

Holden, Stein T.; Ghebru, Hosaena

Working Paper

Links between Tenure Security and Food Security in Poor Agrarian Economies: Causal Linkages and Policy Implications

Centre for Land Tenure Studies Working Paper, No. 7/16

Provided in Cooperation with:

Centre for Land Tenure Studies (CLTS), Norwegian University of Life Sciences (NMBU)

Suggested Citation: Holden, Stein T.; Ghebru, Hosaena (2016) : Links between Tenure Security and Food Security in Poor Agrarian Economies: Causal Linkages and Policy Implications, Centre for Land Tenure Studies Working Paper, No. 7/16, ISBN 978-82-7490-249-7, Norwegian University of Life Sciences (NMBU), Centre for Land Tenure Studies (CLTS), Ås

This Version is available at:

<https://hdl.handle.net/10419/242746>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

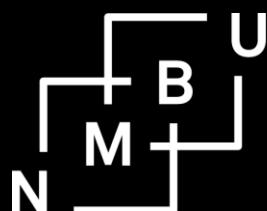
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Links between Tenure Security and Food Security in Poor Agrarian Economies: Causal Linkages and Policy Implications

Stein T. Holden and Hosaena Ghebru



Norwegian University of Life Sciences
Centre for Land Tenure Studies

Centre for Land Tenure Studies Working Paper 7/16
ISBN: 978-82-7490-249-7

Links between Tenure Security and Food Security in Poor Agrarian Economies: Causal Linkages and Policy Implications

By

Stein T. Holden¹ and Hosaena Ghebru²

¹Centre for Land Tenure Studies/School of Economics and Business, Norwegian University of Life Sciences, P. O. Box 5003, 1432 Ås, Norway. Email: stein.holden@nmbu.no.

²International Food Policy Research Institute, Washington, D. C., USA. Email: h.g.hagos@cgiar.org

Abstract

Population growth leads to growing land scarcity and landlessness in poor agrarian economies. Many of these also face severe climate risks that may increase in the future. Tenure security is important for food security in such countries and at the same time threatened by social instability that further accelerate rural-urban and international migration. Provision of secure property rights with low-cost methods that create investment incentives can lead to land use intensification and improved food security. Pro-active policies that engage youth in establishment of sustainable livelihoods hold promise. Social and political stability are essential for tenure security and food security.

Key words: Tenure security, food security, land scarcity, investment incentives, tenure reforms, youth migration.

1. Introduction

Land tenure and food security have traditionally been two separate areas of research. Land tenure research is itself a vast and complex area due to the large variation and complexity of land tenure systems, which has contributed to the specialization of land tenure researchers. We see a similar tendency in the food security literature. In this paper we assess how tenure security and land tenure reforms affect and are affected by household food security. We claim that increasing land scarcity in the world and particularly in poor countries facing high climate risks, make the links between access to land, tenure security and food security of increasing importance (Godfray et al., 2010; Lambin and Meyfroidt, 2011; Holden and Otsuka, 2014). Spatially dispersed food production, poor infrastructure, high transportation costs, and perishable food contribute to imperfections of input and food markets in agrarian based and land scarce economies where ownership and access to land still are important determinants of household food security. Smallholder production and

shrinking farm sizes is still typical in such countries and a growing share of these smallholders are net buyers of food.

After going through definitions of tenure security and food security this paper assesses how tenure security is related to various types of land tenure reforms as a step towards identifying the linkages between tenure security and food security in different contexts in a developing country and global perspective. We do this conceptually by assessing alternative causal links and briefly reviewing relevant literature, with Ethiopia as a case of a poor agrarian land scarce economy where tenure policies have served as a key instrument to enhance household food security. The aim is to provide an overview and a better conceptual understanding of these relationships and at the same time identify important knowledge gaps that future research should target.

Section two assesses the definitions of the key concepts. Section three gives an overview of various land tenure reforms and highlights the role of tenure security in these reforms. Section four assesses the links between tenure security, investment and productivity. Sections five and six look at the links between climate risks, shocks, consumption and nutrition before we discuss land and land markets as a safety net in a world with increasing migration and conclude based on this.

2. Definitions and Measurement

Land tenure insecurity and security have been defined in several ways. Here are two definitions:

- The hazard of expropriation by the government (Jacoby et al., 2002)
- The risk of encroachment or eviction versus the degree of protection by the government against such encroachment and eviction

These definitions illustrate that the government may be the source of the risk or the source of protection against the risk depending on the setting or the formal land rights (recognized by the government) that the land rights claimer has.

Land tenure (in)security can be measured at the farm plot, individual, household, group, or community level. With conflicting claims over land, the increase in the (in)security of one party may imply a reduction in the (in)security of another party or parties. The strength of (in)security can depend on traditional rights (customs, norms), legal protection (laws and law enforcement), duration of possession, the specific location of the land, social networks, political connections and power structure, social stability, land scarcity and distribution.

