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RESEARCH ARTICLE

THE ROLE OF PROPERTY RIGHTS TO ARABLE LAND RESOURCES IN SMALLHOLDER
DEVELOPMENT IN KAT RIVER VALLEY

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ABSTRACT

The paper has attempted to determine how the situation of property rights arable land affects the development of smallholders in the Kat River Valley. To capture data, a questionnaire was administered through face-to-face interviews. Institutional analysis and ANOVA were used for descriptive analysis to describe the property rights situation, security of property rights and the impact of property rights on the development of smallholder farming. The results show that individual land rights holders have secure rights to land resources while communal small holders and farmers on the invaded state land have insecure rights to land resources. The results from institutional analysis show that the situation of property rights negatively affects development of all smallholder farmers in the Kat River Valley. There are various institutional factors that negatively affect development of smallholder farmers in the Kat River Valley. Based on the research findings, some policy recommendations are made. These include consideration of the local context and strengthening of the protection of property rights.

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INTRODUCTION

Institutions as the set of formal and informal rules of conduct that ensure social cohesion through governing the relationships within a society are essential for economic development due to their bearing on behaviour that affects various social outcomes (North, 1990). In rural areas of the developing world, agriculture is key to economic development as many rural people depend on farmland, rangeland, irrigation and fishing waters and forests for their livelihoods. This dependency makes access to these resources of great significance for economic development of these areas. This access to natural resources will lead to poverty alleviation by allowing people to grow food and to invest in productive activities (Van Braun, 2004). However, this access to resources is not realised automatically but depends on the institutions that govern resource use in these areas, thus property rights (Meinzen-Dick and Di Gregorio, 2004). Anderson (2008) stated that property rights define incentives people face for undertaking sustainable and productive management strategies and they determine the extent and distribution of socioeconomic benefits from natural resources.

These have important implications for technology adoption, food security, poverty reduction, economic growth and environmental sustainability, hence overall development. The realisation of these outcomes is dependent upon the institutions that administer property rights through ensuring that individuals and communities involved have clearly defined, understood and accepted the property rights. The institutions that administer property rights should ensure that property rights rules are respected and enforced and this has been facilitated by the institutions' social legitimacy, legal support and accessibility by and accountability to the property rights holders (O'Driscolljr and Hoskins, 2003). Nevertheless, multiple property rights present in the world have resulted in various outcomes in different settings and the outcomes being determined by various socioeconomic factors. The main determinants have been social capital, resource conditions, politics, markets and the needs and preferences of the local people (FAO, 2008a).

Governments in developing countries have designed and implemented various policies aimed at achieving development but the success of these policies has been limited and absolute failure has been realised with other policies. Several factors have been mentioned as sources of failure and these include lack of finance, poor natural resources, and lack of human capital among others (O'Driscolljr. and Hoskins, 2003). The

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South African government has implemented a land reform policy and the National Water Act aimed at achieving development through providing access to, economic use of, non-gender based distribution of, sustainable use and management of land and water resources throughout the country (DLA, 1999; DWAF, 1997). These policies have been and continue to be given various forms of support including finance, human capital, technical support, natural resources of good quality and where this has not been the case improvement measures have been taken (DLA, 1999). Despite all these, the policies have achieved limited success with regard to the intended outcomes particularly in the rural area of KatRiverValley. However, the effect of the property rights situation in the KatRiverValley on the achievement of the national development objectives are examined in this study. The study specifically attempts to achieve the following objectives:

- To identify the property rights to arable land resources held by people in Kat River Valley.
- To establish whether property rights held by people in Kat River Valley are secure and the implications thereof.
- To determine the impact of property rights to land water resources on smallholder development in Kat River Valley.

MATERIALS AND METHODS

Study area

The Kat River Valley is a small basin in the Eastern Cape Province that is situated northeast of Grahams town, in the foothills of the Winter berg and Amatole mountains. It is a sub-catchment of the Great Fish River that includes the areas of Fort Beaufort, Seymour, Balfour and other rural villages (Hill and Nel, 2000). It forms part of the Nkonkobe Municipality which falls under Amatole District Municipality. The area is divided into three main parts including Upper, Middle and Lower Kat River Valley. It is about 80 kilometers in length and covers an area of 1600 square kilometers, with boundaries defined by the Elands berg Mountains in the north east, the Katberg Mountain and the Ndidima range in the North West, the Kroomieberg in the west, and the Menziesberg and Juannasberg in the east (Motteux, 2001).

Data Collection Method

Questionnaires were used for data collection and they gathered information on demographics, land rights issues, investment, finance, resources use and management, production, opinions and attitudes towards property rights. Unstructured interviews were conducted with officials from Department of Land Affairs (DLA) and Department of Water Affairs and Forestry (DWAF) in the Eastern Cape Province. The technique of simple random sampling, which is one of the probability sampling techniques, was used for choosing sample units. The households were taken as sampling units and individual household's head being the person interviewed.

