Waterlines, 40:1, 61–72
<http://dx.doi.org/10.3362/1756-3488.20-00006>

Between water stewardship and independent global water certification: learning from smallholder rice farmers, Karonga, Malawi

Rochelle H. Holm and Alice Ngulube Magombo

Abstract: *Cooperation and locally driven water management are at the forefront of food production water management for smallholder farmers in low-income countries. The aim of this paper was to critically reflect on the experiences of 5,819 smallholder rice farmers in Karonga District, Malawi, who were members of a farmers' organization that achieved improved water stewardship, but could not achieve Alliance for Water Stewardship certification within a three-year project. The data for this paper were obtained through farmer and stakeholder interviews. The partnership attempted to bring together four parties: academics, farmers, local government, and a non-governmental organization. The farmers were trained by combining stewardship and certification topics through a train-the-trainer approach. The farmers' organization primarily focuses on agribusiness; therefore, they did not have any water-related data or detailed farm boundaries from the large and dispersed group of farmers and could not obtain a collective water permit. Understanding water governance was difficult for many farmers. Furthermore, moving from stewardship to certification presented some financial challenges. Critical thinking and questioning are required, along with a deeper understanding of the local context, logistical hindrances, priorities, alternatives, culture, and science, to evaluate how projects are designed and partially succeed or fail from the perspective of low-income farmers in the Global South.*

Keywords: lessons learned, Malawi, rice, rural, smallholder, water

KAPORO SMALLHOLDER FARMERS ASSOCIATION (KASFA) is a farmer-owned association that was established in the Karonga District of northern Malawi in 2001. In this area, farmers mostly depend on rain-fed agriculture for rice production as both a subsistence and cash-providing crop. KASFA is affiliated with the National Smallholder Farmers Association of Malawi. Members are spread throughout the district, but are not necessarily adjacent to one another. During the 2018/2019 growing season, the association had 5,819 members, 58 per cent of which identified as female. KASFA rice is both exported and sold locally through a social enterprise approach.

Rochelle H. Holm (rochelle@rochelleholm.com) is the Manager of the Centre of Excellence in Water and Sanitation with Mzuzu University, Malawi; Alice Ngulube Magombo (alicengulube@yahoo.com) is a postgraduate student in the Water Resources Management and Development Department of Mzuzu University, Malawi

Cooperation and locally driven water management are at the forefront of food production water management. However, farmers do not just select their on-farm practices based on profits and applying independent certification standards in low-income countries is complex (Chouinard et al., 2008; Henson and Humphrey, 2010). The Alliance for Water Stewardship (AWS) is an independent global partnership that aims to balance the environmental, social, and economic benefits of water use (AWS, 2014). There are 67 global sites with AWS certification, and the few in the Global South are predominantly large multinational corporations (AWS, 2020). The AWS certification has four themes: 1) good water governance; 2) sustainable water balance; 3) good water quality status; and 4) improved health of important water-related areas (AWS, 2014). Similar to other global agricultural production certifications (Vos and Boelens, 2014), the AWS certification is based on four main features: 1) a published guideline document (Alliance for Water Stewardship, 2014); 2) an inspection process by a third party; 3) a quality seal on the agricultural product to notify the consumer; and 4) an independent umbrella certification organization. An important benefit of KASFA attaining the AWS global certification is that it could increase its members' profits by allowing them to charge a premium price and attract interest from socially and environmentally concerned consumers for the final rice product with a certification label.

The aim of this paper was to collate and critically reflect on the practicalities of a group of 5,819 KASFA smallholder rice farmers in the Karonga District, Malawi, who were part of a farmer's organization that improved its water stewardship but did not attain AWS certification within a three-year project. This experience was considered from the perspectives of the farmers.