Tenure (in)security may also be defined as a perception variable where the beliefs are formed on the basis of past events and expectations about the future, in addition to information and knowledge about rights, legal restrictions, and various types of threats and protection opportunities. Legal documents that give rights to specific units of land to specific users or owners may enhance the perception of tenure security if such legal documents are accompanied with social recognition and protection. There is no guarantee, however, that such legal documents provide full tenure security.

The width, depth, and duration of rights and legal restrictions of such rights also affect the degree of tenure security.

Changes in tenure (in)security over time for individuals or households may depend on natural experiments in the form of policy interventions, direct exposure to encroachment or expropriation, but also information about the exposure of others can affect the perceived risks of individuals or households. For analytical purposes it is important to identify such time-varying measures of tenure (in)security that can help identify its impacts on food (in)security while controlling for unobservable individual or household characteristics and endogeneity of tenure (in)security.

The concepts *vulnerability* and *poverty* are related to food insecurity. Vulnerability may be defined as the inability to protect oneself against shocks. Food insecurity may also be seen as part of a wider concept of livelihood insecurity. Poor people spend a large share of their income on food. Income generation to meet food needs, therefore, takes a lot of their resources. The inability to smooth consumption over time, including food consumption, shows the close relationship between vulnerability and food insecurity. One definition of food security is “secure access at all times to sufficient food for a healthy life” (Maxwell and Frankenberger, 1992, 8). This concept is typically applied at the household level as households are the core units responsible for the welfare of household members. In this perspective food security is about access, vulnerability, and sustainability. Vulnerability also depends on the ability to cope when exposed to shocks and the types of coping strategies that are available. The complexity of defining food insecurity also makes its measurement empirically challenging but we do not have space to go into that here.

3. Links between Tenure Security and Land Tenure Reforms

From the perspective that secure access to sufficient land is an important means of achieving food security in poor agrarian land-scarce societies, we start with a brief review of the property rights school, the evolutionary theory of land rights, and main types of land tenure reforms that have had implications for tenure security.

The property rights school (Alchian and Demsetz, 1973; Demsetz, 1967) emphasizes the importance of private property rights for economic development. The three main mechanisms are the investment effect, the credit access effect, and the land market enhancement effect.

Property rights development is also seen as an endogenous institutional change: “property rights develop to internalize externalities when the gains of internalization become larger than the costs of internalization” (Demsetz, 1967, 350). This view is expressed by the evolutionary theory of land rights, where a logical chain reaction may be specified as follows:

- **Population growth and commercialization → Land scarcity → Competition for land → Land disputes → Demand for more secure land rights → Land titling and registration → Enhanced tenure security and reduced disputes → Lower transaction costs → More investment and higher land productivity → More active land markets**

→ **More efficient land use** → **Credit market development** → **More investment** → **Land tax revenue base, and so on** (Platteau, 1996).

The role of the state or the government in this is to intervene at the appropriate time to facilitate the process.

Land titling reforms and tenure security: One of the intentions of provision of freehold tenure rights is to provide strong tenure security to landowners and thereby stimulate investment and efficiency of land use. Past failures of land titling programs to create such investment and tenure security effects may partly be due to inappropriate timing of such reforms (Bruce, 1986). Another explanation may be that some land titling reforms have resulted in “elite capture” and marginalization of the poor and minority groups. Inefficient and corrupt bureaucracies and high costs of conventional land titling have also caused rationing out of poor and vulnerable groups and have favored the wealthy (Barrows and Roth, 1989; Platteau, 1996; Benjaminsen et al., 2009). Other studies have revealed no significant investment or credit access effects of land titling (Migot-Adholla et al., 1994 for Kenya; Jacoby and Minten, 2007 for Madagascar). Land registration and titling can create rather than reduce uncertainty and conflicts over land rights (Atwood, 1990; Benjaminsen et al., 2009; Bruce, 1986). Contradictions between customary land rights and new statutory land rights can create uncertainties and conflicts that enhance tenure insecurity for some groups and individuals.

Land-to-the-tiller policies and tenure security: Reforms limiting ownership rights of landlords and strengthening rights of tenants, often called “land-to-the-tiller” reforms or tenancy reforms, have been important policy interventions in many Asian countries (for example, India, Nepal) (Otsuka, 2010). Landlords face the risk that the land they rent to tenants is confiscated and ownership transferred to the tenants. In reality, this reform has not resulted in the transfer of large land areas to tenants. Rather, their access may have become reduced as landlords have stopped or reduced their rental activity, renting to people they trust or for only one season at a time to avoid legal claims by tenants. Enhanced Marshallian inefficiency on sharecropped land may be one of the outcomes of this policy as the threat of eviction cannot be used as a mechanism to enhance tenant effort and landlords may prefer to rent to less efficient tenants or not to rent out at all (Aryal and Holden, 2013).

