



LAND TENURE SECURITY ISSUES IN SMALLHOLDER IRRIGATION SCHEMES IN ZIMBABWE

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ABSTRACT

The main objective of the study was to examine land tenure practices and their implications on the sustainability of the smallholder irrigation schemes in Zimbabwe. The different phases of land reforms in Zimbabwe have not been focusing on community irrigation schemes and the evolution of land rights. The farmers' ownership feelings were stronger for their dryland plots than they were on irrigation plots as the irrigation schemes were regarded as an off-farm employment while their dry-land plots were regarded as transgenerational family assets. Farmers had different perceptions about the security of tenure, inheritability, subletting and disposal of the irrigation plots. The differences in tenure practices and perception attested to the absence of land policy for community irrigation schemes. The existence of informal land markets in some schemes and their absence in others affirmed the Market for the Poor (M4P) assertion that where formal rules and their application are weak, the business environment is governed by the informal rules and the absence of both formal rules and informal institutions make the environment for markets dysfunctional. Some farmers felt their irrigation plots should remain state owned to allow smooth running of schemes and management of farmers' group dynamics of the irrigation. Some, however, felt the irrigation plots should be privately owned in order to allow farmers to invest and to access financial and input markets.

Key words: land tenure, land market, ownership perception, smallholder irrigation schemes

Council for Innovative Research

Peer Review Research Publishing System

Journal: Journal of Social Sciences Research

Vol. 9, No. 3

jssreditor.cir@gmail.com

www.jssronline.com



INTRODUCTION

Land tenure has been defined as the formal or informal laws, rules and obligations governing the access to, holding or ownership of rights and interests in land (Akudugu, 2013). In every society, land tenure is very sensitive as it evokes deep emotions and defines one's sense of participation in a society, commitment and incentives for the promotion of productivity, investment, agricultural growth and sustainable use of natural resources (Dore 2015). Although Zimbabwe had land reforms since 1980, it has not experienced an evolution of land rights (Dore, 2015). In communal areas, the customary land tenure system (whereby local leaders allocate arable land to households and their families on a usufruct basis) is still valid despite the changes in population growth and the increasing need to enhance the financial inclusivity of the communal farmers (Marongwe, 2013). In keeping with Gary Hardin's idea of the tragedy of the commons associated with the customary land tenure, the powerful perverse incentive to benefit without cost, can militate against any commercially driven solution to break the rural poverty cycle (Manje&Snelgrove, 2011). Full ownership entails ability to sell rent, get full remuneration from the land and children can inherit the land

The historical ramification of land tenure system in Zimbabwe ensnared smallholder farmers in a farming system which offered little hope of breaking the poverty cycle. After Zimbabwe's independence from colonial rule in 1980, white commercial farmers, who constituted 3% of the population, controlled 51% of the country's farming land and the majority of them were located in the better agro-ecological regions I, II and III (Darkoh, 1986; Marongwe 2013). The Communal Areas (CAs), which were home to about 4.3 million blacks which constituted 72% of the rural population, had access to only 42% of the land, the majority of which were located in the poorer agro-ecological regions IV and V (Darkoh, 1986; Marongwe 2013). Consequently, there was a direct positive correlation between agro ecological region and the prevalence of poverty in the country (Poulton et al, 2002; Mutambara and Munodawafa, 2014).

Poverty was concentrated in the communal areas where farming was largely subsistence. Given this historical and social background, Zimbabwe land reforms before 1990 was welfarist in its approach as land resettlement was used as a tool for fighting poverty (Moyo 2013; Marongwe 2013). The poor performance of most agricultural settlement schemes proved that resettlements do not make good welfare programs (Marongwe, 2013). Between the late 1980s and the 1990s, the Government priorities and selection criteria shifted from welfare to production/economic oriented objectives (O'Flaherty, 1998). Experienced master farmers, with proven agricultural ability, sufficient educational background, good health and an adequate number of cattle for draught power were added onto those targeted for resettlement with the intention of raising productivity (Maguwu, 2007; Marongwe, 2013).

The Fast Track Land Reform program started in the early 2000 and this phase saw a mix-up of resettlement models and beneficiaries. The land tenure system regressed to become more insecure (Moyo, 2013; 2003; 2006). Over 100,000 new A1 farmers (as they were called) were resettled with no documentation at all. Commercial farms previously held under secure freehold title regressed into unregistered use rights following the Fast Track Land Reform program. Offer letters that reallocated farms under the reform could be easily revoked by the Minister of Lands while the 99-year leases virtually gave all the powers and rights to the State and a few to the farmer (Dore, 2015). The possible grounds for refusal of subletting or ceding such land were not clearly articulated in the documents but left to the discretion of government officials. Different land reform periods in Zimbabwe emphasized different aspects, but the land policies and reforms in Zimbabwe remained silent on the tenure arrangement for the smallholder irrigation scheme in communal areas. Development agencies participating in smallholder irrigation schemes have not been investing much on land rights issues to leverage on this critical dimension to sustain smallholder farmers' livelihoods and for poverty alleviation (Dore, 2015)