Data Analysis

The methods and techniques employed in any investigation depend upon various factors including the nature/type of data

to be collected (Leedy and Ormrod, 2005) as well as the purpose and objectives among others (Patton, 1990). The nature of data collected for the investigation of the role of property rights in smallholder development is qualitative. As a result, the study employed a predominantly institutional framework of analysis and the informal and formal institutional factors that were argued to have had contributions to both development and underdevelopment were highlighted and the recurrent themes were isolated for analysis and discussion. In that regard, institutional economists, particularly Williamson's (2000) hierarchy of society's institutions were employed for guidance. The analysis employed North's (1990) theoretical propositions in discussions of transaction costs.

A qualitative evaluation of the contributions of the factors to underdevelopment was carried out in the study. Factors that were consistently argued to have hugely contributed towards underdevelopment and hence high social transaction costs were assigned a high ranking of '3 points', while those which were argued to have had no detrimental contributions were assigned no ranking, which implicitly signals a 'zero point' value assignment. The factors that had least contribution were assigned a ranking of '1 point' and those with higher contribution were assigned a ranking of '2 points'. The rankings were as follows; 'minimum=1 point'; 'medium= 2 points' and 'high= 3 points'. Based on the sum of ranking points assigned to each category of factors, deductive judgments were made on their contributions towards underdevelopment of the area. Analysis of variance (ANOVA) was used for the descriptive analysis whereby frequency and mean values were main descriptive indicators used.

Security is defined as freedom from interference from outside sources, continuous use, and ability to reap the benefits of labour and capital invested in the resource. Embedded in this description are three dimensions of land rights; breadth, duration and assurance. Breadth refers to the types of rights held. Generally, the more rights held the more secure those rights. Households with rights to alienate resources or to make long-term improvements on land would be considered more secure than those with only use rights to land. Duration refers to the length of time over which the individual/group may enjoy specific benefits while assurance refers to the ability of individuals to exercise their rights (Table 1).

In this study, breadth was measured by the number of rights held to land. In the case of land when use, exclusivity and transferability were held it was ranked strong and when only two were held it was ranked moderate while it was ranked weak when only one type of rights were held.

RESULTS AND DISCUSSION

Individual property rights to arable land

Of the total population, 27% held individual rights to arable land and these people have been occupying the land for more than 20 years, while 3% occupied the land for less than 10 years. The majority (88%) of these farmers acquired the rights to this land by virtue of being left on the land by White farmers.

Table 1. Variables used for the determination of security of property rights

Variable	Definition	Indicators	Measure
Security	Freedom from interference from the outside sources, continuous use, and ability to reap the benefits of labour and capital invested in the resource	Breadth Assurance Duration	Number and type of rights Knowledge of boundaries. Enforcement and protection of rights Certainty/uncertainty on the length of time for exercising the rights

Table 2. Property rights exercised on individual arable lands

Method of acquisition	Rights exercised	Rights prohibited	Period of occupation
Left by whites	Use and exclusion	Transfer	More than 20 years
Obtained through restitution	Use, exclusion and transfer	None	Less than 10 years
Granted by local committee	Use and transfer	Transfer	More than 20 years

Table 3. Responses on boundaries, security, future and legal status of property rights on individual arable lands

Method of acquisition	Knowledge of boundaries	Views on security	Views on future of rights	Views on legal status of rights
Left by whites	Known=90% Unknown=10%	Very good=100%	Certain=100%	Strongly protected, enforced and recognised=100%
Obtained through restitution	Known=100%	Very good=100%	Certain=100%	Strongly protected, enforced and recognised=100%
Granted by land committee	Known=100%	Very good=100%	Certain=100%	Strongly enforced, protected and recognised=100%

Table 4. Types of farming among different land tenure systems

Type of rights	Sizes (ha)	Type of farming	Crops grown	Years of farming
Individual	0.25-2	Subsistence	Carrots, potatoes, pumpkin, cabbage, spinach, butternut, beans, peas, maize, onions	Over 20
Communal	1	Semi-commercial	Carrots, potatoes, pumpkin, cabbage, spinach, butternut, beans, peas, maize, onions	15 years
State/invaded	0.5-1	Subsistence	Carrots, potatoes, pumpkin, cabbage, spinach, butternut, beans, peas, maize, onions	Over 20

Table 5. Responses on crop rotation among different land tenure systems

Types of rights to arable land	People practising crop rotation	Reasons for crop rotation	Reasons for not practising crop rotation
Individual	Practise=72% Not practised=28%	Identify most suited crops=66% Prevention of degradation=34%	Only grow crops with low water requirements=100%
Communal	Practised = 100%	Prevention of degradation = 100%	Not applicable
State/invaded	Practised=66% Not practised=34%	Identify most suited crops=52% Prevention of degradation=48%	Only grow crops with low water requirements=100%

