the economic impacts of predicted climate change on Africa are currently sourced from integrated assessment models and provide highly aggregated estimates. Many of the costs stem from a decline in the availability of water resources, rising sea levels and storm surges in coastal regions, greater burdens on health, increased demand for energy (including from hydropower) for cooling purposes, the impacts of extreme events, and general falls in agricultural yields. In addition to these are the threats to biodiversity and associated ecosystems[27].

Recent estimates, based on a global temperature increase of 2ºC, from the World Bank on the costs of adaptation to climate change in developing countries are in the order of US$75-100 billion per year for the period 2010 to 2050[28]. The total costs to Sub-Saharan Africa are expected to be in the order of US$13-24 billion annually (US$6.2-7.1 billion annually for water supply and riverine flood protection) for the same time period.

The same World Bank report notes that both climate scenarios show costs increasing over time, although falling as a percentage of GDP—suggesting that countries become less vulnerable to climate change as their economies grow. There are considerable regional variations, however. Adaptation costs as a percentage of GDP are considerably higher in Sub-Saharan Africa than in any other region, in large part because of the lower GDPs in this region”[29].

Even though attention is understandably drawn towards the negative effects, it is important that the positive effects of climate change should not be overlooked. A number of areas can expect to benefit from changing rainfall patterns that will create new economic and social opportunities that countries and communities should seek to understand and exploit.

4. Policy Response Options

Adaptation measures consist of both “hard” options involving engineering solutions, and “soft” options based on policy changes and social capital mobilization. Given the policy focus of this paper, attention will be given to “soft” response options. As already noted in the introduction, given the multiple uses of water and the complexity of the problems to be addressed, multi-sectoral and multi-disciplinary collaborative responses are needed.

While the science of climatic modelling, including more complex calculations and higher resolution mapping is constantly improving, the reality is that knowledge of climatic impacts remains weak. Policy responses will depend upon local conditions, although it is important that adaptation be mainstreamed and integrated into the broader development context where challenges such as economic and social development, natural resource management and ecosystem protection are addressed.

Between November 2008 and April 2009 the Danish Ministry of Foreign Affairs (Danida) initiated the "Dialogue on Land and Water Management for Adaptation to Climate Change" that consisted of a series of international workshops, involving researchers, practitioners, policy and decision-makers, that came up with a series of guiding principles and recommendations that aim to promote sustainable development while responding to the impacts of climate change. The particular relevance of the initiative from the African perspective is the emphasis on integrating water with land, as well as the multiple uses of both – including agriculture (the mainstay of most African economies). The five guiding principles and recommendations that the process concluded with will be used as the basis for framing recommended policy response options under the following headings:

1) **Sustainable development**
2) **Building Resilience**
3) **Governance**
4) **Knowledge and information**
5) **Economics and Financing**

Sustainable development

Adaptation in a development context has important ramifications for adaptations in land and water management systems: (i) a pro-poor agenda must be ensured by focusing on facilitating adaptations of the poor and marginalised groups; (ii) poverty is the main and fundamental constraint to adaptation in developing countries and synergies between poverty reduction and adaptation, mitigation, and environmental protection should be realised where possible; (iii) no-regret actions, providing social, economic and environmental benefits irrespective of future climatic scenarios, should be prioritised; and (iv) finally, effective channelling of adaptation support to all stakeholders in both private and public land and water management systems needs a programmatic and multi-sectoral approach, with decentralised decision-making, the involvement of civil society, and gender equality perspectives.

Building resilience

Increasing the resilience to climate change in water management requires integrated ecosystem-based approaches that address poverty-related barriers to adaptation, promotes land use diversification and intensification, and increases water storages and improves their management.

There is an urgent need to implement existing ecosystem-based plans for sustainable management. Building on existing and accepted approaches to integrated land and water management is an effective way of addressing socio-economic and environmental development objectives in the context of current climate variability, while improving the overall resilience to the more uncertain future climate changes. These approaches and interventions are already widely designed also to address the climate-development nexus and to enhance the adaptive capacity and resilience to climate change and other stresses, and may be further improved to explicitly address the context specific challenges of climate change. Such approaches should be scaled up in development interventions, including inter alia integrated water resources management, integrated coastal zone management, sustainable livelihoods programmes, participatory watershed development and community forestry activities.

Appropriate infrastructure that reduces vulnerability and promotes development is highly needed. Thus, water storage capacity should be increased in all forms, and floods and droughts should be addressed now. Investments in rainfed and irrigated agriculture should promote linkages with rural markets and infrastructure, land restoration, water harvesting, pollution control, climate resilient crops and livestock, integrated land-use systems, and increased productivity and diversification. The focus should be on practices with a potential for realising synergies between economic development, adaptation and mitigation, such as rational water allocation mechanisms, water saving practices, conservation agriculture, agroforestry and improved management of grazing lands.

Governance

Building resilience in management systems to climate change stresses the need for decision making processes that respect the principles of subsidiarity, decentralisation and adaptive management. Governance practices must facilitate an effective and pro-poor prioritisation and channelling of adaptation support to all stakeholders, including community-level adaptation initiatives, basin level and trans-boundary adaptations, and guided and people-centred resettlement and migration schemes for people leaving unviable livelihoods. Benefits and costs of winners and losers must be shared equitably, and by recognising the importance of gender equality in adaptation strategies and programmes. Adaptation efforts will therefore need to build on the principles of participation of civil society, gender equality, subsidiarity, decentralisation and adaptive management.

