Land Consolidation for Sub-Saharan Africa’s Customary Lands – The Need for Responsible Approaches

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SUMMARY

This paper explores the potential of land consolidation for dealing with land fragmentation in Sub-Saharan Africa’s (SSA) customary areas – where the intention is to increase food productivity. In SSA’s customary areas, the use of mechanized farming technology and intensive farming techniques have largely failed to increase food productivity. This is despite foreign investment and the interest of the farmers to do so. In many cases, neither the farm parcel structure nor the land tenure arrangements support the use of, or investment in, mechanized equipment. This implies a strong need to deal with the land fragmentation situation. Although land consolidation is argued as an effective response to land fragmentation; its application in SSA’s customary areas has either not been successful, or it has ended up breaking down the customary land tenure arrangements. We argue that past attempts at land consolidation in SSA’s customary areas have failed mainly due to the transfer of European strategies without adequate consideration for the local factors in the planning and implementation, as well as inadequate land information.

On the first issue, land consolidation strategies in Europe have shown that responsible approaches continually considered the changing local factors. There has been a recent push for more responsible approaches to land reform and planning activities that consider social, cultural, and economic factors that were previously not considered.

On the second issue, one of the basic requirements for land consolidation is a well-functioning land administration system, however, the majority of lands in SSA lack this. The registration of customary land tenure rights has been attempted in many ways, however, the approaches usually do not support subsequent land consolidation activities. The need for new methods of recording land rights has led to suggestions about the potential of adopting crowdsourcing techniques – using trusted intermediaries – that has been termed as Participatory Land Administration.

In this paper, the nature and causes of land fragmentation in customary areas will first be explored, then current approaches seeking to increase farm productivity are reviewed. Analysing the problems of land fragmentation in customary areas, the failure to adapt land consolidation approaches in customary areas in the past, and the potential of participatory land administration as an enabling tool, we conclude that responsible approaches are an important component of increasing food productivity in sub-Saharan Africa.
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1. INTRODUCTION

Food security has received much attention over the past two decades from international bodies, especially with respect to sub-Saharan Africa (SSA). Food productivity is a key component of food security. Attempts to increase food productivity in SSA have mostly taken the form of mechanization and fertilization. However, the farm parcel structure and the land tenure system have largely failed to increase food productivity to the optimum. This shows a need to deal with the land fragmentation situation. Despite being successful at dealing with land fragmentation in Europe and some parts of SSA, attempts at applying conventional land consolidation in SSA’s customary lands have largely been a failure. This paper explores the potential of land consolidation for dealing with land fragmentation in Sub-Saharan Africa’s customary areas – where the intention is to increase food productivity. The paper starts by providing an overview of SSA’s customary land tenure and the nature and causes of land fragmentation occurs in the region. This is followed by an examination of the attempts, both past and present, at increasing food productivity on the region. The provision of land information and the need for responsible approaches, two issues that militate against the use of land consolidation in customary lands are then discussed. The paper ends with a summary and conclusion on the need for responsible approaches to land consolidation as well as the support participatory land administration can provide.