In most African countries, the establishment of irrigation schemes by governments or development agencies entailed the suppression of existing land rights, and the reallocation of land or water rights to users who might not have been the original right land holders (Cotula&Sylla, 2014). Irrigation schemes in the communal areas boosted land values on the irrigable areas. As a result, the protection of land rights has usually been focused on areas developed for irrigation to manage land competition and conflicts between users (Akudugu, 2013). This tenure intervention often gave community smallholder irrigation plots different land rights from the surrounding rain-fed land. In Senegal and Burkina Faso, the allocation of use rights to irrigated plots after the completion of the irrigation scheme was usually made on the basis of criteria determined by legislation or specific development projects (Cotula&Sylla, 2014).

In some publicly funded communal irrigation schemes in Africa, farmers did not usually own the irrigation plots they cultivated but just had ill-defined conditional land use rights (Cotula&Sylla, 2014). Private ownership of smallholder irrigation schemes has not been common in Sub Saharan Africa. In some countries, private land right of community irrigation plots was given by one legislation and taken away by another legislation. For example, while the 1996 Land and Agrarian Reform Act in Burkina Faso provided for private land ownership, the 1997 Decree implementing it prohibited private ownership of irrigated land. Consequently, irrigation plots remained communal resources (van der Schaaf, 2014). In Mali, irrigation schemes were owned by the State and cultivated by farmers on the basis of annual contracts or licences with indeterminate duration while rural councils allocated and withdrew use rights on irrigated plots in Senegal (Cotula&Sylla, 2014). In Niger, land transactions were prohibited by legislation although informal land rentals and sales were common. However, in most of West African countries and Sub Saharan Africa, policies and laws have not been fully implemented in rural areas due to lack of; financial resources, institutional capacity in government agencies, legal awareness and lack of perceived legitimacy of official rules and institutions (Cotula&Sylla, 2014; Akudugu, 2013). Due to poor law enforcement, a range of customary, statutory and hybrid institutions with de jure or de facto authority over land co-exist in the same areas (Akudugu 2013). This legal pluralism, in land administration in Sub Saharan Africa usually led to institutional conflicts, especially, regarding which institution takes precedence over the other (Akudugu, 2013).



Several researchers have observed that the impact of smallholder irrigation schemes on the livelihoods and wellbeing of irrigators has been limited, despite the substantial public investments that have been made to construct, maintain and revitalise these projects (Mpahlele; Malakalaka; Heddon-Dunkhorst, 2013). Against this backdrop of poor performance of smallholder irrigation schemes, the social and economic value of using smallholder irrigation schemes as an option for rural development in Africa has been questioned. In some countries, there have been calls for the development focus to shift to dryland agriculture, because dryland farming has been shown to be more sustainable and critical to the farmers (Mpahlele; Malakalaka; Heddon-Dunkhorst, 2013). If dryland agriculture is perceived to be important by farmers and land administrators, best practices in rural development encourage assisting farmers in their areas of interests, otherwise prioritizing irrigation development could be wasted investment (Mpahlele; Malakalaka; Heddon-Dunkhorst, 2013).

This study aims to examine the tenure (both formal and informal) in smallholder irrigation schemes in order to draw relevant lessons. The study also seeks to understand the perceptions of farmers on the security of their tenure in the community irrigation schemes and the implications of such perception on the sustainability of the smallholder irrigation schemes in Zimbabwe. Previous studies in Zimbabwe focused on the legal provision of land use in communal areas, the power of traditional laws, land reforms and the implications of changing land rights in Zimbabwe. These studies have tended to blanket some critical pockets (irrigation schemes within the communal areas) where development agencies have invested a lot in irrigation land development, irrigation infrastructure and capacity building of the farmers which deserve to be highlighted.

RESEARCH METHODOLOGY

An integrated research approach involving the use of quantitative and qualitative methods was used in this study. A questionnaire survey was used to collect both quantitative and qualitative data from 316 farmers in 8 irrigation schemes. Focus Group Discussions (FGDs) were conducted with 81 farmers across the 8 targeted irrigation schemes. A series of key informant interviews were conducted with purposively selected 32 key informants, 8 Irrigation Management Committees, 8 traditional leaders, 8 Agritex officials and 8 Department of Irrigation officials. An integrated research method provided a more complete understanding of the problem under investigation than either quantitative or qualitative alone (Creswell, 2008) and the research capitalized on the strength of both methods. Quantitative methods are better at looking at cause and effect (causality), while qualitative methods are more suited to looking at the meaning of particular events or circumstances (Yin, 1989; Parker, 2003). As Gatrell & Eliot (2009:84) put it, qualitative research "adds colour and explanatory power to the quantitative to shed light on the research questions". Data from the questionnaire survey was processed in SPSS and was subjected to both descriptive and advanced statistical analysis. Qualitative data from FGDs and key informant interviews were analysed using the thematic framework analysis approach.