Only 8% of the individual rights holders obtained rights through the process of land restitution and were in possession of title deeds and 4% obtained rights from the local committee. The majority (90%) of these farmers were Coloured. The farmers who obtained rights through land reform's restitution exercised various rights including rights to use, transfer and exclude and those who inherited land from Whites also exercised use, transfer and exclusion rights (Table 2). These farmers had to notify authorities such as the local committee before exercising the rights to land and all indicated to be unaffected by this obligation with regard to land use aspirations. Those who obtained land from the Department of Land Affairs (DLA) through land restitution were not obliged to notify any authorities before exercising their rights. The majority (90%) of these farmers indicated knowledge of the boundaries of their land and 10% had no clear knowledge of their lands' boundaries. All individual rights holders indicated that their rights were legally enforced, protected and recognised. They also indicated that other people did not have any rights to their arable land. They were certain about the future occupation of their arable land and all deemed the security of their rights to this land to be very strong (Table 3).

There were some rules and regulations such as prohibition of transfer of land rights and the infringement of these could lead to arrest, fines and to some extent expulsion from the agricultural land and all people indicated awareness of the rules and regulations as well as the associated penalties. They indicated satisfaction with conditions and administration of the rights. The individual property rights system was their preferred system since they saw it as conducive for independent planning and better use and management of arable land and communal ownership was believed to be encouraging poor use and mismanagement of resources.

Property rights at Hertzog Agricultural Cooperative (HACOP)

The population of respondents with communal rights to arable land was 7% of the entire community and 43% of such holders occupied the land since 1994, while the rest only since 2003. The land rights were leased from the Department of Agriculture (DoA) in 1994 for the establishment of the irrigation scheme HACOP and the lease agreement was for a period of 10 years, which means it expired in 2004, though these farmers have continued to use the land after the expiry of

the agreement. The scheme had branches in Hertzog, Phillippton and Fairbairn. However, the Fairbairn unit was the only operational branch at the time of the research (HACOP, 2009). Mbatha (2007) indicated that in 1994 the scheme had 52 registered members. However, there has been a sharp decline in membership such that there were only 7 registered members at the time of the research. About half of the registered members joined the scheme less than 6 years ago while the rest joined in 1994 (HACOP, 2009).

Any member of the community could join the scheme by paying a fee of R150. Every month, each member is required to pay an additional R100 towards maintenance. Each member has been allocated a one hectare plot. The members designed both planting and irrigation plans that had to be followed by the members. The farm equipment was collectively used by members (Xola, 2009). The use rights were exercised by the members while transfer and exclusion rights were not exercised. The local committee and DLA were the bodies that administered rights to this arable land. These farmers indicated that this affected them since the authorities at times rejected the proposals and implementation of their production and land use plans. They lacked knowledge about the extent of the boundaries of their land and indicated that their rights to the land were not legally enforced, protected and recognised. This resulted in great uncertainty regarding their future occupation of the land as they did not know for how long they would occupy the arable land. The level of security of property rights on the land was deemed to be poor and very poor by 29% and 71% of the respondents respectively.

The land management system was acceptable since respondents indicated they were comfortable and unaffected by the arrangement. There were rules governing property rights, land use, farming operations and types of punishment for trespassing and all these were known, accepted and respected by all communal rights holders. There has been consensus regarding the direction to take in order to improve the scheme and any disputes among members have been successfully resolved. However, they were dissatisfied with the level of the security of their rights to this land. In 2001 they applied for this land to be permanently, clearly, legally and communally owned by them. At the time of the research there had not been any response from DLA despite several follow ups having been made (Xola, 2009). This group of farmers preferred communal ownership of the arable land since they mentioned that it renders it easy to obtain government services and support. They did not support individual property rights system citing uneven distribution of resources as the reason. This is supported by Mbatha (2007) statement that farmers at HACOP unit in Fairbairn opposed the individual rights system. This negative attitude towards private property rights system is in contrast to Van Averbeke *et al* (1998); Dlova (2001) statements that these farmers expressed a desire to obtain title deeds for their plots.

When asked about progress on the application, DLA's officer (Modiba) mentioned that there was no progress at all. From the interview, it was realised that there were numerous obstacles to the processing of the land applications and claims. The situation of these communal farmers was worsened when the scheme lost part of the original land when DLA granted private

rights to one of the individual community members without providing alternative piece of land to the scheme. Ever since, there has been great tensions and conflicts between the land reform beneficiary and the scheme members as well as those people on the invaded state land.

Smallholder farmers on State land

There were White farmers who leased land from the Ciskei government for tobacco and vegetable cultivation between 1987 and 1993. After the abolition of the homelands governance system and shortly before democratisation of South Africa, White farmers left the area due to uncertainty that characterised the period and some people just invaded the land (Mbatha, 2007). This was confirmed by 53% of the respondents who indicated to have occupied their arable land through invasions. These farmers have been on the land for a period of about 16 to 25 years. They only exercised use rights on the land and the restricted rights included those of transfer and exclusion. It was illegal to transfer the land and the infringement of such rules led to arrests, various fines as well as expulsion from the land. About half of these smallholder farmers did not know the boundaries of their land. They indicated that their property rights to the arable land were not legally enforced, protected and recognised. This group of small-scale farmers was uncertain about the future of their rights to this land. The security of property rights to arable land was deemed to be poor by this group of farmers.

