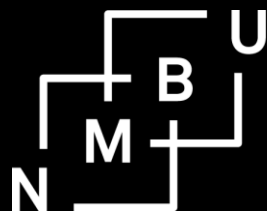


Policies for Improved Food Security: - The Roles of Land Tenure Policies and Land Markets

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Centre for Land Tenure Studies Working Paper 9/17

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Abstract

This chapter provides an overview of what we know about farm size distributions, the emerging land markets, the role of tenure systems, tenure reforms and land policies in shaping the distribution of increasingly scarce land resources. The primary focus is on Africa while making some comparisons with Asia. Climate risk and change have serious implications for household vulnerability and food security. While there is a need to absorb further population growth in rural areas, a rapid rise in rural-urban migration is inevitable. Careful land use planning and tenure reforms are needed to smooth the transition towards more intensive land use.

Key words: Small farms, food security, land tenure, land markets, land governance.

JEL codes: Q15.

1. Introduction

Land scarcity is growing in many parts of Africa and land markets are emerging and becoming more active (Holden et al. 2008). Population growth also put increasing pressures on customary tenure systems. The sharp increase in the demand for land following the hikes in food and energy prices in 2007-2010 revealed weaknesses in land tenure systems and policies (Deininger et al. 2014). The increased investor demand for land created fears that vulnerable groups and smallholders would lose their land rights and become more food insecure (de Schutter 2011;

¹ This chapter is written for the European Commission for a book to be published by Springer on The Role of Smallholder Farms in Food and Nutrition Security. The author takes full responsibility for the content.

German et al. 2013). This chapter provides an overview of what we know about the emerging land markets in Africa, the role of tenure systems, tenure reforms and land policies in shaping the distribution of increasingly scarce land resources, and draws implications for future farm size distributions and livelihood opportunities for the current large and growing rural populations in the continent. Rural-urban and international migration are expected to grow rapidly and management of this flow of people will have to be a central element of more holistic tenure policies. Provision of food at affordable prices for the growing rural and urban populations facing climate change with more turbulent weather conditions is a growing challenge.

There are signs of a more rapid transformation of the agricultural sector in many African countries with high economic growth, infrastructure investments and new technologies. New technologies have also sharply reduced the costs of formalization of land rights. Land tenure reforms using low-cost methods are scaled-up in a number of countries and appear to have contributed to enhanced tenure security and better functioning land markets. However, the devil is in the detail of land tenure reforms in terms of specific details, interpretation and implementation. These can have long-term impacts on the distribution of power, land resources, economic performance, welfare and welfare distribution.

Reforms that enhance land rental markets appear important as a tool to facilitate a transformation towards more productive commercial agriculture that is capable of feeding the growing urban populations in Africa. The rapid urbanization process in some areas puts high pressure on tenure systems and good governance is extremely important to minimize conflicts and facilitate smooth transition. The recent political unrest in Ethiopia was also partly triggered by the need to expand the borders of Addis Ababa and was met by protests by those losing their land with minimal compensation offered compared to the potential value of the land. Rapid economic transformation and shocks also cause rapid social changes and stress that can ignite social unrest and political conflicts that threaten political stability.

I aim to assess the following research questions: What are the implication of population growth and increasing land scarcity for livelihood opportunities and food security in Africa? Will land markets stimulate land access for the land-poor? Will tenure reforms benefit small farmers or be to their disadvantage?

Population growth, farm size distribution and food security

According to HLPE (2013), there was a general decrease in average farm size in Africa and in China during the period 1930-2000. Using data from 2000 for 81 countries they find that 73% of the farms were smaller than 1 ha and 85% were smaller than 2 ha. In 14 African countries 80% of the farms were smaller than 2 ha and these utilized 25% of the agricultural land. Masters (2013) indicates that the trends towards smaller holdings has changed in Asia in recent years. Jayne et al. (2014) find that farm sizes are shrinking in land-constrained countries in Africa, such as Ethiopia, Kenya, Malawi, Nigeria, Rwanda and Uganda, but are increasing in some more land abundant countries, such as Tanzania and Zambia in Africa in recent years.

In low-income countries, we may distinguish two main trends in the farm size distribution. The first trend that is affecting the majority of densely populated rural areas, is an increasing pressure on land due to population growth and absorption of more people on the land. This trend is strongest in Sub-Saharan Africa where it is predicted that the rural population will increase by 60% from 2015 to 2050 (United Nations 2014). This leads to continued fragmentation into smaller farm sizes and is partly driven by the dominant inheritance rules where land tends to be split among children of the parents.

How far this fragmentation process will go in different environments will depend on what is a minimum farm size for an acceptable rural livelihood given the combination of farm productivity and alternative sources of income that are available to those living on the farm. What is an acceptable rural livelihood depends on cultural norms as well as alternative and complementary economic opportunities. A rural livelihood may potentially become a poverty trap (“small is ugly”) if population growth in such areas is stronger than the productivity growth and the costs of escaping the locality are too high and the known alternatives elsewhere are not considered attractive alternatives.

Severe shocks to such a poverty-trapped vulnerable locality may cause desperate migration and/or local disaster. Covariate shocks are more serious in isolated areas because they are associated with large endogenous price changes that add to the costs of consumption smoothing. Households that may be net sellers of food under favourable climatic conditions may become net buyers of food in drought or flood years. Poor market integration causes loss-price effects for such households as they have to sell their surpluses in good years at very low prices and buy their deficits at very high prices in years with covariate weather shocks. If they keep livestock as a means of protecting themselves against such shocks, livestock prices

also tend to fluctuate in their dis-favour, as they may have to sell livestock at low prices in order to buy food at a high price in shock years. When they have recovered after a shock, and want to rebuild their livestock, livestock prices are again likely to be high (Holden and Shiferaw 2004).

