

LAND SCARCITY, TENURE CHANGE AND PUBLIC POLICY IN THE AFRICAN CASE OF ETHIOPIA: EVIDENCE ON EFFICACY AND UNMET DEMANDS FOR LAND RIGHTS

1. INTRODUCTION

Despite the apparent abundance of land, agricultural land with a dependable growing period represents a fraction of the total land area in Ethiopia. Moreover, land degradation is extensive and severe¹, particularly in the highlands above 1500 meters above sea level, which account for about 40 percent of the total land area but home for 90 percent of the total population and 70 percent of livestock. Population continues to grow rapidly in these highlands and exert pressure on diminishing supplies of agricultural land, particularly arable land for cultivation and pasture. There are signs of declining farm size and fragmentation, and excess demand for land such as pushing cultivation onto marginal lands (i.e., steep slopes, low rainfall zone), rural landlessness, and increasing land rentals.

As the current econometric evidence shows, land is one of the major conventional inputs that limit agricultural production. Moreover, land is the main source of rural livelihoods since options other than farming are scarce. And, since the majority of the farmers are subsistence producers, food security problem is closely linked to food production and hence to land. Studies on poverty in Ethiopia also confirm that being poor is statistically related to subsistence farming, shortage of assets for agricultural production (land and oxen), and quality of land.

As land becomes scarce and hence threatens survival, farmers demand for change in land rights that permit them a broad choice of access and secured rights that are enforceable at low transaction costs. The specific type of tenure arrangement that emerges, however, depends on the interplay of demand and supply factors. The African evidence indicates that as land becomes scarce, tenure regimes (or, property rights) evolve towards individualized land rights (see, for example, Platteau, 1996 for an exposition and critique of the theory in Africa context). The evolutionary process is not, however, a smooth progression; either indigenous institutions are not capable to meet sufficiently the growing demands for individual land rights and/or public policy acts in a way that negates the evolutionary process.

The Ethiopia case reviewed in this paper exemplifies the retarding effect of a deficient public policy that is not fully informed by underlying demand and supply conditions that necessitate tenure change. Despite the government deliberate policy to do away grossly with the past tenure systems, there is evidence that indicates farmers are expressing preference towards individualized market-based tenure system for agricultural land such as land rental. But such self-evolving process is not as operative and effective. Paradoxically, government intervention is still necessary. However, it has to be informed to meet the changing demands for land rights that are consistent with the desirable societal goals of equity, efficiency and environmental sustainability.

The thrust of the paper focuses on three questions. First, what has been the policy change that has influenced tenure change in contemporary Ethiopia, especially after the mid-1970s? Second, what has been the consequent change in tenure system? Third, what has been the effect of tenure change particularly on access to land, command over land rights, tradability of land rights, productivity and investment in land, poverty, and land dispute and conflict? The existing evidence is systematically synthesized and presented in analytical framework that is consistent with evolutionary theory of land tenure and the history of land tenure in Africa at large.

The paper is organized in five sections. Following this brief introduction to the motivation and purpose of the paper, section two presents a brief analytical framework that is based on a review of the African evidences. Section three traces the major land tenure policies that have guided tenure changes since the mid-1970s. Section four focuses on synthesis of the empirical evidence on the efficacy of evolving tenure systems. Here the thrust is on key issues that are of prime importance in land tenure debate in Ethiopia at present: access to land and its distribution, uncertainty and command over land rights, tradability of land rights, connection of tenure to poverty, and tenure deficiency and conflict (see the details in Tesfaye 2003 and 2004). Since public policy is dynamic, the

¹ Areas with extensive land degradation are marked by low topsoil, declining soil fertility and increased moisture stress. These biophysical changes are associated with declining productivity, increased rainfall-linked production variability, and impoverishment and out-migration.

paper tracks the recent policy change particularly at regional administration level and identifies policy gaps. The final concluding section highlights the key findings, lessons learned and recommendations for future research and policy.

2. OPTIMALITY OF LAND RIGHTS SYSTEM: ANALYTICAL FRAMEWORK

Optimality of land rights system from the perspectives of efficiency and equity depends on nature of resource (for example, rangeland in arid areas or cropland in humid highlands), pressure factors underlying demand for land rights (e.g., physical environment, population, integration into market), ability of indigenous institutions to innovate or adapt to new demand conditions, and public policy and its legal framework as shown in figure 1. There are different property rights along the continuum that ranges from collective rights to individual rights depending on the underlying conditions. The African evidence indicates tenure regimes (or, property rights) evolve towards individualized land rights in response to increased demand for secured land rights over scarce land resources (see, for example, Platteau, 1996 for an exposition and critique of the theory in Africa context). In a few African countries, land is titled to formally legalize private property rights (Atwood, 1990; Bruce and Migot-Adholla, 1994; Barrows and Roth, 1989; Pickney and Kimuyu, 1994). In other cases, ownership of land remains with a community or state but land rights are individualized for multi-layered claimants. Indigenous land rights are rarely communal in areas of permanent cultivation where individuals exercise use rights that are transferable (Bruce, 1988; Bruce and Migot-Adholla, 1994; Atwood, 1990; and Pickney and Kimuyu, 1994).

The biophysical environment (topography, soil, and climate) sets the potential production possibility of land (ignoring the effect of technological change). For example, arable land for cultivation is limited in arid environment, where the climate is hot and dry, and soil fertility is inherently low. Under conditions of low productivity and variability in production, individualization of land is not a cost effective institutional arrangement. Instead, as in the case of extensive rangelands in the arid and semiarid areas, collective arrangement that allows mobility over an expansive rangeland is the most desirable tenure arrangement (Baland and Platteau, 1996; Scoones, 1995; Behnke et al, 1993; Ostrom, 1990). There are also other advantages with common property arrangements: equity and insurance (see, for example, Baland and Platteau, 1996); low-cost relative to private property (Eggertsson, 1990); economies of scale (Stevenson, 1991); and embodiment in existing social norms and values (Baland and Platteau, 1996).

Population has systematic influence on tenure arrangement. For example, Olson (1965) hypothesizes that small user groups are more likely to cooperate in collective action because of low free-rider problem. But such relationship is not necessarily linear (e.g. Agrawal and Goyal, 2001). Collective actions are effective within some minimum and maximum population thresholds. As population size surpasses some maximum threshold, there is tendency to evolve towards individualized land rights. This is markedly evident in comparing rights systems in settled agriculture in highlands and pastoral lowlands in East Africa. In the densely populated highlands where shortage of land is severe, tenure systems are more individualized. In the sparsely populated lowlands where population pressure is not intense, collective management of resources tends to dominate.

There is also a positive covariation between land markets, and rural infrastructure and market integration, especially where agriculture is profitable and competitive. Acquiring land through lease and purchases is becoming more common in areas of high population density and developed rural infrastructure such as roads and transportation. Land markets are markedly developed where population pressure is high and scarcity value of land is appreciable (see, for example cases in Bruce and Migott-Adholla, 1994; Andrea and Platteau, 1998 and Gassana, 2000 for Rwanda; Tesfaye, 2004 for Ethiopia). Based on survey results conducted in Rwanda in 1988, which compared modes of acquisition of land owned for less than 10 years and moiré than 25 years, show that inheritance is still the dominant form of acquisition but the trends for inheritance, state allocation and land loaning are declining while the trend is rising for purchased land (quoted in Bigagaza, Abong and Mukarubuga, 2002).

The key in evolution of tenure is the supply responsiveness of new institutions to new demands for land rights ((North, 1990; Kikuchi and Hayami, 1980; Ruttan and Hayami, 1984). As resources become scarce, institutions governing land rights need to evolve to facilitate or enhance effective use of scarce resource. The existing empirical evidence indicates that characteristics of user communities play an important role in supply of institutions for governing land resources (see, for example, Agrawal, 2000 for the literature on collective actions in commons). For example, there are four sets of

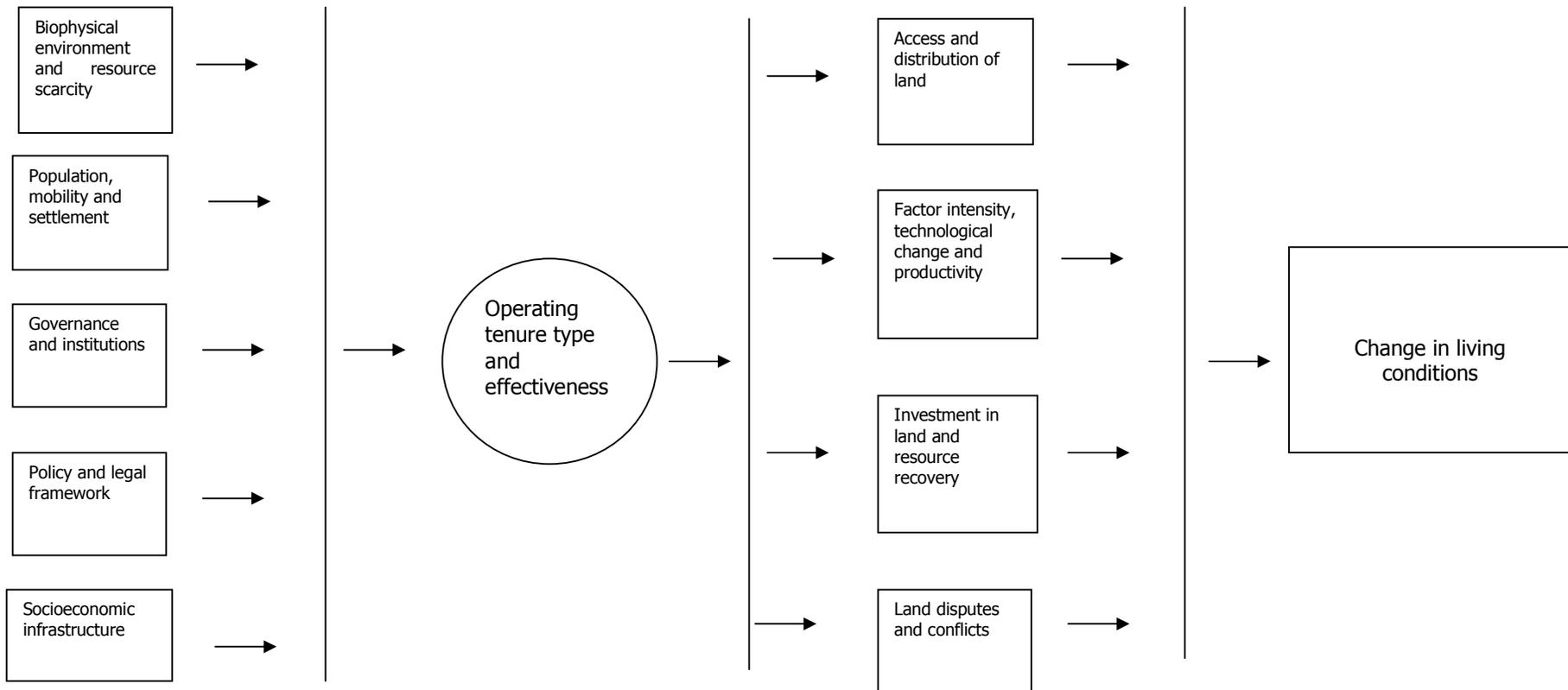
factors that influence ability of users to create and sustain successful governance of common pool resources: (i) characteristics of resources (e.g., small sized with defined boundaries and predictable resource flows are likely to be better managed); (ii) characteristics of user groups (effective if groups are small in size with homogeneous identities and interests, interdependency, similar past successful experiences (social capital) and low level of poverty); (iii) particulars of institutional arrangements (e.g., desirable if rooted in local customs and norms); and (iv) external factors (negative to collective actions are population growth, market integration, failed government to facilitate emergence of institutions).