RESEARCH FINDINGS

Perception about irrigation plot and farmers' rain-fed plot ownership

Farmers from different schemes had different feelings about their ownership of the irrigation plots and the difference was statistically significant at $P=0.05$. Eighty one percent of the farmers in the 8 targeted irrigation schemes had rain-fed plots in addition to the irrigation plots. A comparison was made on their feeling between the farmers' ownership of the rain-fed plots and the irrigation plots. All the farmers with rain-fed plots felt the plots were theirs and it was well expressed that the ownership feeling that they had on the rain-fed plot was different from the feeling that they had on the irrigation (statistically significant at $P=0.05$ using Chi square). Discussion with farmers revealed that their ownership feeling for the irrigation plots was much weaker than their ownership feelings for the rain-fed plots which they regarded as a permanent family property to be passed on from generation to generation. One major reason for the strong ownership feeling was that farmers with the blessing of the local traditional leader (who managed and allocated rain-fed plots) could sell, sublet, share and rent their rain-fed plots without fear of interference from the state. In Insukamini FGDs revealed that the farmers viewed the irrigation scheme as employment which at one point would come to an end but the dryland plot was the home and was a family asset forever. One farmer said; "*munomubasamunemitemoyamo, kana ukakoniwamutemoyemuno, unosiya*" (this is more like a workplace employment with its own rules and regulation where your tenure can be terminated, the rain-fed plot is my home and it is forever). It can therefore be deduced from this finding that tenure for the rain-fed plot was more secure than that of the irrigation plot. In Mambanjeni, the Irrigation Management Committee (IMC) members indicated that they had a hard task of convincing farmers to contribute towards the procurement of their own pump as many of the farmers felt that their investment would not be secure as the scheme belonged to the Government.

Reason for not feeling full ownership of the irrigation plots were diverse. Some in Insukamini and Mambanjeni expressed that they were living under threats as the IMC always reminded them that the irrigation plots were not theirs and that they could be expelled anytime if they failed to satisfy the rule and regulation. Zuvarabuda, Dendere and Vimbanayi had more farmers who felt the irrigation plots were theirs than in the rest of the irrigation schemes. In these 3 schemes, farmers participated in the establishment of the scheme by clearing of the irrigation sites, fencing of the irrigation schemes and providing labor for whatever was constructed in the scheme. They also mobilized locally available materials such as pit and river sand. This level of participation and involvement by the farmers gave them a very strong sense of ownership and belonging and attachment to their respective schemes. In the case of Dendere, when the pumps broke down in 2004, the farmers contributed money to procure a new one and those who failed to contribute to the procurement of the new pumps were dropped off the membership list and membership shrunk from 95 to 50 farmers. So, having resuscitated the scheme using their own resource, gave them a strong ownership feeling of their irrigation plots.



In Mutorahuku and Rupangwana, the establishment of the schemes took place before independence and farmers were not involved in the establishment process. They were allocated the plots after the Government completed everything. The same was done to Insukamini and Mambanjeni which were established after independence. In Mambanjeni, the women who did the brickmolding for the construction of the pump house and the men that participated in the digging of trenches on which the pipes were laid, were paid for the service. It was, therefore, not by coincidence, that these schemes had more farmers who reported that they felt the plot was not theirs. At Insukamini, farmers revealed that the extension of the scheme to accommodate more people in 2006, was never a local idea, but came from the Government without the consultation of the IMC. The decision reinforced the farmers' feeling that both the land and the infield infrastructure of the irrigation scheme belonged to the Government.

Differences in the sense of ownership between farmers of different gender categories were found to be statistically insignificant at $P=0.05$ although the females had a slightly higher proportion of farmers that felt they did not wholly own the plot. Difference by the age and the number of years the farmer spend in the scheme on the sense of ownership was found to be statistically significant using One way ANOVA at $P=0.05$. The older farmers and those that had more years in the scheme had a higher proportion of farmers who felt the irrigation plot was theirs as shown in Table 1.

Table 1. Perception about irrigation plot ownership by name of scheme and length of period in the scheme

Name of scheme	Perception about irrigation plot ownership		
	Yes	No	Total
Vimbanayi	54	6	60
Tsvovani	45	3	48
Rupangwana	30	2	32
Mutorahuku	34	0	34
Dendere	32	0	32
Mambanjeni	25	10	35
Zuvarabuda	30	3	33
Insukamini	37	5	42
Total	287	29	316
No. of years in the scheme			
1--10	131	22	153
11--20	69	0	69
21--30	62	6	68
31-40	9	0	9
40+	16	9	25
	287	29	316

The rain-fed plot remained a very important portfolio for the irrigation plot holders in the scheme. In Zuvarabuda, Vimbanayi, Dendere, Rupangwana, and Mambanjeni, less attention was given to the irrigation plot during the rainy season. The farmers usually gave more attention to their rain-fed crop fields where they grew different cash crops such as cotton and sesame and staple crops like maize and sorghum. In Zuvarabuda, one farmer expressed that during the rainy season, the whole scheme would resemble a cattle paddock with very long grass with no one doing any meaningful cropping in the scheme, as people will be concentrating in the rain-fed crop fields. The major reason was that their rain-fed plot were bigger than the irrigation plot (averaging 4 hectares in Chipinge and Chiredzi) and 2 hectares in Gweru district and was harvesting better yields during a normal season.