Market-assisted land redistribution reforms and tenure security: Market-assisted land redistributions have been proposed and used as an alternative and peaceful approach to obtain more egalitarian land distribution in some countries with highly unequal land distributions (for example, Brazil, Malawi, South Africa, Zimbabwe). Landless or land-scarce poor households interested in accessing land are assisted in buying land from willing sellers (large landowners) of land. Farming ability, capital constraints, market access, access to social services, restrictions in ownership, farm size, and collective management have limited the extent of success of these programs. They have also made only a small dent in the skewed land distribution in the countries where such reforms have been attempted (Simtowe et al., 2013; Wiig and Øien, 2013).

Radical land redistribution reforms and tenure security: Some countries have undergone revolutionary land tenure reforms where all land was made state land and land was to be farmed by collectives or state farms. The collectives in most cases did not function well, and user rights to land were therefore transferred to individual households. Such distribution of weak individual rights was in many cases done according to egalitarian principles (for example, China, Vietnam, Ethiopia, Eritrea). To retain the egalitarian land distribution over time, more or less frequent land redistributions were carried out within communities to provide land to new households and to adjust the land sizes to household sizes and needs. Such redistributions contributed to tenure insecurity (Deininger and Jin, 2006; Jacoby et al., 2002).

Low-cost land certification reforms and tenure security: Low-cost land certification reforms were first implemented in some of the countries that underwent radical land reforms as a response to the problems of tenure insecurity due to frequent land redistributions and weak property rights that undermined incentives to invest and prevented land market development. Such reforms have therefore typically strengthened tenure security, investment, productivity, and land rental market activity (Holden et al., 2009, 2011; Deininger et al., 2011; Khai et al., 2013).

Customary tenure reforms and tenure security: Various countries have attempted to strengthen and formalize customary land rights by registering customary land rights and providing customary tenure certificates to communities, clans, or kinship groups (for example, Tanzania, Malawi, Uganda). Formal recognition of customary land rights may also serve to strengthen tenure security where such customary rights are threatened for various reasons, for example, where certain minority groups' rights are not recognized by more powerful groups that aim to expand their land rights. There is therefore a high risk of elite capture in such customary tenure reforms.

Global land rush and implications for tenure security: The sharp increase in demand for land in the period 2008-2012 due to high food and energy prices has introduced new threats to the tenure security of people living in land-abundant areas exposed to the new, high demands for land. Weak national policies, weak and corrupt bureaucracies, unclear laws, and powerful interest groups have in many cases caused eviction of minority groups without proper compensation or provision of alternative livelihood options, therefore imposing severe livelihood and food insecurity threats to those groups (for example, Ethiopia, Mozambique, Sudan, Madagascar) (Deininger and Byerlee, 2012). Such threats are typically highest in areas where customary land rights have dominated, but the customary rights were not developed to tackle such sharp increases in demand for land from investors and speculators. The short-term effect may be as follows:

- **Sharp increase in demand for land → Tenure insecurity → Food and livelihood insecurity for local populations**

Another problem may be that statutory laws do not acknowledge customary land rights, and politicians and bureaucrats may be ignorant about them. They may even themselves be rent-seekers trying to make a profit from the demand.

4. Tenure Security, Investment, and Agricultural Productivity

Whereas it is commonly agreed that tenure security can stimulate investment, the opposite may also be true—investments are made to enhance tenure security (Sjaastad and Bromley, 1997; Brasseur et al., 2002; Place and Otsuka, 2001). We primarily focus on the first of these causal effects by investigating the empirical evidence of the following linked effects that may be seen as two sides of the same coin:

- **Weak land rights → Tenure insecurity → Poor land management → Land degradation → Reduced land productivity → Food insecurity**
- **Land rights → Tenure security → Incentives to invest (conserve) → Reduced land degradation → Increased land productivity → Food security**

Much of the tenure literature hypothesizes that tenure insecurity has a negative impact on the propensity to invest in land improvements (Hayes et al., 1997) and likewise that making land rights more secure would stimulate long-term investments on the land (Atwood, 1990; Feder and Feeny, 1991; Besley, 1995). We review some of the empirical evidence.

Gebremedhin and Swinton (2003) found that long-term investments in stone terraces are associated with secure land tenure, whereas more short-term investments in soil bunds are associated with insecure tenure in Tigray, Ethiopia. Deininger and Jin (2006) found that land transfer rights and tenure security are associated with higher investments in a study from 2001 covering four regions of Ethiopia, whereas Deininger et al. (2008) found a positive association between land certification and investment in a more recent cross-section survey in four regions in Ethiopia. Holden et al. (2009) found significant positive effects of low-cost land certification on investment in trees and maintenance of soil conservation structures in Tigray Region, using a household-plot panel with baseline data from just before land certification and the last survey round seven to eight years after the land registration and certification took place.

Place and Hazell (1993), in their assessment of indigenous tenure systems in Sub-Saharan Africa, found that lack of credit access, insufficient human capital, and labor shortages have adverse effects on investment decisions more often than tenure insecurity has. One may therefore question whether customary tenure systems provide insufficient tenure security to enhance investments.