Where induced institutional innovation is slow, public policy has important role in hastening the process thereby closing the gap between demand for and supply of land rights. Public policy has pivotal role particularly in ensuring expanding choices for access to land, providing legal protection and enforcement to land rights with social legitimacy, enhancing awareness to overcome resistance to change rooted in existing social norms and values that are not justifiable on equity ground such as excluding rights to women, and promoting factor markets including credit and insurance markets.

But public policy and formal laws may have also diluting effect on evolving land rights and capacity of indigenous institutions to respond to demand pressures. For example, where government owns land and controls rights, farmers may become less secured as compared to indigenous rights. Where tradability of land rights is restricted, farmers can have weak command on informal land markets, especially where both legal recognition and social legitimacy are deficient. Rights that are legally recognized may not be considered socially legitimate if statutory laws fail to recognize social norms and values. It is plausible that right to land degenerates where public policy and statutory laws undermine indigenous institutions. Public policy, instead of strengthening these institutions and enhancing conditions that are favorable towards innovative tenure arrangement that is consistent with increased security of tenure, efficient use of land, and conflict prevention, it can hasten erosion of indigenous institutions.

In short, as shown in figure 1, there are different operating tenure regimes depending on resource type, population, market access, and capacity of indigenous institutions. Rights to land evolve towards greater individualization with increase in population. Tradable land rights are prominent in areas with developed market access. Indigenous institutions evolve strongly towards individualized land rights where public policy has complementary role. Capacity of indigenous institutions to find institutional solution to scarcity of land and associated demands for rights weaken where non-land markets are underdeveloped, return to investment in land is low and uncertain, and public policy acts in a way that harms the capacity of indigenous institutions. The consequences of incomplete or untimely or distorted tenure systems manifest in environmental degradation, livelihood insecurity and poverty, and land disputes and conflicts.

As tenure systems evolve, there will be change in opportunity, incentive and risk that will have influence on land use and management decisions of individual or collective decisions of land users (Figure 1). How much these decisions influence the efficacy of any particular tenure regime can be assessed in terms of a set of intermediary outcomes shown in the flow diagram: (1) access and distribution of land; (2) factor intensity, technological change and productivity; (3) investment in land (or, degradation of land); and (4) disputes and conflicts arising from deficient tenure. These intermediary outcomes ultimately impact on livelihood strategy and welfare of the rural population. Public policy effectiveness is measured not only by improving land use and management practices per se, but its capacity to enhance productivity and rural welfare as well.



3. POLICY-INDUCED TENURE CHANGE AND CONTINUITY IN ETHIOPIA

Preceding the land reform of the 1975, which is the major turning point in shaping the evolving tenure systems today, the land tenure systems varied but broadly fell into two categories (Yigremew, 2002; Dessalegn, 1984; Cohen and Weintraub, 1975): usufructuary tenures and private tenures. Under the former, the "rist" system was the dominant in the settled northern highlands. Rist is the right to claim to ancestral (original) land. And customary laws require such claim be honored if farmers could establish their claim to ancestral land. Holding rist rights was conditional on paying taxes and meeting service obligations. Rist rights were inheritable and tradable in form of rent, but could not be sold or mortgaged. The residual interest over the rist land was not vested in individual rist holders but in communities.

The private tenures, which prevailed in the south, were by far the dominant both in area and population coverage. The chief features of these tenures were high concentration of private ownership, widespread absentee landlordism, and high rate of tenancy. In the year 1974-75, for example, as many as fifty-one percent of all the holdings were partly or wholly operated by tenants (MOA, 1975). Access to land was largely contingent on landlord-tenant agreements. Rights of ownership included rights to lease, sale and mortgage. But tenants had only conditional use rights. Failure to meet these conditions could subject tenants to eviction without compensation.

There were notable deficiencies in these tenure systems particularly in the private tenures (see, for example, the recent review in Yigremew, 2002). First, operated farm sizes were small and fragmented. According to the survey reported in MOA (1975), about 60 percent of the holdings had a size of less than one hectare. Only 3.8 percent of the holdings were more than five hectares. Second, more than half these holdings in the private tenures were tenant-operated. Third, small and fragmented holdings co-existed with large concentration of absentee land ownership in areas under private tenures. Fourth, considerable insecurity of tenure prevailed in all the tenure systems but mainly in private tenures where most of the holdings were under tenancy. Insecurity of tenure among the tenants was related to unenforceable oral contractual arrangements, threat of eviction without compensation, lengthy and costly disputes and litigation, and absence of due process of law free from political influence.

The forces of political change calling for "land to the tiller" built over time and consummated with change in political power in 1974. The first priority of the military government (1974-1991) was to enact radical land reform to abolish the past tenure systems. The major land reform legislation was enacted in 1975 (Proclamation 31/1975). The law abolished the pre-existing tenure systems. Ownership of land was vested in the State. Farmers were entitled to free land through their respective farmers' associations at their places of residence to a maximum of 10 hectare per family. Farmers hold only use rights that cannot be transferred in any form. Farmers forfeit these land holding rights if they are unable to cultivate their land continuously and/or fail to comply with physical residency requirement. No factor markets were allowed to operate legally including labor market. Some of these provisions, particularly the state ownership of land, were enshrined in the constitution in 1987.

Following the 1975 proclamation and over the next three years (1976-78), the major drive was to confiscate land from those who held more than the legal ceiling of 10 hectares and redistribute equitably, and strengthen the administrative and judicial powers of the newly created peasant associations (Proclamation XXX). Qualified farmers access land through these state-mandated peasant associations, which are formed in fixed geographically demarcated areas that do not exceed 800 hectares (PA-land). Farmers are only eligible for PA-land where they are physically resident. The fixed supply of PA-land is 'equally' shared among qualified resident members according to a mutually agreed allocation formula. The common practice has been to allocate land in relation to the number of household members (see the review in Tesfaye, 2003).

The 1980s were marked by major drive towards agrarian collectivization (i.e., formation of cooperative societies, expansion of collective farms, villagization). But these advances started unwinding in late 1980s. Some elements of the reform reversed such as the dissolution of producer cooperatives and abandonment of grouping the rural population into new villages. The process hastened after the fall of the military government in 1991. The then government also expressed its intent to move towards market-based land policy in 1989, which included the rights to use hired labour and rent land.

The land policy of the current government, which seized political power in 1991, is in effect a continuation of the past (1974-1990). It has been largely guided by the ideology of state control of land, entitlement of free land to all to ensure subsistence, and a great fear that opening land markets would provide inroads for involuntary dispossession of land from poor and vulnerable peasants. Some of the policy inconsistencies and contradictions in pursuing the goals of equity, efficiency and sustainability are inherent in these guiding political principles.

The federal constitution was reenacted in 1995. It reaffirms the constitutionality of the State ownership of land. It guarantees free access to land. Holders of land rights are constitutionally protected from eviction except where there is a need for total or partial redistribution of land to ensure "fair and proportionality". Farmers have the same bundles of rights as in the 1987 constitution with added right to bequeath their land. Land is still not subject to sale and other means of exchange. Since land belongs to the state, only the movable and immovable properties developed on land are treated as private and hence transferable in any form. In line with the 1989 policy that was declared in the wake of the downfall of the previous regime, the legal restrictions on factor markets such as labor market have abated. The constitution, however, retrogressed with respect to allowing land market to operate as compared to the policy declaration of 1989.

The constitution bestows the prerogative to administer land and other natural resources to regional governments under the current federal structure. The federal rural land administration and use proclamation of 1997 (No. 89/1997) elaborates the rights specified in the 1995 constitution and provides the principles that guide the development and enactment of regional laws for rural administration. Accordingly, three regional governments have already enacted laws that determine land use and administration in their respective regions (i.e., proclamation 23/89 of the Tigray region in 1997, proclamation 46/2000 of the Amhara region in 2000 and proclamation 56/2002 of the Oromiya region in 2003).

Although all the regional states follow the federal constitution and the guidance stated in the 1997 federal proclamation, there are still some regional variations. The three regional states allocate land freely for agricultural use. But there is a floor size per family of 0.25 ha in Tigray region, and 0.5 for cereal and 0.25 ha for perennial crops respectively in Oromiya region. Even bequeathed land to children cannot fall below this minimum threshold in Oromiya region. The logic of such floor size is presumably to comply with the stipulation in the federal proclamation (No. 89/1977) that calls for allocation of "sufficient land for subsistence". Holders of land are eligible for registration certificate in Tigray, book of holdings in Amhara region and a life long certificate of holding in Oromiya.

The federal constitution guarantees nearly unconditional perpetuity of holdings rights except where land is redeemed for a common good. However, there are specific conditions attached in the regional laws that are in contravention to the federal constitution. The proclamation 23/89 of the Tigray region requires a residency requirement. Those who have abandoned their locality for more than two years will forfeit their holdings. All the three regions require that holders comply with laws governing land use and conservation. The proclamation 46/2000 of the Amhara region, for example, states that land users shall be deprived of their holding rights where they fail their obligation to apply protection and conservation measures.

Holding rights are transferable to family members but cannot fall below the legally stipulated land floor in Oromiya and Tigray regions. The Amhara region extends the right to bequeath to non-family farmers on whom titled holders have become dependent for farming and subsistence. Whilst use right remains in effect, holders of land title can lease their land but cannot sell or mortgage in all the three regions. But there is a great deal of legal uncertainty since the provision of such right contravenes the federal constitution that excludes land sale and any other "means of exchange". The Amhara proclamation in effect defers policy commitment by simply promising establishing an administrative system that enables landholders to lease their land at some future date. Although the subsequent administrative directives specify conditions for leasing land, their legal basis remains questionable. The rural land use law in Tigray permits land rental for a maximum period of two years for plots under traditional farming and ten years for farming using non-traditional technologies. The Oromiya Region permits leasing land not exceeding half of the land under current holdings for a period of 3 years if it is operated under traditional farming. Such transaction is subject to approval by local authority on terms and minimum rent.

