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African Developments: Adapting to Climate Change – A Governance Challenge

2010 has been an important year for Africa. It marked the 50th anniversary of independence for 17 African countries and the 10th anniversary of the Millennium Declaration. It has also been around a decade since steps toward creating the AU und NEPAD were taken. In a series of DIE Briefing Papers, researchers from Europe and Africa look into African Developments a decade after the revival of the African Agenda to take stock and identify the challenges facing the continent in the years to come.

Summary

Global climate change challenges water availability in many parts of the world. Due to its amplification through the hydrological cycle (such as in South Africa, where a change of 10 % in precipitation results in a streamflow change of up to 30 %) and as a result of the low adaptive capacities in many African countries, climate change is expected to have a higher impact in Africa than in other parts of the world. Climate change is increasing the already existing water stress in many African countries. African water governance organisations are regularly characterised by low (human and financial) capacities and subsequently low adaptive capacity and resilience. As a consequence, water managers often perceive climate change as an additional burden, and adaptation action tends to be postponed. Nonetheless, many African countries have begun reforming their water sectors, aiming at sustainable and integrated water governance regimes. However, these reform processes are progressing slowly. There are some local success stories, but these can often not be scaled up to the national level. Furthermore, current reform efforts in the water sector seem to fall short of addressing the challenges of climate change.

This briefing paper centres on the question of how African (water) governance can create an enabling environment for adaptation to climate change, i. e. what the role of water governance is to increase the resilience and adaptive capacity of African water sectors. Good practices include (i) enhancing responsiveness (to increase sensitivity towards environmental and social change), (ii) establishing flexible institutions (to enable quick adjustments to environmental change) and (iii) increasing cross-scale coordination and cooperation (to support communication on climate change both across sectors and administrative levels). However, these so far remain isolated examples. The following policy recommendations to African governments and donors can therefore be derived:

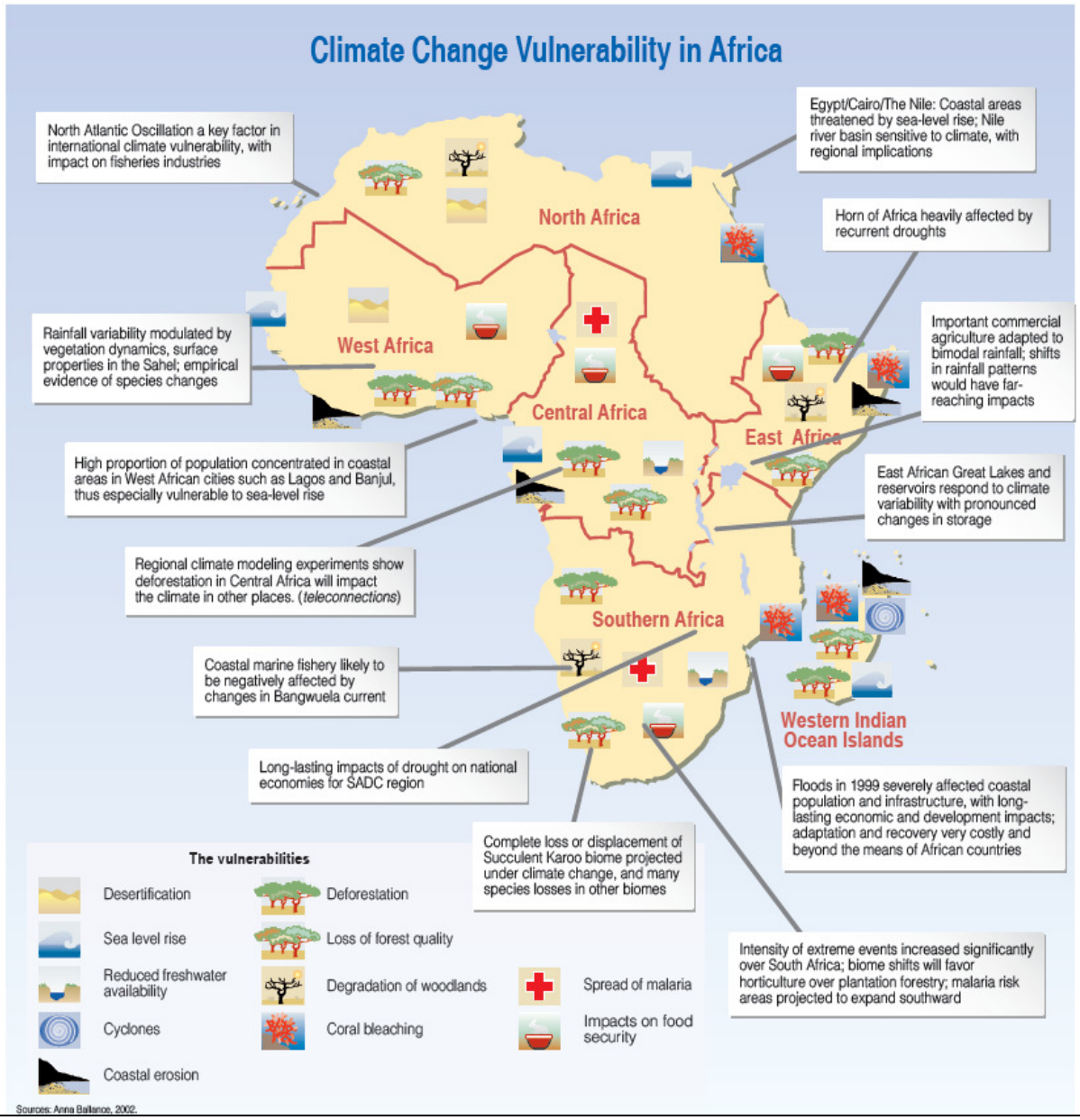
- acknowledge the importance of the governance dimension of water management and support water governance reforms;
- raise awareness and build capacities by training officials on the implications of climate change for the water sector and adaptation options;
- strengthen the responsiveness of African water governance regimes (such as design of reforms and capacity building);
- assist in increasing institutional flexibility; and
- establish and strengthen platforms for cooperation and coordination (not only across sectors but also across administrative levels).