There is need to understand the irrigation farmers within the context myriad economic and livelihood activities to get an appreciation of the value they attach to the irrigation scheme. Irrigation farming is just one of the portfolios that need to be understood within the matrix of other portfolios. The cropping calendar for the scheme was well integrated to the rain-fed cropping system with the latter taking precedence over the former during the rainy season. One Agritex officer from Dendere summarizes the importance of the rain-fed crop fields by the irrigation farmers. She said;

"In Dendere like other irrigation schemes around here, irrigation plot business is an off-summer season activity where farmers concentrate when they have finished their dryland agricultural business. Between November and February every year, the farmers usually grow crops that require less attention like ground nuts and maize in the scheme which may not be irrigated or weeded in time. All the efforts will be channeled to rain-fed cropping crops like cotton and sesame and the irrigation business will not be a priority. Cotton and sesame will give them some money during the summer and after



harvesting, they will come back to the irrigation scheme to grow sugar beans around April which will give them money during the winter. Afterward, they will grow maize for food security from August to December and the cycle goes on and on”.

The farmers who participated in the FGDs in Tsvovani and Dendere indicated that it was very common for the irrigation farmers to use the proceeds from their dryland farming to finance their operations in the irrigation scheme. One farmer in Dendere said; *“tikatengesaruninganecotton, tobvatatowanamariyokutengambeu ne mafertilizer ye beans”* (soon after selling cotton and sesame from the rain-fed plot we will get money to buy seed and fertilizer to grow sugar beans). This link between rain-fed and irrigation agriculture showed that, the two were complementing each other with the rain-fed helping to sustain irrigation farming. It was only during bad seasons of excessive drought that farmers solely concentrated on the irrigation plots.

Ability to sublet the irrigation plot.

Sixty nine percent of the farmers were not able to sublet their irrigation plots while 31% indicated that they were able to sublet if they wanted to do so. Differences in the 8 schemes on the number of farmers who were able to sublet was found to be statistically significant at $P=0.05$ with Dendere having the highest proportion of farmers who were able to sublet (75%) while Mutorahuku, Mambanjeni and Insukamini had no single farmer who was able to sublet part or the entire plot by the time of the survey as shown in Table 2. Differences by educational status was also found to be statistically significant at $P=0.05$ with those that had attained tertiary education having the highest proportion of farmers who were able to sublet their plots. Although male constituted the greatest proportion of farmers (35%), over females (24%), who were prepared to sublet, the difference was found to be statistically insignificant by the Pearson's Chi-square test at $P=0.05$.

Farmers from Mambanjeni and Insukamini reported that, subletting was prohibited and was interpreted as failure to make use of one's plot. It was shown that if a farmer faced difficulties or temporary setbacks, he/she was allowed to invite someone to help him/her in the plot and not to remove the face of the original owner from the plot completely. The tenure arrangement in Insukamini had the effect of keeping plot holders around even if they were not effectively utilising the plot. If some temporal opportunities arose somewhere, one would weigh it against the risk of losing the plot. In both Insukamini and Mambanjeni, farmers reported that they believed the irrigation schemes were government owned.

There was a strong belief in both schemes that the Government could dissolve the membership and IMC of the scheme or cut any form assistance if subletting was done in the scheme. In all the schemes other than Insukamini and Mambanjeni, both the FGDs with the farmers and discussions with the IMCs revealed that subletting was not allowed by Government but the IMC and the farmers agreed to make a local arrangement to allow it. This was done to finance operations in the scheme where some farmers were temporally unable to utilize the plot because of family challenges or other commitments.

Table 2. Ability to sublet by name of scheme and age of the farmer

Variable	Ability to sub-let part or entire irrigation plot	
	Yes	No
Name of scheme		
Vimbanayi	38%	62%
Tsvovani	31%	69%
Rupangwana	28%	72%
Mutorahuku	9%	91%
Dendere	75%	25%
Mambanjeni	20%	80%
Zuvarabuda	36%	64%
Insukamini	10%	90%
Total	31%	69%
Age of the respondents		
Below 20	67%	33%
20-29	24%	76%
30-39	29%	71%
40-49	28%	72%



50-59	36%	64%
60-69	24%	76%
70 and above years	36%	64%
Total	31%	69%

Some elderly farmers from Mutorahuku who were no longer able to fully utilize their irrigation plots because of their ages were reportedly receiving rental fees from the tenants. So, subletting was found to be convenient for both the scheme as a whole and the individual farmer facing temporal and permanent capacity challenges in fully utilizing their irrigation plots. Differences by sex and marital status on the ability to sublet was found to be statistically insignificant at $P=0.05$ although the males had a higher proportion of farmers (35%) than females (28%) who were able to sublet their plots and the divorced had the least proportion of farmers who were able to sublet.