The federal proclamation recognizes or stipulates "fair and proportionate" assignment of land at interval decided by rural communities. The proclamation thus leaves open for a periodic distribution

of land to sustain equitable redistribution of land. The Amhara Proclamation states such redistribution is necessary to 'further secure the equal rights of citizens'. On the other hand, the Oromiya Proclamation states that land under current holdings of cultivators and pastoralists will not be subject to redistribution. Land without legal certificate and unoccupied pockets of land are subject for distribution. These apparent contradictions are rooted in seeking administrative formulae for managing the goals of universal guarantee of free access and allotment of sufficient land for subsistence in environments where land is increasing scarcity for cultivation.

Legally entitled landholders are entitled to financial compensation in cases of voluntary relinquishment or termination of land rights. The compensation is only for improvements made on land and immovable property built on the land, but not to the land since it is owned by the state --the state apparently appropriate the capitalized value embedded in land. Nowhere in the Amhara proclamation is stated the right to compensation in the event of voluntary relinquishment. The Oromiya law extends guaranteed coverage for voluntary relinquishment. No explicit provision exists regarding to right to go to court for conflict resolution in the Federal proclamation. As stated in the Oromiya legislation, conflict arising on land holding is first resolved by local social court. Decision can be appealed at ordinary court. Decision is final if both courts reach the same verdict. Otherwise the case can go to higher court.

In summing up, these policy changes at Federal and regional governments attempt to address common policy concerns: problems of landless, diminution of farm size, insecurity of tenure and weak land rights, depreciation of the productive capacity of the land, and distress land rental or sale. The policies attempt to contain rising landlessness and insufficiency of land for subsistence through searching and transferring land that is unoccupied or illegally possessed or failed meeting environmental standards. In addition, some regions redistribute land periodically and/or individualize common lands that are traditionally held for pasture and forest. Besides these measures, the regions such as Tigray and Oromiya institute floor land size. Specific to the problem of insecurity of tenure, there are policies such as slowing or halting redistribution of land (there has not been major land redistribution in Tigray since 1992 and not allowed in Oromiya region), certification of land rights, and acceptance in principle to compensate for capitalized value in land. Whilst recognizing the existence of informal land markets, policies continue to restrict land markets to operate

4. EMERGING TENURE SYSTEMS

There are three notable tenure arrangements today: administrative-based, re-emerging market-based, and customary-based non-market arrangements. The majority of farm households have land through administrative based allocation (as known in the literature as PA-land or Kebele land interchangeably). Hence, it is the dominant tenure arrangement. Access to government-controlled land is a constitutional right subject to eligibility conditions. Eligible farm households have access to free land within officially set land ceiling and floor. Use rights are, by and large, unrestricted except for meeting conditions for land conservation and improvement. PA-land is not transferable except to family members through bequeathing. Any value added in land is transferable in any form.

While PA-based land allocation is the basic rights system, there are emerging derivative tenure systems. Access to land through informal land rental markets (crop-sharing and cash rental) is gaining importance (see Tesfaye 2004 for the recent review of the rental land market)². Four factors contribute to this trend. First, the ability of the PAs to accommodate the continuous demand for land is diminishing, as is evident from diminution of PA-allocated farm size and growing numbers of farmers with no PA-land, especially newly formed young farm households. Second, the technical ability of the PAs to anticipate and correct change in factor proportion at the farm level is limited. There are households with equal allocation of PA-land based on family size, but with significant variation in factor intensity such as land per adult or land per oxen. Third, farmers who participate in land rental markets are able to combine land rent with other factor markets (e.g., labour, oxen, credit) and overcome problems associated with missing or incomplete factor markets. Fourth, there is a move towards relaxing restrictions that favour transacting in land rental in some regions.

Access to rental land is subject to demand and supply factors. On the demand side are land-constrained farmers, defined as those whose official land holdings are not sufficient to fully utilize

² Informal land transactions cover market-mediated (rental contracts such as crop-sharing and cash rental) and non-market mediated transfers (for example, borrowing or gifts). The terms share cropping, crop sharing and share rental are used interchangeably in this paper.

their resource endowments including their own labor. On the supply side, there are land abundant farm households including the land abundant but poor households who often lease out land in exchange for labor and/or oxen and/or credit. Share tenancy is the dominant contractual arrangement, particularly among resident farmers with close social ties. The contracts are short-term and rarely exceed more than two crop seasons. Use rights in these contracts are restricted. Tenants rarely fallow and/or grow perennial crops and/or invest in land. Rental land is not transferable except to the original holder of the land.

As arable land becomes scarce, access to rental land tends to favor farmers with cash, farm skills and experience. Lesser farmers ask up front fee to buy the right to rent or prospective lessee advances credit to lesser land holder where the right to till continues until the debt is retired (e.g., the "Meliso" contract in Ankober of central highlands as narrated in Senait, 2002). Lesser farmers with strong economic position also demand for proof of farming skills and experience, and increased output share including by-products and contribution of variable inputs. These requirements work against the poor, young and inexperienced "landless" farmers. Some are rationed or priced out because of the increasing rental rate and tightening selection criteria.

There are other venues for land acquisition that are particularly important for the growing 'landless' farmers who often seek land through the informal markets but constrained by lack of farm experience and equity capital such as oxen. They either borrow land from their landed parents with no reciprocal obligations or share land with their parents and divide the output, or obtain land as a grant in a form like dowry. The institution of marriage acts occasionally as a non-market device for getting access to land and pool labor, especially between landed female-heads and landless male labor (Yared, 1995; Teferi, 1994).

Besides arable land, there are common pool resources such as pasture for grazing, water resources (rivers, streams and lakes) and forests. Traditionally, these resources have been managed through customary tenure systems. Within boundaries of the commons, the rights to common resources are vested in groups or communities that claim legitimacy to customary laws. Boundaries are closely defined. Rules are set that govern access, modality of utilization, distribution of benefits, and transfer of use rights. Non-members are excluded except where there is a negotiated reciprocal arrangement.

The commons have come under different arrangements over the years: (1) unrestricted common pool resources akin to an open access; (2) restricted common pool resources (e.g., restricted grazing and forest areas), (3) individualized hillsides and enclosed areas and (4) direct state-operated. The unrestricted tenure arrangement is prevalent under conditions where properties characterizing common property resources are absent (e.g. defined boundaries, rules of access and exclusion, and enforcement) or ineffective (i.e., individuals act independently to maximize utility or benefit without regard to externality effect). The restricted arrangements come under different modes with varying degree of access (or, denial) to members and non-members. For example, no grazing is allowed in the wet season in enclosed areas except for some preferential access to members in some village grazing lands. However, seasonal switching of tenure regime occurs in dry season under a variety of arrangements such as open access to members only, negotiated access to non-members, and open access to all.

In short, notwithstanding state ownership and control, there are multiple modes of acquiring arable land with different bundles of rights governing access, use and transfer. The rural communities are moving towards market oriented multiple and flexible tenure arrangements. However, the rights in these informally arranged rights systems may have social legitimacy and sanction, but juridical uncertainty prevails because the statutory law of the country prohibits market transactions. Although some regions are relaxing legal constraints, land marketing remains illegal in the constitution, which is the supreme law of the country. For farmers with no access to official channel or rental markets, particularly those with little farm experience, skills and cash, there are also informal arrangements akin to the customary based systems in Africa (e.g., inheritance, gift and exchanges).

A variety of management arrangements co-exist in the commons involving open access, co-management between state and user communities, and individualization.

5. EFFICACY OF LAND TENURE CHANGE

As it is shown in figure 1, the impact of any operating tenure system on welfare outcome is intermediated through change in (i) access and distribution of land; (2) factor intensity, technological change and productivity; (3) investment in land (or, degradation of land); and (4) incidence of

disputes and conflicts. A tenure system is welfare reducing if it constrains access to land, creates disincentive to improve resource use and productivity, increases risk for investing in land, and aggravates dispute and conflict over competition for scarce land resources.

Uncertainty and command on land rights: As land becomes scarce, farmers demand for adequately specified, bounded and secured land rights. Access to land is necessary but exercising rights that come with it in effect determines how much a landholder has control over land, either in use or in transfer. Insecurity of tenure limits the degree to which landholders exercise their land rights. Where there is a prevalence of insecurity of tenure, some of the land rights are left unexercised. For example, a landholder who is insecure of long-term rights is less likely to commit resources into long-term investment as shown, for example, in Place and Hazell (1993) for Ghana, Kenya, and Rwanda; Gavian and Fafchamps (1996) for Niger, and Berhanu (1998), Bekele and Holden (1998) and Tekie (2001) for Ethiopia. Furthermore, insecurity of tenure limits tradability in land rights.

The existing empirical evidence on extent of insecurity of tenure in rural Ethiopia is derived from asking farmers their perceptions of insecurity of tenure (Berhanu, 1998; Yeraswork, 2000; and Holden and Yohannes, 2001) or counting bundles of rights they possess on their privately held plots (Amare, 1998), or measuring certainty premium (Tekie, 2000). The findings from these studies indicate a significant prevalence of insecurity of tenure in different parts of the country ranging between 17 to 40 percent. Farmers feel more insecure about their holdings in the long run, particularly in their long-term transfer rights as compared with long-term use rights, especially those with larger land holdings. The insecure are more willing to pay premium for more secured land rights (Tekie, 2000), which indicate there are unmet demands for security of tenure.

The Ethiopian evidence indicates perception and degree of insecurity of tenure vary between farmers. The econometrics evidence in Tekie (2001) and Holden and Yohannes (2001) identifies some key relations. The evidence in Tekie (2001) shows that farmers with per capital land holdings above village mean would be more tenure insecure than those with below-average holdings. Because of the prevailing government allocation of land in proportion to family size, farmers with a large amount of land relative to their family size would expect to give up part of their possession as compared to those with smaller holdings relative to their family size. The probability model estimated in Holden and Yohannes (2001) qualifies that not all farmers with larger relative farm size are more tenure insecure. The relationship is instead location-specific. Some farmers with large farm size may have influence in local power structure to protect their larger holdings.

