

Research in Context:

Tanzania: irrigation, formal institutions & water governance

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In this 'Research in Context', DEGRP theme lead [Steve Wiggins](#) focuses on findings from a [DEGRP project](#) led by the University of Sussex.



The [research on irrigation management...](#)

'... seeks to understand how 'external' actors interact with 'local' norms, rules, moralities and politics, particularly when faced with climate change. It further asks how economic growth can be reconciled with improved livelihoods and the resilience of diverse stakeholders.'

The project has carried out case studies in **Bangladesh, Malawi and Tanzania** and has just published a [working paper](#) on some of the results for Tanzania.

FINDINGS

The full summary appears in the [working paper](#), but in a nutshell, it reports the following:

Two contrasting sites in central Tanzania have been compared:

- **Choma** lies in the Uluguru mountains just east of Morogoro where small-scale farmers water their plots of vegetables using hosepipes from the numerous nearby streams. Unregistered, the scheme operates according to local norms and face-to-face negotiations between resident community members.
- **Dakawa** lies on plains some 60 km north of Morogoro where a formal irrigation scheme started in 1981 pumping water from the Wami river on to 2,000 hectares (ha) cultivated by 1,000 farmers. Water flows through canals to 4.85 ha (12 acre) blocks by rotation, most of which are sub-divided into plots of 1.2 ha on average, although some larger-scale farmers occupy multiple blocks. Rice is the main crop. Data were collected in 2013 from both qualitative investigation, such as semi-structured interviews with key informants and farmers, as well as surveys of 102 households in Choma and 115 households in Dakawa.

Key results reported:

- **Vegetable irrigation at Choma functions well.** Farmers grow fruit and vegetables that command good prices in markets in Morogoro, Dar and other cities. Although the streams generally have enough water for the small plots cultivated, urban users in Morogoro compete for water that comes off the

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mountains. City authorities have tried to restrict water use in the mountains, but have been rebuffed by the farmers.

- **At Dakawa rice yields can be high, as much as 10 tonnes/ha, so agronomically the scheme is quite successful.** Questions arise, however, about the financial sustainability of the scheme since the costs of pumping that are not covered by the charges levied on users by the scheme management.
 - **Dakawa has received aid from several donors as well as government support.** At times the level of the river Wami falls so low that not all the scheme can be watered, a problem that is worsening owing to abstractions from the river upstream, mainly by large-scale farms. Disputes over land rights on the scheme have broken out between farmers and pastoralists.
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INTERPRETATION

Two related issues stand out from this comparison.

- One concerns **formality and local institutions**. Irrigation at Choma functions with little or no external assistance, producing incomes for farmers, and supplies fresh fruit and vegetables to Morogoro and other cities. Yet despite this apparent success, some authorities look askance at the informality of the scheme and seek to restrict farmers' access to water. At Dakawa, the scheme is engineered both physically and socially, with top-down management. Agronomically it usually works, but socially there are tensions among users and between them and their neighbours.
 - The other issue is **water governance**. In both cases, demand for water is rising, but the water basin authority lacks the power and capacity to allocate water either efficiently or fairly. At most, it issues permits and tries to monitor use, but it cannot resolve competition for water between the farmers and Choma and the urban users of Morogoro, or between the Dakawa scheme and upstream irrigators.
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WIDER RELEVANCE

These insights reflect Tanzania's challenges with irrigation. The country is rich in both land and water, yet very little of the cropped area is irrigated. In late 2005, the President proposed a target of another one million hectares to be irrigated within five years. Some donors have supported this, with the World Bank providing US\$ 65M for irrigation.

Irrigation has been expanded, with the area covered rising from an estimated 264,000 ha in 2006 to 332,000 ha in 2010, but the increase of 68,000 ha is a small fraction of the target set. Funding may not have been adequate to achieve that target, but an assessment by [Ole Therkildsen](#) signals two equally or more important shortcomings that are inter-related and borne out by the results of this study.

One is the **limited technical capacity of government to implement schemes, or to support private and collective initiatives**. The other reason may be more important, however: the **politics of irrigation**. Therkildsen argues that political goals matter more than economic ones to elites. For irrigation, then, it

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was enough to be seen to be doing something (mainly with formal schemes), rather than following through to deliver results.

Tanzania decentralises responsibility for ministry of agriculture activities to district level. When the funds for irrigation development were sent to this level, funds were spread over many sites to maximise the number of those benefiting, but with little consideration of priority and irrigation potential. Funds were used for physical investment: often for the rehabilitation of existing (presumably formal) schemes that – tellingly – were not operating well or even at all. Crucially, attention to how the schemes would be operated and maintained was limited, as were considerations of rights to land and water.

In part, that probably reflects the difficulties of the latter compared to comparatively straightforward engineering, but also may reflect professional orientations towards technical rather than social questions, with concomitant discounting of farmer views. From interviews of technical staff, Therkildsen reports that:

“How to change the ‘mind-set’ of smallholders to make them accept extension advice was regarded as the key challenge facing local bureaucrats, according to interviews with them.”

At a higher level, these orientations correspond to the commitment of the ruling party to modernisation of agriculture, to be achieved by quite dramatic step changes, rather than marginal increments. This is a longstanding motif of Tanzanian development that can be traced back to colonial times, and later seen in the emphases on state control of the economy and the idealistic but flawed experience of village development (*ujamaa vijijini*) in the two decades following independence (Hyden 1980).

It is not surprising, then, that the informal irrigation at Choma with its rudimentary rubber hoses not only receives little encouragement, but on the contrary is treated with suspicion by authority. Dakawa, on the other hand, with its electrical pumping station and its orderly canals has received lavish attention from government and a succession of donors.

The danger is that as competition for water increases in Tanzania, informal uses will be suppressed, no matter what their economic efficiency and social benefits, in favour of formal schemes that will automatically be assumed superior.

REFERENCES

Hydén, Göran. (1980) [Beyond Ujamaa in Tanzania: underdevelopment and an uncaptured peasantry](#). Univ. of California Press

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