They applied for private rights to residential land and communal rights to arable and grazing land resources at the same time as the HACOP members. They identified the lands they wanted to use for residential, crop production and grazing purposes and indicated these in their application. They preferred communal rights for both grazing and arable lands as they indicated positive attitude towards communal rights to arable land and water resources and they did not support the idea of private rights to water, grazing and arable land. They had identified and targeted the areas that were not occupied and used. Progress had not been made at the time of investigation and obstacles similar to those responsible for lack of progress on the application made by HACOP members were identified in the interview with DLA official (Modiba).

Property rights and smallholder farming in the Upper Kat Smallholder farming of individual land rights holders

The previous section indicated that the area had two sections which were the east and the west section. The small-scale farmers who held individual rights to arable land were located in the eastern section of the area. All these farmers indicated that they have been farming their lands for over 20 years (Table 4). The sizes ranged between 0.25hectare (ha) to 2 hectares per household. They planted various crops including carrots, potatoes, pumpkin, cabbage, spinach, butternut, beans, peas, maize and onions. All these farmers practised subsistence type of farming. They mentioned that they used their household income to finance the farming activities. The majority (63%) spent less than R200 on their farming per season, about R200-500 was spent by 25% and only 12% spent between R500-R1000. These smallholders have never accessed any loans and various reasons were given for that: they

included lack of information about loans and how to get those (40%), while 60% indicated that they would be unable to repay loans. Lack of capital was cited as the reason for low investment in to farming.

It was discovered that, during the period 2004 to 2007, 72% of these farmers practised crop rotation on their plots and various reasons were given for the rotation of crops. These included prevention of degradation by 34% of the people who practised rotation while the rest rotated crops in order to identify crops that could do best in their plots. There was 28% that did not rotate crops and they alternated two crops on their plots and they indicated that those crops were demanding less water and did well in conditions of water scarcity which was experienced in the area (Table 5). A quarter of these farmers were doing nothing to improve fertility of the soil, while half and another quarter applied fertilizers and manure respectively, though they indicated that this rarely happened. There were some measures taken to prevent soil degradation and the measures included crop rotation and application of fertilizers by 44% and 19% only applied manure, while 37% did not do anything to prevent soil degradation. From observation and further interaction with the community, the researcher noticed that majority of these smallholders only practiced what was decided upon by male members of the households.

Table 6. Summary of security of individual property rights to arable land

Type of rights acquisition	Breadth	Assurance	Duration
Land restitution	Strong	Strong	Strong
Left by whites	Strong	Strong	Strong
Local committee	Strong	Strong	Strong

In order to improve efficiency in soil use, 28% indicated that planting was done at recommended rates, 6% indicated that they planted at recommended rates and during suitable seasons while 66% did nothing to increase the efficiency. After further interaction with this community it was noticed that these smallholder farmers did not make any effort to improve their farming situation because they did not view farming as a source of income and employment and they indicated a desire to be employed elsewhere outside agriculture. There were various implements/equipment that were owned by the farmers that included hosepipes and watering cans which were owned by 3%, 25% owned digging forks, spades and rakes, only 13% owned wheelbarrows, 3% owned ox-drawn ploughs and 53% did not own any equipment, while only one person (3%) owned a tractor. These smallholders mentioned that any implement they did not have was borrowed or rented from the neighbours. The most important improvement these people desired was the improved supply and reliability of water for farming purposes since they hoped that would improve the productivity which they all deemed poor at the time of the research.

Joubert (2009) and Brutsch (2004) indicated that the production values of all crops are low among this group of farmers. The yield that these farmers obtained in all crops is far below the average. However, these people indicated that their production levels were affected by the destruction and theft of their crops by the people who lack rights to land resources. Tlouet *et al* (1998) explained that land issues are a source of

conflicts in rural societies and feuds between neighbours are caused by conflicting claims of land rights.

Farming at Hertzog Agricultural Cooperative (HACOP)

The plots were located on the land that was leased by DoA to the Fairbairn community for the establishment of the irrigation scheme (HACOP) in 1994 and the lease agreement was for a period of 10 years that had already expired. There were only 7 members at the time of the research though it was indicated by members that the number was initially higher but the members did not mention reasons for the decline. Each member was allocated a 1 hectare (ha) plot and similar crops to those of individual smallholders were planted. The members mentioned that their objective was to satisfy household food requirements then sell the surplus. These farmers spent a minimum of R2000 per season on farming activities but they had never accessed any loans. They mentioned that their application and proposals were rejected by financial institutions because they did not have clear rights to the arable land which was one of the requirements of the institutions they had approached. However, they obtained R450 000 as assistance from the Department of Social Development. The interviewed members could not explain the conditions and terms attached to the assistance except that it was one of the government's poverty alleviation strategies. The funds were used for infrastructure development and maintenance and were used according to the plan and budget designed by the members together with officials from the Department and they were strictly monitored by the Department.