Methods

The observational study was conducted in the Karonga District of northern Malawi (Figure 1). Data were collected by conducting key informant and farmer interviews from February to December 2019, which was the final year of the project. A total of 322 interviews with KAFSA farmers were conducted orally in the local Chichewa, Chitumbuka, or Chinkhonde languages and then translated and transcribed into English. Additionally, four key informant interviews were conducted orally or via an electronic questionnaire in English, which included the head of the local government water office in Karonga District and the KASFA Business Manager at the end of the project, the Balmore Trust project manager, and a non-governmental organization (NGO) director with global experience in implementing AWS certification. Data were analysed using a thematic framework to identify field evidence categories based on 'what works', which were triangulated between sources.

For this study, water stewardship was defined by increased access to and better management of water resources for the farmers, as stated in the initial project grant application. The AWS certification was defined by the published guideline document (Alliance for Water Stewardship, 2014).

Figure 1 Maps of Malawi and the study site, Karonga District

Owing to gaps in pre-certification at a farm level, this study did not further analyse factors such as water footprint or chain-of-custody for product processing. Both authors are also implementing agents in this study.

This study and its informed consent procedures were approved by the Republic of Malawi National Commission for Science and Technology (P.12/18/341). Informed consent was obtained from all study participants.

Findings

In 2016, the Balmore Trust, in partnership with KASFA and Mzuzu University (author RH), a government university in the region, wrote an application to the Scottish Government's International Development Small Grants Fund and was awarded a donor grant to improve water stewardship. The initial application further committed the local government water office to partake in administering water permits. After the grant was awarded, but before implementation began, the donor added the vision of KASFA as the first smallholder farmers association to work towards AWS certification through its Climate Justice Innovation Fund. Additionally, the donor added an NGO with global experience in implementing AWS certification to the partnership. Though some representative farmers were included, there was no evidence that all KASFA farmers were involved in the decision to bring in the donor's vision of AWS certification.

Partnership

The partnership approach implemented here attempted to bring together four parties – local academics with technical knowledge (the authors), farmers, local government, and an NGO – as shared champions. However, our project was begun without answering some fundamental questions regarding the defined relationships and roles. Yet, the potential benefits of strong stakeholder partnerships with overlapping perspectives in water stewardship programmes have been demonstrated (Senthilkumar et al., 2009; Isundwa and Mourad, 2019).

Regarding the multi-partnership experience, the KASFA Business Manager stated: 'Having multipartners was a brilliant idea, but the implementation part was not done properly, the roles of each partner [were] not clearly defined.'

The partnership studied here relied on a few key individuals. However, over the three-year project, four key personnel changed: the KASFA Business Manager, the local government water officer, and two contacts at the NGO. For both the KASFA Business Manager and local government water officer, there was evidence of limited knowledge transfer during the transition. The local government water officer stated, 'The change of the DWDO [District Water Development Officer] affected progress and handovers were not fully done, mainly relied on making consultations [by] phone when a situation arises'. Therefore, more project time was required to repeat the background work and build relationships, indicating that both stewardship and certification implementation have strong human dimensions.

Although there was no duplication of efforts, there was also no wider collaboration to increase effectiveness more broadly across the public, private, and civil society water sector organizations in the Karonga District, or more regionally in northern Malawi. Initially, KASFA staff did not have expertise in high-level water stewardship, as agribusiness was its core focus. Additionally, the NGO was new to Malawi and was still setting up its in-country operations; its main office was a 12-hour drive from the KASFA farmers.

No single broken link is evident, but there were gaps in the partnership, overstretching people's capacity. The original grant application did not envisage

achieving certification or working with the NGO, and including them at a late stage and without a pre-agreed plan by all (expert but disparate) partners led to less clear lines of accountability and transparency than initially envisaged.

Farmer inclusion approach

Implementation began with the former KASFA Business Manager and a Master's student in Water Resources Management and Development from Mzuzu University (author AN) attending AWS training outside Malawi facilitated by the NGO. The former KASFA Business Manager and the NGO developed an umbrella action plan. Farmer training materials for a combined water stewardship and AWS certification approach were then developed (AN). The training programme was approved by the NGO prior to its roll-out. The approach began through oral training by the facilitator (AN) in the local vernacular with a group of lead farmers. The lead farmers were able to express their views and ask related questions and then collectively developed with the facilitator an action plan for their area based on the four AWS themes. The training was repeated in four KASFA areas. A translated training handbook was not developed. The lead farmers were to then pass on training knowledge to approximately 20 farmers each in their assigned area in addition to their ongoing commitments.