In addition, the findings in Tekie (2001) and Holden and Yohannes (2001) suggest that farmers renting out land feel less secure because they are not demonstrating continuous cultivation of their land, which is a key requirement for maintaining possession of PA-land. On the other hand, farmers growing perennial crops feel more secured. Growing perennial crops on PA-land appears to strengthen the security of tenure (e.g., Holden and Yohannes, 2001). This finding, however, cannot be fully corroborated with other studies on Ethiopia. Farmers in parts of Southwest Ethiopia, for example, deliberately converted their perennial fields to annual crops for lack of tenure security (Tessema, 1994). The opinion-based survey in Yeraswork (2000) also concludes that farmers in Wello and North Shewa either do not plant trees or destroy their private trees because of fear of losing their right to dispose of their own trees. These findings are consistent with other descriptive studies (Teferi, 1994; Yigremew, 2000; Yared, 1995; Aklilu and Tadesse, 1994).

Whilst the empirical evidence is generally scarce, there are a few pointers that indicate female-headed households are less secured in effectively controlling their land rights than male-headed households. Firstly, they practice fewer long-term rights such as growing trees or bequeathing land. Secondly, they are more vulnerable to lose their PA-land land overtime because of likelihood of failure to meet continuous cultivation and residency requirements, high costs of protecting land rights, and abandoning farming for lack of resources. Thirdly, long-term investment in land as a way of protecting land right is weak. Finally, female-headed households show a greater propensity to abandon farming and move to non-farm business as source of livelihood, which is indicative of deficiency in tenure and farming system under prevailing social norms and customs.

Underlying the prevalence and persistence of insecurity of tenure are at least three reasons. First, since land is state owned, it can be reclaimed through declaration of eminent domain without prior knowledge and consent of individual landholders. Second, there is legal uncertainty over landholdings particularly in the case of rental contracts, which exist informally. Third, even where land rights are

legally permissible, transaction costs associated with enforcing land rights are high to some landholders. Either the law or the rules of enforcement are not transparent, or the institutions are not in place to effectively enforce the rules. The burden of enforcing these contracts falls heavily on poor households and socially excluded, particularly poor female-households.

Tradability of Land Rights: Farmers trade use rights off their government allocated land. Land rental in particular is growing in importance as a venue for short-term land acquisition, especially for those with farm experience and established social ties within the village communities. The empirical evidence from case studies in Ethiopia so far points out that rental land markets have beneficial effects of providing alternative access to land, enabling farmers to pool resources, and equalizing factor proportions and distribution of landholdings (Gavian and Amare 1996; Gavian and Ehiu, 1996; Ahmed et al 2002). Although the evidence on productive efficiency and technology adoption is not conclusive, the tenure effect on productivity is not sizable particularly when the risk and resource pooling benefits are accounted for.

Notwithstanding these benefits, however, there are marked weaknesses with land rentals (see for recent review in Tesfaye, 2004). First, rights in rental lands are restricted in use (e.g., no fallow or perennial crops) and transfer (e.g., no right to bequeath). Farmers operating on short-term rental land rarely grow perennial crops and invest in land conservation and improvement. Second, the rental markets are geographically segmented since farmers are restricted to hold land in their places of residence only. Third, liquidity of markets is hampered by insecurity of tenure in rental land and absence of legal mechanism to enforce contracts. The markets are thinly traded and personalized with rates also partially contingent on bargaining position of the transacting parties. Finally, access to rental land is tightening to farmers with little farming experience and skills, reputation of no-default in contractual agreements in the past, and ability to deposit cash and pay competitive rent.

Access to Land and Area Operated: The majority of the farm population has access to land to operate regardless of ability to cultivate. But, the average land operated is small relative to family subsistence need (an important parameter where farming is mainly for subsistence) and/or relative to labor (e.g., Mulat et al, 1998). According to the national survey of private peasant landholdings conducted in 1997/98 (CSA 1998), nearly 80 percent of the holdings were below 2 hectares. A quarter of the holdings were below a one-half hectare. The average land holding per holder was nearly one hectare, which constitutes areas for temporary crops (77.4%), permanent crops (6.2%), grazing (6.6%), fallow (5.6%), and other land uses (7.2%).

Although farm size is small on average, there is significant variation in area of land operated around the mean. As the econometric evidence reviewed in Tesfaye (2003) shows, area of land operated is strictly determined by factors affecting local supply of and demand for land. First, village characteristics within which farmers reside such as ecological conditions and population density have significant influence on the area of land operated. Consistent with the neo-Malthusian hypothesis, the rural population tends to be concentrated in areas where there is good climate and soil, and land suitable for cultivation to meet subsistence. Farmers in these ecological areas hold on average smaller area of operated land. The same as ecological factors, size of land operated tends to be small in areas with better infrastructure such as road access, which is often associated with more population density and better income opportunity.

There are also significant differences within peasant associations (or, villages). The demographic characteristics of farm households, especially family size, have a significant influence on land allocation. Size of households has a significant positive non-linear effect on area of land operated. This is consistent with administrative based allocation practices. That is, as the size of a household increases, the size of land increases but the incremental land for every additional household member decreases. As it can be drawn from the findings in Dessalegn (1984), increase in household size has even zero incremental effect in some peasant associations. That is, the additional number of household has a zero effect on land size.

Land allocation tends to favor older than younger household heads, especially where land is scarce. The allocation tends to be biased towards the more experienced farmers in the 25 to 59 year age category. Because of their proven management skills, which have a high premium in an environment of land scarcity, they tend to have more access to land. The young households, because of their youth and limited farm experience, obtain less land than farmers with established farming experience. But such age-differentiation is not as strong where availability of land is not tight. Consistent with these descriptive results, the econometric evidence based on 1995 and 1996 national surveys in

Jayne et al (2003) shows a non-linear relationship between age and access to land as land under household's use rights including rental land. The land allocation at the margin increases until roughly mid-50s and then tapers off as the capacity to farm shrinks.

It is generally the case that female-headed households, as compared with male-headed households, hold smaller area of land. Generally, ease of access to official land by female-headed households is contingent on availability of land for male-headed households. In addition, female households face fewer modes of access to land. For example, female-headed households rarely rent-in land since they often lack the resources that a tenant farmer brings to acquire access to land: labor for undertaking all farm operations (female-labor rarely engages in plowing), farming skills, oxen, and seeds. In an environment where land is scarce, competition for land works to the disadvantage of those without resources. The econometric evidence in Jayne et al (2003) distinguishes unmarried female-headed households and female-headed households with a male partner away. The first category of female-headed households possesses the least followed by the second category when compared to male-headed households.

Jayne et al (2003) also find a positive association between land holding and asset, specifically ownership of livestock. However, the relationship is not as strong as the demographic variables particularly family size. These results are consistent with the expectation under the current land allocation practice. Factors other than household size and composition are occasionally considered in the allocation of PA- land. Where availability of land is not tight, upward adjustment in land is made to account for the size of livestock owned.

The trend in per capita land operated continues to decline. For example, land cultivated to annual and permanent per agricultural person based on FAO data declined from 0.51 ha in 1960-69 to 0.25 ha in 1990-99 (see Jayne et al, 2003). The ideal of allocating land proportional to household size has become less and less attainable, especially for younger generations. The more recent claimants of land, who are largely newly formed households, are more likely to receive smaller and less productive plots regardless of gender (Amare, 1998; Yared, 1995). Since the physical supply of land is fixed (or, deteriorating due to degradation) and acquiring land outside place of residence is constrained, the same pool has to be sub-divided as new claimants become eligible thereby depressing the average towards uneconomical size.

Notwithstanding the constitutional right of "guaranteed land entitlement", there are a sizable numbers of farmers who seek but unable to get government land.

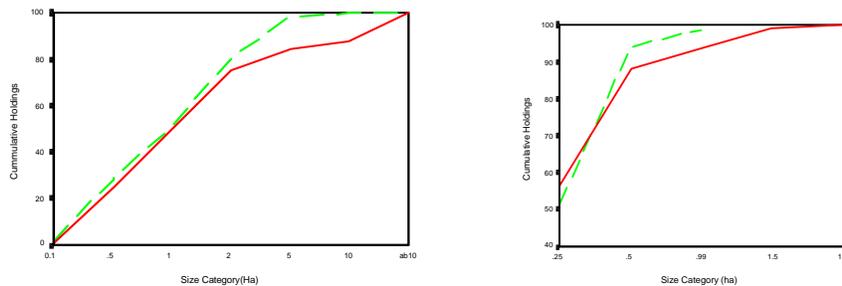
In short, the majority of farmers today have access to land. But average operated farm size is small. And it is declining. However, there are significant differences in landholdings with area of land operated at farm level statistically related to village level fixed-effects (population density, topography, soil type, proximity to urban or market centers), household demography (household size, age, and gender), and access to rental land. The fact that the area of land operated depends mainly on household land and labor endowments indicates that the markets for land and labor are not fully functioning to obviate the need to depend on their initial endowments.

Inequality in area operated: One of the key elements of the 1975 land reform is the setting of a 10-hectare ceiling. This upper limit to farm size has effectively truncated the upper end of the distribution of land ownership. The overall effect of the administrative based land distribution has been to do away with private ownership, abolish land -owning class, and shift the concentration of landholdings towards the middle and lower land-size categories. This is illustrated in figure 2, which compares cumulative distribution of holdings before and after 1975 based on national surveys and data for one locality reported in Dessalegn (1984). There are at least three patterns that emerge. First, the curves are truncated at the upper end³. Secondly, the shift towards the left occurs in the national data, which indicates that numbers of farmers with landholdings have increased but they hold on average smaller area of land. The majority of holdings after the reform fell below 5 hectares, which indicates a shift towards the middle and lower ends of the distribution. Third, the curves in the case of the figure for Bolosso shift to the left and then cross at the lower end. That is, there were some farmers who got more land after the reform.

³ Dessalegn (1984) reports an upper truncation point of 1.25 ha in Bolosso in the southern region (down from pre-reform maximum of 1.5 ha), 2.5 ha in Manna in the southern west region (down from the pre-reform above 6 ha), 5 ha in Adet in the north west region (down from above 6 ha) and 3 ha in Sire in the central western region (down from pre-reform above 6 ha).

The relative disparity of land holdings has narrowed as the consequence of land distribution at upper end (and legally stipulated minimum size in some region states). However, there is disparity in land holdings within the narrow band of distribution (i.e., below 5 ha) due to within and between village effects. The Work in Tadesse (1998), for example, shows a Gini coefficient 0.47 for Ethiopia as a whole. There are several zones with above (e.g., South Shewa, West Shewa, North Omo) and below the national average (e.g., North Gondar, South Gondar, West and East Gojjam). At the bottom of the land distribution, there are small-scale farmers approaching near landless.

