

The evolution of the land struggle for smallholder irrigated rice production in Nante, Zambezia

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Abstract

This article analyses an ongoing struggle around securing access to land and water between external parties and smallholder farmers in the Munda Munda irrigation system in Nante, on basis of long term and regular involvement in the area since the year 1996,

The struggle was consecutively fought in four different domains, from (1) the delimitation of land, through (2) mechanization of the rice production system, (3) the design and rehabilitation of irrigation infrastructure and (4) the rice commercialization of smallholder produce. The struggle evolved as an action and reaction between outsiders trying to get a hold on the land and water resources and local communities defending them. The variety of domains over which the struggle was fought, shows that the issue is actually about the access to water and irrigation infrastructure that was fought within the domain of land and markets.

Till now the smallholder users have successfully managed to avert a land and water grab, but the pressure still exists to demonstrate that smallholder irrigated production in combination with cooperative marketing is a viable rural development model for Mozambique. A positive effect of this struggle is that in the process local capacities were enhanced and ownership was created, which made the meaningful involvement of smallholder farmers in local development possible.

Introduction

The Munda Munda Irrigation system was constructed in the beginning of '60 in the Administrative area of Nante, District of Maganja da Costa, Zambezia. The construction was done by the Portuguese owners of the local rice mill, as a reaction to find new ways to ensure a minimal production. At first it relied on forced production practices, where farmer families had to deliver a minimum quantity of rice to the factory, but these were abolished in '62 under pressure of ILO (International Labor Organization). After the independence in '75 the company was transformed into a state cooperative. The extension of the irrigation system was underway when in '83 the civil war became too violent in the area, forcing families to flee the area to safer locations near Quelimane, the province capital. The civil war destroyed much of the infrastructure, leaving the rice factory and machinery pillaged and the irrigation system in need of rehabilitation. It was to this setting that farmers returned in 1994 and where the struggles for irrigated land ownership started.

Mozambican land law

The Mozambican law on land is both progressive in its potential to support smallholder farmer communities, as ambiguous in its demands to maintain those rights. Land belongs to the Mozambican state and can never be owned. An individual or a group of farmers through a community can obtain the right to use and profit of land (DUAT in the Mozambican acronym). The granting of these rights is dependent on the submission of business plan that describes how the land will be used in a productive way. The process to obtain the DUAT starts with a delimitation process to determine the area, which in the case of a community is often interpreted as the area traditionally used. It continues to map the natural resources linked to a plan for the economic use of those resources. When this plan is approved, a DUAT is given based on the proposal for that specific economic use of land. Although the DUAT is based on the economical use of all the available natural resources, including water, it only ensures the right for use of land.

In the case of a farmer community this process is ambiguous. First, the traditional area used by a community is often an area belonging to an administrative area or a *Regulado*, and therefore often includes areas that are not physically used at that moment by the communities. This always gives room to contest the land claim based on the argumentation that land is not economically used and should be given to a person/group that can use it. Second, mapping the resources is aimed at attributing users' rights but here national law aimed at individual use often comes in conflict with the local traditional customs of a community on land use. Third, the DUAT is given on basis of a business plan for use, which serves as a check and control mechanism. However, plans made for communities are often measured against the economic potential of a national or foreign investor using the same area. Smallholder use is often assessed as being of less economic value than what a commercial party could do. These tensions within the law give room to contest areas held by communities and often favor the commercial entity. Furthermore, to successfully obtain the DUAT or oppose an outside claim as a community, capacities, knowledge and funds are necessary that are not often found within the local leadership. This results in a situation where communities are dependent on external support to obtain a DUAT, for instance through an NGO.

Water Rights

The Water Act of 1991 distinguishes between common and private use. Domestic water needs, including small scale use for agriculture (up to 1 ha), is understood as common use. Common use does not require a license or concession and its use do not need to be paid for. Furthermore common use is prioritised over private use, which does require a license. The compulsory licensing of private use is already referred to in the 1991 Water Act, but the actual process has only been regulated in 2007 through an additional decree (Decreto No 43/2007).