Hayes et al. (1997) found that the probability of long-term investments in fences, wells, and trees is positively correlated with complete land tenure rights (individual right to sell and right to use) and that higher long-term investments are positively associated with higher commercial input use and higher land productivity in a study in three villages under customary tenure in Gambia. Place and Hazell (1993) showed that land rights have less effect on choice of improvement than on the probability of undertaking an improvement of the land.

These findings indicate that tenure security may be a necessary but insufficient condition for land investments and it may be relevant to investigate the following related pathways:

- **Poverty and vulnerability → Inability to invest (high discount rates) → Land degradation**
- **Poverty reduction → Strengthened ability to invest → Increased investment → Reduced land degradation → Increased land productivity**

Several studies in Latin America have demonstrated positive investment impacts of land titling (Alston et al., 1995; Deininger and Chamorro, 2004; Lopez 1997), and the same is the case for some case studies in Asia (Feder, 1988). However, studies of classical land titling in Africa have found no evidence of investment impacts (Migot-Adholla et al., 1994; Pinckney and Kimuyu, 1994).

Holden et al. (1998), in their study in Ethiopia, Indonesia, and Zambia, found a strong association between poverty and high discount rates and that liquidity and capital constraints explain the very high discount rates of poor rural households in the study areas. Shiferaw and Holden (1998) found limited incentives to conserve own farmland to protect against land degradation and future losses in land productivity when such labor-intensive investments produce only limited or negative short-term returns. Poverty and land scarcity are associated with a stronger tendency to use soil-mining practices such as removal of soil conservation structures to access fertile soils in the structures. Holden and Shiferaw (2004) have shown that land degradation in combination with population growth and stagnant technology with imperfect markets leads to increasing food insecurity unless targeted policy interventions that improve markets and stimulate technology adoption are introduced.

Based on this brief review, we may deduce that tenure security is an important but insufficient condition for the existence of conservation and investment incentives.

Technological change in agriculture is associated with population increase and market development. Increasing population pressure may induce investment and intensification and that could lead to more sustainable land management and improved welfare, as has been experienced in many parts of the world. This is the “Boserupian development pathway” (Boserup, 1965):

- **Increasing population pressure → Land scarcity (land poverty) → Land use intensification and investment incentives → Increased market participation → Economic development → Food security**

Improved tenure security is an implicit part of this development pathway as land rights tend to become more individualized and formalized. The failure to develop secure property rights in this process may therefore threaten this positive pathway.

Another important aspect of the relationship between tenure security is the fact that there may be reverse causality:

- **Investment → Tenure security**

This means that tenure security is endogenous. A positive correlation between tenure security and investment could thus occur because people invest to become more tenure secure (Sjaastad and Bromley, 1997; Brasselle et al., 2002; Place and Otsuka, 2001). Homesteading was used as an explicit policy in the United States in the 19th century. Settlers had to settle on and develop the land in order to claim property rights to it. This makes both land rights and tenure (in)security endogenous and adds methodological challenges to the establishment of causality and the estimation of unbiased causal effects.

Land rights restrictions and obligations may also contribute to this type of reverse causality. Laws that impose land use and maintenance obligations such as the recent land law reforms in Ethiopia are a good example. The Ethiopian land laws of 2006 require that land is farmed and not left idle, that only 50 percent of the land can be rented out, that land should be properly conserved, and that households' land can be confiscated without compensation if the household leaves the land for more than two years. The ultimate penalty for not using and not conserving the land is eviction (TNRS, 2006). Failure to conserve, excessive renting out of the land, and migration, which could be behavioral responses to shocks, poverty, and vulnerability causing food insecurity, therefore can result in tenure insecurity and loss of land and livelihood security. On the other hand, such a law may create incentives for the able-bodied to take better care of their land, enhance land productivity, and thus enhance food security.

5. Climatic Risks, Land Degradation, Investment Incentives, and Land Productivity

Weather risks, such as droughts, floods, frost, hailstorms, and other natural hazards such as pests and diseases, are important elements of the production environment of farm households. Such risks tend to be higher in areas without irrigation and with lower levels of average annual rainfall. Rainfall variability relative to mean rainfall tends to increase with decreasing mean rainfall. The vegetation cover tends to be poorer the lower the mean rainfall, and the frequency and severity of droughts tend to be higher. Intensive rains tend to cause more damage when vegetation cover is limited and cause severe land degradation and crop damage. Climate risks are therefore one of the main factors contributing to food insecurity in dryland (semiarid and arid) areas. At the same time, such risks affect the behavioral responses of farm households that have such risky environments as their livelihoods. Such households are typically risk averse and use combinations of *ex ante* behavioral strategies and *ex post* (after weather shock) coping mechanisms to survive and maximize their welfare. Flexible tenure systems that allow mobility of people and animals represent one of the institutional responses in the most arid areas dominated by pastoralism. Imposing individual, exclusive property rights and fencing in such areas would severely threaten food and livelihood security. Strengthening of communal land rights and collective action may be a better approach than promotion of individual tenure rights (Ostrom, 1990; 2009). However, more research is needed to identify optimal mixed tenure systems for the management of trees, fodder and water resources in ways that enhance investment incentives and food security in such areas.