Differences by age on the ability to sublet was found to be significant using Analysis of Variance (ANOVA) at $P=0.05$ with those who were 50 and above years of age having a higher proportion of farmers who were able to sublet than the younger generation as shown in Table 2. Because there was a positive correlation between the farmer's age and the number of years the farmer was in the scheme, there was also a significant difference on the period the farmers worked in the scheme and the ability to sublet at $P=0.05$, using ANOVA. This was possibly because the ability to work in the scheme was reduced with age or that the younger, with less capital base than the older generation, had more to lose if they were punished for subletting than the older generation. The older generation could have possibly learnt about the implication of subletting with age because although it was illegal, how this law has been enforced over the years determined whether or not people would adhere to it or not.

Ability to sell the plot

Only one irrigation scheme, Vimbanayi, had informal arrangements to sell irrigation plots. The selling process was overseen by the IMC and it was done under the agreement that the scheme would get a third of the proceeds. So, the irrigation scheme was government-owned but locally, privately owned, as people were free to sell the plot if necessary. According to the farmers and the IMC in Vimbanayi, the value of the plot was pegged at \$350 by July 2014 and the price was subject to periodic upward review. The value of the plot was calculated based on what the farmers had contributed towards the establishment of the scheme, its rehabilitation and repairs. Their argument for allowing the selling of the plots was that it allowed farmers who would have invested in the farm to recover something from their investment as they left the scheme. It was for this reason, according to the IMC in Vimbanayi, that farmers were not difficult to mobilize to make improvement on the scheme as they were aware that whatever they contributed would translate into more recoverable value of the scheme. The farmers and IMC in Vimbanayi indicated that they were aware that the Government did not allow selling and subletting of irrigation plots but were not prepared to wait for the Government to tell them what to do when they were investing in the improvement of the schemes using their own resources without any help from the Government.

One IMC committee member said;

"Hatingamiriinkutihurumendeizotichitengeserenaimaplotisutaishandisa mari dzedukutischemeirambeiripo. Dei taisadaro, scheme inoingadaiyakafakare (We can't wait for someone to tell us what to do with our plots when we were using our money to sustain the scheme. Otherwise the scheme would be non-existent).

The farmers in Vimbanayi felt that the informal disposal of plots was a clear sign that irrigation farmers needed title deeds to protect their investments in the scheme and those title deeds would ensure that all the selling transactions of the plot would be done legally. Farmers also needed title deeds to secure loans from banks that only required immovable assets as collateral.

In Insukamini and Mambanjeni, selling or subletting the irrigation plot was not allowed for the reason that it was illegal and that the plot was not theirs. One farmer in Insukamini said: "Unorendesamundandewako here?, unotengesamundandewako? Munda ndewe Government hautengeswe kana wazvitadzaunousarendakucommitteepotsvawumwe." (How can you sublet or sell a piece of land that doesn't belong to you? This is Government property and if one is no longer interested in utilizing the scheme, he/she should surrender it to the IMC and a replacement will be sought accordingly). In Dendere, the farmers were not allowed to sell the irrigation plot. Both farmers and the IMCs who were interviewed during the survey in Dendere were against the selling of the irrigation plot. One IMC member said:

"Farmers have no constitutional rights to sell the plot. The system is good as it is, because the scheme was established to develop the area and to raise the standard of living of the local people. If allowed to sell, entrance into the plots will be determined by the resource endowment of the incumbent and not local citizenship which will defeat the objective of the scheme. The rule is clear and fair. "Anengeanetakurimaanongosiya" (if one is tired of utilizing the plot he/she should just leave) and the land is allocated to someone else.

Inheritability of the irrigation plot

There was no clear legal position regarding ownership of the irrigation plot after the death of the original owner and there was no uniformity in the manner the 8 schemes were handling the inheritance of the irrigation plot. For Zuvarabuda and



Tsvovani irrigation schemes, the wife or children could inherit the ownership of the irrigation plot. In the absence of both children and spouse, other closer relative could inherit the plot although in Tsvovani that had to be approved by the traditional Chief of the area. In Mutorahuku, the farmers had to change their constitution to ensure that the children and the immediate relatives of the deceased member could take over ownership of the plot. Otherwise, the original scheme constitution was silent on the heritability of the irrigation plots.

