

Water allocation and permitting to support sustainable development in the Kilombero Valley

Rufiji Basin



At a glance

Harnessing water is the key to Tanzania's growth. But in order to secure the prosperity offered by water (for example through irrigated agriculture) we need to be sure how much water is available and coordinate its use. If we don't manage the resource wisely, chaos and conflict are inevitable and economic growth potential squandered. Processes for water allocation and controlling resource use through water permitting therefore need to improve.

The situation in the Kilombero Valley provides a good example why this is so important. Rapid investment in irrigation expansion across the valley is underway, and by some reports 74 000 hectares is planned (that's about 110 000 football pitches). Estimates suggest that there is only enough water to supply a fraction of this. Development based on such unsustainable water resource use is destined to fail its supposed beneficiaries, and cause impacts for people and ecosystems downstream.

These risks have been recognised in the SAGCOT Strategic Regional Environmental and Social Assessment (SRESA):

Because of the risks of significant, irreversible negative impacts to critical habitats, ecosystems and downstream users as already demonstrated on the Great Ruaha River, large-scale irrigation development in the Kilombero Valley should be postponed until there is: better understanding of water availability; the water requirements of the floodplain ecosystem and downstream users; and an effective sub-basin water management organisation.

Executive Summary, SAGCOT SRESA 2013

Despite this proposed moratorium, large scale irrigation development schemes are underway across the Kilombero Valley. None possess an Environmental Impact Assessment

or certificate from NEMC despite these being required under the Environment Management Act 2004. Under the Water Resource Management Act 2009 irrigators also need a Water Use Permit from the Basin Water Board (BWB) which aims to maintain water use within the limits of sustainable supply. Only one scheme is known to possess as a water use permit (WUP) from the Rufiji BWB.

In any case, the existence of a permit is almost irrelevant because the system for processing, issuing and monitoring compliance against WUPs is not currently effective:

- *Permit applications are taking many years for BWBs to process.*
- *There is no environmental flow needs assessment and the sustainable limits of water use are poorly understood by the BWB.*
- *Compensation flow or seasonal variations to protect downstream uses are not specified within WUPs.*
- *WUPs are currently unenforceable: they fail to specify a requirement for measuring devices or for users to monitor use, and BWBs have inadequate budget to inspect or enforce compliance.*

Water use in the Kilombero is therefore close to anarchy. Unless this is addressed the result may be wasted investment in unsustainable schemes, conflict between communities, and long term impacts on livelihoods and the internationally important river ecosystem which supports tourism and fisheries in the Selous, Rufiji and Coast.

The Kilombero, like many of Tanzania's rivers, has great potential to be developed for irrigation, but the Rufiji BWB need the authority, resources, and systems to ensure that its development is based on available flow and that use is equitable and sensible. Without the ability to set and enforce sustainable levels of use, our rivers and economic potential will be bled dry.

What's going on in the Kilombero Valley?

Fact 1. Large-scale irrigation development is underway with little knowledge of water availability.



Photo 1. Irrigation scheme and rice paddy at Mkula, Kilombero.

- 16 irrigation schemes with a reported area of 74,513 ha are being developed with government support. Of these, 4 schemes with an area of about 35,000 ha received donor support.
- Little is known about how much water is actually available for irrigation, partly because of low investment in monitoring. An environmental flow assessment (EFA) has been initiated, although there are concerns about the level of detail it will provide. Without reliable knowledge it is difficult to set water use permits at the right level to protect downstream uses and interests. Nevertheless, irrigation expansion is ongoing without this information.
- Previously installed schemes in the Kilombero which had similarly failed to consider water availability such as the Kilama PADEP irrigation scheme have collapsed representing massive wasted investment.

Fact 2. The needs of water using communities downstream of new water resource development are not considered

- Thousands of people in Ifakara and Ulanga Districts rely on fishing in the Kilombero River for their livelihoods. Fishing contributes up to 25% of local economic activity and provides an important source of food for many Tanzanians. Fisherfolk report a reduction in catch of up to two thirds since 2009 and attribute this to lower water levels, reduced rainfall and greater upstream abstraction. The most important fish species (comprising 75% of the catch during high season) in the river are migratory and their lifecycle depends on adequate flows in the river.
- Although several irrigation schemes are in the process of applying for Water Use Permits, the process for determining applications does not appear to be based on water availability or protection of downstream uses and values such as fisheries.

- Despite the reliance of many fishing communities on water flows in the river, none of these communities or their representatives have been consulted in relation to upstream water resource and irrigation development and abstraction. Their prior use rights in relation to the river are currently not registered or properly protected.

Photo 2. Fisherfolk of the Kilombero have not been consulted or involved in decision making aresource use.