We may thus summarize these relationships as follows:

- **Droughts → Low land productivity → Food insecurity**
- **Erratic rainfall/Floods → Rapid land degradation → Loss of land productivity → Food insecurity**
- **Increased climatic risk → Increased land degradation → Increased short-term and long-term food insecurity**
- **Arid environment → Food and livelihood insecurity → Flexible tenure system → Mobility and improved security**
- **Secure communal land rights → Community investment in soil and water conservation → Reduced land degradation → Improved livelihood security and sustainability**

6. Climate Shocks, Household Income, and Consumption Expenditure

Rural households may derive income from agricultural as well as nonagricultural activities, and they may obtain food by producing it themselves or buying it from the market. With better market integration the links between food production on own farm and household food security become weaker. However, the link between household food production and food security is stronger in environments that are poorly integrated into markets and where particularly food and labor markets are poorly developed and subsistence production dominates. Agricultural production risks affect income risk and may cause various forms of income diversification strategies to smooth income over time.

Deaton (1991) assumes that households maximize intertemporal expected utility where the utility in each period is concave in consumption and marginal utility is convex, giving a precautionary (risk-averse) motive. At the same time, households are assumed to be impatient and discount future utility, and this limits willingness to save and invest unless the expected rate of return is higher than the discount rate. This also limits asset accumulation. Such households facing production and income risk will adjust assets and income in order to smooth consumption over time.

The existence of covariate risk in remote rural areas with high transaction costs and information asymmetries causes credit and insurance market failures and limits households' ability to smooth consumption over time, making them vulnerable. Households use precautionary savings in the form of assets and income diversification strategies to help protect against such covariate shocks. However, such mechanisms also involve risk as asset values, such as livestock prices, are correlated with covariate production shocks (Dercon, 2001). Holden and Shiferaw (2004) estimated that the value of a direct production loss due to drought could be less than the indirect price loss in livestock value that households face because they must sell animals at a lower price to buy food at a higher-than-normal price. This terms-of-trade risk limits the ability of households to smooth consumption via self-insurance through asset savings. One response may be that households cut their consumption to very low levels rather than sell their assets when the asset terms-of-trade are very unfavorable. This was observed in Ethiopia in the 1984/85 famine (Dercon, 2001). In such cases land assets of households may also be under threat of being sold or rented in

the form of distress sales or rentals at unfavorable prices. Severe covariate shocks causing food insecurity and famine may therefore also result in tenure insecurity and the selling of land entitlements as one desperate coping strategy.

It follows from the previous paragraph that nutritional status may be an indicator of vulnerability and food insecurity in risky environments where households are imperfectly insured, and therefore have limited ability to smooth consumption over time. The choice to go hungry to protect assets may be an adaptive strategy to enhance consumption in the longer run. The alternative coping strategy would be to sell assets at a low price to increase short-term food consumption at the high cost of reduced future consumption.

Nutritional research has shown that young children in particular are vulnerable to nutritional shortages. Such shortages result not only in weight loss and stunting but also in brain underdevelopment with lifetime consequences. Malnutrition of children can therefore lead to permanent human capital losses that can affect the ability to work in more than one way.

The alternative options available to vulnerable households can be stated as follows:

- **Covariate shocks → Food insecurity → Selling of assets → Loss of future income opportunities**
- **Covariate shocks → Food insecurity → Malnutrition → Permanent human capital losses → Reduced ability to work → Less investment and productivity**

Households may choose from many alternative coping strategies. The availability and combination of such coping strategies may be an indicator of food (in-)security (Maxwell 1996). Such coping strategies tend to be location and household specific. There may also be a hierarchy of alternatives from the most preferred to the least preferred (most costly) options.

Gebregziabher and Holden (2011) found that distress land rental under fixed-rent contracts as a coping response to shocks came as a last resort after all other means of coping had been exhausted in Tigray, Ethiopia, illustrating the central role of land in this environment. The stated coping strategies included (a) daily labor; (b) migration; (c) selling animals; (d) selling firewood; (e) selling household assets; (f) looking for aid; (g) reducing consumption; and (h) renting out land for cash. Households were less likely to use distress land rental as a coping strategy if they sold livestock or assets to cope, but distress land rental was positively associated with the collection and sale of firewood. The latter two strategies were chosen only after depletion of other household resources and could be seen as more desperate strategies.

The following effects could be envisioned from the migration and reduced consumption coping strategies, which may have negative future effects on investment, land productivity, and food security and contribute to a vicious spiral but could also be a way to reestablish a sustainable livelihood by reducing the family size, as migrating members find alternative livelihoods and may even contribute remittances:

- **Shock → Migration of household members → Loss of on-farm labor → Less investment → Food insecurity**

versus

- **Shock → Migration of household members → Reduced family size and food needs → Food security**
- **Shock → Poor nutrition → Inability to work → Less investment and productivity → Food insecurity**

7. Land and Land Markets as a Safety Net

Access to land is an important indicator of household welfare in agrarian economies with limited off-farm employment opportunities. Land distribution can in such economies be a policy instrument to enhance or change the welfare distribution. This is also a reason for emphasis on more egalitarian land distribution and avoidance of landlessness because the most land-poor and landless tend to be the poorest in such agrarian economies. Various forms of land tenure reforms have been implemented aiming to achieve a more egalitarian land distribution, such as radical land tenure reforms, land-to-the-tiller policies, and market-assisted land redistributions (see section 3).