Personal or small-group face-to-face meetings were then conducted on a weekly rotational basis for six months with the KASFA farmers (AN). Most of the project funding was used for supporting this follow-up, in terms of payment for the labour and travel funds by the student. The NGO also conducted periodic spot-check visits. Additional water stewardship funds were available for KASFA farmers to implement 20 shallow wells, along with diesel or solar pumps to support improved agricultural capacity and water scarcity-mitigation measures. The KASFA farmers had no access to other external funds that could be used to elevate their sites to meet the AWS certification levels or to travel to visit and learn from other AWS-certified sites in Africa.

One-year post-training, KASFA farmers exhibited low retention of the four AWS outcomes (2 of the 242 randomly selected farmers knew all four themes). Our survey results indicated that the train-the-trainer approach was ineffective. Some farmers appeared to have a negative attitude towards receiving training from fellow farmers, which created the perception that lead farmers had benefited more because they were trained by the main facilitator. However, in other contexts, peer exchange is a useful source of information for improving farming practices (McGuire et al., 2013).

The KASFA Business Manager stated the following regarding the training:

> *The content of the training was very rich, seemingly not easy to understand for an ordinary farmer. It was interesting to see farmers explaining the water stewardship principles showing they have a good understanding. The training triggered interest in catchment management and some farmers already started planting trees along the river banks.*

Farmers had a mixed understanding of the benefits of moving from stewardship, which was more loosely defined by KASFA itself in the initial grant application,

to certification, which was rigidly defined. Kreutzwiser et al. (2011) stated that personal motivation is required for water stewardship to succeed, and our results highlight the limited personal responsibility of the lead farmers after their training for certification. Furthermore, there is evidence of smallholder farmers grouped into an association overcoming entry barriers and benefiting from economies of scale to gain Rainforest Alliance certification (Maguire-Rajpaul et al., 2020). While KASFA farmers could have had a long-term profit motive, many farmers had short-term expectations of funding for their time attending the training or materials. This deep expectation of attendees' per diems in Malawi is known (Erasmus et al., 2018), yet there was also an equity issue and power dynamic when the higher-income facilitators in the project received a salary, and in some cases per diem for their attendance, while the train-the-trainer work was voluntary. This does not appear to be a universal finding in the literature. In South Africa, Knüppe and Meissner (2016) found that farmers improving their water-quality management were driven by maintaining global market competitiveness, while many stakeholders in Kenya were willing to spend money on water stewardship activities (Isundwa and Mourad, 2019). Yet, reports from the United Kingdom (Kay et al., 2012) found voluntary stewardship that lacks financial reward or regulatory pressure is less likely to work. Furthermore, the environmental benefits of other independent certifications have been reported as negligible in some cases, as only the good producers obtain certification (Vos and Boelens, 2014).

Stewardship activities from training, such as planting following elevation contour lines to create a water break from heavy rains, had been completed by KASFA farmers. However, these activities did not require self-investment of cash and were implemented more easily than providing access to safe drinking water, adequate sanitation, and hygiene awareness for workers on-site that were further needed to meet certification standards. The local government water officer also understood the current limitations of activities and stated, 'There is a gap on access to safe drinking water, we should think of improved technologies for drinking water supply in the rice schemes'.

Lack of historical or current environmental monitoring data

Certification required historical and current environmental monitoring data. KASFA is primarily a business association and existing member data collection focuses on demographic details including gender, household size, farmer age, crops cultivated, and self-reported land size. Detailed information regarding KASFA farm boundaries is unavailable and publicly available water quality data are limited in the district (Holm et al., 2018). Furthermore, Foguesatto et al. (2020) cautioned that farmers' historical recollection of meteorological records may be inaccurate and influenced by economic and psychological factors. There could be an opportunity for KASFA to incentivize water management data collection by providing membership discounts to participating members; however, compiling the records of 5,819 farmers would be a large task, as 70 per cent of KASFA farmers (211/301) reported they had less than eight years of education. Richter (2009) noted that water sustainability certification

applicants may need to initiate data collection programmes to resolve the gaps in existing government programmes.