The trend towards fragmentation into smaller farms is also associated with an increasing share of rural farm households becoming deficit producers of staple food. Climate change may contribute to larger risks and uncertainty in agricultural production and enhance the vulnerability of smallholder farmers who may become even more food insecure. Investments in infrastructure and market integration may contribute to reduce price fluctuations due to covariate risk and technological improvements may contribute to adaptation and reduction in production risks. However, provision of food to the rapidly growing urban populations will require large increases in agricultural production and in marketed surpluses.

There are likely to be diminishing returns to labour as the labour/land ratios are increasing when farm sizes get very small. An inverse farm size-land productivity relationship (IR) has frequently been observed within smallholder agriculture and this relationship appears not to be only due to land quality differences and measurement error (Carletto et al. 2013). Labour and land market imperfections are at the heart of the IR. Moral hazard causes hired labour not to be a perfect substitute for family labour. In combination with seasonality and search costs in the labour market, there is a tendency that higher labour/land ratios on farms are associated with more intensive labour use per unit land and this may also be associated with lower shadow wages, and thus higher output per unit land (land use intensification). However, this may also be affected by the access to other productivity-enhancing inputs than labour. If the most land-poor but labour-rich have limited access to input markets and improved technologies, or need access to credit in order to afford to buy inputs, they may be too poor to invest and to be efficient (Holden and Binswanger 1998). There is also a risk that their labour-intensive practices contribute more to soil mining or land degradation if they do not replace lost nutrients or conserve the land properly (Shiferaw and Holden 1998).

With continued rural population growth and expansion of super-small farms, push- rather than demand-driven outmigration is likely to increase over time and employment creation for such migrants will become critical for economic development and social stability. The stochastic nature of shocks is also likely to cause stochastic migration flows unless there is institutional and governance capacity to cushion the effects of such shocks.

A change in inheritance rules may help to prevent fragmentation into smaller farms e.g. by requiring that only one of the children in the family can inherit the land to ensure the farm size remains intact. Setting of minimum farm sizes for legal registration may be another way to attempt to stem this trend but whether and how it will work is an empirical issue. Facilitation of consolidation into larger farm sizes is another option. The success of such policies will depend on the incentives and the degree of compliance. There are few studies that have assessed the costs and benefits of such land fragmentation. A study by Ali and Deininger (2015) in Rwanda, the most densely populated country in Africa, where the average farm size is 0.72 ha (on average split in four parcels) is not sufficient to meet household food needs. The national land policy prohibits splitting of farms in smaller than 1 ha units and advocates land consolidation and mobilization of land for investors. The study finds, however, a strong IR when controlling for household-specific shadow wages and a strong ability of small farms to absorb labour in a productive way while the IR disappears when market wages are used to calculate area-based profits. A policy that generates employment and higher wages outside agriculture is likely to be better than a forced consolidation policy that may do more harm than good in such a context.

Expansion of medium sized farms

The other trend of significant importance is the expansion of medium size farms observed in e.g. Ghana, Kenya, Malawi and Zambia (Anseeuw et al. 2016; Sitko and Jayne 2014; Jayne et al. 2016). This trend is associated with urban expansion and land acquisition by African elites. The trend is strong enough to threaten small farm development and reduce land access for land-poor smallholders. This expansion may have been boosted by rising energy and food prices and facilitated by weak land governance and tenure systems. It is uncertain whether customary tenure reforms will hinder or further boost this development through privatization of land rights and land market development. While some earlier studies in East Africa did not reveal that land sales contributed to a more skewed land distribution (Holden et al. 2008), more recent studies point in direction of a more skewed land distribution because of the expansion of large and medium sized farms in combination with further sub-division of small farms (Jayne et al. 2016).

Whether this increase in medium sized farms will lead to increased land productivity and improved food security overall, depends on a number of factors. If those taking over or buying such farms are doing it to establish productive agriculture and they possess the necessary skills, social networks and other forms of capital, this may enhance efficiency. If they, on the other

hand, do it to establish a rural resort for retirement and as a tax shelter, the outcome may be reduced land productivity. Anseeuw et al. (2016) found that a large share of the owners of medium sized farms in Malawi were urban dwellers and part-time farmers. Sitko and Jayne (2014) found a similar situation in Zambia. Their studies indicate that the rural growth linkages become weaker with this kind of change in ownership structure as more of the income remains in urban areas.

There is a shortage of good studies that carefully compare the productivity on medium versus small farms. In general there are few economies of scale in agriculture in low income countries (Binswanger and Rosenzweig 1986). Anseeuw et al. (2016) find that the share of unutilized land increases with farm size in Malawi. While the policies in Malawi favoured estate agriculture up the early 1990s by prohibiting smallholder tobacco production among others, the removal of these policies caused a rapid expansion of smallholder tobacco production while many tobacco estates put more land under fallow. The relatively low utilization of estate land in the country contributed to a “market assisted land redistribution” project providing 15000 landless or near landless households farmland and this project appears to have given positive impacts (Simtowe et al. 2013). Ali et al. (2015) find on the other hand that medium sized farms have higher land productivity than small farms in Ethiopia. Farms in the range of 10-20 ha had the highest land productivity for most crops. However, the data were not good enough to control for land quality or labour use intensity, which potentially could be correlated with farm size. They found that commercial farms had on average one permanent job per 20 ha and some additional temporary jobs and this is far below smallholder agriculture in the country where a family farm may only be 1 ha and thus possibly absorbing 20x more labour per unit land. With about 80 million of the 100 million population in Ethiopia still engaged primarily in smallholder agriculture and with a population growth of about 2.6 million per year, providing alternative employment to transform smallholder agriculture to commercial agriculture is not a trivial challenge.