We take a closer look at Ethiopia which implemented a radical land reform in 1975. All land was made state land, and a new constitution was established granting all residents user rights to land to meet their basic household needs. Land was allocated based on household size within each community (peasant association) after land had been divided into land quality classes. Each household received a share of each land quality class. This was done to enhance household food security and reduce dependency on markets as land renting and hiring of labor were prohibited. To retain the egalitarian land distribution and provide land to new households, land redistributions were implemented, first by allocating the remaining collective and parts of the communal land to new households and later by taking land from the most land rich (for example, households that had experienced a reduction in their family size) for redistribution to the most land-poor and landless new households. Paradoxically, the constitutional right to land therefore resulted in tenure insecurity, and that may have undermined investments on land (Deininger and Jin, 2006).

After the overthrow of the Derg regime in 1991, Ethiopia adopted a more market-friendly policy. Although land renting and hiring labor were allowed, selling land remained illegal and access to land remained a constitutional right. However, the country realized that the administrative redistribution policy had negative effects on tenure security and investments, and that policy was therefore halted, with a few exceptions, and land registration and certification was introduced to enhance tenure security and provide perpetual user rights to land. Land was allowed to be bequeathed to children, but a minimum farm size of 0.25 hectares was introduced to prevent excessive land fragmentation. The combination of prohibition of land sales, the minimum farm size, and continued population growth in the densely populated highlands with limited communal

land for redistribution has created an excess demand from young landless households in search for a livelihood based on their constitutional right to access land. This growing excess demand for land is one of the main challenges faced, and in 2006 Ethiopia introduced a new land law and policy stating that land can be expropriated from households that have migrated from the community for more than two years and from households with permanent off-farm income. One of the debated issues is whether households that migrate for desperate livelihood security reasons should risk losing their land and become destitute landless households. The new law therefore reintroduces tenure insecurity that may hurt some of the poorest households that have been forced to migrate.

Overall, we see an evolution where increasing land scarcity erodes the capacity of land to serve as a safety net. Expansion of desperate migration is inevitable, and a basic question is whether policies should aim at facilitating or preventing migration out of such overpopulated rural communities (Bezu and Holden, 2013). The current policy in Ethiopia of prohibiting land sales and prohibiting households from renting out more than 50 percent of their land hinders rather than facilitates migration. It may contribute to enhance rural poverty traps and increase the burden on public safety net programs.

We may compare the Ethiopian policy with that of Uganda, which allows land sales. There households may decide to sell their land if they live in a particularly land-scarce area where land prices have become very high. This gives them starting capital to move to another area and establish a new livelihood. The land market therefore creates more flexibility and may reduce the existence of rural poverty traps and the need for public safety net programs (Holden et al., 2008).

On the other hand, Ethiopia has started to protect communal lands by closing areas for rehabilitation. Since 2011, the government has started to allocate such rehabilitated lands to youth as a livelihood opportunity where the youth can invest in enhancing the productivity while also protecting the land. It remains to be seen how successful this strategy will be in creating employment and sustainable livelihoods for the growing number of otherwise landless youth.

Conclusions

Shocks due to social conflicts have increased tenure insecurity as well as food insecurity in parts of Africa and the Middle East and this has resulted in a rapidly expanding international migration of destitute migrants that have lost their properties and basic human rights. Creation of employment opportunities and provision of secure property rights for youth is increasingly important for social stability and food security. This requires political stability and proactive policies that engage youth in creation of sustainable livelihoods.

Alchian, A. A., Demsetz, H., 1973. The Property Right Paradigm. *J. Econ. Hist.* 33 (1), 16–27.