As KASFA farmers are dispersed and not located within a single catchment area, they collectively use large amounts of water, but it was difficult to calculate the water footprint as required for AWS certification. There was also evidence of some informal irrigation, with one respondent stating, 'Yes but just on a backyard garden' (male, age 29). There is a grey area where a KASFA farmer may mix water practices, with some of their farming supporting subsistence foods (thus not requiring certification standards), while some does not. Individual KASFA farmers who did practise irrigation had insufficient control of water quality or quantity and were required to use what was provided. Furthermore, the study found no evidence of the use of rain gauges or devices for measuring run-off. Third-party global certification audits and corrective actions tend to focus on reliable documentation and monitoring data (Vos and Boelens, 2014), the very things which KASFA farmers struggled with.

Small steps coming together

The approach of transitioning from water stewardship to certification can be compared to community-led total sanitation (CLTS), a subsidy-free approach to improving household sanitation conditions facilitated at a community level (Kar, 2008). Similar to the AWS approach used in our project, CLTS uses social pressure and a sequence of steps, and relies on a facilitator giving an oral presentation. In Malawi, the facilitator commonly has access to external funding to conduct follow-up site visits dedicated to community mobilization. The CLTS certification process is first followed within the community, and then involves the local government. It then reaches out to regional geographic areas, and finally involves administrative districts. However, AWS does not recognize small steps, and relies more on third-party audits than local authorities when certifying larger areas. While neither AWS nor CLTS allow tailor-made certification standards, in Malawi, CLTS certification is achievable for rural communities.

Application within a local context

Perspectives on global certifications designed by Global North countries overlap, to some degree (Amekawa, 2009; Henson and Humphrey, 2010; Vos and Boelens, 2014). Richter (2009) suggested that AWS certification could jump-start government movements toward water sustainability, yet is in contrast to the findings related to the local government in our study. When considering governance, one key policy document for KASFA farmers' water rights is the National Water Policy (Malawi Government, 2005), which was included in the project training content. However, only 5 per cent (13/242) of the KASFA farmers were aware of the document one year after their training.

Both the internal and external finances of farmers were important in this study. In the 2017/2018 growing season, the self-reported mean annual income for a KASFA member from farm crop sales was below US$200 (personal communication with

KASFA Business Manager). While some farmers in the Global North have personal stewardship motives to undertake conservation practices and are willing to forgo some profits to adopt such practices, others are still unable to afford stewardship activities (Chouinard et al., 2008; Kreutzwiser et al., 2011). Karonga District is prone to frequent floods, drought, and landslides (Karonga District Council, 2013), over the past few years regular disaster assistance response includes handouts and other incentives from donor agencies and the Malawi Government. Amekawa (2009) reflected on the EurepGAP entry barriers for certification in Zambia, and specifically noted that, for the smallest farmers (0.3 to 0.8 ha), initial capital towards achieving certification cost 58 to 160 per cent of their annual profit, while that for larger farmers (2 to 6 ha) cost 8 to 23 per cent of their annual profit. The smallest and poorest farmers will struggle with both initial certification and the annually recurring costs without donor support (Amekawa, 2009). Donovan and Poole (2014) similarly reflected on smallholder coffee producers in Nicaragua for Fairtrade certification, and noted a disconnect between agricultural support services for value chain activities and improving livelihoods at the household level, especially for the poorest farmers.

The KASFA Business Manager stated the following regarding the local context of AWS:

> *From our discussion with [the NGO], it seems to be impossible for our farmers to achieve certification, the standard used is ideal for well-established institutions, which is fixed at one place like Illovo sugar estate [a large local corporation], our farmers are scattered and it may be difficult to control their actions to certify us. The other proposal was to develop tailor-made guidelines for small-scale establishments like KASFA [smallholder] schemes.*

Further research must be conducted on the per-farm cost to achieve AWS certification and compare it to post-certification projected KASFA yields and profits.