The water rights, like the land law, are primarily based on the individual use of a resource. It states that every farmer or company irrigating more than 1 ha should indicate the amount of water used and what source. The government water boards (ARA's - Administração Regional de Águas) should then research whether this water is available on catchment level and issue the license for use, which also obliges the farmer to pay fees. There is a procedure for the recognition of existing water rights as well as procedures for the acquisition of new water rights. New water uses cannot be conflicting with common use interests or be environmentally harmful. Otherwise requests for new water rights are dealt with on the principle of who comes first is served first. Water allocations should never surpass availability. In case conflicts arise between users with granted water rights there is distinguished order of prioritisation in six steps:

- (1) Preference for water for human consumption needs and sanitation
- (2) Preference for water uses that are sustainable in the long run
- (3) Preference for economic and productive use of water
- (4) Preference for water use that benefits the largest numbers of Mozambican citizens
- (5) Preference for water use with the best economic and social impact on basis of investments
- (6) If uses are the same in all these respects then water should be shared equally

This process requires an advanced knowledge at catchment level on water availability and quality, an up-to-date knowledge on current users and staff that has the means and capacity to monitor the water use.

In Mozambique this means that only large users can effectively be monitored and in practice this is the only group obtaining water licenses. Smallholder farmers using less than 1 ha individually have established rights to common use and do not need a license. The exemption from licensing of common uses has the side-effect that these uses and users run the risk of remaining administratively invisible, as happened for instance in the Limpopo basin where, in 2008-9, too many licenses were granted if one takes a realistic estimate of the common use into account (Van der Zaag et al, 2010).

The case of Nante is an example of how a community successfully defended its land and water use against several land claims with the active support of local NGOs.

Land delimitation

When in 1996 a nephew of the former Portuguese owners of the rice processing factory and the Munda Munda irrigation system tried to reclaim the land once used by his family, a land conflict arose. This coincided with the publication of the new land law, which made it possible for a

community to begin the land delimitation process followed by the DUAT application. ORAM, a Mozambican NGO aimed at divulging this new law and supporting farmer communities in obtaining land rights, stepped in at this point to support the community in the delimitation process to counter the Portuguese land claim. Through the successful delimitation of the land the Portuguese was discouraged to continue his claim. At the same time the delimitation forced the farmer community to demonstrate that they use the land productively.

Although the delimitation was successful in 1997, at the end of 2011 the DUAT process is still not finalised. At first this made people hesitant to invest in their land, afraid that the government or an outsider would push them off the land. This threat was not just a feeling of the farmers, but was often voiced throughout the years by government agencies supporting outside investors in claims on the irrigation area. Farmers were therefore slow in entering and intensifying their use of the irrigation area. Meanwhile ORAM stimulated the farmers to use the irrigation areas to defend their land rights against claims by outsiders. This threat has remained constant throughout the years and is still felt to present day (end 2011), but the methods to defend against it has changed over time in response to the strategies and argumentations used.

As the years progressed several efforts were made to apply for the DUAT but always with a negative response. In 2006 a Water Users Association (WUA) was formed to have a legal entity that could gain the land right over the whole future irrigation area (3500 ha). This area overlaps several local community boundaries that would normally fall into different delimitation processes. The last effort to apply for a DUAT was submitted by the WUA in 2010, but got rejected by the Governor with the argumentation that in Mozambique it is not possible to privately own land, even though the claim was not done by a private entity and asked for a DUAT and not landownership.

Mechanization

After the successful completion of the delimitation process, the opponents of smallholder development started to voice their doubts about the ability of smallholders to farm the full area productively. From 1998 onwards ORAM supported the smallholder farmers to mechanise their production process, amongst others by the introduction of tractors. The number of tractors slowly grew to six tractors in use by 2010. The tractors were not only an important marker of modern agriculture but were also important for its capacity to open new areas so more land would be used by the farmers within the irrigation boundaries, demonstrating the willingness of farmers and strengthening the land claim. In the defence on land claims it was paramount to demonstrate that farmer association were capable of managing the tractors.