2. LAND FRAGMENTATION, AND SUB-SAHARAN AFRICA’S CUSTOMARY LAND TENURE

Land Fragmentation, is defined as the spatial dispersion of a single farm holding into several distinct parcels over a wide area usually separated by other farms, as well as a high density of land users on a small farm (Binns, 1950; King & Burton, 1982). Van Dijk (2003b) points to two dimensions of land fragmentation – the spatial (physical) aspect, and the tenure (legal) aspect. Based on these two dimensions, four forms of land fragmentation are shown – fragmentation of land ownership, fragmentation of land use, ownership-use fragmentation, and internal fragmentation. Land ownership fragmentation characterizes the situation where several persons own one parcel of land. The second form of fragmentation, land use fragmentation, refers to a high density of land users on a small sized farm. These land users may be tenants or land owners. The third form of fragmentation, ownership-use fragmentation refers to a high proportion of land users being tenants therefore the land owner-land use relationship is broken. The fourth form of fragmentation, internal fragmentation, has received the most attention. This form of fragmentation deals with the shape and size of the parcels as well as the distance between the parcels. A cursory look over the four forms of fragmentation shows the first three dealing with the legal aspect (Error!
Demetriou (2014) observes that Western Europe mostly deals with fragmentation of land use and internal fragmentation. The ownership fragmentation and the ownership-use fragmentation is however a problem in Central and Eastern Europe (CEE), stemming from the privatization process after the fall of communism. This section reviews the nature and causes of land fragmentation in SSA’s customary areas, to provide a background for the need for land consolidation in customary area. Land fragmentation has always been prevalent in the agricultural system of SSA’s customary lands, however its emergence as a problem is a recent occurrence (Braimoh, 2009; Eastwood et al., 2010; Headey & Jayne, 2014; Pingali et al., 1987). Many studies have examined land fragmentation in SSA’s customary areas, with recent studies focusing on the mechanisation of farms (Baudron et al., 2015; Binswanger & Pingali, 1989; Houmy et al., 2013; Nothale, 1986; Thurston, 1987). The combination of two characteristics of customary areas has been identified as the causes of land fragmentation – the customary land tenure system and the agricultural system.

The customary land tenure system is identified as one of the major causes of land fragmentation (Abubakari et al., 2016; Blarel et al., 1992; Migot-Adholla et al., 1991; Takane, 2008). Customary tenure describes the form of land tenure that is based on the customs and traditions of a group of people, reflecting the socio-cultural, and spiritual connection among generations; present, past and future (Asiama, 1981; Elias, 1956). This fuels the belief that the current generation is merely a caretaker, steward, or protector of the land. Two main interests in customary land tenure – the Allodial/Paramount title, and the Customary Freehold interest are identified (Arko-Adjei, 2011; Chimhowu & Woodhouse, 2006). The allodial title is held by the community and managed by its leaders. Customary freehold/usufructuary interest is held by the members of the land owning group based on their inherent right to use any vacant land within the confines of the customary area. Although the modes of acquiring the land include the clearing of an unencumbered land followed by uninterrupted settlement, conquest and occupation, or as a gift or purchase; inheritance is currently the most common means of land acquisition (Arko-Adjei, 2011; Ollennu, 1962; Udo, 1965). The customary freehold is held in perpetuity except for situations of abandonment, forfeiture, or want of successor; in which case, the land reverts to the allodial title holder (Kalabamu, 2000; Ollennu, 1962). The customary freehold is held in perpetuity except for situations of abandonment, forfeiture, or want of successor; in which case, the land reverts to the allodial title holder (Kalabamu, 2000; Ollennu, 1962). The nature of the customary freehold restricts farmers from expanding as contiguous parcels’ holders are unwilling to sell their parcels in order to hold the land for the future generation. This causes land fragmentation because to expand their operations, farmers have to move parcels further away from their primary parcels.

Shifting cultivation, as the predominant agricultural system of customary areas, is another key cause of land fragmentation in the area (Migot-Adholla et al., 1991; Pingali et al., 1987). This system however moves to a more intensive system as the population density grows. Shifting cultivation, which thrives on land fragmentation, involves farming a parcel of land for a period and then leaving it to fallow whilst another area is farmed. The system favours the acquisition of land by forest clearance as it uses the natural fertility of land, small farming equipment as well as small parcels, resulting in low productivity (Headey & Jayne, 2014; Pingali et al., 1987). Since one of the manners of the land use rights acquisition in the customary land tenure system is the clearing of unencumbered land, after using the cleared land, the farmer keeps his use rights to be transferred to his heirs. Shifting cultivation allows for the tilling of the farms one after the other gradually causing land fragmentation. The fragmented parcels is not a problem at this point as population numbers are low, the farmers uses small equipment and it deals with the critical seasonal labour
bottlenecks (Fenoaltea, 1976; Ohene-Yankysa, 2004). As the population increases, more intensive agricultural systems such as the annual cultivation and the multiple cropping farming systems which need intensive weeding and ploughing emerge. Higher returns to labour offered by the industrial and service sectors, as against the farming sector, substantially reduces the available pool of labour that can be hired, resulting in the farm labour being determined by the household size. The labour reduction necessitates the adoption of large farm machinery which is difficult with small, scattered farms. The simultaneous farming of the fragmented parcels with the use of the rudimentary farming equipment still resulted in lower productivity experienced with the shifting cultivation.