Time

Upon reflection, the time-frame of three years from the donor grant was too short for certification with a large and dispersed group of farmers. A specific example of this was the KASFA farmers withdrawing water without permits, for example stating 'I don't practice irrigation farming' (female respondent, age 33) as the reason for their lack of a permit and not considering how their co-farmers may use water in the same area from other sources more collectively. To obtain water rights, farmers using the water source must form a committee; have sufficient funds for the water right permit and source operation, as well as system maintenance; collect data for the size of the area, number of farmers, and how much water is withdrawn per day; apply for the permit at the national government offices (National Water Resources Authority) located eight hours' drive away; pay for training from government water staff; and then wait for water rights to be granted (personal communication with Karonga District Irrigation Office, 4 May 2019). Schreiner and van Koppen (2020) argued that Malawi water laws are a legacy of colonial water grabbing and instead promote pro-poor, non-permit, tools for irrigation water use below a specified use threshold and further promote

customary water law, including collective water rights permits. Vos and Boelens (2014) further argued that global certification processes requiring formalized permits undermine local and customary water rights frameworks and organizations. In the Karonga District, the current nine irrigated area water permits include both gravity-fed river diversion and wells with an electric or solar pump. They cover a range of 10 to 400 ha, but only include groups of 50 to 1,500 farmers (personal communication with Karonga District Irrigation Office, 4 May 2019). Our results indicate obtaining a collective water rights permit for KASFA is not possible within the current legal framework of Malawi, as permits are linked to a specific water source and not to a group using a combination of rain-fed, surface, and groundwater sources.

Three years was insufficient to change the existing organization ethos to link agribusiness to water stewardship and global certification. There were several hurdles, including permitting, but even if more time is provided, it is unclear if the farmers would have been able to attain certification (Figure 2).