Cumulative Distribution of Land Holdings by Size Category



National

Bolosso (Wolaita)

Transactions in informal land markets tend to contribute towards equality in the size distribution of land area operated (Tesfaye, 2004). Such an equalizing effect of rental markets is also reported in Andre and Platteau (1998) for the case study in Rwanda where, as in Ethiopia, the country experiences high population density and land scarcity. Temporary land transfers such as land rentals and loans contribute to narrowing inequality while land sales aggravate inequality. Based on data on distribution of operational holdings from 103 countries, Deininger and Squire (1998) found that the share of land rental was below 10% of the total in all developing countries and the Gini coefficient for the distribution of operated land was lower than the Gini coefficient for the distribution of owned land. The lower inequality in area operated suggests that rental market contributes to more equal distribution of land.

There is an important caveat in the Ethiopia-specific results. The size distributions of operated land above do not take into account variation in the quality of land. But quality of land enters systematically in government controlled land allocation. Farmers with a low quality of land are often compensated with a larger area of land. Hence, farmers with small farms end up having better quality of land as compared with farmers with large farms. The presence of such systematic variation in land quality suggests distribution of land holdings is more equal when quality-adjusted land size is compared. Ignoring such adjustment tends to bias upward measures of land inequality such as the Gini coefficient. On the other hand, the relation between land quality and rental land is inconclusive and can only be empirically determined.

Productivity Gap: There are different ways in which land influences agricultural production. The first is the quantity effect; more land means more to output. The second is the quality effect; land with better land quality produces more output per unit of physical area of land (e.g., output per hectare of land). The third is the tenure effect that governs access, use and transfer rights. Tenure effects land productivity through technical efficiency, technological change and change in output mix. Over a long period of time, tenure also influences productivity through its impact on today's investment in land or enhancing the future productive capacity of land.

The evidence so far indicates there are small differences in productivity gap between farms held under different tenure arrangements (Gebeyehu, 1990; Gavian and Ehui, 1999; Ahmed et al 2002). For example, Gavian and Ehui (1999) found a total factor productivity (TFP) gap of 10 to 13 percent on land held under fixed rental and share contract respectively in the Arsi villages, as compared with Government allocated land. Ahmed et al (2002) found using the same Arsi survey data, statistically significant lower yield under share tenancy, but no appreciable difference between fixed rental and PA-land.

One possible explanation for the productivity gaps is the difference in technical efficiency among farms under different tenures. The econometric evidence in Ahmed (2002) shows significant technical inefficiency related to share contract (10 to 15 percent lower), holding other efficiency determining factors constant. XXXXXXXXXX

Productivity differences may also arise between tenure types due to variation in the adoption of agricultural technology. Holden and Yohannes (2001) tested if tenure insecurity negatively affects intensity of purchased technical inputs (seeds, fertilizer, pesticides and herbicides) using survey data from central and Southern Ethiopia. The tenure insecurity variable was not significant in the decision whether to purchase or not (stage one), as well as in the intensity model (stage two). The authors find no significant inefficiency spilling over the use of purchased farm inputs due to share-tenancy arrangement. Using a different data set from villages in Southern Ethiopia, this author estimated a Tobit regression model to test if intensity of fertilizer use differs between staple crop (maize) and cash crop (Teff in the survey villages)⁴. Farmers using rental land (a predicted variable) for Teff, the main staple crop that is commonly grown on rented plots, use fertilizer intensively as compared to maize plots. Hence the conclusion in Holden and Yohannes (2001) is generally plausible but may not hold for all crops.

The studies so far have not captured the effect of crop composition on explaining productivity difference between own-operated and tenured farms. However, such variation is strong in farming systems where perennial crop growing is common. Since the majority of rental contracts are short-term, farmers concentrate on annual crops. Permanent crops such as coffee, chat, and 'Enset' are rarely grown in rental lands. Hence, there are yield differences (measured in real monetary value) between farmers operating their own PA-lands where perennial crops are grown and rental lands where only annual crops dominate.

In short, the evidence so far indicates that productivity gaps exist between farms under different tenure arrangements mainly arising from the composition effect and technical inefficiency, especially on shared plots. However, given the presence of large technical inefficiency in smallholder farming regardless of tenure type in Ethiopia, the inefficiency that arises from share tenancy may not be as strong. Moreover, farm communities in Ethiopia choose share tenants who have knowledge of farming and a reputation for trustworthiness. While the cost of supervision is non-zero, the social penalty of labor shirking is high and hence the loss in efficiency due to undersupply of effort may not be substantial.

Investing in Land: Land size is not only small, but it is degrading as evident from

Severity of land degradation tends to be high in areas with mountainous topography, low inherent soil fertility (i.e., low organic matter and essential soil nutrients), poor climate (e.g. low and variable rainfall, and recurrent droughts), extensive deforestation, overgrazing and cultivation into fragile margins, intensive land cultivation without adequate soil fertility management and technological change. The areas with extensive soil and water erosion are marked by low topsoil, declining soil fertility and increased moisture stress and water scarcity. These biophysical changes are associated with declining productivity, increased rainfall-linked production variability and failures, and out-migration.

Farmers are generally aware of the severity of soil and water degradation (Berhanu 1988; Belay, 1998; Belay, 1992; Ezra, 1997; Tekie, 2001). Level of awareness tends to be high among farmers who live in areas with more degraded lands. Depth of farm knowledge of specific plots that is accumulated through years of cultivation enhances the level of awareness (Berhanu, 1998; Tekie, 2001). Such a high level of perception is one of the reasons for more farmers applying indigenous conservation practices in degraded areas of Ethiopia (Belay 1992 and 1998; Berhanu, 1998; Kruger et al, 1996; Tekie 2001).

However, the extent of soil conservation and improvement are not commensurate with the level of awareness. The econometric evidence in Berhanu (1998), Bekele and Holden (1998) and Tekie

⁴ The regression results show that intensity of fertilizer use is positive with respect to land quality attributes (intensity is high on red/black soils and less eroded land), ownership of livestock (those unconstrained by subsistence requirement tends to apply more amount per area), use of improved seed (predicted variable), and presence of service cooperatives (where there is physical access to fertilizer). On the other hand, intensity of fertilizer use is negative with respect to area (intensity is higher on small farms), and nutrient-grain price ratio (responsive to price effect).

(2001) identify some of the factors that negatively affect investment decision: small farm size and subsistence orientation, large presence of dependents and less working adults, low asset ownership, insecurity of tenure, off-farm income destined mainly for subsistence, and impoverishment.

Insecurity of tenure emerges as a prominent explanatory factor. Land with secured long-term tenure provides farmers with more incentive to invest. Hence tenure stability is the key for farmers to have increased knowledge of specific plots and devise a long-term strategy for land improvement (Berhanu, 1998; Tekie, 2001). On the other hand, farmers with short-term leased land show little propensity to invest.

Poverty and Land: Income poverty is widespread and deep in rural Ethiopia, and high even by African levels. As evident from the studies on poverty in Ethiopia (Gobeze, 1999; Deracon and Krishnan, 1998; and Mekonen, Abebe, Bereket, 1999), the probability of being poor is statistically related among others to living in marginal agroecology with poor agricultural potential, shortage of assets for agricultural production (land and oxen), producing mainly non-tradable staple crops, and being female-headed without working adults. Mekonnen, Abebe and Bereket (1999) find that it is not land size per se but its quality such as whether the land is used for cash crops or not that explains the probability of escaping poverty.

Land, both its quality and quantity, are the key limiting factors in agriculture and food production. Because non-farm income opportunity is scarce; income poverty is strongly related to land. The two-way correlation results in Jayne et al (2003) shows positive and non-linear relationship between income and land; income grows faster initially as land constraint for households at the lower end of land distribution is relaxed. Farmers with land, particularly good quality land, are able to increase production, which passes to improved living conditions mainly through increase on-farm food consumption in an environment where agricultural markets are undeveloped.

However, the gain in income due to increase in area of land operated maybe less for tenants who operate partly or wholly rented land. Productivity under share tenancy tends to be lower than fixed cash rental or government land. In addition, tenants appropriate only part of the increase in agricultural output or income depending on output and input share arrangement. For example, rental rate has historically increased from one-third to 50:50 in output shared. As land becomes scarce, those who lease out land demand tenants to contribute a large share of variable inputs. In some instances cash advance is required to get access or to continue farming. To the extent that the tenants start from a low-income position and rising rents redistribute income to renters, the net income gain from increased production or productivity growth is diminished.

Are tenants necessarily poor? The conventional association of poverty with tenancy is not quite applicable in the Ethiopian context. Unlike the Asian countries where there exists a wage labor-tenant-owner operator ladder that systematically mirrors poverty rankings in descending order, there is a reverse type of tenancy in the Ethiopian context. It is because the tenants are not the commonly characterized economically disadvantaged who are located at the bottom of labor-tenant-owner operator ladder. Some of those who rent in land are land-constrained but not in size of working labor, assets and ability to finance. These "tenants" often seek more land area to operate through exchanging their labor or oxen or advancing credit. On the other hand, the "landowners" possess large land because they have large family size but some may not possess the ability to farm because of lack of assets. The farmers who rent out their land are not the commonly understood "landlords" who hold economic and social power. These include the poor, female-and elderly-headed households who rent out land due to necessity (Yared, 1995, Abebe, 2000).

Mobility of Labor as a way to ease land pressure: People move seasonally or permanently from their place of residence. According to the latest 1994 population census, for example, most of the migration is rural, and rural to rural migration accounts for 49 percent of the total migrants. The history of long distance migration shows that regions in the north, northwest, northeast, and central-south (i.e., the densely populated "enset" growing areas) are areas of net out-migration. On the recipient end are the regions in southwest, southeast and central Ethiopia.

In addition to such a migration involving traversing long-distances, people migrate short-distances. In addition to permanent migration involving traversing long-distance, some migrate short-distance such as the seasonal migration of farmers from northern highlands to the adjacent lowlands. For example, the Wollo highlanders in northeast move down the slope to the lowlands along the eastern

escarpment (Tesfaye, Belay and Dessalegn, 2003). Mesfin (1991) also cites cases where the movements are not always unidirectional; some highland farmers in North Shewa and South Wollo abandon the mid-elevation and move upwards where the temperature is cold but the land is not as degraded as the mid-elevation. As Mesfin (1991) and Seyoum (1996) noted the pattern of the population movement "... has been an aspect of a natural response by persons to challenges posed by environmental problems." Many people from the Gurage highlands of south central Ethiopia initially migrated down slope to the lowlands (Muluneh, 2003). As of the last two to three decades, there is a significant shift of the population towards urban areas. By 1994, 39% of the Gurage population lived permanently or quasi-permanently outside of their homeland.