However, the management of tractors has many aspects that are often outside the scope of smallholder farmers. Capacity problem around joint management of fuel supply, maintenance and payment schemes are aspects to be tackled and only learned from experience in time. Associations were formed, linked to the communities, which would jointly manage the tractors.

In the beginning this process was heavily supported by NGO's. As a result the farmed area quickly increased. But soon this scheme was questioned on its economic and institutional sustainability, as farmers were not repaying the credit received in services. This forced a slow change in organisation

and the management scheme changed from credit paid after harvest to payment in advance for the services.

The tractor management was a learning school in many ways for the associations. Not only in terms of management of funds, but also in logistics and maintenance. The tractor operation scheme started with heavy support from the NGOs, apart from funds and maintenance capacity, also through the planning of the operational plan and later by placing a tractor manager paid by ORAM and APAC. In light of the economic and institutional sustainability the NGO reduced its support. By the end of 2010 farmers had already realised the prepayment was necessary to generate the working capital for operations and an independent logistic network emerged to get the diesel from the nearby district capital.

The support from NGO was necessary to start this whole process, and although the current operation is still not a smooth running machine, the management capacities have increased and have helped the association to defend their land claims by showing the use of improved technology and production. However, doubts remain around management capacities linked to maintenance. Both skilled labour and spare parts necessary for proper tractor management is are very scares in Mozambique, particular in a rural environment as Nante. It is often necessary to find spare parts in Maputo, which forces the association to remain dependent on external support by NGOs and/or government agencies.

Meanwhile local government agencies started to criticize the fact that farmers were using land in an irrigation area without using the irrigation infrastructure. The scheme in Nante was in need of rehabilitation after the war, and during the severe flooding of 2001 dikes, roads, access bridges, headworks and dams were destroyed in a magnitude that could not be carried by the farmers alone.

With the flooding of 2001, funding became available to rehabilitate much of the destroyed infrastructure in Nante, through the development activities of NGO's. Road access was improved, bridges built and parts of the irrigation system rehabilitated. With this necessary rehabilitation first trials were made to irrigate the rice fields within the system. Although the use of flood water for rice cultivation is common in Nante, the necessity to work and coordinate irrigation together was new. This posed some problems in management that through trial and error were slowly learned. The most important effect of irrigation was the effect of production security. This was something farmers did not know beforehand, but with practice came to know the value. As a result farmers came to realise the value of their land, which was an important factor in the emancipation of farmers in taking initiative in defending their own land rights. Before it had mainly been a push by NGOs, but with the dawning understanding of the economical value of irrigation the attitude of the farmers changed to openly defending their land rights.

Investments in infrastructure

With the willingness to manage demonstrated and a growth of capacity in management, the skeptics of smallholder irrigation development in Nante started to point their arrows at another perceived weakness: the bad state of the infrastructure and the lack of investment capacities. After the rainy season (and floods) of 2000/2001, ORAM together with the farmers engaged in a first round of

system improvement, with a focus on access roads and dike rehabilitation for flood protection. As a result of the improved accessibility of the irrigated area, more people started to cultivate which lead to an increased demand of water.

As a response, ORAM started to investigate the possibilities to increase the irrigation area to be able to present a land use plan in defense of land rights. The process started with a development plan for the Administrative area of Nante written after the floods of 2001. In this plan the first identification was done towards the extension of the Munda Munda irrigation area. This was followed in 2004/2005 by a preliminary design of the Munda Munda irrigation system, studying the potential for the extension of the Munda Munda irrigation system from its current 350 ha to 3500ha. In 2008/2009 a full basic design for the increase of the Munda Munda irrigation system was finalized and in 2011 the approved construction phase started with funding from CEPAGRI and the Dutch ORIO fund for infrastructural investment. This showed that smallholder farmers, with external help, are able to invest in irrigation infrastructure and that it provides a viable alternative to investments by outside investors on basis of large concessions. The local government, which has been fiercely advocating for bringing in such outside investors, only subsided into accepting the current development plan for smallholder farmers after the direct intervention by CEPAGRI and National Government in 2010.