Adaptation to climate change as a challenge for African water governance

On the African continent precipitation is highly unevenly distributed across time and space, often leading to extended droughts or floods. Climate Change is expected to exacerbate this significantly. The Intergovernmental Panel on Climate Change (IPCC) states that throughout Africa warming is very likely to exceed the global mean. At the same time, water demand constantly rises due to population growth, changing lifestyles, and the related increase in demand for agricultural products. These trends will have a high impact on development in general and water supply, health and food security in particular, thus decreasing the adaptive capacity and resilience of the respective societies (cf. Figure 1). By 2050, in some regions of Sub-Saharan Africa surface drainage and agricultural production are projected to decrease by up to 50 % and 70–250 million people are expected to be suffering from increased water stress. The increasing pressure on water resources will initiate new disputes and pronounce already existing conflicts between alternative uses (such as water for development vs. water for nature).

Besides (future) physical limitations, current water stress in Africa has been described as a governance crisis rather than a water crisis since it is rooted in economic water scarcity, such as limited access to safe drinking water. This is reflected in generally underdeveloped (i.e. not exploited) water resources and a lack of water and sanitation infrastructure and governance. Since climate change is likely to produce an

Figure 1: Climate change vulnerability in Africa



Source: UNEP/GRID-Arendal, online : http://maps.grida.no/go/graphic/climate_change_vulnerability_in_africa

impact on livelihoods far beyond any extent of technical progress, technical solutions will not suffice. Furthermore, available technologies are unlikely to be affordable for the people hit hardest by climate change, especially in Africa. "Soft" adaptation measures (such as improved water governance) are therefore becoming more important in addition to "hard" adaptation options, such as access to safe drinking water and irrigation. Strategies that increase adaptive capacity and resilience urgently need to be developed.

Recent water governance reforms have fallen short

Many African countries have recently begun transforming their water governance (for instance, Ghana, Mauritius, South Africa, Uganda, and Zimbabwe). These reforms are in line with international concepts, such as Integrated Water Resource Management (IWRM), and are designed to govern water resources in an integrated, sustainable manner. The goals of recent African water reforms include:

- ensuring sustainable water use (e.g. the South African and Ugandan constitutions oblige the government to ensure sustainable water management and use),
- promoting equitable use of water resources (for instance, the South African and Zambian constitutions include the right to water),
- decentralising water management and introducing hydrological boundaries (such as Catchment Management Agencies in Madagascar and South Africa, as well as Basin Management Committees in Namibia),
- stimulating the participation of water users especially at the lower levels of water administration (such as the introduction of Water User Associations in Madagascar, Malawi, Lesotho and South Africa).

However, these progressive laws are enforced by African water sector administrations often characterised by low levels of human, social and financial capital. Governance structures and institutions are often weak, coordination across agencies and sectors is lacking, and skills are lacking or eroding due to brain drain and HIV/AIDS. Consequently, implementation is progressing slowly. Furthermore, these reforms (as those in many developed countries) seem to have a number of conceptual shortcomings when it comes to adaptation to climate change. First, they do not sufficiently address uncertainties either about water availability or the increasing uncertainties connected to climate change. Second, management decisions and governance structures are rather inflexible. Third, reforms often disregard the facilitation of cooperation and coordination across levels and scales as envisaged in IWRM.

Governing African water resources adaptively

Current water reforms need to be complemented by features that allow uncertainties to be addressed and flexibility as well as responsiveness increased in the water governance system in order to create adaptive capacity and resilience.