There are different motives for migration. In most of the cases these are economic migrants who are pushed by land degradation under population and poverty pressure. Migration provides the mechanism for easing pressure on land through migrating to areas with low population density. Migration is the medium for diversifying income away from their place of residence. Farmers also seasonally migrate as a way to augment household income. In addition, migration provides a way to pool climatic risk across space, which is a common practice among pastoral population in arid and semi-arid environments. Further more, migration is a common coping mechanism in time of food crisis. Returnee migrants are valuable carriers of new knowledge and skills that opens up rural communities and integrate them into larger economic polity.

As of the 1970s, distant migration has diminished because of constrained mobility of labor. For most farmers, the cost of migration is high relative to expected employment opportunity and return. Secondly, the permanent residency requirement of the current land policy restricts the option of migrating for work away from place of origin. Thirdly, the current aggregation of people by ethnicity and drawing administrative boundaries further restrict mobility of labor because of territorial claim and restriction of access to land to indigenous people.

The deceleration of labor mobility means that the important role of migration as a way to ease land pressure by equalizing factor proportionality between land and people is missed. Such a role is important since land is immobile and the only way to equalize land holdings across geographical space is through migration. As labor mobility is restricted, using migration as a way to pool climatic risk through spatial diversification of livelihood also diminishes. This is particularly an important income smoothing strategy for people in drought-prone areas, who, without long-migration, are confined to local income sources that often co-vary positively.

Common property resources under pressure: With the exception of agricultural lands, the major land resources (i.e., pasture, water and forests) are held and managed collectively under a variety of tenure regimes. The existing empirical evidence points to declining trends in these resources both in quantity and quality. Studies in change land cover and use in particular show consistent contraction in forests and permanent pasture. The existing empirical evidence ascribes the causes for declining common resources to change in climate (increased aridity and desertification), population growth and pressure, loss of livelihood and impoverishment, political instability and weak central authority, deliberate government (e.g., individualization of the commons) and declining in collective action in the commons.

As resources become scarce, institutions governing rights to common resources need to evolve to facilitate or enhance collective action for effective use of scarce resource, managing risks, and resolving conflict over claims to resources. Under conditions of low productivity and variability in range production, individualization of land is not a cost effective institutional arrangement. Instead, as in the case of extensive rangelands in the arid and semiarid areas, collective arrangement that allows mobility over an expansive rangeland is the most desirable tenure arrangement (Baland and Platteau, 1996; Scoones, 1995; Ostrom, 1990)

Despite the need for a more cohesive and cooperative collective action to economize and effectively utilize scarce resources while allowing flexibility in defining boundaries and mobility, there are forces that are working towards weakening collective action such as heterogeneity of communities, population size having an inverted U shape relation, improved market access and increased spatial economic integration (Yeraswork 2000; Berhanu et al (2000a and 2000b). The findings in Yeraswork (2000), for example, suggest, collective actions are less likely to emerge or be effective where evolving rules governing common pool resources are not rooted in traditions and flexible to changing scarcity condition. Where user communities are heterogeneous, boundaries are hard to define and incidence of free ride is high (or, negative externality arises from diminishing assurance). The case

studies in Berhanu et al (2000a and 200b) show that both small or large population sizes are not favorable for collective action (or, the relation between collective action and population has an inverse U relationship). In addition, wealth heterogeneity, low social capital, and openness to trade and market access undermine the sustenance of collective action in common resources.

Tenure deficiency and conflict: As elaborated in section 2, farmers demand for expanded access to land, greater rights for land use and transfer, and command over land rights as land becomes scarce. In response, tenure systems evolve towards meeting these demands. Deficiency in tenure arises where desirable land rights systems are absent or incomplete, or where there are unmet demand gaps in land rights. Failed or incomplete institutional response to meet demands for land rights contributes to land related dispute, litigation and conflict. That is, dispute or conflict is bound to arise where there are absent or incomplete institutions that determine who has access to natural resources and who does not, when and how such resources are utilized, and how they are managed and protected.

The recent study on environment-induced conflicts in Ethiopia traces cases of land related disputes and conflicts along the highland and lowland continuum in Ethiopia (Teklu, Tegene and Rahmato, 2003). The findings show numerous cases of environmental induced grievances, disputes and conflicts in different parts of the country. And they occur between members of same household (in particular between father and son), between one household and another (inter-household), and between one community and another (inter-community). The key conclusion that emerges from these cases is that conflict is an outcome of a long process and occurs particularly where competition for access and control of scarce environmental resources operate under conditions of: (i) rapid population growth, mobility and resource encroachment; (ii) societal heterogeneity such as wealth differentiation and ethnicity; (iii) economic deprivation and increased vulnerability; (iv) deficient institutions to manage scarce resources and conflict; (v) weak governance and legal environment; and (vi) regional political instability and insecurity. Whilst these conflict-aggravating factors are not uniquely present in all cases of conflicts, most of them exist and persist to work in tandem with environmental change to enhance frequency and intensity of conflicts overtime.

Deficient tenure system is thus a key aggravating or contributing factor to dispute and conflict. Tenure related grievances, disputes and conflicts arise, for example, over legal (statutory or customary) ambiguity over access (or, exclusion) to land, unbounded land rights and multiple claims over land use, inequity arising over assigning or sharing common resources or their benefit stream, unsettled jurisdictional claims (e.g., exclusion of non-members claiming over traditional grazing territory in pastoral lowlands), encroaching over protected area (e.g., reserve area for public good), and legal fragmentation and weak enforcement of land rights.

There are different cases of disputes and conflicts arising over claim to parental land (intergeneration conflict), ancestral land (common between original settlers and migrants), original land (disputes between returnee migrants or refugees claiming their land in their places or origin and current holders land) and traditional grazing land or water point (common between pastoral communities in the lowlands). Disputes arise over assignment of parental land, for example, due to ambiguity in the current administrative land distribution. Access to land through PAs is based on consideration of head counts of a family. In principle, the share of land of children is already included in their parents' land holdings at time of the PA land allocation. Children thus have legitimate right to claim their share of land when they form their homesteads. But such claims over PA allocated land at time cause dispute and social friction between parents and children particularly where PA-land is scarce and/or PA-land allocation is halted (Teferi, 1994).

There are also disputes arising due to deficiency in customary practices of intergenerational land allocation. It is customary in the predominantly patriarchal Ethiopian societies for parents to allocate plots of land to their children when they come of age and get married. Children, particularly male children, are also entitled to inheritance upon death of fathers. As land becomes scarce, disputes arise over legitimizing claimants to parental land, and allocating land equitable to competing children.

For protecting use rights, the right to exclude others needs to be closed bounded, specified and enforced. Where there are primary and secondary right holders (for example, grazing in crop fields after harvest), such rights need to be clarified in statutory or customary laws. Failure to meet these conditions as land becomes scarce begets disputes and conflicts. For example, since farm boundaries are not always unambiguously defined, there are disputes over land use. Similarly, ambiguity over using land between primary and secondary holders of land rights is also be a source of conflict (e.g.,

grazing crop fields after harvest or excluding non-community members to common grazing land in dry season).

Uncertainty over access to common resources and perceived inequity in sharing benefit stream are also sources of dispute. Common lands such as forest and grazing lands are either managed by communities or distributed to community members. Disputes arise in either case over access to the common resource and allocation of benefit stream. For example, in cases community managed resources, disputes arise between members and non-members over access, and among members over distribution of benefits. Where commons are individualized, as in the case of the of the pilot schemes in the Amhara region, disputes arise because some community members resent losing their traditional grazing lands and those with access resent getting very tiny plots that are insufficient for their needs (Tarekegn, 2001).

There are cases of disputes over protected areas such as state forest and national parks. For example, disputes between local officials responsible for protecting national parks and communities arise over illegal poaching, tree harvesting, cultivating areas belonging to the parks, settling in the parks by building houses and planting perennial crops, and penetrating deep into the parks to graze and to water animals. Gete (2000) cites a case of farmers living close to Sekel Maryam state forest in Dembecha (in Gojjam) resent the denial of access to the forest, which claim as an intrusion on their farm and grassland.

Because operation in land markets is technically illegal, there is not much evidence on extent to which disputes arising from breaching informally arranged contracts. Often such contracts are arranged between close community members and subject to societal norms and values, and hence indigenous institutions play important role. Nonetheless, disputes are likely to arise over violation of agreed use of land, shirking in assessment of harvest to be shared, failure to payment rent, and compensation in case of eviction. The case study in Yigremew (2001), for example, suggests there are disputed cases without equitable legal enforcement.

Government policy and practice at time directly contribute to land disputes and conflict. The case in point is the 1997 land redistribution in the Amhara region as documented in Ege (2000 and 1997), Teferi 1997; and Yigremew, 1997). There were several cases of resentment related to the process as well as the outcome. First, the initial phases involving setting the allocation rules, inventory of available land at each village level and determining individual holdings were done in secrecy. Second, the allocation criteria such as "reallocating from the rich, past bureaucrats and feudal remnants to the poor and middle classes" were vague and imprecise. Third, the inventory of available land at village as well as at individual holding levels was arbitrary and influenced much by kinship, friendship and political connections. Finally, the actual land allocation was far below the general expectation of the majority of the beneficiaries. Contrary to the initial justification of the land redistribution, there were losers on accounts of their weak social and economic status.

7. CONCLUDING REMARKS AND POLICY RECOMMENDATION

The empirical evidence indicates increasing scarcity of land resources, particularly land suitable for arable agriculture. Because of scarcity of land resources, competition between uses of land (cropland, pasture and forestland). Cultivation is expanding into marginal areas that are best suited for forest cover and grazing, and hence the economic and environmental costs at the margin are rising for cropland (or, the supply curve of arable land is steeply rising). Population continues to grow rapidly and the demands for land continue to outstrip the supply of land. As land becomes scarce, farmers demand for more options to access land, farm size that is adequate for subsistence, flexibility in land use, secured rights in use and transfer, and low cost of enforcing land rights.

The major policy thrusts in the last three decades have at least five key features: (1) state ownership of land; (ii) constitutionally guaranteed access to free rural land; (3) equitable distribution of land according to need as determined chiefly by family size; (4) control of land market; and (5) provision of directives in land use and management. As compared to the pre-1975 tenure systems, these policy changes have notably abolished unequal ownership of land and absentee landlordism.

Today, administrative based land administration remains the dominant tenure arrangement governing rural lands. In addition, there are parallel land transactions through informal arrangements, particularly through rental land markets. Unlike the arable lands that are under individualized land holdings, pasture and forests are mainly under common pool arrangements. Here, there are at least

three tenure arrangements: open access akin to the "tragedy of the commons", various co-management arrangements between state and users communities, and direct state control.