What is peculiar about the land struggle in Nante, is that there are more floodplain areas with rich alluvial soils that are very suitable for rice production. More than 5000 ha exist apart from the 3500 ha already identified within the Munda Munda floodplain which harbours a 350 ha irrigation systems. In these other areas no infrastructure exists, although the Portuguese did use them for rice production as well. That there have been no proposals for the commercial development of those areas underscores that the struggle is not about land as such but about easier access to water.

Commercialization capacity

In most rural areas of Mozambique outlets for agricultural products are unreliable with fluctuating demands and prices and unorganised buying by traders of which farmers do not know whether they will come or not. In many areas big traders dominate the market and create monopolistic situations (Bolding, 2009). In Nante limited possibilities existed for smallholders to sell their rice at attractive prices. In order not to become dependent on others, the smallholder farmers and NGO's decided to organise their own marketing through a cooperative society. The first processing equipment was installed in Nante in 2003, and managed locally with the rice sold with success on the market of Quelimane. This was a trial that continued until the official establishment of the Muhde Muhne Cooperative in Nante in 2006. This cooperative joined up with 3 other rice cooperatives in the Zambezia province to establish a 2nd tier, concentrating the processing and selling of the rice.

The cooperative enterprise has been far from a smooth process that is still being adapted to function better. But important results have been established in the sense that it has proven that sourcing by and with smallholders is possible and that both on regional and national level there is a large demand for Mozambican produced rice. This combination indicates the large potential for the commercialization of rice from smallholders that is still in the process of institutional adaptation to function properly.

The success of attracting the funds to build the 3000+ ha extension of the Munda Munda irrigation system and the creation of the 2nd tier cooperative, together an investment of over 20 million Euros planned in the coming 10 years, has stopped the active trials to displace the farmers in the irrigation system. This has started a current period of “wait and see”, that puts a big pressure on the successful conclusion and results in the coming year around the irrigated production and commercialization of rice through the farmers’ cooperative and the water users association.

Nante has now become a show case for rural development, that makes it necessary to demonstrate that smallholder irrigated production in combination with cooperative marketing is a viable rural development model.

Discussion

The smallholder water users of Munda Munda irrigation system have successfully averted various attempts by outsiders to alienate their land and water rights. The case shows how water rights are intricately linked to land rights, and that smallholders are tested on their ability to productively use the land through mechanization, water management, investments in infrastructure as well as to their ability to market their produce. The case demonstrates that land and water rights of smallholder farmers are contested within four domains.

(1) the delimitation of traditional use of land

Water rights only make sense in relation to being able to use (suitable) land. If one loses the land, de facto one also loses the water. This is especially true in situations as in Mozambique, where smallholders hardly ever have water rights registered in their names, separate from the land. As extensively discussed and demonstrated elsewhere (####) the land rights of smallholders in Mozambique used to be eroded easily, which made it an attractive strategy for outsiders to try to get hold of this potentially productive area.

(2) mechanization of the rice production system

In the context of poorly defined land and water rights the argument of productive use of resources is frequently brought up to prop-up the claims by companies and approaches that advocate more intensive production systems with an orientation towards the market. This is then linked to the envisaged contribution to macro-economic development (of the region and/or the country) and combined with a trickle-down argumentation to make it likely that the local population would also benefit more from a change in the mode of production, which then requires a change of ownership.

Even though a very fundamental critique is possible to counter this flawed argumentation (Achterhuis, 2010), the smallholders of Munda Munda have chosen to counter this argumentation with a flight forward. Through intensification and mechanization of rice production, which involves the collective management of tractors, they have shown that smallholder production can be highly productive and lucrative. This also led to an expansion of the cultivated area within the boundaries the irrigation perimeter, something which further strengthened the claim on the area.