Strengthening responsiveness: In the context of climate change, the responsiveness of governance structures towards a changing environment is becoming increasingly important, such as in recognising changes in the water system (for instance, decreasing water availability or increasing water pollution), as is the need to react to them with timely, adequate measures. Experience as well as current and future changes in the social-ecological system (such as increasingly frequent droughts and floods as well as increasing vulnerabilities due to HIV/AIDS and poverty) need to be monitored and taken into account. In addition, the long-term effects of present interventions need to be anticipated (e.g. by climate proofing) and monitored during implementation in order to be able to adjust measures that have unintended negative effects (cf. Box 1).

Box 1: Examples for strengthening responsiveness

In line with the South African Water Law, Resource Quality Objectives (RQOs) have been adopted. This outcome-related management approach strives towards a sustainable balance between protection, on the one hand, and water use and development, on the other, tailored to the specific (environmental, social and economic) characteristics of the catchment. RQOs are responsive since they guide decision-makers towards the objective, but the actual decision and action pathway remains open. Based on the actual state of the environment and socio-economic needs, the objectives and their implementation are flexible and open to adjustments.

Increasing institutional flexibility: Flexibility is needed to enable continuous adaptation as social, ecological or economic parameters change over time. Adaptive water governance requires flexible institutions (i. e., rules and norms), which offer mechanisms that provide for the adjustment of management procedures and governance structures to new (environmental and social) conditions and new (scientific) knowledge. Institutions should simultaneously provide planning security and leeway for adapting to unforeseen events (cf. Box 2).

Box 2: Examples for increased institutional flexibility

Many African countries are implementing new national water legislation, including water rights systems and water charges (for instance, Ghana (1996), Kenya (2002), South Africa (1998), and Tanzania (2009)). Several provisions of the South African National Water Act include time-bound regulations. The National Water Resources Strategy is subject to reviews every five years. Likewise, water licenses are reviewed every five years and may not be granted for longer than 40 years. This allows for reallocation of water resource. Another similar example is the authorisation and renewal of all groundwater abstractions in Mauritius every one to three years.

Fostering cooperation and coordination across levels and scales: The sustainable governance of such complex systems as water governance regimes requires the integration, interaction and cooperation of the different administrative levels and scales of a governance system. Effective, resilient

resource management should acknowledge water as a cross-cutting issue, provide governance mechanisms across the local, provincial, national and international levels, and mirror the multiple levels of ecosystems. Platforms are needed that facilitate negotiation processes, as well as the cooperation and linkages (for example, the sharing of knowledge, information and best practices) among governance entities at the same level as well as cross-sectoral and cross-disciplinary thinking. For instance, ministries concerned with water management tasks or local water management organizations, such as Water User Associations (WUAs), share information to allow new practices to spread quickly, which is increasingly important for the current decentralisation of responsibilities in many African countries (cf. Box 3).

Box 3: Examples for improving cooperation and communication

The Water Resources Commission in Ghana, Catchment Management Agencies (CMAs) in South Africa and Basin Management Committees in Namibia are examples of organisations fostering cooperation across levels and scales. Their task is to enable negotiation processes, promote participation in water management and facilitate all water-related activities in a catchment. As an intermediary between levels and scales, they may develop into bridging organisations for adaptive water governance that provide an arena for trust-building, social learning, the identification of common interests, vertical and/or horizontal collaboration, and conflict resolution. However, the principle of one CMA for each basin is currently being discussed in South Africa, and Basin Management Committees in Namibia face resource constraints, thus indicating a possible step back behind recent achievements.

The way forward

On top of existing shortcomings in water availability and supply with accelerating climate change the African continent will increasingly be confronted with uncertainties and water-related extreme events. Adaptation measures there fore urgently need to be identified and a more adaptive water governance regime implemented.

As shown above, Africa has some leverage points for adaptive water governance, but these are isolated examples, whose full implementation is not ensured. Some African countries have made initial steps towards a more adaptive water governance regime, such as South Africa. It is now of vital importance that they proceed on this track despite implementation difficulties and limited capacities. Achievements should not be abandoned hastily, as can currently be observed, for example, with the questioning of CMAs in South Africa, the non-enactment of policies in Zambia and resource constraints of Basin Management Committees in Namibia. To support African countries in their efforts to not only reform their water governance regimes according to IWRM but also improve their adaptiveness, it is recommended that African governments and donors

- acknowledge the governance perspective of water management and support water governance reforms;
- raise awareness and build capacities by training officials in the implications of climate change for the water sector and adaptation options;
- especially strengthen the responsiveness of African water governance regimes (such as the design of reforms and capacity building);
- help increase institutional flexibility; and
- establish and strengthen platforms for cooperation and coordination (not only across sectors, but also administrative levels).

Literature

Wit, M. de / J. Stankiewicz (2006): Changes in surface water supply across Africa with predicted climate change, in: *Science* 311 (5769), 1917–1921

Müller, C. (2009): Climate change impact on Sub-Saharan Africa: an overview and analysis of scenarios and models, Bonn: DIE (Discussion Paper 3/2009)

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