In Rupangwana the farmers agreed that after the male married owner dies, the IMC and the relative of the deceased would meet to decide whether the wife could inherit the relative of the deceased would discuss and decide who would inherit and forward the name to the IMC. Otherwise it was not automatic that if the husband died the wife would take over. One farmer said;

“If the wife is not implicated on the death of her husband and was staying well with the relatives, then the wife will be allowed to utilise the irrigation after the death of her husband. If it is otherwise, the wife will be chased away from the matrimonial home and the relative will forward another name from amongst the relatives of the deceased to takeover. If the women appeals to the chief of the committee, the IMC will sit down to facilitate a consensus in the chief's court and a decision will be reached”.

In Vimbanayi, if the husband died, it was agreed that the wife or children would automatically inherit ownership. But if the woman left the matrimonial home, then the relatives of the deceased might put forward another successor to inherit ownership of the plot. The arrangement in Rupangwana and Vimbanayi was tricky in that, the relatives of the deceased who might be interested in the scheme might level allegations of witchcraft on the wife to get a justification to chase her from the matrimonial home. The only advantage with Vimbanayi was that if the wife was pressured to leave, she could sell the irrigation plot before leaving.

In Insukamini, it was not automatic that if the father died, the children would inherit the plot. According to the farmers that participated in the FGDs at Insukamini, the scheme belonged to the Government and the children had to demonstrate willingness and capacity to utilize the plot. Otherwise, the plot of the deceased was declared vacant and a replacement sought. One farmer who participated in the FGDs said: “*Hakunanhakandewe Government, kana ukatadzakurimaunobuda*” (there is no inheritance to the irrigation plot, this is Government property, if you fail to comply with the requirements and constitutional provisions, you will be expelled).

The land policy in Zimbabwe did not adequately address the inheritance issue. It was oblivious to the realities of conflict over inheritance as were highlighted in Rupangwana and Insukamini. This lack of clarity on the inheritance policy of irrigation plots did not seem to provide sufficient incentive to the farmers to invest in the scheme as there was no guarantee that the benefits from the investment would spill over to the next generation.

Ideal land tenure for smallholder irrigation plots

There was no agreement amongst the farmers in different irrigation schemes on the ideal tenure arrangement for the irrigation schemes. Although the majority of the farmers expressed the need to have the irrigation plots privately owned by the farmers, some felt the irrigation plots should remain government owned. For Tsvovani, the original farmers were given 99 year leases during the 1990s, but these were reduced to mere pieces of paper when more farmers were added to the scheme in the year 2000 under the fast track resettlement program. They were not issued with any lease agreements and those holding the 99- year leases were no longer being recognized by banks which used to recognize them before the 2000. Farmers in Tsvovani felt that the withdrawal of all rights of title and ownership to the lands by Government economically disadvantaged them as they had no other assets they could use as collateral other than their land.

Those who felt the plot should remain government owned mentioned the need to get government support in pump repair, inputs and extension backstopping support. It was also felt that if ownership was privatized, the plots would be underutilized as the current tenure arrangement was threatening farmers with expulsion if they failed to utilize the plot fully. Some IMC members highlighted that it was easier to control farmers if the plots were government owned than if they were individually owned. They were forced to cooperate by the fear that government would repossess the plot if farmers failed to use it. Some farmers felt individual ownership of irrigation plots in smallholder irrigation schemes would defy the collective effort needed for smooth functioning of the irrigation schemes. One farmer in Dendere said:

“We cannot enjoy the autonomy we enjoy in the rain-fed plots as things are done differently in the scheme. Private ownership may bring individualism amongst the farmers which would work against the collective approach needed in the scheme as people use common water source, common fence, share the same bill, cropping program and face the same threats. Therefore the scheme should remain Government owned and the farmers will be bound together by the constitution”.

Dendere, farmers felt private ownership of irrigation plots would allow other people from different areas to own plots in the irrigation schemes when the project was meant to benefit the local community. It was also believed to have the effect of compromising the cohesion that was existing amongst the farmers which they believed was brought by the current tenure arrangement where one's use of the scheme was contingent upon one's loyalty to the rules and regulation of the scheme and not his/her title deeds to the plot. The IMC members also felt that the expulsion of farmers who would have failed to contribute towards utility bills would attract complicated litigation if the irrigation plots were privately owned. Some farmers also charged that the poor farmers might be forced to dispose of their plots due to temporary pressing problems if private ownership of the irrigation plots was allowed. Therefore, the current tenure arrangement (government ownership) for the



farmers made them resilient as they always remain with their plots after different shocks as the irrigation plots were not disposable.