A conversion from small farms to larger (medium sized) farms will require a livelihood solution for those populations that have to give up their small farms in order to provide the space for larger farms. If those populations can be provided attractive better livelihoods in urban areas and the non-farm sector, transformation of small farms into medium and large farms may be socially optimal, and be consistent with what has happened in many western countries. It could lead to a drastic reduction in rural poverty. However, it would have to be driven by a very strong economic growth outside the agricultural sector. It may be too

optimistic to hope for this in all developing countries with large rural populations concentrated on small farms although economic growth has increased in many African countries over the last two decades. On the other hand, it may be less challenging to establish medium and large farms in areas with low population density, but it will also depend on the traditional land rights and existence of customary tenure systems.

In China, rural wages have started to increase in recent years and this has also triggered a process there towards larger farm sizes. However, it took many years of strong economic growth even in China with its population control policy, to eliminate the surplus labour in rural areas to the extent that rural wages have started to rise due to labour scarcity in these areas. It may take even longer to see such an effect in countries with similar economic growth and larger rural population growth.

Increasing landlessness and migration

Malthus is still spooking behind. There is a danger that poor smallholders become too poor to invest and unable to maintain the productivity of the land on which they subsist (Holden and Binswanger 1998; Shiferaw and Holden 1998), unless systematic actions are taken to promote sustainable intensification of smallholder agriculture. While there are many examples of success stories (Boserupian pathways), and evidence that promotion of tenure security enhances incentives to conserve land, secure tenure rights is only a necessary but not sufficient condition to ensure sustainable land use on smallholder farms (Holden et al. 1998; 2009). Comprehensive tailor-made policies are needed to handle diverse and densely populated rural livelihood systems. Whether diversification, intensification and growth can be facilitated within the economy, or outmigration or strict family planning to curb population growth are needed, is an empirical issue. China succeeded with the household responsibility system, population control and export oriented industrialization policies and rural wages and farm sizes have started to rise in recent years. For more densely populated and land constrained African countries where economic growth has picked up, rural population growth is still high and keeps on concentrating on small farms. This represents a massive push towards the minimum bearable farm size and a rapidly growing number of youth are pushed over the cliff and into landlessness. Growing national and international youth migration is an in-evident outcome and a huge challenge.

In Asia landlessness has in the past been closely associated with poverty due to the importance of land as a source of income in rural areas (Pakistan: Anwar et al. 2004; India: Meenakshi and

Ray 2002; The Philippines: Balisacan 1993). However, landlessness may also be an indicator of growing diversification in rural economies and the finding in some countries that there is poor correlation between poverty and landlessness shows that landlessness also can be a sign of better opportunities (Lanjouw 2007). Ravallion and van de Walle (2008) found that recent increases in landlessness in Vietnam are not associated with higher levels of poverty. The differentiation in rural areas of Vietnam after strong economic growth appears to have reached a stage where landlessness is de-coupled from poverty.

Landlessness is growing rapidly in densely populated poor agrarian economies and the landless may in such economies be among the poorest of the poor. In undifferentiated land-constrained rain-fed agriculture, it may even be very hard to survive as a landless as there may be very few jobs available that provide a livelihood throughout the year unless one has some specialized skills or education. Outmigration may thus be the best and only option for the landless in such areas that have passed a certain threshold level of population density (Bezu and Holden 2014). While this may occur quite suddenly in some egalitarian societies with equitable land distribution, it may occur more gradually in areas with more variation in farm sizes. Climatic and other forms of covariate shocks may also trigger massive migration within short periods of time unless organized actions are taken to buffer such shocks. Migrants have to leave immobile assets including their land behind. Without a compensation for such immobile assets and inability to return, they are likely to be extremely poor and also to be very vulnerable wherever they go. Whether it is better that these asset values stay behind with the remaining rural population or goes with the migrants as a capital to help them start a new livelihood, is also an empirical issue. Extreme rural poverty and better-off urban livelihoods and adequate job opportunities where migrants go may point in direction of retaining the asset values in the rural sending areas. This implies that e.g. the child in the family that remains behind and takes over the family farm does not need to compensate her/his siblings that have to migrate and do not inherit any of the immobile assets.

On the other hand, with a functioning rural land sales market, the whole family may decide to sell its immobile assets. While this may help migrants to get a start-up capital, there is also a risk that it can lead to distress land sales, increasing landlessness and accumulation of land in the hands of the wealthy (Holden et al. 2008; Jayne et al. 2016). In countries with powerful urban elites that influence land governance through law formation or law violations, the risk is higher that land tenure reforms and land markets contribute to more in-egalitarian land distribution in a way that also makes poverty worse.

The traditional way in many developing countries to prevent landlessness in rural areas has been through inheritance to share the land among the children. There has even in some countries been a constitutional right to access land for free for rural residents as they become old enough to establish their own family (e.g. Ethiopia). Customary tenure systems have also had such rules for land allocation to clan members. Such allocation mechanisms function only up to the point where land scarcity creates a gap between demand and supply of land. In Ethiopia they have recently started to allocate rehabilitated communal lands to groups of landless youth. Providing them temporary licences to extract mineral resources is another approach to help them generate starting capital for another business (Holden and Tilahun 2017).

