Trans-boundary Water Resource Management in Africa

Why is it important?

Fair and sustainable water resource management in Africa using a basin-wide approach has never been a more pressing problem both on surface and groundwater. Water scarcity and the impact of flooding are already substantial constraints to economic and human development in many regions. It is estimated that 1.5 million people in 18 countries lost homes and livelihoods to flooding in 2007. Floods and droughts over the period 1997 to 2000 in Kenya are estimated to have cost the country $US4.8bn in infrastructure damage and lost agricultural production, representing around 22% GDP.

Water security and the competition for fresh water may well become a source of conflict in the future. Yet, shared waters can be a source of cooperation. The situation is now more urgent as changes in climate patterns lead to increased hydrological and hydrogeological variability. The decline in the surface area of Lake Chad from 22 902 km² in 1964 to a meagre 304 km² in 2001 (less than 1.3 % of its previous size), is now widely attributed to the effects of climate change and human interventions. Adaptation to this impact is critical for political, socio-economic and environmental stability and economic growth.

What is happening now?

Significant political and technical collaboration is already underway across Africa. Multipurpose water resource development projects are ongoing on the Senegal River Basin, the Nile Basin and Niger Basins, with collaborative arrangements and investments also in the pipeline for the Gambia and Volta and basins. Donor support for trans-boundary water cooperation has significantly increased since 2002 (GTZ 2007) though currently only 17 out of 59 trans-boundary basins receive donor support.

Only 7% of the realistic hydroelectric potential production is exploited in Africa. In Europe the average is 75%. Only 5% of arable land is irrigated.

The physical infrastructure gap is huge.

Capacities to store surface and groundwater must be significantly increased. Recently, the Senegal basin and Niger Basin have been supported with about $ 400 M through multi-donor support, largely aimed at institutional development, eco-system management and infrastructure development. Similarly, the Nile Basin has been supported (about $300M) in sectoral investments in irrigation, power inter-connection and capacity building. Using water storage capacity of South Africa (750m^3 per person per year) as guide to other African countries the World Bank estimates that Nigeria and Ethiopia alone have investment storage requirements of $US67bn and $US46bn respectively. Tanzania is estimated at $US27bn and Uganda $US18bn.

What next?

There is a need for Africa to better understand, to monitor and to exploit, its water resources, both surface and groundwater, in a sustainable way and with good ecological and environmental safeguards. Integrated approaches that look at storage, containment, ecological balances, water conservation, flood management, drought mitigation, irrigation, hydro-power development and water for consumption all need to be reinforced. Politically, it remains a challenge given the number of shared river basins and aquifers. Focusing on sharing benefits from a integrated management instead of hazardous individual behaviours can help to provide incentives to set up and sustain the right institutional arrangements.

Africa, like other developing parts of the world, already has massive climate variability. Changes to the water cycle brought about by increased climate variability will lead to more frequent and extreme floods and droughts and rising sea levels with obvious economic and social consequences. Mitigation through the increased provision of hydraulic infrastructure is essential. Significantly, hydropower is also a much under-utilised energy resource in Africa, and whilst developing it will in many cases offer a low carbon solution, it needs to be part of a proper integrated river management framework.

Possible ICA actions

- Help sell the concept of sharing benefits.
- Take a less risk adverse approach. Many hydropower projects need to be developed either through thorough feasibility studies or updating of old studies.
- Support institutional development of the basins organisation to go ahead with substantial investments when ready and provide more finance.
- Advocate for accelerated development of water infrastructure to urgently address climate variability impacts with more high-level and sustained argument
- Better explore carbon financing mechanisms?
- Emphasise on the water aquifers as a whole and do not only move the actual burden on the surface waters to the groundwater; better monitoring and management of groundwater are necessary.
- ICA Secretariat to organise water PPP meeting