The IMC chairperson in Dendere said: "scheme inoyakaitirwavanhuvemunosaka kana vanhuvakapihwamatitle deeds, vamwevanhuvemunozevanouyamunokuzotengamplotsamuno ,zvopesananechinangwachehurumende. Uyevanhuavavanotungamiririkaseimumweneumweavekuitazvake. Kudzingamunhuhaizovenyorenyangweakarambakubhadharamariyemagetsi. Anokuendesaikucourt. Scheme kana zvdaroyatofa"(private ownership of the plots will benefit people who were never meant to benefit from such scheme. Beside how will you manage people who will be autonomous? Even if he/she may decide to pay utility bills, expulsion will not be easy, we can be sued and that will be the end of the scheme).

DISCUSSION OF RESEARCH FINDINGS

Farmers' ownership feeling was stronger on rain-fed plot than on their irrigation plot and this attested to the insecurity of tenure in smallholder irrigation schemes. Some farmers regarded irrigation agriculture as employment where one could retire from if necessary while their dryland crop field was regarded as a family asset that could be passed from generation to generation. This confirmed the finding by Kortenhorst et al (2002) that short-term tenancy conditions in irrigation projects in Sub-Saharan Africa was the major cause of project failure, not only because it led to low production, but also because farmers in the irrigation schemes, regarded scheme cropping as an 'off-farm' activity.

The position of the land policy regarding subletting was not clear as the conditions for subletting, cession and partnerships were ill-defined and not known to the farmers in the irrigation schemes. The land policy's lack of clarity on sub-letting, transfer of ownership and inheritability promoted informal land markets and attracted different tenure interpretation and perception by farmers in different irrigation schemes. This affirms the M4P argument that, where formal rules and their application are weak, the business environment is governed by the informal rules and where the formal rules surrounding markets are weak and informal institutions are not supportive of business transactions, the environment for markets is significantly dysfunctional (Ferrand et al., 2004). FAO (2008) confirmed that the failure by many Governments in Sub-Saharan Africa to create provisions for viable partnerships, innovative lease transfer or subletting on the land was causing poor and underutilization of land.

Some farmers and IMCs were opposed to private ownership of irrigation plots as they felt that such tenure arrangements would prevent them from getting the support they needed from the government. They also felt individual ownership could work against the collective effort and group cohesion needed for smooth running of the smallholder irrigation schemes. Some felt private ownership would lead some chronically poor household to dispose their irrigation plots during times of shocks which would perpetuate vulnerability to poverty and livelihood instability. This is consistent with Kadigi et al's (2012) finding that farmers in Sub-Saharan Africa hesitated leasing out their land as they were unsure about their legal rights due to unclear and insecure land rights, leading to sub-optimal use of land resource. In China, although the transfer of use rights to land, or subletting became legal in 1993 only a few were subletting due to the lack of security in rental rights under the collective land ownership (Kadigi et al., 2012). Research findings in Senegal suggested that titling irrigation plots land had no strong farmers' support because farmers feared they would lose their land (Kelly et al, 2006).

It was universally felt that the government was against selling, sub-letting and unconditional inheritance of the irrigation plot. However, some irrigation schemes had to make local arrangements to allow sub-letting and to make the irrigation plot inheritable by immediate family members. Selling of irrigation plots was only done in one irrigation scheme (Vimbanayi) where it was justified by the need to safeguard farmers' personal investment in the scheme. Farmers' experiences in Vimbanayi irrigation scheme affirmed Landesa (2012) finding that secure land rights provide a lasting impact that generates transgenerational benefits, because farmers would be more willing to invest in permanent improvement to the schemes.

The existence of informal land markets in smallholder irrigation scheme was consistent with some research findings in Sub-Saharan Africa on rain-fed resettlement areas and other communal areas that hinted on the possible existence of active informal land markets where land was sold extra-legally (FAO, 2008, Marongwe 2013; Chimhowu and Woodhouse 2010).

Sub-letting and disposal was not done in Insukamini and Mambanjeni for fear of losing their irrigation plots. It was felt that the government would interpret sub-letting as failure to utilize the irrigation plot. It was strongly felt in these two irrigation schemes that both the irrigation plots and the infrastructure in the schemes were Government owned and as such, the farmers had no moral, logical and legal justification to sell the plots. Bruce (2004) reported that the rural farmers in most rural areas in developing countries remained poor because their land had limited economic value as their landholdings were not legally transferable.

The absence of a formal land market in smallholder irrigation schemes in Zimbabwe was contrary to farmers' experiences in China, Vietnam, South Africa, West Bengal and Gambia. In Thailand it was proved that farmers with secure legal ownership of their pieces of land had more incentives and better ability to invest, due to a lower perceived risk and a favourable access to institutional credit which later translated to higher variable inputs use and higher output per unit of land (Feder, 2007). In Vietnam and China, the introduction of land use certificates in both countries, conferred smallholder farmers the right to rent, mortgage and inherit-allowing farmers to take de facto title to their land (Ferrand et al., 2004). Such changes triggered rapid agricultural growth and major increases in agricultural input and productivity of at least 7% per annum in both countries (Tschumi & Hagan, 2009). In South Africa, adaptations of customary institutions of