Fact 3. Legal processes and policy for planning, allocating and controlling water use are ignored.

- Construction of some schemes is already underway despite an absence of any EIA studies or certification despite this being required under Section 81 of the Environment Management Act 2004. Failing to prepare an EIA is an offence under S. 184 of the Act and is punishable upon conviction by a fine of up to 10 million shillings and/or imprisonment of up to seven years.
- Under Section 43 of the Water Resources Management Act 2009, all water abstractions require a Water Use Permit issued by the Basin Water Board. The Act sets priorities for water allocation in line with the National Water Policy. The first priority is domestic use; then an environmental reserve followed by economic activities. Without permits it is impossible to align water use with these national policy priorities.
- Only one new irrigation scheme has obtained a Water Use Permit, despite construction underway. Many have applied but have heard nothing from the BWB. Some applicants have waited up to 7 years and are paying annual fees. It is an offence under Section 44 of the act to abstract water without a permit, punishable upon conviction by a fine of up to TSh 500000 or up to six months in prison.



Photo 3. Irrigation scheme construction underway in 2014.

- Under both WEMA 2009 and EMA 2004 a Strategic Environmental Assessment for irrigation development in the Kilombero is required. The Strategic Regional Environmental and Social Assessment completed for SAGCOT in 2014 concludes that irrigation development should be put on hold until more data are available. In spite of the recommendations in the SRESA the work continues.

Fact 4. Water Use Permits are currently unenforceable and unenforced.

- The content and specifications of WUPs are not enforceable: no measuring devices, reporting or monitoring are specified; no location or structural details are provided for abstraction weirs; return flows, 'hands-off' flow, and seasonal adjustment requirements are not included.
- The Basin Water Office does not routinely inspect abstractions to check compliance. There is no budget for this. Even if environmental flow requirements are established, under the current system resource use is unlikely to be controlled. The EFA alone may give a false impression that water use is managed sustainably.
- As evidence of this problem, several irrigation canals were inspected across the valley and found to be diverting the full flow of the river to the fields leaving no water at all for downstream users. Users reported that BWB staff had turned up to collect fees but not to check compliance.

How reliable is our information?

The Uhakika team included experts from the Ministry of Water, NEMC, and NGOs. They visited the Kilombero Valley on six occasions since 2013 to understand and document the situation there. The field work consisted of interviews with experts, meetings with over community members and field surveys and inspections. In February 2015 the team surveyed the river between Ifakara and Mikelegembe in the Selous, interviewing representatives of fishing communities along the valley.

The Uhakika approach also includes action research whereby the team supports affected communities to take formal action to improve their water security. The team tracks the response of responsible authorities in order to evaluate and provide feedback on government performance. Uhakika action plans include working with communities to apply for water use permits or to report serious pollution problems.

In the Kilombero, seven Uhakika action plans were initiated and government responses tracked. Over the duration of the project the BWB were able to issue one permit to the Mkuka Irrigation Scheme.

What needs to change?

Locally: In the Kilombero

- Development of further irrigation should be suspended until there is proper understanding of the water availability, downstream needs and a working system of water use allocation and control.
- Irrigation schemes in the valley should be subject to an EIA study or audit as required by EMA 2004 which should consider the amount which can be safely abstracted by each scheme and the timing of this. This work should draw on a comprehensive downstream needs assessment which should specifically:
 - Examine the fishery, habitat and life cycle requirements of key species;
 - Recognise the prior use values provided to ecosystems, fishing communities, irrigators and pastoralists along the valley.
- A suitably simple and enforceable water allocation and permit determination regime is required and adequate budget must be provided to the BWB sub-office for compliance monitoring and enforcement action. A hierarchy of use should provide for scaling back of non-essential uses during dry periods to ensure adequate water for downstream needs.
- The creation of a Water Users Association within the Kilombero will support higher levels of information exchange and coordination among users and can contribute to sustainable use.

Nationally: learning and response

- The plans and strategies of major water using sectors such as agriculture and energy need to be informed by water availability. The BWBs and Ministry of Water can play a much more proactive role so that development is based on sustainable limits, as established by IWRM plans and environmental flow assessments. This will require political will to realise the powers given to the BWBs under the law, to ensure that decisions are based on rational resource use and that line Ministries adhere to laws and regulations.
- The technical system for allocating water, determining permits and inspecting compliance requires review to ensure it is fit for purpose as a mechanism for implementing water policy. Particular attention is needed to clarify the sequencing of decision making and authorisation required for new water resource development; registration of prior use claims including non-consumptive uses like fisheries; the enforceability and affordability of the permitting system. A risk based system is likely to provide many benefits.
- Basin Water Boards should be supported with the proper level of resources and political autonomy needed to deliver their functions, and be held to account for that delivery.