Between the years 1998 and 2000, the scheme was provided with input support from Micro-projects Trust (MPT). MPT is the non-governmental organisation that was based in East London and funded by European Union for projects that brought practical benefits to local communities. The inputs supplied included seeds, seedlings, pesticides and packaging materials (Dlova, 2001). Between the years 2004 and 2007, all the members practised crop rotation in order to prevent soil depletion. Fertilizers and lime were applied to the plots in order to improve soil fertility and crops were planted at recommended rates, times and during suitable seasons so as to increase efficiency.

They owned various inputs including disc and spike tooth harrows, plough, sprayers, planter, generator, small irrigation pipes and a tractor. There were contrasting views regarding the level of productivity on the land as 71% of the members saw it average and the remaining 29% deemed it to be poor. However, common views were shared when they all indicated that improvement would be made if the supply and reliability of farming water could be improved. Recently, they failed to get loans for building water storage tanks and installing advanced irrigation system due to lack of land rights. The yields of all crops are high compared to those of individual and farmers on the invaded State land. However, these yields are low when compared to figures in Brutsch (2004) averages. This supports Van Averbeke *et al.* (1998) statement that at HACOP yields are relatively low for irrigated agriculture. Despite the relatively higher production levels these people experienced great losses since their crops rot in the field as they could not sign contracts with the bulk buyers, namely, retailers.

Table 7. A quantitative evaluation of the contributions to underdevelopment: case of the individual property rights holders

Individual rights holders	Institutional Factors	Quantitative evaluation of contributions to inefficiencies/underdevelopment			Total points
		Min=1	Med=2	High=3	
	1. Gender based decision making	X			
	2. Disrespect of property rights			X	
	3. Lack of capital		X		
	4. View of farming to be inferior and interest in other sectors			X	
Index points		1	2	6	9/12

Table 8. A quantitative evaluation of the contributions to underdevelopment: case of the HACOP

HACOP	Institutional Factors	Quantitative evaluation of contributions to inefficiencies/underdevelopment			Total points
		Min=1	Med=2	High=3	
	1. Lack of property rights			X	
Index points		0	0	3	3/3

Table 9. A quantitative evaluation of the contributions to underdevelopment: case of the smallholder farmers on the invaded State lands

Individual rights holders	Institutional Factors	Quantitative evaluation of contributions to inefficiencies/underdevelopment			Total points
		Min=1	Med=2	High=3	
	1. Gender based decision making	X			
	2. Lack of property rights			X	
	3. Lack of capital		X		
	4. View of farming to be inferior and interest in other sectors	X			
Index points		2	2	3	7/12

A member of the scheme committee indicated that long term contracts were preferred by the approached retailers and that was impossible given the uncertainty of the future of their rights to this land. They only sold the produce to the street vendors in towns such as Fort Beaufort, Seymour and Alice, depending upon the availability of transport. According to members of the scheme, the street vendors only purchased at lowest possible prices, which in most cases, were determined by the vendors and that did not result in any benefit on the side of the scheme.

Smallholder farming on invaded State lands

This group of smallholder farmers was located in the western part of the area and the sizes of their land ranged between 0.5 hectare and 1 hectare. Each person owned and worked a plot and they used their lands for the production of crops similar to those produced by the individual and HACOP farmers. They produced crops for household consumption but they indicated that in good seasons some produce was sold. They used their own household income to finance their farming activities and 75% of them spent less than R200 per season, 20% spent between R200 and R500.

The amount between R500 and R1000 was spent by 3% while only 2% spent above R2000 per season. None of these people ever received a loan and they mentioned various reasons: 79% citing lack of clear rights to land as the main reason for the rejection of their proposals and applications. Small size of land was the reason given by 7% of these farmers while 14% did not have information about how to get loans. About 66% of these farmers were practising crop rotation while the remaining alternated between two crops.

Among those who practised crop rotation only 48% did it in order to prevent soil degradation while 52% just wanted to identify the crops that would do best in their plots (Table 5). Farmers who did not practise crop rotation and all those who alternated two crops mentioned that they did that because the crops they planted had low water requirements and did well in conditions of water stress which was common in their area. It was realised by the researcher that most farming practices adopted were decided upon by males irrespective of whether they are effective or not. Women did not have any say regarding farming operations.

The majority (51%) and 2% of the farmers applied manure and fertilizers respectively so as to improve soil fertility, while the remaining did nothing to improve soil fertility. Crop rotation and fertilizer application were undertaken for the prevention of soil degradation as indicated by 42% and 7% only applied fertilizers to prevent soil degradation while 51% did not take any measures to prevent soil degradation. Crops were planted at recommended rates by 9% of the respondents so as to increase the efficiency of soil use and only 4% mentioned that they planted crops during seasons that suited them most and 2% mentioned that they planted at recommended rates and during suitable seasons while 85% did nothing to increase the efficiency of soil use.