As the evidence of the last two and half decades shows, there are notable deficiencies in the current administrative-based arrangement. Problem of declining farm size persists. Farmers are not permitted to hold land outside their place of residence. And, given land available for "free" distribution is fixed within a place of residence, the numbers of claimants for land are increasing with some unable to get access to the promised free land. The residency requirement for maintaining use rights to land restricts mobility of labor as a way to ease pressure on land. Insecurity of tenure is widely prevalent with degree of insecurity heightened among farmers operating large farm sizes (relative to family size), operating rental land and living in villages with a history of frequent land redistributions. Hence, incentive for investing in land improvement and tree growing remains weak. The concept of private property as defined in the laws is elusive and hence bars investors to full entitlement to capitalized value of land. Uncertainty and weak command in land rights trigger or aggravate conflict in some areas.

The rental land markets are thriving in areas with developed rural infrastructure and markets, and commercialized agriculture. Rental lands, however, are restricted in use (e.g., no fallow or perennial crops) and transfer (e.g., no right to bequeath). They are geographically segmented since farmers are restricted to hold land in their place of residence. And the liquidity of these markets is hampered by insecurity of tenure in rental land and absence of legal mechanism to enforce contracts. Access to rental land is tightening to farmers with little farming experience and skills, and cash. Some of the farmers are priced out of the rental markets because of these entry requirements and high costs of transactions, especially households headed by women.

In short, the review of the empirical evidence shows that there are unmet demands for land rights. The majority of cultivators have land to operate but farm sizes are small and declining. The process of equalization chiefly occurs through compression, which is marked more by increase in number of people holding than size of land holding (or, area of land operated). There are growing numbers of rural households with no access to land ("landless"), especially among the young generations. The prevalence of landlessness indicates that right to access free land, which is guaranteed in the constitution, remains unmet. Farmers are generally insecure of their long-term rights to land. Insecurity of land and tree tenure militates the incentive to invest in land and grow perennial crops. Land rental is growing but the fact that area of operated depends mainly on household land and labor endowments indicates markets for land and labor are not widespread to obviate the need to depend on initial endowments. The residence requirement for having and maintaining access to government allocated land distorts the migration process in rural areas. Widespread prevalence of land disputes and litigations (open conflict in some localities) indicates institutions are not in place to prevent or manage the rights of landholders.

There have been incremental policy changes over the years within the context of state-controlled tenure system. Examples include halting or slowing land redistribution or adjustment; broadening land access through permitting bequeathing land and limited transaction in land market, setting minimum farm size and certifying land rights. These changes are in the right direction. However, such policy action has been largely reactive and tentative. The constitutionality of some of these expanded rights is also questionable since the 1995 constitution, for example, still prohibits any transfer of land other than through state mandated institutions. The current policies continue to restrict ways of accessing land, emphasize on administrative-based land allocation, show weakness in provision and protection of land rights, restrict development of rental markets and mobility of labor, and limit indigenous institutions to develop to economize on scarce land resources, especially the commons.

Public policy has important role in the future, but it needs an informed and a balanced view that emphasizes on searching for equitable but efficient and sustainable tenure arrangements that are mediated through the market place. As detailed in Tesfaye Teklu (2003), major policy changes are necessary that expand ways to acquire land and facilitate efficiency-enhancing land transfers, enhance secured control in land rights, permit tradable land rights and reduce transaction costs, improve management of common resources and collective action, remove political and administrative restrictions on labor mobility, and develop land and other factor markets in tandem.

The following recommendations warrant policy consideration, preferably through a process of pilot testing, learning and scaling up as informed knowledge warrants low policy error:

Expand ways to acquire land and facilitate an efficiency-enhancing land transfer: The empirical evidence shows that farm size is small and fragmented. Disparity in holdings has narrowed but there is no absolute equality because of differences in factors affecting distribution of land holdings among the farm population. And the problem of declining farm size has persisted regardless of past and present tenure type. Tenure reform alone cannot be the remedy without addressing the underlying problems such as population pressure, limited economic expansion to absorb the growing population, and restricted labor migration.

However, the government intervention and land public policy accentuates the demand and supply imbalances in land. First, the policy of “guaranteed” free access to land” is not sustainable in an environment of rapid population growth and farming is the main source of subsistence. The residency requirement for maintaining use rights to land restricts mobility of labor as a way to ease pressure on land. And the emphasis on the principle of equal land for equal sized households, regardless of capacity to utilize land efficiently, leaves non-proportionality in factors of production that cannot be corrected through administrative-based land allocation. It is desirable that individuals have greater choice in seeking land that is economic in size to operate.

The current emphasis on halting or slowing land redistribution or adjustment, individualization of commonly held land resources, and controlling diminution of land size may not be sufficient. A more long-term policy is desirable that: (1) allows farmers to acquire land through different channels; (2) strengthens rental land markets that provide additional venue to access land, corrects imbalances in factor proportions and permits land consolidation; (3) reduces demographic pressure through relaxing constraints that restrict mobility of labor and holding land away from the place of residence; and (4) enhance employment through broad agriculture and rural development.

Enhance secured control in land rights: The empirical indicates significant prevalence of insecurity of tenure among the farm population. But the degree of insecurity varies depending on frequency of land redistribution (less secured where frequency is high), size of land operated (less secured if operated land is large relative to family size), mode of land access (less secured if operated rental land), and social status or political connectivity (less secured if poorly connected with village administrators). Insecurity is high particularly among farmers who live in villages with a history of frequent land redistribution, especially those who operate large farm size including rental land. Prevalence of insecurity is less among those who cultivate government-allocated land particularly those who cultivate small plot and grow perennial crops.

Concerns with insecurity of tenure are foremost related to stability of tenure and restricted applications of land rights. The thrust of public policy is hence to create stable and secured tenure systems that permit farmers to fully exercise rights in land at low enforcement and transaction costs. Public responses so far involve bequeathing use rights to land, halting or slowing redistribution of land to create a climate of stability, titling use rights in some region states, and accepting in principle compensation for added value in land in case of government expropriation.

These are essential policy measures to institute predictability and assurance in land holdings. However, the provision of full legal entitlement to privately owned use rights that are tradable would further strengthen security of tenure and improve liquidity of rental markets. Compensation fully at market value in time of land acquisition by the government is assuring if a transparent institutional mechanism exists to implement and enforce such measures.

Permit tradable (rental) land rights and reduce transaction costs: Although the empirical evidence is still scarce, the rental markets have beneficial effects over sales markets in an environment where other factor markets (credit, insurance) are missing or incomplete: low transaction cost, low capital requirement to access land, and low incidence of distress land sales. Public policy needs to recognize that rental markets represent an intermediate low-cost process towards full development of land markets that include land sale and purchase. Transacting in rental markets involve low transaction costs including initial capital, hence promises to grow rapidly in volume. These markets also act as substitute for missing or incomplete non-land factor markets such as credit and insurance in early stage of market development.

The role of public policy is to strengthen the positive attributes of the existing rental markets and remedy factors limiting its growth at its sources. The first objective of future land policy is to enhance the working of these markets as an efficient venue to access land, correct imbalances in factors of

production, and equalizing effect on distribution of area of operated land. The second objective is to overcome problems of technical inefficiency, low technological change and investment in rental land, and distress land rental or sale. The third objective is to enhance the development of incomplete non-land factor markets. Part of the explanation for distress type of land transaction is the absence or incompleteness of non-land factor markets.

Future policy, therefore, needs to: (1) enhance secured land rights and institutional mechanism for enforcing; (2) provide legal cover to rental contracts so that farmers are able to transact enforceable contracts; (3) allow tradability of long-term use rights through rental markets; (4) minimize restrictions on contract choices that adversely affect access to land, factor equalization, equalization of area of land operated, production efficiency and technology, and investment in rental land; (5) expand choices across geographical space by lifting residence requirement for land and allowing mobility of labor; (6) create stable and secured rental markets that permit farmers to fully exercise rights in land at low enforcement and transaction costs; and (7) provide institutional mechanism to enforce rental contracts and reduce the burden on self-enforcement.

There are several advantages with such policy measures. First, volume of trade increases (or, transaction cost declines) since farmers are able to engage in land transaction outside their residential village. Second, conditions emerge for increased spatial integration of rental markets. Third, factor equalization occurs across larger space, which is plus to enhance productivity growth. Fourth, pressure on land is reduced as these markets provide alternative way of acquiring land and reducing non-proportionality in factors of production at farm level. Fourth, greater opportunities are created for farmers to engage in other activities outside their locality and hence able to maximize income while pooling risk across space.

Improve management of common resources and collective action: As the little evidence so far shows, there are forces that reduce the effectiveness of indigenous institutions and collective action in governing common pool resources. There is a range in population size within low and upper population thresholds where collective action is effective. Beyond these thresholds, the effectiveness of these institutions dwindles. For the same population size, increased heterogeneity due to, for example, socioeconomic differentiation also dilutes their effectiveness. Similarly, modernization or integration into urban economy has diluting effect where traditional values and norms come into conflict with modern values. The role of state also contributes to erosion of indigenous institutions where statutory laws fail to recognize the role of customary laws and/or indigenous institutions become politicized such as appointing traditional leaders as local officials.

Public policy has important role to enhance effectiveness of indigenous institutions and collective action among users in governing common resources. And there are important principles to follow in designing public policy and action. Firstly, enhance the effectiveness of indigenous institutions where socioeconomic parameters and risk conditions dictate continuation of collective action. Secondly, strengthen indigenous mechanisms for conflict resolution arising from violation of boundaries and encroachment. Thirdly, promote conditions that improve productivity of collective resources and reduce costs. Fourthly, institute devices to manage risk that are not adversely affecting incentives for conservation and improvement of collective resources. Fifthly, restrain from pushing privatization of the commons under conditions where the need for an expansive boundary is strong to allow spatial mobility, costs of delimiting private boundaries and enforcing are considerably high, and private returns are low. Finally, learn from the different tenure arrangements on their efficacy and efficiency and develop informed public policies that are consistent with equity, efficiency and sustainability of collective resources.

Enhance women's legal rights and translate them into practice: Whilst the empirical evidence is sparse, there is an apparent gender-differentiation in access to land including common pool resources, effective control of land rights, utilization and sustenance of land resources, and welfare outcomes related to land. The fundamental issue is the prevailing social norms and customs in regard to recognition of woman as able farm operators and managers. Under the prevailing gender differentiated division of labor where adult male support is a key constraint in crop farming (exceptions are backyard plots and farming systems where hoe-technology is the dominant technology), the focus needs to be placed more on woman as managers than as cultivators.

