

Understanding Hydraulic Property Rights Creation, Re-Creation And De-Creation: A Case Study of Lorraine and Fumukwe Villages, Limpopo Basin

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Abstract

The paper seeks to examine and understand hydraulic property rights creation in two villages, Lorraine village in Sekororo (Olifants), South Africa, and Fumukwe village in Gwanda (Mzingwane) Zimbabwe. Unpacking and understanding hydraulic property rights creation in the two villages entail a rigorous analysis of how such property rights creation and the changes involved affect men and women; the nature and type(s) of water sources involved (access and use); and the choice of technologies available for use. This paper focuses on how villagers create, re-create and de-create informal and formal hydraulic property rights in water access and use for multiple uses in their everyday lives. The researchers gathered data through in-depth interviews, group discussions, group interviews and literature search in order to understand the evolution of hydraulic property rights creation in the two villages of the Limpopo basin. Results from the study indicate that hydraulic property rights creation in the two villages is characterized and defined by the nature of investment that an individual or group of people put together in order to claim access and/or use stakes in water and (in some instances) land. Investment in infrastructure and technologies such as water pumps and boreholes at individual (or household) level tended to consolidate the creation and re-creation of 'formal' hydraulic property rights in both villages. On the other hand, investment in social capital through labour contributions by members on allotted times for digging and cleaning the water diversion (or informal) canal, and shallow wells also guaranteed participation and a claim by resource poor individuals and households. Hydraulic property rights re-creation also entailed the 'conversion' and 'adoption' of derelict government and donor funded infrastructure by the villagers, where only individuals who contributed either in cash or kind in its maintenance can claim a stake. From the foregoing discussion, it is important to note that the nature and type of investment required in creating and re-creating hydraulic property rights (primarily water access and use) is largely influenced by the type of water sources available, available technologies, and support from external agencies that include government, private and non-governmental (NGO) stakeholders. The creation and re-creation of hydraulic property rights serves to empower actors, but does not affect men and women in the same way as illustrated in this paper.

Key words: Hydraulic property rights creation, gender, water, technology and investment

Media grab: Water rights depend on (water) sources, and, investment in infrastructure and technology guarantees a stake in hydraulic property rights.

1. Introduction

This paper is part of on-going doctoral (PhD) research study by P Sithole under the supervision of B. van Koppen. Research carried out for this paper contributes to the understanding of local and intermediate level institutional arrangements as a sub-goal of Challenge Program Number 17: Integrated Water resources Management for Improving Rural Livelihoods in the Limpopo basin. The paper seeks to examine and understand hydraulic property rights creation and re-creation in two villages, Lorraine village in Sekororo (Olifants), South Africa, and Fumukwe village in Gwanda (Mzingwane) Zimbabwe, in order to trace and analyse the manifestation and embeddedness of power relations, and stakeholder participation in local level institutions. It also highlights the importance and centrality of water sources for locals when claiming a stake in the resource: water rights depend on water sources; and investment in infrastructure and technology secures and guarantees a stake in hydraulic property rights.

2. Methods

The researchers gathered data through in-depth interviews, group discussions, group interviews and literature search in order to understand the evolution of hydraulic property rights creation in the two villages of the Limpopo basin. Transact walks were conducted to map water resources, infrastructure and technologies used, by walking through the whole ward identifying the quality and quantity of water (re) sources. Social maps were used to locate key social features and diagrammatic representation of key institutional interactions identifying and mapping access to social networks, services and infrastructure, and to relations between different social groups within the villages.

Results

Results from the study indicate that hydraulic property rights creation in the two villages is characterized and defined by the nature of investment that an individual or group of people put together in order to claim access and/or use stakes in water and (in some instances) land. Investment in infrastructure and technologies such as water pumps and boreholes at individual (or household) level tended to consolidate the creation and re-

creation of 'formal' hydraulic property rights in both villages. On the other hand, investment in social capital through labour contributions by members on allotted times for digging and cleaning the water diversion (or informal) canal, and shallow wells also guaranteed participation and a claim by resource poor individuals and households.