Only 2% of the farmers on State/invaded land owned hoes/pipes, another 2% owned wheelbarrows, 4% owned harrows and 42% owned spades, digging forks and rakes, and 4% owned ox-drawn ploughs, while 47% did not own any equipment. Of all these farmers, 47% mentioned that they wanted improved supplies and reliability of farming water, 33% wanted to have inputs such as fertilizers, herbicides and

insecticides while 9% wanted to expand the scale of their production. There were farmers (11%) who wanted to have their plots fenced. There were different opinions expressed by these farmers regarding the levels of productivity as it was deemed to be poor and very poor by 34% and 66% respectively. The production values from these farmers are more or less the same to the individual Smallholders and there is no significance in the difference between the mean values of these farmers and those with private rights to arable land that is proved by the value $P > 0.0001$.

Analysis and discussion of the security and impact of property rights in the Upper Kat Security of individual property rights to arable land

For farmers who obtained land through restitution the breadth, assurance and duration are strong while those who obtained land rights from previous landlords/Whites and those who were granted land rights by the local committee have strong breadth of rights, strong assurance as well as strong duration of property rights (Table 6). The economic theory states that individuals with secure property rights are motivated to manage and use their resources in a better way and they invest more in their resources which result in higher productivity. However, in this area the use and management of land is poor, investment is low and the productivity is poor among farmers with secure land rights. This anomaly is attributable to various institutional factors that will be discussed in the upcoming sections.

Security of property rights at HACOP

The farmers that work in HACOP only exercised use rights to this land and it renders breadth of their rights weak and the situation regarding the assurance and duration of their rights indicates that these two aspects of the security of their property rights are also weak. The situation of property rights to land has negatively contributed to growth and development of HACOP. The insecurity of the property rights has denied these farmers an opportunity to be water scheduled by KRVWUA as clear rights to land are required for water scheduling. This has led to water shortages, hence lower productivity as well as inability to expand scale of production. The advanced means of irrigation such as stone/brick built tanks and irrigation pipes could not be installed due to lack of secure land rights which was required by loan providers. It is evident that the situation of property rights has prevented the scheme from fulfilling its potential.

The scheme could not sign contracts with established role players in agribusiness as the approached retailers indicated a desire for long term contracts which were impossible given the insecure nature of the land rights. The failure to secure contracts has led to losses on the scheme as much of the produce rots in the field, particularly in good seasons. This led to street vendors being the main customers of the scheme and these customers were only willing to buy at relatively low prices and due to the lack of customers the scheme had to accept these low prices in order to prevent further losses. Despite the external support from the Department of Social Development, the members had a desire to make improvements that required additional funding. Therefore, they

approached several financial assistance providers for funding but were unable to get funding because they did not have proof of land ownership which was one of the main requirements.

Security of property rights to arable land on invaded state land

These farmers obtained land through invasions more than 16 years ago and they only exercise use rights to the land as other rights including transfer and exclusion are not allowed. It is evident that both the breadth and assurance are weak due to unclear boundaries and lack of enforcement and protection while uncertainty about the length of time for which the rights will be exercised led to weak duration. The situation of property rights has led to farmers applying no effort to improve fertility of the land and also not taking any measures to prevent degradation of the land. The farmers experienced water scarcity since they could not register with KRVWUA in order to get adequate amounts of water for their farming as they had no property rights to land. These conditions have led to relatively low productivity among these small-scale farmers. These smallholders were characterised by low investment in farming which was the result of small amounts of capital being invested by the farmers as well as relatively inferior and inefficient technologies/equipment used by these farmers. The smallholders who had a desire to improve their farming through the acquisition of funding from financial institutions were turned down as the loan providers required proof of land ownership of which they did not have. It is apparent that the development of these farmers was negatively affected by the situation of their property rights.

Institutional analysis and discussion of the impact of property rights of smallholders

Factors affecting individual land rights holders to arable land

According to Williamson (2000), norms and customs form the foundations of social and economic behaviour. Based on this, it was obvious that these factors governed some of the practices of smallholder farmers in the area. It was discovered that the only farming decisions implemented were the ones made by men and this supports Tlou *et al.* (2006) statement that males are dominant in farm decision making in the rural areas. This has negatively impacted on development since the practices were proved to be inefficient and has led to poor use and management of land resources, hence poor productivity in the area. This case together with the case of farmers on the invaded State land indicate that culture has rendered the Land Reform and Water Allocation Reform policies' objectives of gender equity, sustainable and economic use of resources unachievable in this area.

The lack of respect of property rights by farmers on invaded State land and HACOP has negatively affected development of farmers with individual rights to land. The farmers without secure rights to land purposely and frequently destroyed the crops on the land of the individual land rights holders and it is believed that this has led to low production levels observed among the affected farmers. These small-scale farmers indicated highly negative attitudes towards farming as a source

of employment and income. They had a desire to get employment in sectors other than agriculture. This has led to neglect of agriculture reflected by poor use and management of land resources and low investment in to farming. The individual rights holders lacked capital to engage in meaningful farming and this has led to other portions of land lying idle, non-adoption of better technologies, uses and management of land resources. These people could not access farming loans due to small land sizes and lack of information about loans; what they are and how they are accessed. It is evident that these conditions had a negative contribution towards development of small-scale farming in the area.