Public policy needs to enhance access to land through inheritance, administrative allocation and markets. Having access is not sufficient without effective land control, which calls for enforceable legal rights, enhanced social acceptability, lowering costs of enforcement. Holding land is not good on

its own unless women are able to farm or transfer land to efficient farmers through markets. The policy recommendations above for opening up land markets and operate at low cost are applicable here but with a special emphasis that women enter into these markets from disadvantaged economic and social conditions.

Remove political and administrative restrictions on mobility of labor: The empirical evidence so far shows that migration has important functions as a way to spread distribution of labor across space, contributes to income generation, and minimizing variability in income through pooling income sources. Localizing migration over a narrow geographical area has the disadvantages of pushing population to areas with low resource productivity and/or risk of income failure is high as it is the case with moving up or down slopes.

The current land policy restricts access to land in places of origin and hence discourages labor mobility for an extended period of time. In addition, ethnic-based aggregation, laxity in protection of minority rights and conflicts discourage labor mobility. Notwithstanding the political and administrative impediments, there is a need to relax the current restrictions on mobility of labor while creating short-term and long-term conditions for indigenous and migrant communities to nurture socio-economic and cultural integration.

Strengthen legal institutions for managing land rights: Competition for land does not always translate into conflict where there is land shortage. Conversely, armed conflict does not occur where land is scarce. However, there are varied cases of tenure related disputes and conflicts over access, use and transfer rights. The traditional harmonious parental land allocation has become a source of dispute over legitimacy of claim and claimants. Those with government land are uncertain of their rights where physical boundaries are not unambiguously defined, rights are not legally certified, and land is subject to repossession without compensation. Judiciary uncertainty is strong among those who trade their land rights since such transactions are not legally protected and enforced. Sharing the commons is also another source of disputes and conflicts, particularly related to denial of access to common grazing and forestlands, and distribution of benefits from the commons.

There are indigenous institutions that play an important role in containing conflicts. These institutions do not necessarily have the force of law but derives their authority from their religious base and social acceptability. However, the effectiveness of these institutions erodes overtime where there is increased heterogeneity such as socioeconomic differentiation, greater integration into urban economy where traditional values and norms come into conflict with modern values. The role of state also contributes to erosion of indigenous institutions where statutory laws fail to recognize the role of customary laws and/or indigenous institutions become politicized such as appointing traditional leaders as local officials. Instead, public policy has to recognize the complementary role of indigenous institutions for conflict management and integrate them effectively in formal institutions.

Set land policies in a pro-poor agricultural growth framework: There is a limit as to how much land policy alone can address the country's perennial land problems that are rooted in processes of rapid population growth, degradation of land resources, inefficiency in scarce land use and low productivity, widespread impoverishment, and weak institutions to manage scarce resources and conflict. Declining farm size is a problem that has persisted regardless of tenure regime. The problem of landlessness is not to go away without making progress on creating and expanding employment opportunity. Insecurity of tenure still persists although the sources of the problem are now rooted in state control and administration of land, and informalization of land markets as compared to the feudal-tenant relationship in pre-1975.

The country needs to push sustainable rapid agricultural growth in a balanced economic growth framework but centered on smallholder agriculture. It has to address the larger issues of factor accumulation, improving efficiency of input use, promoting technological change, investing in land, and reforming tenure. Whether focusing on reforming tenure relative to these other source of agricultural growth is an open issue that needs to be framed in a balanced way. The strategy is to promote pro-poor agriculture growth where the mandate is larger than improved production performance (productivity, profitability and competitiveness). Growth in agriculture is judged by how much it contributes to improvement in human welfare (i.e., reducing poverty, food and nutrition insecurity).

For the growth process to be pro-poor, it is necessary that it: (1) captures large segments of the population through the provision of secured access to land, opening physical and market access, (2) economizes on and increase productivity of scarce factors such as land and fully and effectively

utilizes the abundant factor (e.g. off-season labor); (3) lower costs of transactions through investing in infrastructure, markets and innovative institutions; (4) invests in human resources, reduces demographic burden and fosters demographic transition; and (5) improves management of scarce and fragile natural resources. Since agricultural income sources tend to be risky, managing risk is a key component of such an agricultural growth strategy.

The major land distributions since 1975 have in effect created favorable conditions for initiating a broad-based growth process. Land policies that focus on efficiency-enhancing land transfer, secured control in land rights, unimpeded growth in land markets in conjunction with other factor markets, and maintenance and improvement of land resources are consistent with pro-poor agricultural growth policies and strategies. These policies have to be complemented by investments in research and technology generation to enhance agricultural productivity and reduce costs of production, and physical infrastructure and institutions including markets to reduce transaction costs.

Informed public policy is critical to minimize costly policy error: Public policy is likely to be correct and effective when it is guided by analytical empirical policy research. Policy prescription requires asking the right research question, diagnosing the underlying source of the problem, matching the right prescription to the cause of the problem, weighting the costs and benefits associated with policy choice, and assessing the institutional and human capacity to implement, monitor and evaluate performance. The current schemes such as pilot testing privatizing common resources or titling in the Amhara region are cases that exemplify such effort albeit the self-serving nature of the evaluation reports.

There are important policy prescriptions in the current federal and regional laws that are based on thin (fuzzy) empirical evidence such as setting minimum farm size, choice of land allocation criteria, valuation of land and compensation. The debate on land policy has to also move out of the realm of political ideology and be guided by empirical based approach that finds equitable but efficient tenure system that is mediated through the market place. The challenge ahead is to strengthen these markets to pursue these goals.

References

Kruger, H-Joachim, B. Fantaw, Y. G. Michael, and K. Kajela (1996). Creating an inventory of indigenous soil and water conservation measures in Ethiopia. In Reji, Scoones and Toulmin (eds).

REFERENCES

Ege, Svein. 2000. Peasant participation in land reform: The Amhara land redistribution of 1997. In Bahru Zewdie and Siegfried Pausewang (eds.), *Ethiopia –The Challenge of Democracy from Below*, Elanders Gotab, Stockholm.

Ege, Svein, 1997

Teferi Abebe, 1997

Yigremew Adal, 1997. EJDR 19(2)

Yigremew, Adal. 2002. Review of Landholding Systems and Policies in Ethiopia under the Different Regimes: EEA/Economic Policy Research Institute. Working paper No 5/2002.

Cohen, John and Weintraub, Dov, 1975, *Land and Peasants in Imperial Ethiopia: The Social Background of a Revolution*. Van Gorkum, Assen.

MOA, 1975. *Agricultural Sample Survey 1974/75, Volume I*, Addis Ababa.

Central Statistical Authority, 1998, *Statistical Abstract 1997*. Addis Ababa

Mulat Demeke Valerie Kelly, T.S. Jayne, Ali Said, J.C. Le. Vallee, H. Chen, 1998,

Agricultural Market Performance and Determinants of Fertilizer Use in Ethiopia.

Grain Market Research project. Working Paper 10, Addis Ababa.

Andre, C. and Platteau, J P (1998), Land relations under unbearable stress: Rwanda caught in the Malthusian trap, *Journal of Economic Behavior and Organization*, 34(1).

Agrawal, Arun. 2001. "Common Property Institutions and Sustainable Governance of Resources." *World Development* 29 (10): 1623 – 1648. [****]

Agrawal, A., and Goyal, S. (2001). Group size and Collective action: third party monitoring in common-pool resources, *Comparative Political Studies*, 34(1), 63-93.

Agrawal, Arun, and Gautam N. Yadama. 1997. "How do Local Institutions Mediate Market and Population Pressures on Resources? Forest Panchayats in Kumaon, India." *Development and Change* 28 (3): 435-465.

Baland, J-M. and J-P. Platteau (1996), *Halting degradation of natural resources: Is there a role for rural communities?* Oxford: Clarendon Press.

Behnke, R. H., I. Scoones and C. Kerven (1993), *Rangeland ecology at disequilibrium: New models of natural variability and pastoral adaptation in African Savannas*, London: Overseas Development Institute.

Bruce, J.W. (1988), A perspective on indigenous land tenure systems and land concentration, in R.E. Downs and S.P. Reyna (eds), *Land and society in contemporary Africa*, Hanover, NH and London: University Press of New England.

Bruce, J.W. and S.E. Migot-Adholla (eds) (1994), *Searching for land tenure security in Africa*, Dubuque, IA: Kendall/Hunt Publishing Co.

Dasgupta, P. and K.-G. Maler (1995), Poverty, institutions and the environmental resource base, in J. Behrman and T.N. Srinivasan (eds.), *Handbook of Development Economics, Vol III*, Amstredam Elsevier. [****]

- Hardin, G. (1968), The tragedy of the commons, *Science* 162
- Kikuch, M. and Y. Hayami (1980), Inducements to institutional innovations in an agrarian economy, *Economic Development and Cultural Change*, 29(1).
- Migott-Adholla et al (1994), in J. W. Bruce and S.E. Migott-Adholla.
- North, D.C. (1990), *Institutions, institutional change and economic performance*, Cambridge: University Press, New York.
- Olson, M. (1965). *The logic of collective action*. Cambridge, MA: Harvard University Press.
- Ostrom, E. (1992), Property rights regimes and natural resources: A conceptual analysis, *Land Economics*, 69 (3): 249-62. [****]
- Ostrom, E. (1992), *Crafting institutions for self-governing irrigation systems*. San Francisco: Institute for Contemporary Studies.
- Ostrom, E. (1999). Self governance and forest resources. Occasional Paper No. 20, Center for International Forestry Research, Bogor, Indonesia. [Http://www.cgiar.org/cifor](http://www.cgiar.org/cifor).
- Ostrom, E., Gardner, R., & Walker, J. M. (1994) *Rules, games, and common-pool resources*. Ann Arbor: University of Michigan Press.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action, Political Economy of Institutions and Decisions*. Cambridge and New York: Cambridge University Press.
- Platteau, Jean-Philippe (1996), *The evolutionary theory of land rights as applied to Sub-Saharan*
- Scoones, I. (ed.) (1995), *Living with uncertainty: New directions in pastoral development in Africa*, London: Intermediate Technology Publications.
- Varughese, George, and Elinor Ostrom. 2001. The Contested Role of Heterogeneity in Collective Action: some Evidence from Community Forestry in Nepal. *World Development* 29 (5): 747 – 765.
- Varughese, G (2000). Population and forest dynamics in the hills of Nepal institutional remedies by rural communities. In C. Gibson, M. McKean, & E. Ostrom (Eds.), *People and forests: Communities, institutions and governance* (pp. 193 – 226). Cambridge, MA: MIT Press.