Land market development

Land scarcity and the existence of a price for land where there is a willing seller and a willing buyer is the fundamental requirement for a land sales transaction and a land market to occur. Such land sales transactions can lead to more productive land use if the buyer primarily aims to use the land for productive purposes. However, if s/he was able to buy it under distress conditions for the seller and thus obtained it at a very favourable price, the desperate seller may under the circumstances have been forced to sell the land at a price below her/his own long-term value of the land. It is thus not necessarily the case that land sales transactions transfer land from less productive to more productive farmers. But under normal conditions where the purchase is for productive purposes, buyers of land may also turn out to be more productive users of the land than those who sold the land. However, output price fluctuations, like the high energy and food prices during the period 2007-2011 also triggered high demand for land while the later unexpected fall in energy prices have affected the land use efficiency on land obtained by the investors who typically obtained large areas of land under long-term lease arrangements. Planting of energy crops is no longer profitable. Demand for land for food production by smallholder farmers is a much more inelastic.

Whether the development of a land sales market leads to a concentration of land in the hands of the few and growing landlessness, is also an empirical question. Unequal land distributions are more often the outcome of political processes rather than redistributions through the land sales market, however. Some studies in Africa indicate that land purchases are made by land-poor but capital-rich persons and do not necessarily lead to a more in-egalitarian land distribution (Deininger and Mpuga 2008). This implies also that most owners of small farms are willing to sell their farms and it may not be realistic in the foreseeable future to see a transition from small farms to medium sized farms through an active land sales market in most

African and many Asian countries. A recent study in Ethiopia (Holden and Bezu 2016) revealed a strong resistance against opening the land sales market and very high and increasing Willingness-to-Accept prices for land.

A trigger towards the development of larger farm sizes appears to be the rural wages. When the cost of labour in agriculture increases, we start to get a substitution into more capital-based production as mechanization becomes both labour- and cost-saving. There are limited or no economies of scale in most forms of tropical agriculture (Binswanger and Rosenzweig 1986; Binswanger et al. 1995) and hired labour is not a perfect substitute for family labour, thus giving family-based production a comparative advantage. Economies of scale exist in processing and marketing and some forms of land development such as investment in irrigation, drainage, and building of roads and that is where large private companies can play an important role (Byerlee et al. 2015). However, even in land abundant frontier areas the most successful land development projects have involved subdivision of land for family farming (Byerlee et al. 2015).

In relation to the commercialization of agriculture and development of the supply chain for agricultural products, such as the expansion of supermarkets, contract farming by smallholder producers has in many cases been quite successful. This is an area with a lot of scope for further development and can be an avenue to improve food security in a more urbanized world. In Asia, with the economic development a Westernization of the diets and a diversification from strongly cereal-based diets towards much more diversified diets are observed, and obesity is taking over as the biggest nutrition related problem (Pingali 2007; Popkin et al. 2012). Development of vertically integrated supply chains is part of this transformation, putting more pressure on the smallholder sector to commercialize, diversify and specialize the production. There are more scale economies in some of these specializations, such as poultry, and this can lead to larger farm sizes (Pingali 2007). More stringent quality standards can also push in the same direction but this is questioned and smallholders are found to supply a large share of the products in such supply chains (Reardon et al. 2009). Diversification of the demand by wealthier consumers is also the key to high-value production and on-farm processing of such products. Farmers' markets in urban areas supplying high quality farm products is also a way to raise returns to land and labour and to intensify production. This is a trend in developed countries and is likely to expand also in developing countries with the growth of a wealthy middle class.

Secure and well-defined property rights and well-functioning land markets are essential to create the incentives for investments into new types of production and obtaining more optimally sized production units. While Africa is lagging behind Asia, it is likely to follow a similar evolutionary pathway of diversification and intensification in smallholder agriculture as urbanization expands and creates new market opportunities.

Land rental markets have been shown to be pro-poor in many contexts (Holden et al. 2008). Landless or near landless people may access land through renting if they have the necessary complementary resources to utilize the land efficiently. The land rental market can also transfer land from landlords that are poor in non-land resources and to tenants that are rich in non-land resources relative to land resources. Reverse tenancy systems with poor landlords and relatively wealthier tenants are dominant in Ethiopia, Eritrea, Madagascar and Tunisia. A general finding has also been that land rental markets transfer land from less efficient to more efficient producers (Holden et al. 2008; 2013).

In areas where sharecropping is dominant and Marshallian inefficiency prevalent, the efficiency-enhancing effect of land renting is less clear. Otsuka (2007) associate Marshallian inefficiency with Land-to-the-tiller reforms that have enhanced tenure insecurity of landowners in several Asian countries. Poor landlords have also been found to have weak bargaining power and therefore to be less able to choose efficient tenants or enhance their production efficiency in the reverse tenancy system in Ethiopia (Holden and Bezabih 2008; Ghebru and Holden 2015). Land rental contracts among kin partners have sometimes been associated with higher land use efficiency and in other cases with lower land use efficiency (Sadoulet et al. 1997; Kassie and Holden 2007; Ghebru and Holden 2015).

One may ask what the added value of land rental markets is in rural areas. The basic neoclassical farm household model (Singh et al. 1986) contained no land market and yielded no inefficiencies. It is when land is scarce and there are imperfections in non-land markets that reallocation of resources through the land market can give efficiency gains by reducing overall transaction costs and enhancing resource use efficiency.

