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# Pangani River Basin over time and space: On the interface of local and basin level responses

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# Pangani River Basin over time and space: On the interface of local and basin level responses

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## Abstract

As the pressure on the water resources mounts within a river basin, institutional innovation may occur not as a result of a planned sequence of adjustments, but arising out of the interplay of several factors. By focusing on the basin trajectory this paper illustrates the importance of understanding how local-level institutional arrangements interface with national-level policies and basin-wide institutions. We expand Molle's typology of basin actors responses by explicitly introducing a meso-layer which depicts the interface where State-level and local-level initiatives and responses are played out; and focus on how this interaction finds expression in the creation and modification of hydraulic property rights. We subsequently apply this perspective to the case of Pangani River Basin in Tanzania.

The Pangani River Basin development trajectory did not follow a linear path and sequence of responses. Attempts by the state government to establish 'order' in the basin by issuing water rights, levying water fees and designing a new basin institutional set-up have so far proven problematic, and instead generated 'noise' at the interface.

So far water resources development in the Pangani has primarily focused on blue water, and the paper shows how investments in infrastructure to control blue water have shaped the relationship between water users, and between water user groups and the State. It remains unknown, however, what the implications will be of widespread investments in improved green water use throughout the basin – not only hydrologically for the availability of blue water, but also socially for the livelihoods of the basin population, and for the evolving relationships between green and blue water users, and between them and the State. The paper concludes with a question: will green water development engender a similar double-edged material-symbolic dynamic as blue water development has.

The findings of this paper demonstrate that the expanded typology of basin actors' responses helps to better understand the present situation. Such an improved understanding is useful in analysing current and proposed interventions.

## Keywords

Institutional arrangements; Water rights; Basin trajectory; Hydraulic property; Conflict; Furrow systems; Tanzania