communal land into commercially inspired arrangements impelled a hitherto waning land rental market to rise from 4% of households to 25% within a 4-year period (Tschumi & Hagan, 2009). This new tenure arrangement allowed those with land but without the means to utilize the land, to lease out their pieces of land to those without the land but have the ability, interest and resources to farm resulting in huge improvements in farm efficiency, profitability and sustainability (Tschumi & Hagan, 2009; Van Zyl, 2010). A research in West Bengal revealed that the greater tenure security enjoyed by the protected tenants explains around 28% of growth in agricultural productivity during 1979 – 1993 (Banerjee et al, 2002). A study of farming communities in western Gambia found secure land tenure positively and significantly affect the propensity to make fixed investments on farms and higher farm yields (Hayes et al., 1997).

Although the inheritance arrangement reported in the majority of the irrigation was emanating from informal arrangement, it was clear that inheritance of irrigation plots was not usually favorable to the female farmers as it was done along customary lines. This gender insensitive arrangement was consistent with the finding by Jenkins & Ishikawa (2009) that in Kenya that the institutionalization of customary land ownership weakened women farmers' right to the farm land they were using, compromising their ability and motivation to invest in farming. Landesa (2012) revealed that even when a smallholder household in Sub Saharan Africa obtains more secure land rights, women within the household very often do not have secure rights. Moyo (2003) argued that the cultural practices in Zimbabwe often failed to protect the children of deceased parents and aligning the land rights to the traditional practices could perpetuate the insecurity of tenure and uncertainties in the event of death of leaseholders. Therefore, the interpretation of inheritance issues along traditional line was likely going to perpetuate and entrench gender inequalities (Moyo, 2003). Nevertheless, the initiative by farmers in Vimbanayi, Rupangwana and Mutorahukui irrigation schemes, to make secure informal inheritance arrangement for their irrigation plots, confirmed McCorkle's (2013) finding that the concept of "inheritability" in keeping with the traditional land ownership, ancestral worship and allocation of resources, serves as an important element of African perceptions of responsibility and ownership.

Farmers in all the smallholder irrigation schemes lacked formal land titles. Considering that the irrigation plot might be the only valuable asset the farmers had, lack of land titles suggested that farmers had no collateral to enable them to access credit, which in turn prevented them from purchasing the inputs they need to obtain high yields and income for the sustainability of their schemes (Salami et al., 2010; Kadigi et al, 2012 & Rukuni, 2013). In Zimbabwe, the fast track land reform program has changed the land ownership structure to make the state as the sole owner of the land without private ownership by farmer (Nhundu & Mushunje, 2010; Musemwa & Mushunje, 2012). This land tenure arrangement confirmed Landesa's (2012) assertion that most rural farmers in Sub Saharan Africa have tenuous rights to land that the government regards as publicly owned. In Tanzania, Ethiopia and Mozambique, land is legally owned by the state and the rights associated with different categories of land were not clear, resulting in the unwillingness of farmers to make long-term investments such as purchasing irrigation equipment or contributing free labour to canal construction and land management initiatives (Kadigi et al, 2012). Wily (2012) reported that there are about 428 million poor people in Sub-Saharan Africa who are customary landholders without legal security in their land, running the risk of losing their land to others.

CONCLUSION AND IMPLICATIONS

The land reforms in Zimbabwe have not been targeting smallholder irrigation schemes and this has promoted confusion over the interpretation of tenure and land rights. The farmers' response to this confusion has been the establishment of informal land markets in the irrigation schemes. Unlike other countries in Asia where the Governments had deliberate reforms to promote commercialisation through privatization of irrigation schemes, Zimbabwe has resorted to more insecure land tenure arrangements whereby every land is government owned. As a result,

farmers' ownership feelings for irrigation schemes was weaker than their ownership feeling on rain-fed plot. This gave them less incentives to invest in the sustainability of irrigation schemes. Some farmers were against private ownership of smallholder irrigation plots for fear of losing Government support and group cohesion needed for the advancement of collective initiatives in the schemes. In order to sustain agricultural growth, agricultural intensification in irrigation schemes need to be accompanied by the institutional evolution of land rights conferring the ability to bequeath and sell the land (Dore, 2015). This suggests that the hope of improving the productivity and resilience of irrigation schemes will remain a dream until deliberate effort is made to make the land rights and tenure arrangement of the irrigation plots more secured.

RECOMMENDATION

- There is need to make the tenure for irrigation plots more secure and transferable by issuing 99-year leases or giving free-hold titles in order to facilitate the connection of irrigation schemes to financial markets and to promote private sector participation.
- There is also need by the relevant government officials to inform the farmers in the irrigation schemes about their rights in the irrigation schemes to prevent debilitating interpretation of land tenure that would entrench tenure insecurity perception.
- Further research is needed to establish the link between different tenure perceptions and level of productivity of smallholder farmers.

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