

Power Traps or Poverty Traps?

Institutions, Markets, and Environmental and Livelihood Restoration

By

Stein Holden

Department of Economics and Resource Management

Norwegian University of Life Sciences

P. O. Box 5033, 1432 Ås, Norway

Email: stein.holden@umb.no

Abstract

With many forms of severe environmental degradation taking place in the developing world the paper starts with a broad conceptual framework to identify the types of responses that are relevant before it goes to the main focus, the roles of institutions and markets to mitigate the problems. Power traps are identified as the main cause of poverty-environment traps and resource curse and the main constraint that hinders institutional reforms that are essential for market development and environmental and livelihood restoration. Ethiopia is used as a main case to illustrate the issues and is compared with some other relevant case countries.

Introduction

Why is environmental degradation so widespread in the developing world while we have so many promising policy instruments that could be applied to rehabilitate degraded environments and livelihoods? Why do even countries with resource abundance fail to protect people's livelihoods and ecosystems? And why have land reforms so often failed to achieve their targets and benefited the rich rather than the poor? Should we blame it all on poverty-environments traps or resource curse? In this paper I will argue that poverty traps and resource curse are only symptoms and not the primary cause of the sad state of nature. It is rather power traps that is what is the matter with the world and these power traps have to be broken before efficient institutional reforms can be introduced that both stimulate market development and environmental and livelihood rehabilitation.

Sachs et al.(2004) state that large parts of sub-Saharan Africa are stuck in a poverty trap that hampers economic growth while the crisis is exacerbated by rapid population growth and land degradation. They argue that assistance from the rest of the world is needed for these countries to reach threshold levels of infrastructure, human and natural capital to establish self-sustaining growth. This perspective is similar

to the “Big push” perspective that emerged from work by Rosenstein-Rodan (1943, 1961) and has again appeared in relation the Millennium initiative, however, the empirical evidence of the existence of such poverty traps is not convincing (Easterly, 2006). The existence of poverty traps may be related to endogenous fertility, technology traps associated with low degrees of substitutability between labor and other forms of capital, or impatience traps associated with market imperfections (Azariadis and Stachurski, 2005). The testing of the existence of poverty traps is an expanding literature and this literature has moved from using income and expenditure data to using data on household assets due to the difficulties of high share of the households falling in the transitory poverty when using income and expenditure data (Carter and Barrett, 2006; Barrett and Swallow, 2005). The empirical evidence of the existence of poverty traps is, however, still inconclusive due to the limited availability of long panels, measurement error and attrition. This also makes it hard to statistically explain why some countries, communities or households may have fallen into a poverty trap. It is on this broader issue that this paper aims to contribute.

The other phenomenon I want to bring the attention to is the so-called resource curse which to some extent is a counter-example of the poverty-environment trap. Some empirical evidence seems to indicate that countries highly endowed with certain valuable natural resources have also failed to develop and instead suffered from low economic growth and continued poverty (Auty, 1993). Explanations of this phenomenon include the Dutch disease effect, enclave economy, debt overhang, high volatility of resource prices and political economy factors related to the presence of rents (Auty, 1993; Hausmann and Rigobon, 2003; Manzano and Rigobon, 2001; Brunnsweiler and Bulte, 2008). Some recent studies increasingly emphasize the importance of institutions rather than the resources per se to explain the ‘resource curse’ (Mehlum, Moene and Thorvik, 2006; Robinson, Torvik and Verdier, 2006).

Based on this recent literature a main argument of this paper is that both poverty-environment traps and resource curses are conceptual misnomers with respect to the causal problems that they aim to analyze and they therefore also tend to misdirect the attention away from where to solutions to these problems really are found. The main argument is that power traps are the primary cause of poverty traps and resource curses and breaking these power traps is essential for successful institutional reforms that can lead to market development, economic development and environmental rehabilitation in the developing world.