(3) the design and rehabilitation of irrigation infrastructure

Hydraulic property is a concept that explains the close link between water rights and investments in infrastructure (Coward, 1986a and 1986b). Investment in infrastructure creates property and thus ownership over the property. Water rights, both use rights and decision making rights, are often closely related to these initial investments, especially in traditional farmer managed irrigation systems (Yoder and Martin, 1998; Gerbrandy and Hoogendam, 2002; Nkoka, 2009; Bolding et al., 2010; Komakech et al, 2011). In the same way that water rights are established through investment they are consolidated by maintenance of infrastructure. Because of this relation investment in and maintenance of infrastructure becomes a domain in which water rights are contested. People exclude others from making investments and/or participating in maintenance activities in order to exclude them from claims to water rights. In Mozambique, the land law effectively simulates a similar situation, where the land rights are, among others, based on productive use and investments made. The ability to do make investments therefore also strengthens the water rights claim of the smallholders. The ORIO project (2009-2018) in Nante thus seems to be an effective strategy for the smallholders to defend their land and water rights.

(4) the rice commercialization of smallholder produce

The marketing of rice, the produce of irrigated farming by smallholders in Nante, has also become a contested domain, not (only) as a competitive market, but (also) because of the link to claims on land and water. This could be seen in the context of the “revival of a neo-mercantilist, company model of rural development” in Mozambique (Bolding, 2009) in which concessions and monopolies play an important role. Markets are not just the abstract meeting of demand and supply (Van Donge, 2002; Andersson, 2006) and the nature of markets and selling points and the constructions of relations around them can have a crucial influence on the way in which smallholders organize their production processes (Veldwisch and Spoor, 2008). Especially when contracts between producers and traders come into play buyers and/or traders can get a strong grip on smallholders and influence the way in which land and water can and cannot be used (Veldwisch, 2010).

The company model of rural development not only assumes that smallholders are not able to effectively organize commercial agricultural production, but also that they are not able to link to national and international markets. This is used as an argumentation in favor of companies, claiming that they should get preference over smallholder incapable of establishing effective marketing. The cooperative model is a trial to establish this link between smallholders and national markets in a different way.

The development of a cooperative model, in which smallholder farmers are the owners of their own bulking, trading, processing and marketing company, has so far been an effective response to fend-off attempts to control and monopolize the market for rice. This makes it possible for these smallholder farmers to maintain the liberty to choose their own varieties and level of use of external inputs like fertilizers and pesticides. Also it makes it possible for them to exert a much greater influence on the distribution of benefits along the value chain (Wiersinga and Beekman, 2011).

Conclusion

The case of Nante demonstrates a particular process of struggle around land that clearly focuses on lands with readily available access to water. Apart from the current 3000 ha of the Munda Munda floodplain, the administrative area of Nante holds more than 5000ha of floodplains that are suitable for irrigated rice production. This area has no current infrastructure and is apparently left aside within the discussion around possible foreign investment in irrigated agriculture. This suggests that the struggle is not about the suitable land for rice cultivation but more about the existing irrigation infrastructure and the accessibility of water.

It also demonstrates that the struggle is mainly between local government agencies trying to attract foreign investors and the interest of local farmers supported by NGO's. It is clear in this case that the active support from the NGO's was essential for the success of smallholder farmers in defending against outside land claims. It also demonstrates that the smallholder farmer's performance is measured in reference to the potential economical use by outside investor. This might be an unfair bias due the big differences in education and capacities between smallholder farmers and outside investors. The case also shows that at a different level it is a struggle between two alternative rural development models, the company/concessionary model versus the smallholder/cooperative model.

The struggle evolved as an action and reaction between outsiders trying to get a hold on water management infrastructure and local communities defending them. The variety of domains in which the struggle over access to water was fought shows that the issue is actually about the benefits of water use, but that it is contested within the domains of land use efficiencies and commercialization. Because land cannot be owned, the struggle is therefore not about title, but about use, investments, and the maintenance of the investments.