Institutional factors affecting farmers at HACOP

The scheme members prefer the current land management system and they all respected and accepted the constitution of the scheme. The rules and regulations were fully observed by the current members of the scheme and any disputes were internally resolved. Due to the small number of members, there was a more cohesive internal voice hence less conflicting perspectives on how to initiate growth and development of the scheme. These conditions have positively contributed to the well-being of the scheme. The scheme received external support from the Department of Social Development which was used for infrastructure development and maintenance. This support has resulted in better management of finances due to strict monitoring and guidance by the department's officials. The support has positively affected the farming operations at the scheme, though it fosters attitudes of dependency on the part of the farmers which in the long run could hamper growth and expansion of the scheme. The extension services have ensured that the technologies, land and water uses and management practices adopted by the scheme were of a good standard as members consistently approached the extension services department for guidance and advice. It is evident that the external support has positively contributed to the development of smallholder farming in the area.

Institutional factors affecting farmers on the invaded state land

The technologies, land uses, production and management practices were inefficient and detrimental to the development of small-scale farming in the area. However, they were sustained due to the fact that they were decided upon by men who were the sole farming decision makers. It is apparent that this norm has negatively contributed towards the development of small-scale farming in the area. Like the farmers with individual rights to arable land, this group of farmers did not view farming as employment and an income provider as they indicated a desire to get employment in the other sectors of the economy. This view seems to have led to neglect of farming which was proved by poor use and management of land and water resources among these smallholder farmers. These farmers were unable to improve on their farming due to the lack of capital which was stated by the majority of them. This lack of capital was also revealed by the small amounts on which these farmers survived. This has led to adoption of cheaper and inefficient technologies/equipment and management practices which has led to poor productivity among these farmers.

A quantitative evaluation of the contributions to underdevelopment/ inefficiencies

Disrespect of the property rights by other members of the community and the view of farming as an inferior source of employment and income have been the most detrimental institutional factors to development in the area. The two factors achieved a combined score of 6 points out of 12 points for all institutional factors that negatively affected development of smallholder farmers. Gender based decision making and lack of capital contributed to underdevelopment though their impact is less than that of the disrespect of property rights and view of farming as an undesirable source of employment. Both factors scored 1 and 2 points respectively (Table 7). The same process of evaluation has been applied to the case of farmers in the HACOP irrigation scheme. The results indicate that the inefficiencies stemmed from the lack of property rights that is, the lack of property rights has been the detrimental factor to development of HACOP. From the results of the survey, it is evident that this was the single factor that negatively affected development of the farmers at the irrigation scheme as it scored 3 out of a total of 3 points (Table 8). In the case summarised in Table 9, the detrimental factors are not that bad as they only scored 7 out of 12 points. However, the property rights have the highest contributions to underdevelopment as they scored 3 points while gender, lack of property rights and view of farming as undesirable have a combined score of 4 points.

Conclusion

Smallholder farming has potential to contribute to economic growth, reduce poverty, and hence contribute to economic growth. In the Republic of South Africa, this farming system has not fulfilled this potential. It is argued that smallholder farmers have to engage in meaningful agriculture, if they are to contribute to economic growth and development in the rural areas. Nevertheless, this can only be achieved in the presence of property rights that is, institutions that govern resource use. The property rights should be clearly defined, accepted, understood, protected and enforced in order for them to be efficient and effective. The main question of the study was how the situation of property rights to arable land resources in the Kat River Valley affects smallholder development. The main focus was on how the property rights influenced land use as well as productivity among smallholder farmers. The results of the study agree with the economic theory that property rights affect economic performance and there are other factors that affect efficiency and effectiveness of the property rights.

In the Kat River Valley, there are few people who hold individual property rights to arable lands. The security of property rights to these lands is strong, according to economic theory, most economic development is the result of individual property rights. It is ironic that smallholder farmers with individual rights to land are among the poorest in the valley. This is caused by a lack of respect of these property rights by other members of the community, regard of farming as an undesirable source of employment and that only farming decisions made by males were adopted. There are small-scale farmers who invaded state land and those who farm at the irrigation scheme (HACOP).

They only exercise use rights to such lands and the security of property rights to land and water is insecure for both groups of small-scale farmers. The situation has led to misuse and mismanagement of land resources, low investment in farming hence low productivity, particularly among farmers on invaded State land. The farmers at HACOP were denied access to agricultural loans required for improving their farming and they were also unable to sign contracts with established retailers, which could have positively contributed to growth of these farmers. The two groups of farmers could not register with the KRVWUA in order to get adequate amounts of farming water and this has led to water scarcity and low productivity. In the case of farmers who invaded State land, underdevelopment is deepened by gender based decision making, lack of capital as well as view of farming as an undesirable source of employment.