How much agricultural land is re-allocated through land rental markets varies substantially across countries. Land markets are likely to be non-existent or very thin in land abundant countries. A skewed distribution of land relative to non-land resources, low elasticity of substitution among factors of production, and low transaction costs in land relative to non-land factor markets will increase returns to participation in the land rental market to achieve

balanced resource portfolios for production. An active land rental market is also likely to reduce the incentives to sell land. It reduces the cost of ownership and enhances the flexibility as management can be passed on to tenants while retaining land values that may be expected to increase over time with increasing land scarcity and economic development. It also reduces the need for capital in relation to accessing land. The rental market's advantage of reducing the need for credit for buying land may be more important than the usefulness of land as collateral in developing countries where the sales market for land does not work well enough to favour the use of land as collateral. De Soto (2000) emphasized the need to formalize property rights in order to "make dead capital alive" through linking the credit and the land market by collateralizing land. In developing agrarian economies, it is rather land rental markets that can reduce capital needs and enhance land use efficiency and growth in rural areas. The financial crisis also revealed that too strong links between the credit and capital markets, by too much borrowing with security in immobile assets, can become the Achilles heel in the economy and contribute to economic instability. Rental markets for immobile assets can on the other hand help to create stability and reduce the need for distress sales of such assets.

Air B&B and other forms of short-term rentals are utilizing modern information technologies (internet) to reduce dramatically the transaction costs and information asymmetries in these markets. Transaction costs are still very high in land rental markets in developing countries but there is scope for reducing these transaction costs and information asymmetries through better registries and information sharing mechanisms that enhance transparency and accountability in tenure arrangements. This can reduce search, monitoring and enforcement costs of agents and government administrations.

Land tenure reforms, tenure security and food security

While classical land titling has given very limited or very skewed benefits in favour of the wealthy and well-connected in many developing countries (Jacoby and Minten 2007; Benjaminsen et al. 2009), low-cost tenure security enhancing tenure reforms in Ethiopia and Rwanda appear to have given significant positive effects in terms of enhanced investments in soil conservation (both countries) and tree planting (Ethiopia), enhanced land productivity (Ethiopia) and land rental market activity (Ethiopia) (Deininger et al. 2008; 2011; Holden et al. 2009; 2011; Ali et al. 2014). In Ethiopia there is also evidence of improved food security and child nutrition, particularly for female-headed households (Holden and Ghebru 2013; Ghebru and Holden 2013) while in Rwanda the land access for legally married women has improved and tenure security and land investments have increased for female-headed

households (Ali et al. 2014). This is also likely to have had positive effects on food security in the case of Rwanda, although this has not been investigated by the researchers.

Maxwell and Wiebe (1999) and Holden and Ghebru (2016) have reviewed the literature relating land tenure and land tenure reforms with food security in developing countries. They demonstrate the complexity of such links and that the literatures on tenure issues and food security largely have been separate fields of inquiry. Lawry et al. (2017) made a systematic review of studies of impacts of land tenure reforms on investment and agricultural productivity and, after reviewing 27000 studies, they ended up with only 20 holding high quality impact assessment standards. Ten of these were in Africa, five in Ethiopia. The external validity of these few high quality studies may be questioned, given the diversity of tenure systems and their complex dynamics. There is clearly a need for more high-quality studies. But for policy purposes we still need to draw on lower quality studies. The urgency of issues limits how much we can rely on experimental designs that the “randomistas” have argued to be the way forward to promote economic development in developing countries. Such experiments are not a panacea solution in all important developing country contexts where interventions are needed. Tenure systems are complex and important other forms of contextual and spatial heterogeneity. We therefore need to pay careful attention to the underlying causal mechanisms and need structural models to capture more of the complexity, longer-run impacts and chain reactions related to tenure systems and tenure reforms (Deaton 2010).

There is clearly a need for more studies of the relationship between land tenure and food security in different contexts. The sharp increases in the demand for land related to the energy and food price boom in 2007-2010 revealed that investors obtained more land where tenure systems were poorly developed and population densities were low (Deininger and Byerlee 2012). However, there are people with customary land rights also in such areas although their rights may not have been recognized by statutory law. Within the complex area of customary tenure more attention is needed towards preventing marginalization of population groups with limited political influence as their food and livelihood security can otherwise be threatened. While there is an urgent need to strengthen land governance in many countries, there is also a high risk that such reforms lead to elite capture given the trend in land distribution, converting customary land to state land for allocation to investors, observed in a number of African countries (Jayne et al. 2016).

Important factors for whether customary land and smallholder farmers are protected from land acquisitions by investors are; a) the extent to which customary land and land rights of holders of customary land are recognized in statutory law; b) whether it is possible to convert customary land to state land and put it under long-term lease to investors; c) whether customary land that has been converted and transferred to investors goes back to customary land at the end of the lease; d) whether traditional leaders have the freedom to transfer customary land to investors; and e) whether the state can expropriate customary land for allocation to investors, possibly without any need to compensate those that have lost the land.

Alden Wily (2015) shows how a tenure reform in Côte d'Ivoire threatens to eliminate the land rights of people who have not been able to obtain a land title within a specific date. Other countries have attempted to integrate customary tenure systems into statutory law, e.g. by establishing customary tenure titles or certificates. Malawi is one of the countries now attempting this with its new Customary Land Bill that was passed in the Parliament in 2016. Other countries attempting formalization of customary land rights in this way include Tanzania, Uganda and Zambia. The implementation has been slow in Uganda while there are some anecdotal evidence of positive effects on tenure security and reduction of disputes in Zambia.