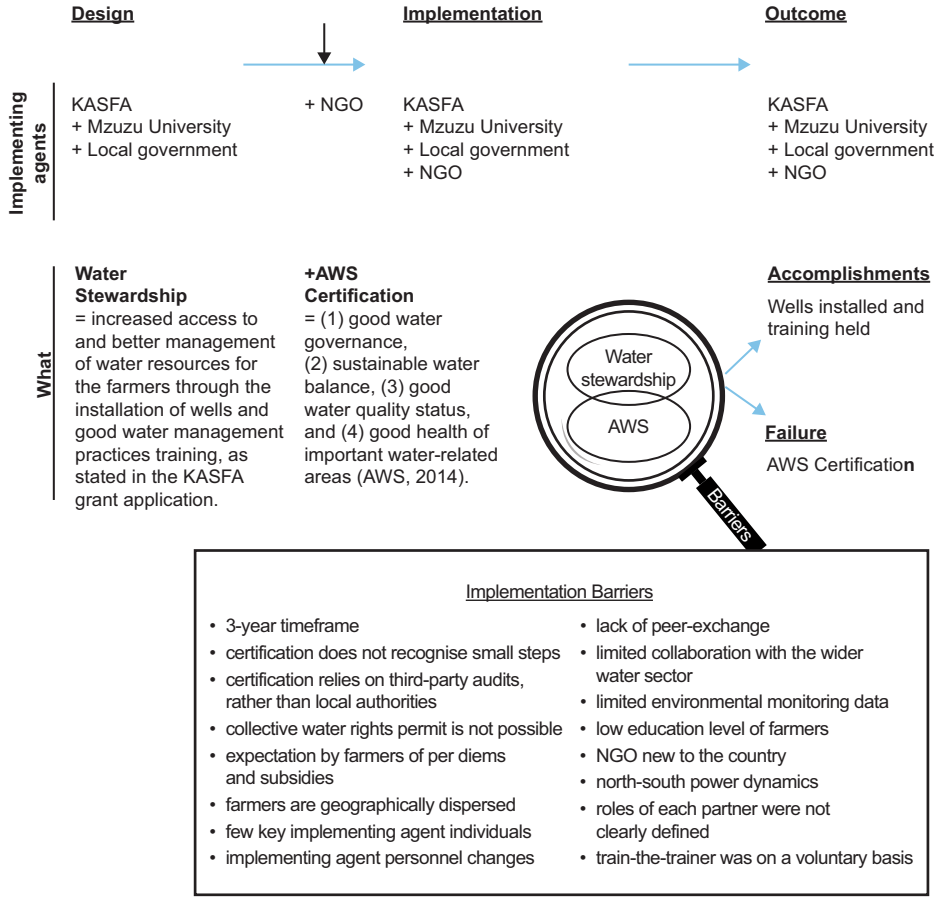

Figure 2 Project design, implementation, and outcome schematic: underlying causes of the lack of success in delivering certain objectives and missed goals

Conclusions

This project achieved its original objective accepted by the funder to improve water stewardship for rural smallholder rice farmers and build capacity in a low-income country; however, the related but clearly distinguishable, added vision of AWS certification was not achieved in its current form. The lessons learned must be chronicled to improve our collective understanding of the underlying causes of the lack of success in delivering certain objectives and missed goals. Project barriers included: difficulties in partnership relations; the donor vision of moving from the initial water stewardship structure to AWS certification was not equally recognized by farmers; environmental monitoring data was beyond KASFA's current resources for a large and dispersed group of farmers; AWS does not recognize small steps coming together; AWS made unachievable demands on smallholder farmers; and a three-year timeframe. This does not mean that AWS cannot add value; however, critical thinking and questions are required along with a deeper understanding of the local context, logistical hindrances, priorities, alternatives, culture, and science. Different certification examples should be evaluated to offer guidance for practitioners to accelerate the implementation of improved food production water management based on rich case study evidence from the perspective of farmers. This review contributes empirical insights into how appropriate, or inappropriate, Global North notions of certification are for low-income farmers in the Global South, and how projects are designed and partially succeed or fail.

Acknowledgements

The authors would like to thank Marcie Jacques, Muthi Nhlema, and Kip L. McGilliard. The work reviewed here was funded by the Scottish Government in part through its Climate Justice Water Futures Programme and in part through the International Development Fund through a grant awarded to the Balmore Trust. The funding source had no role in the study design; the collection, analysis, and interpretation of data; the writing of the report; or in the decision to submit the article for publication.

References

Alliance for Water Stewardship (2014) *The AWS International Water Stewardship Standard, Version 1.0*, AWS, North Berwick, Scotland.

Alliance for Water Stewardship (2020) 'Certification' [website] <https://a4ws.org/certification/certified-sites/> [accessed 1 April 2020].

Amekawa, Y. (2009) 'Reflections on the growing influence of good agricultural practices in the global South', *Journal of Agricultural and Environmental Ethics* 22: 531 <http://dx.doi.org/10.1007/s10806-009-9171-8>.

Chouinard, H.H., Paterson, T., Wandschneider, P.R. and Ohler, A.M. (2008) 'Will farmers trade profits for stewardship? Heterogeneous motivations for farm practice selection', *Land Economics* 84(1): 66–82 <http://dx.doi.org/10.3368/le.84.1.66>.

Donovan, J. and Poole, N. (2014) 'Partnerships in Fairtrade coffee: a close-up look at how buyers and NGOs build supply capacity in Nicaragua', *Food Chain* 4(1): 34–48 <http://dx.doi.org/10.3362/2046-1887.2014.004>.

Erasmus, Y., Lötter, D., Tannous, N. and Stewart, R. (2018) 'Reflections on per diems in international development projects: barriers to and enablers of the project cycle', *Development Southern Africa* 35(6): 717–30 <http://dx.doi.org/10.1080/0376835X.2017.1384364>.