This paper starts from a broad conceptual framework and focuses on the main land-related environmental problems that require action and elaborates on the potential roles of institutions and markets as instruments to protect the natural resources and enhance their efficient and equitable utilization. Ethiopia is used as the main case and land resources and land reforms are given primary focus due to the frequent failures of such reforms in the developing world. Comparisons are made between land reforms and efforts of land rehabilitation in Ethiopia, other African countries, and China. The empirical evidence indicates that land reforms open opportunities even in very poor countries if the windows of opportunity are well utilized.

Conceptual framework

Definition

Power can be defined as control over legal forces in terms of formulating laws and/or exercising laws according to own interests (legal power). Power can, however, also be to be able to break the law and escape from legal punishment (criminal/illegal power).

I define a power trap as a situation where there are sufficient resources to create broad economic development and welfare improvements in a society but such development fails to take place for a number of reasons:

- a) A situation where those in power use it to hinder broad economic development and where those negatively affected lack the power to break the trap on their own. This implies that those in power primarily act out of self-interest to maximize their private returns at the expense of others and to keep their power. This requires that those in power lack motivation/interest in improving human welfare but have the resources to do so. This is a dictatorial power trap that is supported by a strong government. Institutions are developed to conserve this power structure, e.g. by investment in military and secret service protection, information control (no free press etc.), control of enemies/threats, and possibly investing in strong allies that benefit from the alliance.
- b) A situation where a number of political interest groups compete for power and fail to cooperate or find stable cooperative solutions. The lack of cooperation can result in varying conditions from civil war to weak and unstable governments that fail to put welfare-improving policies in place. A number of sub-categories may be identified, including;
 - a. Anarchy, civil war situation
 - b. Unstable, weak democracies
 - c. Corrupted democracies

A game theoretic approach to explain the power trap can also be useful: When cooperative stable solutions cannot be found even in repeated games due to the pay-off and power structures. There are many who benefit more from defection than from cooperation although broad economic development would require broad cooperation. A prisoners' dilemma pay-off structure may not be necessary for this to be the case. Also a chicken game pay-off structure will cause non-cooperation e.g. by the opposition in unstable weak democracies. This implies that those in power do not get sufficient support to implement well-intended and potentially welfare-improving policies. This is the dilemma of democracies; short-term political gains are given more weight than long-term economic and welfare gains.

Power traps cause low investments for several reasons, including; first, they cause skewed resource distributions such that the majority are too poor to invest and/or they lack the necessary access to markets and technologies that are required for successful investments; second, the powerful elite does not invest itself to create economic development but rather to stay in power and such investments do not stimulate economic development; third, the power structure and the elite scares away other potential investors that could contribute to economic development; fourth, only investors that can go into

an alliance with those in power, help in resource extraction for mutual benefit and invest at a large scale in such countries but with limited local growth effects; and fifth, potential donor countries are scared away from providing investment funds because they are not wanted or they see small chances of succeeding with their donor support.

Discriminatory and/or weak institutional structures can facilitate continued existence of power traps. Discriminatory institutional structures can provide legal basis for discrimination of the resource poor by the powerful while weak institutional structures cannot protect the poor against illegal actions by the powerful.

Driving Forces behind Land Degradation

There can be many reasons or driving forces behind why land users consciously or unconsciously degrade their natural resource base. A brief list of possible explanations follow and the choice of solutions may also depend on what are identified as the causes. Several of the causes can also be inter-related.

1. *Missing information:* The land users are unaware of the (full) consequences of their land use practices and underestimate the severity of the problem. This implies that their perceived rates of degradation are below scientifically estimated rates.
2. *Appropriate technologies unavailable.* Land users do not have access to appropriate technologies to intensify land use or adopt more sustainable land use practices and this may inhibit or reduce conservation incentives.
3. *Tenure insecurity.* Land users are aware of the problem but their tenure insecurity leads to short planning horizons and low WTP.
4. *Collective action failures.* Much land degradation takes place on communal and state land and co-ordination and cooperation problems undermine efforts to conserve these areas.
5. *Population pressure.* Population pressure leads to land scarcity and an increase in the shadow value of land. This should lead to an increase in the incentives both to intensify land use and to degrade or conserve the land. If incentives to degrade are stronger than the incentives to conserve due to the high population pressure, higher population pressure is bad for the environment.
6. *Rapid population growth.* Rapid population growth may lead to a lag in learning, technology- and institutional adjustment, which may cause underinvestment in conservation.
7. *Market imperfections.* Imperfections in land markets may undermine the scarcity effect on the shadow value of land. Credit market imperfections in combination with poverty may lead to high discount rates and/or short planning horizons reducing incentives to invest in conservation. Imperfections in insurance markets and risk may cause underinvestment. Particularly covariate risk is a challenge in risky environments.
8. *Poverty.* People may be too poor to afford to invest in conservation (poverty-environment trap). Subsistence constraints may effectively reduce poor people's ability to invest (ATP) in conservation. We may call this the neo-Malthusian hypothesis.
9. *Policy distortions.* State interventions may have prevented the development of market and nonmarket institutions, which could have stimulated conservation activities.