- Alston, L. J., Libecap, G. D., Schneider, R., 1995. Property Rights and the Preconditions for Markets: The Case of the Amazon Frontier. *J. Inst. & Theor. Econ.* 151 (1), 89–107.
- Aryal, J., Holden, S. T., 2013. Caste Discrimination, Land Reforms and Land Market Performance in Nepal, in: Holden, S. T., Otsuka, K. and Deininger, K. (Eds.), *Land Tenure Reforms in Asia and Africa: Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan, London & New York.
- Atwood, D. A., 1990. Land Registration in Africa: The Impact on Agricultural Production. *World Dev.* 18 (5), 659–671.
- Barrows, R., Roth, M., 1989. Land-Tenure and Investment in African Agriculture—Theory and Evidence. *J. Modern Afr. Stud.* 28 (2), 265–297.
- Benjaminsen, T. A., Holden, S. T., Lund, C., Sjaastad, E., 2009. Formalisation of Land Rights: Some Empirical Evidence from Mali, Niger, and South Africa. *Land Use Pol.* 26, 28–35.
- Besley, T., 1995. Property Rights and Investment Incentives: Theory and Evidence from Ghana. *J. Pol. Econ.* 103 (5), 903–937.
- Bezu, S., Holden, S.T., 2014. Are Rural Youth in Ethiopia Abandoning Agriculture? *World Dev.* 64, 259–272.
- Boserup, E., 1965. *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*. Earthscan, London.
- Brasselle, A. S., Gaspart, F., Platteau, J.-P., 2002. Land Tenure Security and Investment Incentives: Puzzling Evidence from Burkina Faso. *J. Agric. Econ.* 67 (2), 373–418.
- Bruce, J. W., 1986. *Land Tenure Issues in Project Design and Strategies for Agricultural Development in Sub-Saharan Africa*. Land Tenure Center, University of Wisconsin–Madison, Madison, WI, US.
- Deaton, A., 1991. Savings and Liquidity Constraints. *Econometrica* 59 (5), 1221–1248.
- Deininger, K., Byerlee, D., 2012. The Rise of Large Farms in Land Abundant Countries: Do They Have a Future? *World Dev.* 40 (4), 701–714.
- Deininger, K., Chamorro, S. J., 2004. Investment and Income Effects of Land Regularization: The Case of Nicaragua. *Ag. Econ.* 30 (2), 101–116.
- Deininger, K., Jin, S., 2006. Tenure Security and Land-Related Investment: Evidence from Ethiopia. *Eur. Econ. Rev.* 50, 1245–1277.

- Deininger, K., D. Ali, S. T. Holden, Zevenbergen, J., 2008. Rural Land Certification in Ethiopia: Process, Initial Impact, and Implications for the Other African Countries. *World Dev.* 36 (10), 1786–1812.
- Deininger, K., Ali, D. A., Alemu, T., 2011. Impacts of Land Certification on Tenure Security, Investment, and Land Market Participation: Evidence from Ethiopia. *Land Econ.* 87 (2), 312–334.
- Demsetz, H., 1967. Toward a Theory of Property Rights. *Am. Econ. Rev.* 57 (2), 347–359.
- Dercon, S., 2001. *Income Risk, Coping Strategies, and Safety Nets*. CSAE Working Paper 136. Centre for the Study of African Economies, Oxford University, Oxford, UK.
- Feder, G., 1988. *Land Policies and Farm Productivity in Thailand*. Johns Hopkins University Press, Baltimore.
- Feder, G., Feeny, D., 1991. Land Tenure and Property Rights: Theory and Implications for Development Policy. *World Bank Econ. Rev.* 5 (1), 135–153.
- Gebregziabher, G., Holden, S. T., 2011. Distress Rentals and the Land Rental Market as a Safety Net: Evidence from Tigray, Ethiopia. *Ag. Econ.* 42, 45–60.
- Gebremedhin, B., Swinton, S. M., 2003. Investment in Soil Conservation in Northern Ethiopia: The Role of Land Tenure Security and Public Programs. *Ag. Econ.* 29, 69–84.
- Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., Pretty, J., Robinson, S., Thomas, S. M., Toulmin, C., 2010. Food security: the challenge of feeding 9 billion people. *Science* 327(5967), 812–818.
- Hayes, J., Roth, M., Zepeda, L., 1997. Tenure Security, Investment, and Productivity in Gambian Agriculture: A Generalized Probit Analysis. *Am. J. Ag. Econ.* 79 (2), 369–382.
- Holden, S. T., Ghebru. H., 2013. *Household Welfare Effects of Low-Cost Land Certification in Ethiopia*, in: Holden, S. T., Otsuka, K. and Deininger, K. (Eds.), *Land Tenure Reforms in Asia and Africa: Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan, London & New York.
- Holden, S. T., 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. *Ag. Econ.* 30 (1), 31–49.
- Holden, S. T., Yohannes, H., 2002. Land Redistribution, Tenure Insecurity, and Intensity of Production: A Study of Farm Households in Southern Ethiopia. *Land Econ.* 78 (4), 573–590.