It is concluded that farmers with private rights to land resources have secure property rights to land resources. However, they remain underdeveloped due to disrespect of their rights, gender based decision making, lack of capital as well as the view of farming as an undesirable source of employment. Farmers at HACOP and those on invaded lands have insecure rights to land resources. This situation has led to misuse and mismanagement of these resources, low investment in farming as well as low productivity among small-scale farmers in upper Kat. One of the requirements for efficient and effective property rights is the acceptability by the communities. In the Kat River Valley, farmers at HACOP and those on invaded State land prefer communal rights for arable land while those with private rights to arable land prefer private rights for such lands. Therefore, policy makers should consider these when distributing land in the area. That is, land reform should focus on granting only the land rights that are preferred by people as it is believed that such rights could positively influence their behaviour and economic performance. Most economic development is the result of private ownership of resources including land and water. It was discovered that private rights to land and water are disrespected, hence inefficient and ineffective in the Kat River Valley. As a result, the government through its relevant ministries should ensure that the property rights to resources are protected and enforced in the Kat River Valley.

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REFERENCES

- Anderson, T.L., 2008. Property Rights and Sustainable Development. Hoover Press, Stanford.
- Brutsch, M.O., 2004. Introduction to fruit and vegetables. Lecture notes, Department of Agronomy, University of Fort Hare, Alice.
- Department of Land Affairs (DLA), 1999. White Paper on Land Policy for South Africa. Pretoria.
- Department of Water and Forestry (DWAF), 1997. White Paper on National Water Policy for South Africa. Pretoria.
- Dlova, M.R., 2001. An Agricultural production in the Hertzog Agricultural Cooperative of the Seymour district in the Eastern Cape, South Africa. Unpublished MAgric Thesis. University of FortHare, Alice.
- Food and Agricultural Organisation (FAO), 2008. Irrigation Technology Transfer in Support of Food Security. [Online]. Available From: <http://www.fao.org/docrep/W7314E/w7314eOa.htm#TopOfpage>. [Accessed on 22/06/08].
- Hacop, 2009. Hertzog Agricultural Cooperative. Meeting-Workshop held in May 2009. Fairbairn, Mpofu District.
- Hill, T. and NEL, E., 2000. An Evaluation of Community-driven Economic Development, Land Tenure, and Sustainable Development in the KatRiverValley. HSRC. Pretoria, South Africa. [Online]. Available from:<http://www.books.google.co.za>. [Accessed on 20/06/08].
- Joubert, B., 2009. Personal Communication. Lecturer in the Department of Agronomy, FortHareUniversity, Alice.
- Leedy, P. D., and Ormrod, J, E.2005. Practical research. Planning and design. Pearson Merrill Prentice-Hall. Ohio. USA.
- Mbatha, C., 2007. A case of institutional investigations in economic research methods with reference to South Africa's agricultural sector. Unpublished PhD thesis, University of Rhodes. Grahamstown.
- Meinzen-Dick, R. and Di Gregorio, M., 2004. Collective Action and Property Rights for Sustainable Development. Research Report 3, International Food Policy Research Institute. Washington, DC.
- Modiba, N., 2009. Personal Communication. Land redistribution official. DLA Provincial Department, East London.
- Motteux, N., 2001. Evaluating People-Environment Relationships: Developing Appropriate Research Methodologies for Sustainable Management and Rehabilitation of Riverine Areas by Communities in the KatRiverValley, Eastern Cape Province, South Africa. Unpublished PhD Thesis. Rhodes University, South Africa.
- North, D., 1990. Institutions, Institutional Change and Economic Performance. CambridgeUniversity. Cambridge.
- O'driscoll JR, G.P. and HOSKINS, L., 2003. Property Rights: The key to Economic Development. Policy Analysis 482, CATO Institute. Washington, DC.
- Patton, M.Q., 1990. Qualitative Evaluation and Research Methods. SAGE publications. London.
- Tlou, T. Williams, C.J. Perret, S. Mosaka, D. and Mullins, D., 2006. Investigation of different farm tenure systems and support structures for establishing small-scale irrigation farmers in long term viable conditions. WRC Report No. 1353/1/06. FortHareUniversity, Alice.
- Van Averbeke, W. M'marete, C.K. Igodan, C.O. and BELETE, A.,1998. An Investigation into food plot production at irrigation schemes in Central Eastern Cape. WRC Report No. 719/1/98. University of FortHare, Alice.

Van Braun, J. 2004. Property Rights and Sustainable Development. Research Report 16, International Food Policy Report Institute. Washington, DC.

Williamson, O.E., 2000. The New Institutional Economics: Taking stock, Looking ahead. *Journal of Economic Literature*, 38 (3): 595-613.

Xola, J., 2009. Personal Communication. Chairperson of HACOP. Fairbairn, Mpofu District.