Studies into land fragmentation in SSA mainly focused on the spatial of internal fragmentation, with little attention paid to the land tenure fragmentation (Abubakari et al., 2016; Ansoms et al., 2008; Blarel et al., 1992). However, the other aspect of fragmentation – tenure has not been adequately investigated. Van Dijk (2003a)’s attempt to characterise land tenure fragmentation into three categories, does not apply in customary areas. This is because unlike Western Europe, which deals mostly with fragmentation of land use and internal fragmentation, and Central and Eastern Europe (CEE) that deal ownership and ownership-use fragmentation stemming from the fall of communism, customary areas’ land tenure does not fall under any of these categories of land fragmentation because the land tenure system in Europe is mostly individual tenure, where customary areas have a group ownership with individuals having use rights. The nature of land fragmentation in customary lands is described in terms of the relationship between parcel ownership and use in Figure 1. The differences are shown, in a more generalized manner, among the three contexts, where A, B, C, and D, are land owners and 1, 2, 3, and 4, are tenants/users. In Figure 1, three current dominant forms of relationships between parcel ownership and use are presented. The first situation (i) shows where owners use the lands themselves, with the accompanying spatial fragmentation. This is a situation identified in the Western Europe. The second situation (ii) is seen in CEE and Western Europe where the farmlands are leased out. The third situation (iii) is found in SSA’s customary lands.
3. ATTEMPTS AT REDUCING LAND FRAGMENTATION AND INCREASING FOOD PRODUCTIVITY IN SUB-SAHARAN AFRICA

Land consolidation, in various forms, has been successfully used in Europe to curb land fragmentation and increase food productivity, and further develop rural areas. However, majority of land consolidation attempts in customary areas in sub-Saharan Africa have either failed or broken down the customary land tenure in the areas (Coldham, 1978; Nothale, 1986; Takane, 2008; Taylor, 1964). These attempts at land consolidation were predicated on the assumption that land consolidation was needed as an approach to developing the agricultural sector, even though land tenure and agricultural systems did not favour it (Makana, 2009; Swynnerton, 1955; Thurston, 1987). Makana (2009) however notes that land consolidation in some customary areas rather yielded positive results in terms of increase in food production, despite the breakdown of the customary land tenure. Various reasons have been advanced for the success and the failures of these land consolidation schemes. One group attributes the fortunes of the process to the participation of all the parties involved, whilst another is the failure to adapt the land consolidation scheme to the conditions of the customary area (Abubakari, 2015; Taylor, 1964). In Malawi, land consolidation was started in the 1940’s, and although the government was successful in consolidating 81,000 hectares of farmlands, complete with infrastructural improvements, the programme still failed because it was solely run by the colonial government, after being prematurely rolled out without consideration for local factors and conditions (Nothale, 1986). Kenya’s land consolidation was also started by the colonial government; however, a major objective was a complete overhaul of the land tenure system that was to do away with the customary
land tenure and replace it with individual titles, as customary rules were seen to be a militating factor against the benefits of land consolidation and a well-functioning land market (Coldham, 1978). Here the land consolidation planning was participatory, with the plans being drawn by the government officials together with the clan elders. However, the last step of the plan was to grant individual titles, thus effectively ending the coverage of customary land in these areas.