A positive effect of the struggles is that it forced action and through that learning opportunities are created that enhance the farmers' capacities and results in meaningful participation in future development efforts.

Till now the smallholder users have successfully managed to avert a land and water grab, but still the pressure exists to demonstrate that smallholder irrigated production in combination with cooperative marketing is a viable rural development model for Mozambique. In the process local capacities were enhanced and ownership was created, which made the meaningful involvement of smallholder farmers in local development possible.

References

- Achterhuis, H. (2010). *De utopie van de vrije markt*. Rotterdam: Lemniscaat.
- Andersson, J. (2006). 'Informal moves, informal markets: International migrants and traders from Mzimba District, Malawi', *African Affairs* 105/420: 375-397.
- Bolding, A. (2009). *The return of Company Rule in Mozambique: the case of irrigated biofuel and food production in the Elephants-Limpopo and Incomati rivers*. Unpublished draft paper 28/10/2009.
- Bolding, A., N.C. Post Uiterweer, and J. Schippers, 2010, *The fluid nature of hydraulic property: a case study of Mukudu, Maira and Penha Longa irrigation furrows in the upper Revue river, Manica District*. In: Van der Zaag (ed). *What role of law in promoting and protecting the productive uses of water by smallholder farmers in Mozambique? Water rights in informal economies (CP66)*
- Coward, E. W. (1986a). "Direct or Indirect Alternatives for Irrigation Investment and the Creation of Property." *Irrigation Investment, Technology, and Management Strategies for Development*, K. W. Easter, ed., Westview Press, Boulder, Co, 25-44.
- Coward, E. W. (1986b). "State and Locality in Asia Irrigation Development: The Property Factor." *Irrigation Management in Developing Countries: Current Issues and Approaches*, K. C. Nobe and R. K. Sampath, eds., Westview Press, Colorado, 491-508.
- Gerbrandy, G., and Hoogendam, P. (2002). "Materialising rights: hydraulic property in the extension and rehabilitation of two irrigation systems in Bolivia." *Water rights and empowerment*, R. Boelens and P. Hoogendam, eds., Van Gorcum, Assen, 36-51.
- Komakech, Hans, Barbara van Koppen, Henry Mahood and Pieter van der Zaag (2011 forthcoming). *Pangani River Basin over time and space: On the interface of local and basin level responses. Agricultural Water Management. In press.*
- Nkoka, F. S. (2009). "Locked in Potato Irrigation: Characteristics and evolution of farmer managed irrigation systems in Tsanganano, Mozambique," Wageningen University, Wageningen.
- Van der Zaag, Pieter, Dinis Juizo, Agostinho Vilanculos, Alex Bolding, Nynke Post Uiterweer (2010). 'Does the Limpopo River Basin have sufficient water for massive irrigation development in the plains of Mozambique?' *Physics and Chemistry of the Earth* 35(13-14): 832-837.
- Van Donge, J.K. (2002). 'Disordering the market: the liberalisation of burley tobacco in Malawi in the 1990s', *Journal of Southern African Studies* 28(1): 89-115.
- Veldwisch, G.J.A. and M. Spoor (2008). 'Contesting rural resources: Emerging 'forms' of agrarian production in Uzbekistan'. *Journal of Peasant Studies* 35(3): 424-451.
- Veldwisch, G.J.A. (2010). *Rice value chain development and changing control over land and water resources in Chókwè, Mozambique*. Paper presented at the Justicia Hídrica Workshop 2010, Cusco, 9-13 November 2010.
- Wiersinga, R., and Beekman, W. (2011). " Research on stakeholders perceived responsibilities and activities in the new rice chain model " Internal research paper for the VC4PD project, LEI-WUR.
- Yoder, Robert and Edward Martin (1998). 'Water rights and equity issues. A case from Nepal', In: Boelens, R and G. Davila (eds) *Searching for Equity*, Van Gorcum, Assen, pp. 133-142.