The transition from common property to individual land rights has been seen as a necessary part of the evolution of land rights with growing land scarcity and there has been a tendency to associate customary tenure with common property. However, individual and household use rights to land can be quite strong in customary systems although sales rights often are restricted. I was surprised myself when I studied land use in northern Zambia in low population density areas with long fallows and shifting cultivation in the 1980s that even the long fallow woodland areas had borders and belonged to individual households.

Alienation of the less influential happens also in customary systems and women are particularly exposed in male-dominated customary systems (Peters 2004). Chiefs are usually in a dominant position in such systems and lack of transparency and accountability has prompted demands for customary tenure reforms and establishment of more transparent and accountable land administrations and land conflict resolution systems. However, this could also be seen as a power struggle between a rural elite (traditional leaders) and an urban elite advocating for land tenure reform and being in a position to take advantage of such a reform. The extent to which the old system or the reform process better will protect the interests of the poor and vulnerable is an empirical issue. International organizations in this context have an important role to

safeguard the interests of the poor as well as to support reforms that contribute to economic and social development. Good systems for monitoring and impact assessment are essential and require specialized expertise that goes beyond the capacity of each country to have.

Provision of food security and tenure security for the rapidly growing urban populations is among the most demanding tasks ahead. Urban expansion is inevitable and may take place on high-potential agricultural land leading to irreversible land losses for food production. Better long-term land use planning is crucial to optimize the use of scarce land resources and minimize production and transportation costs and greenhouse gas emissions. Good governance with emphasis on forward-looking legal and administrative systems may easily be hijacked by short-term political interests and lead to conflicts that threaten social stability and welfare. “Random walk” development of urban areas may have unforeseen future costs. This may particularly be the case in developing countries facing rapid population growth and urbanization. Urban planning emphasizing vertical rather than horizontal expansion can reduce the pressure on surrounding land areas. Providing adequate housing, other social services and jobs to the young migrants is essential for inclusive development. Low-cost rental housing and labour intensive construction businesses can help on the transition to urban environments for many youth. The Ethiopian youth group model is an interesting approach that may be suitable in other countries as well and may work both in rural and urban settings (Holden and Tilahun 2017). It mobilizes and organizes youth in rural as well as urban areas in ways that enhances environmental conservation, resource utilization, entrepreneurship, employment and infrastructure development.

Conclusions

Population growth, land degradation, climate change, urban expansion and changing diets contribute to increasing land scarcity and strong demands for land use intensification to meet future food demands. Uncertainties in terms of timing and severity of agro-climatic and other shocks, including social and political instability, threaten vulnerable developing economies and their systems of governance.

A rapid transformation from rural to urban livelihoods for many with rural origin is needed while still facilitating absorption of more people on small farms in rural areas in the years to come in developing countries. This is especially the case in Africa which still has large rural populations that continue to grow at a high rate. This will require a formidable land use intensification through push and pull mechanisms. Tenure security, well-defined property

rights and well-functioning property markets are essential for this transformation in order to stimulate investment on the land, diversification and intensification of production, provision of employment opportunities, affordable housing and other social services in rapidly growing urban areas.

Short-term as well as longer-term rental land and housing markets are essential to reduce the costs of transformation, to buffer shocks and facilitate social mobility. Good and competent governance that facilitates the transformation through legal provision, transparent and accountable land administration will be crucial. National governance systems will need support from international organizations to build their competence and exchange ideas and experiences, do careful research and develop better evidence-based policies.

New technologies for land registration, mapping, information dissemination, matching of suppliers and demanders in property markets have great potential but there is also a high risk of misuse of such information by political elites and rent seekers. This is particularly the case in urban and peri-urban land markets where property values are increasing very fast and there can be huge rents up for capture through legal as well as illegal processes. Small farms on the fringe of urban areas may see their land being expropriated while receiving minimal compensation if any. The assignment of rights and the functioning of property markets and government regulation, including property taxation, in these urban and peri-urban areas will be immensely important for the future degree of inequity in wealth.

Small and even smaller farms will persist in rural areas in densely populated developing countries with high population growth. There is a high risk that rural poverty traps can grow in space and severity and trigger destitute migration in waves of growing scale. The migration flow from Africa and the Middle East and into Europe over the last couple of years is only the beginning. Investment in smallholder agriculture and political stability in Africa can be one of the best ways to reduce such uncontrolled migration.

References

- Alden Wily, L. (2015). Time to Rethink? A Critique of Rural Land Law in Côte d'Ivoire. March 2015. FERN Office UK and Brussels. www.fern.org
- Ali, D.A. and Deininger, K. (2015). Is There a Farm Size–Productivity Relationship in African Agriculture? Evidence from Rwanda. *Land Economics* 91(2), 317-343.
- Ali, D.A., Deininger, K. and Goldstein, M. (2014). Environmental and gender impacts of land tenure regularization in Africa: pilot evidence from Rwanda. *Journal of Development Economics* 110, 262-275.