The most recent of the land consolidation activities in Sub-Saharan Africa is from Rwanda, which undertook a new form of land use consolidation. Land use consolidation is the procedure of putting together small plots of land in order to manage the land use in an efficient manner so the land is more productive (Republic of Rwanda, 2005). With the prime objective of increasing agricultural production, the reasoning behind this is to be able to undertake a land consolidation programme that does not alter the land tenure relations (Musahara, Nyamulinda, Bizimana, & Niyonzima, 2014).

Recent approaches to increase agricultural productivity in SSA have largely focused on intensive cropping of farms, use of fertilizers, and mechanized farming (Houmy et al., 2013; Pingali, 2007). These attempts to increase agricultural productivity through mechanization took a prominent place on the development agenda of the governments of many developing countries in the 1970’s and 1980’s. Mechanization at the time was supported by several governments through the direct importation and financing of farm machinery to extend the service to smallholder farmers. The investment in mechanized farming was largely influenced by the donor-driven development strategies that largely characterized the SSA’s economies after their independence and during structural readjustment programmes to increase food productivity. However, during this period of state-led push to mechanization, there was low demand for the farm machinery leading to the failure of these programmes despite the desire of farmers to increase their farm productivity. This led Pingali (2007) to conclude that mechanization is not necessarily a driver for intensifying agriculture. Recently, there has been an increase in the demand for mechanized farming equipment (Baudron et al., 2015; Sims & Kienzle, 2016). Diao et al. (2014) assign the key reason for this as the widespread labour constraints, which are mostly due to rural-urban drift and the demand for labour from non-agricultural sectors on the economy. Mechanization is linked to expansion of farmlands as in other parts of the world (Ansoms et al., 2008; Heltberg, 1998). However, because the expansion of land to a contiguous parcel in customary areas is not easy, the farmers have no option but to find land further away from the farm parcels to expand their farms worsening the land fragmentation situation. This necessitates the consolidation of lands in order allow for the use of the mechanised farming equipment.

4. LAND CONSOLIDATION AND PARTICIPATORY LAND ADMINISTRATION IN CUSTOMARY AREAS

A basic requirement for land consolidation is a well-functioning land administration system with an up-to-date land information system (Vitikainen, 2004). Although many western countries began contemporary registration of their lands in at least 1808 (Based on Napoleon’s Cadastre) and have covered the entire countries with an effective land administration system, this is not the same for Sub-Saharan African countries (UN-Habitat, 2012; Williamson, 1985; Zevenbergen et al., 2013). Land administration processes serves important prerequisites for undertaking land management activities such as land consolidation. However, most sub-Saharan African countries with customary lands undertake land administration processes in order improve land transactions, and create a market economy (Binns, 1953; Zevenbergen, 2004). They attempt to replicate the conventional
style of land registration that favours individual rights, leading to the exclusion of secondary rights holders. The conventional land administration processes are also slow and expensive and do not serve the goal of aiding land management activities. There is therefore the need for innovative processes, approaches, and technologies to remedy the situation.

Land consolidation in this study will be described as the a land management activity that involves all the procedures for exchanging, rearranging, realigning, and expanding farmland parcels in rural areas with the goal of increasing food productivity. Affecting both the tenure and spatial aspects of land, land consolidation requires land information that covers both areas. The mapping customary land boundaries has not been an integral part of customary land management as the boundaries being determined mostly natural such as trees and foot paths, resting on the account of witnesses, though having the ability to map their rights in their own way (de Vries et al., 2015; Zevenbergen, 2006). Responding to calls for new faster, cheaper, and more fit for purpose approaches to mapping SSA customary areas’ lands, tools such as the use of old map documents, high resolution satellite images (HRSI), low altitude remote sensing imagery (LARSI), Global Navigation Satellite Systems (GNSS), and Unmanned Arial Vehicles (UAVs) respectively for boundary surveys (Basiouka & Potsiou, 2012; de Vries et al., 2015; Mumbone et al., 2015).