Climate change concerns need to be mainstreamed and integrated in national policies and implementation frameworks, bridging across institutional and sectoral divides. This calls for a review and possible revision of national policy and planning frameworks, such as the poverty reduction strategy papers (PRSPs). Policy changes for promoting synergies between adaptation, food security, poverty reduction and environmental protection needs to be identified and implemented. Mandates and management functions need to be clarified and institutions strengthened at all levels of governance and management, in particular at regional and local levels where the majority of adaptation activities need to be planned and implemented. Linkages between institutions need to be improved.

Resources for supporting and enhancing climate change adaptation capacities for the poor need to be mobilised and channelled in a number of ways, e.g., through national policy mainstreaming, social transfers, donor funded adaptation projects, civil society actions and private sector provision of products and services. Partnerships with diverse stakeholders should therefore be established to enhance the incorporation of adaptation into development processes and responses to unexpected events.

Knowledge and information

Vulnerability and adaptation to climate change risks and impacts are shaped by a complex interaction between local characteristics, economic conditions and the often highly diverse livelihood capitals and strategies of individual households. Effective adaptation planning and implementation in management systems is therefore highly context specific and knowledge demanding.

Adaptation should be knowledge based, including and integrating both scientific and local knowledge. Local knowledge systems on adaptation have in many placed evolved from the experiences of generations with adaptation to changing climate conditions. Building resilience to climate change at all levels requires that the potential of these knowledge systems are recognised, enhanced and taken into account alongside scientific knowledge systems. Furthermore, the uncertainties over short and long term climate change and impacts must be reduced, especially at local levels and in terms of precipitation and water availability.

The capacity to generate and utilize context specific and real-time agro-and hydrometeorological data and information needs to be strengthened. Observation networks and linkages between meteorological services and end-users need to be improved. The information available from global climate impact models must be refined to identify hot spots and to better support national and local adaptation actions. Best adaptation practices need to be documented, and the adequacy and safety of existing infrastructure for water storage, water supply and hydropower generation needs to be reassessed under the non-stationary climate change conditions. Information and knowledge on the cost of inaction and adaptation options need to be generated.

Effective and equitable adaptation actions require that knowledge and information on climate change and adaptation practices in land and water management are considered as a public good and shared widely in a form that users can understand. Mechanisms for sharing data, information and best practices need to be identified and promoted, such as real-time data sharing for early warning, community alert systems and farmer-to-farmer learning. Knowledge and information needs to be suitably packaged and appropriately communicated to all decision-makers to scale-up interventions.

Economics and Financing

Recognising adaptation as an additional development challenge, additional and substantial increases in financing is needed to improve adaptive capacity and resilience of rural households and land and water management systems. Development budgets are already under high pressure from the global financial and economic crisis. There is a need to influence and ensure the development of financing mechanisms capable of generating sufficient resources and delivering them in a manner that minimizes complexity and supports the integration of adaptation concerns into the broader development agenda.

Financial resources should be prioritized towards the needs of the more vulnerable, taking into account the cost of inaction while ensuring economic and social viability. Adaptation activities must be budgeted at sectoral levels, and increased funds should be available at local government and community levels to facilitate local initiatives.

The full range of financing options needs to be utilized, including innovative financing mechanisms, private sources and public sector funding from developed countries. All opportunities in the UNFCCC negotiations covering mitigation and adaptation need to be utilized and aid effectiveness improved. Land and water management practices that provide mitigation and/or adaption benefits should be eligible for financial support. The scope of the Clean Development Mechanism and/or emerging Market Mechanisms for Sustainable Development should therefore be expanded to include avoided deforestation, agro-forestry and soil carbon sequestration practices. It is important that funding for climate change adaptation is substantially scaled up and additional.

About CC DARE: Climate Change and Development – Adapting by Reducing Vulnerability

CC DARE was officially launched in February 2008. Uganda, Senegal and Tanzania participated in the pilot phase and to be followed by other countries in sub-Saharan Africa including Benin, Ghana, Mozambique, Seychelles, Malawi, Togo and Botswana.

The main objective of CC DARE is to mainstream climate change adaptation within the broader development context. This is done by providing both technical and financial support to key partners (including both government and non-government) in participating countries.

The emphasis of the CC DARE support is on short-term (3-6 months) initiatives and products that contribute towards addressing key gaps for national climate change adaptation. National institutions, NGOs, experts, and the private sector are eligible for requesting support through CC DARE. Preference is given to institutions involved in country-driven climate change adaptation issues whose outcomes and outputs would be enhanced by assistance from the CC DARE project. The selection of the CC DARE funded activities takes place in close consultation with the national focal points on climate change to the UNFCCC and UN country teams.

The CC DARE programme is characterised as being:
- **Demand-driven and targeted**: The identification of potential activities under the CC DARE programme is based entirely on the needs and priorities as identified by partner countries through a multi-stakeholder process.
- **Rapid**: Approved project proposals may start implementation approximately 9 weeks after the deadline for initial project submission to the CC DARE programme manager.
- **Flexible**: Timely technical assistance by UNEP, UNDP, URC and UDC, in close cooperation with national, regional and international experts, is provided on request, throughout the project cycle – from project design to implementation and evaluation.

The CC DARE programme (www.ccdare.org) is coordinated by a team of project staff from UNEP, UNDP, UNEP Risø Centre on Energy, Climate and Sustainable Development (URC) and UNEP-DHI Centre for Water and Environment (UDC).

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