- Ali, D.A., Deininger, K. and Harris, C.A.P. (2015). Using national statistics to increase transparency of large land acquisition: evidence from Ethiopia. *World Bank Policy Research Working Paper*, (7342).
- Anseeuw, W., Jayne, T., Kachule, R. and Kotsopoulos, J., 2016. The quiet rise of medium-scale farms in Malawi. *Land* 5(3), 19.
- Anwar, T., Qureshi, S.K., Ali, H. and Ahmad, M., 2004. Landlessness and rural poverty in Pakistan [with comments]. *The Pakistan Development Review*, 855-874.
- Balisacan, A.M., 1993. Agricultural growth, landlessness, off-farm employment, and rural poverty in the Philippines. *Economic Development and Cultural Change* 41(3), 533-562.
- Benjaminsen, T.A., Holden, S., Lund, C. and Sjaastad, E. (2009). Formalisation of land rights: Some empirical evidence from Mali, Niger and South Africa. *Land Use Policy* 26(1), 28-35.
- Bezu, S. and Holden, S., 2014. Are rural youth in Ethiopia abandoning agriculture? *World Development* 64, 259-272.
- Binswanger, H.P. and Rosenzweig, M.R. (1986). Behavioural and material determinants of production relations in agriculture. *The Journal of Development Studies* 22(3), 503-539.
- Binswanger, H.P., Deininger, K. and Feder, G. (1995). Power, distortions, revolt and reform in agricultural land relations. *Handbook of Development Economics* 3, 2659-2772.
- Byerlee, D., Masters, W. A., and Robinson, D. (2015). From Land Grab to Land Development: The Past and Potential of Private Investment in Frontier Agriculture. Paper presented at the World Bank Land and Poverty conference, 23-27 March 2015, Washington, DC.
- Carletto, C., Savastano, S., and Zezza, A. (2013). Fact or artifact: the impact of measurement errors on the farm size–productivity relationship. *Journal of Development Economics* 103, 254-261.
- Deaton, A. (2010). Instruments, randomization, and learning about development. *Journal of Economic Literature* 48(2), 424–455.
- Deininger, K. and Byerlee, D. (2012). The rise of large farms in land abundant countries: Do they have a future? *World Development* 40(4), 701-714.
- Deininger, K. and Mpuga, P. (2008). Land Markets in Uganda: What is Their Impact and Who Benefits? In: Holden, S.T., Otsuka, K. and Place, F.M. (Eds.), *The Emergence of Land Markets in Africa: Impacts on Poverty, Equity, and Efficiency*. Washington DC: RFF Press/Routledge, pp. 131-155.
- Deininger, K., Ali, D.A. and Alemu, T. (2011). Impacts of land certification on tenure security, investment, and land market participation: evidence from Ethiopia. *Land Economics* 87(2), 312-334.
- Deininger, K., Hilhorst, T., and Songwe, V. (2014). Identifying and addressing land governance constraints to support intensification and land market operation: Evidence from 10 African countries. *Food Policy* 48, 76-87.
- Deininger, K., Ali, D.A., Holden, S. and Zevenbergen, J. (2008). Rural land certification in Ethiopia: Process, initial impact, and implications for other African countries. *World Development* 36(10), 1786-1812.
- de Schutter, O. (2011). How not to think of land-grabbing: three critiques of large-scale investments in farmland. *The Journal of Peasant Studies* 38(2), 249-279.
- de Soto, H. (2000). *The mystery of capital: Why capitalism triumphs in the West and fails everywhere else*. Basic books.
- German, L., Schoneveld, G. and Mwangi, E. (2013). Contemporary processes of large-scale land acquisition in Sub-Saharan Africa: legal deficiency or elite capture of the rule of law? *World Development* 48, 1-18.

- Ghebru, H. and Holden, S.T. (2013). Links between Tenure Security and Food Security: Evidence from Ethiopia. CLTS Working Paper No. 2/2013. Centre for Land Tenure Studies, Norwegian University of Life Sciences, Ås, Norway.
- Ghebru, H.H. and Holden, S.T., 2015. Reverse-share-tenancy and agricultural efficiency: Farm-level evidence from Ethiopia. *Journal of African Economies*, 24(1), 148-171.
- HLPE (2013). Investing in smallholder agriculture for food security. A report by The High Level Panel of Experts on Food Security and Nutrition (Vol. 6). Rome: FAO.
- Holden, S.T. and Bezu, S. (2016). Preferences for land sales legalization and land values in Ethiopia. *Land Use Policy* 52, 410-421.
- Holden, S.T. and Bezabih, M., 2008. Gender and land productivity on rented land in Ethiopia. In: Holden, S. T., Otsuka, K. and Place, F. (Eds.), *The Emergence of Land Markets in Africa: Assessing the Impacts on Poverty, Equity and Efficiency*, pp.179-98.
- Holden, S.T. and Binswanger, H.P. (1998). Small farmer decision-making, market imperfections, and natural resource management in developing countries. In: *Agriculture and the environment: Perspectives on Sustainable Rural Development*, Washington, DC: The World Bank, pp.50-71.
- Holden, S.T. and Ghebru, H. (2013). Welfare impacts of land certification in Tigray, Ethiopia. In: Holden, S. T., Otsuka, K. and Deininger, K. (Eds.), *Land Tenure Reform in Asia and Africa: Assessing Impacts on Poverty and Natural Resource Management*. London: Palgrave Macmillan, pp. 137-161.
- Holden, S.T. and Ghebru, H. (2016). Land tenure reforms, tenure security and food security in poor agrarian economies: Causal linkages and research gaps. *Global Food Security* 10, 21-28.
- Holden, S. and Shiferaw, B. (2004). Land degradation, drought and food security in a less-favoured area in the Ethiopian highlands: a bio-economic model with market imperfections. *Agricultural Economics* 30(1), 31-49.
- Holden, S. T. and Tilahun, M. (2017). The importance of Ostrom's design principles: Youth group performance in Northern Ethiopia. CLTS Working Paper No. 2/2017. Centre for Land Tenure Studies, Norwegian University of Life Sciences, Aas, Norway.
- Holden, S.T., Deininger, K. and Ghebru, H. (2009). Impacts of low-cost land certification on investment and productivity. *American Journal of Agricultural Economics* 91(2), 359-373.
- Holden, S.T., Otsuka, K. and Deininger, K. (Eds.) (2013). *Land Tenure Reform in Asia and Africa: Assessing Impacts on Poverty and Natural Resource Management*. London: Palgrave Macmillan.
- Holden, S.T., Otsuka, K. and Place, F.M. (Eds.) (2008). *The Emergence of Land Markets in Africa: Impacts on Poverty, Equity, and Efficiency*. RFF Press/Routledge.
- Holden, S. T., Shiferaw, B. and Wik, M. (1998). Poverty, Market Imperfections, and Time Preferences: Of Relevance for Environmental Policy? *Environment and Development Economics* 3: 105-130.
- Jacoby, H.G. and Minten, B. (2007). Is land titling in Sub-Saharan Africa cost-effective? Evidence from Madagascar. *The World Bank Economic Review*, 21(3), 461-485.
- Jayne, T. S., Chamberlin, J., and Headey, D. D. (2014). Land pressures, the evolution of farming systems, and development strategies in Africa: A synthesis. *Food Policy* 48, 1-17.
- Jayne, T.S., Chamberlin, J., Traub, L., Sitko, N., Muyanga, M., Yeboah, F.K., Anseeuw, W., Chapoto, A., Wineman, A., Nkonde, C. and Kachule, R., 2016. Africa's changing farm size distribution patterns: the rise of medium-scale farms. *Agricultural Economics* 47(S1), 197-214.