Recent studies have however looked into the use of Volunteered Geographic Information (VGI), the collecting and editing of digital spatial data by people responding to an open call, for as a fast and cheap method for the collection of land (Goodchild, 2007; Laarakker & de Vries, 2011; McLaren, 2011; Sui, 2008). This method of land administration process is seen to be ideal for SSA as it has a wide coverage of mobile phone network, with the proliferation of cheap smart phones, allowing citizens to view, create, and edit spatial information (McLaren, 2011). This ideal is however challenged in the sense that with land administration being a public administration function, given the numerous legal and standards covering the process, VGI will not be able to achieve its goals (Navratil & Frank, 2013). This has necessitated the need for a governmental partnership, or at least the introduction of a trusted intermediary to influence the process (McLaren, 2013; Zevenbergen, 2006). This has been described by Asiama et al. (2015) as Participatory Land Administration.

5. TOWARDS RESPONSIBLE LAND CONSOLIDATION

Studies have shown that public administration, and more recently land administration need responsible approaches in order to serve their purpose (Bourgon, 2007; Burke & Cleary, 1989; de Vries et al., 2015b). Responsible approaches are described here as practices that that tailor the internal processes and resources towards the specific needs of the user and the beneficiaries through the building of collaborative partnerships with citizens, sharing responsibilities and information, and creating opportunities for citizens to engage in government activities (Bourgon, 2007; de Vries et al., 2015b). Responsible approaches are needed as conventional approaches to land management activities are rooted in western historical notions that do not apply to all areas in the world, most especially customary lands. Responsible approaches align land management activities with the ever-changing requirements, and abilities of individuals, government and the society. Several social, economic, legal, and cultural factors affect a society’s make up, their notion of development, their view of capital, as well as their reaction to the government’s activities. The failure of land consolidation in customary areas failed to consider these factors through a lack of participation and inadequate land information. The adoption of responsible approaches to land consolidation is therefore needed to be able to align the land consolidation approaches to the conditions that exist
on customary lands. There is therefore the need to comparatively study the areas that have already undertaken land consolidation and customary areas, to be able identify their commonalities and peculiarities before a responsible land consolidation approach for customary areas can be developed. The technological advances in land administration that has paved way for participatory land administration to be aligned to customary areas and used as an aid to combat the problem of inadequate land information. This has led to the conceptual framework that builds up an approach to develop responsible land consolidation for customary areas. It is acknowledged that certain characteristics of customary lands cause land fragmentation and that land fragmentation can be reduced by land consolidation. However, attempts to undertake land consolidation on customary lands have largely failed in the face of inadequate land administration processes on customary lands. There is therefore the need to adapt responsible approaches to land consolidation and land administration to adapt land consolidation. Responsible land consolidation will therefore be defined as land consolidation approaches that continuously align the internal processes, technical and administration requirements of land consolidation to the dynamic local societal demands, economic conditions, cultural and legal requirements.

![Conceptual Framework for the Responsible Land Consolidation - From the known to the unknown](image)

**Figure 2:** Conceptual Framework for the Responsible Land Consolidation - From the known to the unknown

### 6. CONCLUSION

Although land consolidation has been successfully undertaken in Europe for the past four centuries, attempts to use it in customary areas have largely failed, with little being known on how to adapt it for customary areas. These failures have mostly been attributed to the land tenure and agricultural systems of customary areas that do not match with those conditions that favour the use of the conventional land consolidation. Although the agricultural system has evolved from the shifting
cultivation system to the multiple cropping system that call for the need for land consolidation, the land tenure system still remains customary, thus making it necessary for further studies to be conducted on how the conventional land consolidation can be adapted. Furthermore, the inadequate land information available necessitates a fast, cheap and more fit for purpose approach to collecting land information for land consolidation. This paper concludes that responsible approaches need to be developed in order to adapt land consolidation to customary areas.

7. REFERENCES


**BIOGRAPHICAL NOTES**

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