- Holden, S. T., K. Deininger, Ghebru, H., 2009. Impacts of Low-Cost Land Certification on Investment and Productivity. *Am. J. of Ag. Econ.* 91 (2), 359–373.
- Holden, S. T., Deininger, K., Ghebru, H., 2011. Tenure Insecurity, Gender, Low-Cost Land Certification, and Land Rental Market Participation. *J. Dev. Stud.* 47 (1), 31–47.
- Holden, S.T., Otsuka, K., 2014. The roles of land tenure reforms and land markets in the context of population growth and land use intensification in Africa. *Food Policy*, 48: 88-97.
- Holden, S. T., Otsuka, K., Deininger, K., (Eds.), 2013. *Land Tenure Reforms in Asia and Africa: Assessing Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan, London and New York.
- Holden, S. T., Otsuka, K., Place, F., (Eds.), 2008. *The Emergence of Land Markets in Africa: Impacts on Poverty, Equity, and Efficiency*. Resources for the Future Press, Washington, DC.
- Holden, S. T., Shiferaw, B., Wik, M., 1998. Poverty, Market Imperfections, and Time Preferences: Of Relevance for Environmental Policy? *Env. & Dev. Econ.* 3, 105–130.
- Jacoby, H. G., Minten, B., 2007. Is Land Titling in Sub-Saharan Africa Cost-Effective? Evidence from Madagascar. *World Bank Econ. Rev.* 21 (3), 461–485.
- Jacoby, H., Li, G., Rozelle, S., 2002. Hazards of Expropriation: Tenure Insecurity and Investment in Rural China. *Am. Econ. Rev.* 92 (5), 1420–1447.
- Jorgenson, D. W., 1967. The Theory of Investment Behavior, in: Ferber, R. (Ed.), *Determinants of Investment Behavior*, 129–155. Columbia University Press, New York.
- Khai, L. D., Markussen, T., McCoy, S., Tarp, F., 2013. Impacts of Land Rights Reforms on Land Transactions in Vietnam, in: Holden, S., Otsuka, K. and Deininger, K. (Eds.), *Land Tenure Reforms in Asia and Africa: Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan, London & New York, pp..
- Lambin, E. F., Meyfroidt, P., 2011. Global land use change, economic globalization, and the looming land scarcity. *Proceedings of the National Academy of Sciences*, 108(9), 3465-3472.
- Lopez, R., 1997. *Land Titles and Farm Productivity in Honduras*. World Bank, Washington, DC.
- Maxwell, D. G., 1996. Measuring Food Insecurity: The Frequency and Severity of ‘Coping Strategies.’ *Food Pol.* 21 (3), 291–303.

- Maxwell, S., Frankenberger, T., 1992. *Household Food Security: Concepts, Indicators, Measurements: A Technical Review*. UNICEF and International Fund for Agricultural Development, New York and Rome.
- Migot-Adholla, S. E., F. Place, Oluoch-Kosura, W., 1994. "Security of Tenure and Land Productivity in Kenya, in: Bruce, J. W. and S. E. Migot-Adholla, S. E. (Eds.), *Searching for Land Tenure Security in Africa*. Kendall/Hunt, IA, US.
- Ostrom, E., 1990. *Governing the commons*. The Evolution of Institutions for Collective Action. Cambridge University Press, New York.
- Ostrom, E., 2009. Design principles of robust property-rights institutions: what have we learned? In: Ingram, K. G., Hong, Y.-H., (Eds.), *Property Rights and Land Policies*, Lincoln Institute of Land Policy, Cambridge, MA.
- Otsuka, K., 2010. Efficiency and Equity Effects of Land Markets, in: R. E. Evenson, R. E., Pingali, P., (Eds.), Ch. 51 in *Handbook of Agricultural Economics* 4, Elsevier, Amsterdam, pp. 2671–2703.
- Pinckney, T. C., Kimuyu, P. K., 1994. Land Tenure Reform in East Africa: Good, Bad, or Unimportant. *J. Afr. Econ.* 3, 1–28.
- Place, F., Hazell, P., 1993. Productivity Effects of Indigenous Land Tenure Systems in Sub-Saharan Africa. *Am. J. Ag. Econ.* 75, 10–19.
- Place, F., Otsuka, K., 2001. Tenure, Agricultural Investment, and Productivity in the Customary Tenure Sector of Malawi. *Ec. Dev. Cult. Ch.* 50, 77–99.
- Platteau, J.-P. 1996. The Evolutionary Theory of Land Rights as Applied to Sub-Saharan Africa: A Critical Assessment. *Dev. & Ch.* 27, 29–86.
- Shiferaw, B., Holden, S. T., 1998. Resource Degradation and Adoption of Land Conservation Technologies in the Ethiopian Highlands: A Case Study in Andit Tid, North Shewa. *Ag. Econ.* 18, 233–247.
- Simtowe, F., Mendola, M., Mangisoni, J., Tchale, H., Nyirongo, C., 2013. Welfare and Productivity Impacts of Community-Based Land Redistribution Project in Malawi, in: Holden, S. T., Otsuka, K. and Deininger, K. (Eds.), *Land Tenure Reforms in Asia and Africa: Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan, London & New York.
- Sjaastad, E., Bromley, D. W., 1997. Indigenous Land Rights in Sub-Saharan Africa: Appropriation, Security, and Investment Demand. *World Dev.* 25 (4), 549–562.

- Tigray National Regional State, 2006. Rural Land Administration and Utilization Proclamation. *Negarit Gazetta of the Council of Tigray National Regional State Proclamation No. 97/2006*. Addis Ababa.
- Wiig, H., Øien, H., 2013. Would Small Be More Beautiful in the South African Land Reform? In: Holden, S. T., Otsuka, K. and Deininger, K., (Eds.), *Land Tenure Reforms in Asia and Africa: Impacts on Poverty and Natural Resource Management*. Palgrave Macmillan, London & New York.