Investment (social and capital) in infrastructure by households without external assistance safeguards and guarantees the use rights of the participating households, and a stake in decision-making. Cleaning the earthen-canal on a rotational basis is a mutual and beneficial activity which members undertake with the incentive to make a claim to use water from the diversion. The farmers and/or participating households in Lorraine self-organize and contribute labour for cleaning and maintaining the canal, where each member is an active informant and potential enforcer of the penal code for those who break the norm of equitable-rotational water allocation, and duty roster. Where individuals and households took the initiative to invest in infrastructure, the household and/or individual had full rights to use the technology, and to abstract water from a common source with little

In both Lorraine and Fumukwe, external intervention through non-governmental organisations (NGOs) and (local) government has also established new infrastructure, with new systems, for a select number of beneficiaries. This selective-intervention, or project-intervention, brought with it new realities where beneficiaries earn a leveraged advantage over non-beneficiaries for competing claims on common-pool resources, while they have the fall-back plan on the project. Although such interventions enable poorer households and individuals to have a claim to some resource, this does not guarantee the claim as envisaged, often due to lack of resources and know-how to utilise the technology provided.

Hydraulic property rights re-creation also entailed the 'conversion' and 'adoption' of derelict government and donor funded infrastructure by the villagers, where only individuals who contributed either in cash or kind in its maintenance can claim a stake. Villagers in Fumukwe "converted" a communal access and government-funded borehole into a "group" access, where only households and individuals who heeded the call to contribute labour and financial resources to repair a dysfunctional borehole are allowed to access water from the borehole. The initiative came after relentless efforts failed to have the government and the local headman organise people and resources to get it repaired. The headman, after the initiative, was left with little choice and had to sanction the norms laid down by the members who invested in the repairs and maintenance of the borehole. Each member is both an active 'policeman/woman' to ensure that those who did not

contribute also do not have access to the borehole.

Discussion

This paper tries to present an understanding of hydraulic property rights creation and re-creation at the local level, what Mollinga (2008) calls local level politics. It tries to underscore the point that the rationales and ideological underpinnings of various narratives and concepts that populate the water sector need to be investigated. This is done through exploring the historical and political depth of water in society, and unpacking the . Relations between local users, individual investors vs non-investors, poorer farmers vs well-to-do farmers, NGO/Project supported farmers and households vs non-supported households. The dichotomy is not as simplistic, but presents a scope for analysis and understanding the new patterns of winners and losers along political, class, gender and ethnic lines. Investment in water infrastructure and the creation of hydraulic property rights depends on the nature and type of water sources, as well as the range of interaction patterns in water management, including negotiation and struggle, plus the less explicit and longer term disputations and controversies. Investment on its own does not necessarily guarantee assured access to water. Rather, the control of water is the main ingredient in the menu. Water control is used here in its broadest sense to refer to the manipulation of the physical flow and quality of water, the guiding of the human behaviour that is part of water use, and the socio-economic, legal, administrative and other structures in which water management is embedded, and that constitute conditions and constraints for management and regulation (Bolding et al, 1995, and Mollinga, 2003).

Institutional arrangements at the local level are largely a reflection of the power relations within society where membership is often open to all, and decision-making is a preserve for the few, often powerful individuals such as headman and other wealthy individuals. For the poor to have a stake and a voice in deliberations on water governance at the local level, investment in infrastructure and technology is one way to secure their rights. This is where external agencies such as NGOs, private sector and government can intervene to try and lift the ordinary stakeholder from a mere member to an active and empowered participant.

5. Conclusion and recommendations

From the foregoing discussion, it is important to note that the nature and type of investment required in creating and re-creating hydraulic property rights (primarily water access and use) is largely influenced by the type of water sources available, available technologies, and support from external

agencies that include government, private and non-governmental (NGO) stakeholders. Investing in infrastructure and technologies to lift, divert, convey and pump water ensures secure access rights to water, provided the water sources available yield enough water to be shared. Therefore, water rights depend largely on water sources, where investment in infrastructure and technology guarantees access to the resource.

References

Mollinga. P. P 2008 Water, politics and development: Framing a political sociology of water resources management. *Water Alternatives* 1 (1): 7-23

Bolding A., Mollinga, P. P. and van Straaten, K. 1995. Modules for modernisation: colonial irrigation in India and the technological dimension of agrarian change. *Journal of Development Studies* 31 (6): 805-844

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