Foguesatto, C.R., Artuzo, F.D., Talamini, E. and Machado, J.A.D. (2020) 'Understanding the divergences between farmer's perception and meteorological records regarding climate change: a review', *Environment, Development and Sustainability* 22(1): 1–16 <http://dx.doi.org/10.1007/s10668-018-0193-0>.

Henson, S. and Humphrey, J. (2010) 'Understanding the complexities of private standards in global agri-food chains as they impact developing countries', *Journal of Development Studies* 46(9): 1628–46 <http://dx.doi.org/10.1080/00220381003706494>.

Holm, R.H., Kunkel, G. and Nyirenda, L. (2018) 'A thought leadership piece: where are the rural groundwater quality data for the assessment of health risks in northern Malawi?' *Groundwater for Sustainable Development* 7: 157–63 <http://dx.doi.org/10.1016/j.gsd.2018.05.004>.

Isundwa, K.F. and Mourad, K.A. (2019) 'The potential for water stewardship partnership in Kenya', *Arabian Journal of Geosciences* 12: 389 <http://dx.doi.org/10.1007/s12517-019-4506-x>.

Kar, K. (2008) *Handbook on Community-Led Total Sanitation*, Plan UK, London; Institute of Development Studies, Brighton, UK.

Karonga District Council (2013) *Karonga District Socio Economic Profile 2013–2018*, Karonga, Malawi.

Kay, P., Grayson, R., Phillips, M., Stanley, K., Dodsworth, A., Hanson, A., Walker, A., Foulger, M., McDonnell, I. and Taylor, S. (2012) 'The effectiveness of agricultural stewardship for improving water quality at the catchment scale: experiences from an NVZ and ECSFDI watershed', *Journal of Hydrology* 422–3: 10–16 <http://dx.doi.org/10.1016/j.jhydrol.2011.12.005>.

Knüppe, K. and Meissner, R. (2016) 'Drivers and barriers towards sustainable water and land management in the Olifants-Doorn water management area, South Africa', *Environmental Development* 20: 3–14 <http://dx.doi.org/10.1016/j.envdev.2016.09.002>.

Kreutzwiser, R., de Loë, R., Imgrund, K., Conboy, M.J., Simpson, H. and Plummer, R. (2011) 'Understanding stewardship behaviour: factors facilitating and constraining private water well stewardship', *Journal of Environmental Management* 92: 1104–14 <http://dx.doi.org/10.1016/j.jenvman.2010.11.017>.

Maguire-Rajpaul, V.A., Rajpaul, V.M., McDermott, C.L. and Pinto, L.F.G. (2020) 'Coffee certification in Brazil: compliance with social standards and its implications for social equity', *Environment, Development and Sustainability* 22: 2015–44 <http://dx.doi.org/10.1007/s10668-018-0275-z>.

Malawi Government (2005) *National Water Policy*, Ministry of Irrigation and Water Development, Lilongwe, Malawi.

McGuire, J., Morton, L.W. and Cast, A.D. (2013) 'Reconstructing the good farmer identity: shifts in farmer identities and farm management practices to improve water quality', *Agriculture and Human Values* 30: 57–69 <http://dx.doi.org/10.1007/s10460-012-9381-y>.

Richter, B. (2009) 'Sustainable water use: can certification show the way?' *Innovations* 4(3): 119–39.

Schreiner, B. and van Koppen, B. (2020) 'Hybrid water rights systems for pro-poor water governance in Africa', *Water* 12: 155 <http://dx.doi.org/10.3390/w12010155>.

Senthilkumar, K., Bindraban, P.S., de Boer, W., de Ridder, N., Thiyagarajan, T.M. and Giller, K.E. (2009) 'Characterising rice-based farming systems to identify opportunities for adopting water efficient cultivation methods in Tamil Nadu, India', *Agricultural Water Management* 96: 1851–60 <http://dx.doi.org/10.1016/j.agwat.2009.08.007>.

Vos, J. and Boelens, R. (2014) 'Sustainability standards and the water question', *Development and Change* 45(2): 205–30 <http://dx.doi.org/10.1111/dech.12083>.