- Kassie, M. and Holden, S.T. (2007). Sharecropping efficiency in Ethiopia: threats of eviction and kinship. *Agricultural Economics* 37(2-3), 179-188.
- Lanjouw, P. (2007). Does the rural nonfarm economy contribute to poverty reduction. In: Haggblade, S., Hazell, P.B. and Reardon, T. (Eds.), *Transforming the rural nonfarm economy: Opportunities and threats in the developing world*. Washington, DC: International Food Policy Research Institute, pp.55-79.
- Lawry, S., Samii, C., Hall, R., Leopold, A., Hornby, D. and Mtero, F., 2017. The impact of land property rights interventions on investment and agricultural productivity in developing countries: a systematic review. *Journal of Development Effectiveness* 9(1), 61-81.
- Masters, W. A., Djurfeldt, A. A., De Haan, C., Hazell, P., Jayne, T., and Jirström, M. (2013). Urbanization and farm size in Asia and Africa: Implications for food security and agricultural research. *Global Food Security* 2(3), 156–165.
- Maxwell, D. and Wiebe, K. (1999). Land tenure and food security: Exploring dynamic linkages. *Development and Change* 30(4), 825-849.
- Meenakshi, J.V. and Ray, R. (2002). Impact of household size and family composition on poverty in rural India. *Journal of Policy Modeling* 24(6), 539-559.
- Otsuka, K. (2007). Efficiency and equity effects of land markets. *Handbook of Agricultural Economics* 3, 2671-2703.
- Peters, P.E. (2004). Inequality and social conflict over land in Africa. *Journal of Agrarian Change* 4(3), 269-314.
- Pingali, P. (2007). Westernization of Asian diets and the transformation of food systems: Implications for research and policy. *Food Policy* 32(3), 281-298.
- Popkin, B.M., Adair, L.S. and Ng, S.W. (2012). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition reviews* 70(1), 3-21.
- Ravallion, M. and Van de Walle, D. (2008). Does rising landlessness signal success or failure for Vietnam's agrarian transition? *Journal of Development Economics* 87(2), 191-209.
- Reardon, T., Barrett, C.B., Berdegue, J.A., and Swinnen, J. (2009). Agrifood Industry Transformation and Farmers in Developing Countries, *World Development*, 37(11), 1717-27.
- Sadoulet, E., De Janvry, A. and Fukui, S. (1997). The meaning of kinship in sharecropping contracts. *American Journal of Agricultural Economics* 79(2), 394-406.
- Shiferaw, B. and Holden, S.T. (1998). Resource degradation and adoption of land conservation technologies in the Ethiopian highlands: a case study in Andit Tid, North Shewa. *Agricultural Economics* 18(3), 233-247.
- Simtowe, F., Mendola, M., Mangisoni, J., Tchale, H. and Nyirongo, C. (2013). The economic effects of land redistribution: the case of a community-based rural land development project in Malawi. In: Holden, S. T., Otsuka, K. and Deininger, K. (Eds.), *Land Tenure Reform in Asia and Africa: Assessing Impacts on Poverty and Natural Resource Management*. London: Palgrave Macmillan, pp. 105-133.
- Singh, I., Squire, L. and Strauss, J. (1986). *Agricultural household models: Extensions, applications, and policy*. Washington DC: The World Bank.
- Sitko, N.J. and Jayne, T.S. (2014). Structural transformation or elite land capture? The growth of “emergent” farmers in Zambia. *Food Policy* 48, 194-202.
- United Nations (2014). *World Urbanization Prospects: The 2013 Revision*. New York: United Nations Department of Economic and Social Affairs.