10. *Transaction costs and asymmetric information.* Transaction costs and asymmetric information cause pervasive market imperfections which are particularly severe in remote marginal areas. This may be seen as an underlying cause of several of the other hypotheses stated above.

11. *Political and social instability.* This may affect several of the hypotheses listed as they exacerbate or cause tenure insecurity, market imperfections and poverty.

12. *Power traps.* Elite capture and rent-seeking by powerful elites with little regard for equity and sustainability issues can prevent institutional responses and lead to poverty-environment traps.

Responses: A Menu of Promising Policy Instruments rather than a Blueprint!

Provided there are ways to break the power traps we have a menu of promising policy instruments to promote market development, enhance livelihood security and restore degraded environments. Some of these tools have not yet been tested at a broad scale and there is still a lot to learn from combining and possibly sequencing these policy tools in different environments. Some of them may be infeasible in some environments for various reasons, while others require careful pilot testing before their use is called up. I am advocating an experimental approach for this where I recommend policy-makers to ally themselves with skilled researchers to maximize the learning from such pilot testing programs. This approach should be combined with collection of baseline data to allow for careful impact assessment.

Once the existence of a socially excessive level of land degradation is known, governments may resort to various policy instruments for mitigating or reversing the problem. The choice of instrument may depend on the identified causes of the problem and/or may be found elsewhere. An incomplete menu of possible policy instruments follows and is partially related to the previously presented list of hypothetical causes of environmental degradation:

1. *Agricultural research and extension.* Without government intervention there will be underinvestment in technology generation and dissemination. Access to improved technologies and new knowledge may increase incentives to conserve land.

2. *Land tenure policies.* Improvement of tenure security will improve conservation incentives. Land markets can enhance investments and land use efficiency but may need regulations to protect the poor and stimulate conservation.

3. *Decentralization of power and stimulation of local collective action.* Local participation in planning, monitoring and enforcement of conservation efforts is likely to increase incentives. Avoiding that local elites capture such programs can be a difficult challenge.

4. *Promotion of good governance.* Good leadership is central to motivate and orchestrate international, national and local policy decision-making and implementation. Power traps may be the main obstacle.

5. *Family planning and population control.* Reduction of population growth may reduce the need for other forms of interventions in areas where population pressure contributes to more non-sustainable land use.

6. *Poverty-reducing policies.* These may improve peasants' ability and willingness to pay for conservation.

7. *Improvement of the functioning of markets.* Infrastructure investments and removal of distorting regulations may improve the functioning of markets and strengthen incentives to conserve land. However, building of roads in forested areas can contribute to more rapid deforestation.

8. *Inter-linkage of markets, technologies and conservation investment.* By making access to credit and yield-enhancing technologies conditional on conservation investments, incentives for conservation may be increased. FFW targeted to investment in conservation has higher probability of success if properly combined with local participation in planning, monitoring and enforcement.

9. *Payment for environmental services (PES).* This can be a good way to establish markets where they are missing and in this way internalize negative environmental externalities. It may be particularly relevant in relation to spatial externalities.

10. *Pigouvian taxes and subsidies.* Taxes on degrading inputs and subsidies on conserving inputs may be specified to mitigate the land degradation problem. A rise in the profitability of less erosive crops relative to more erosive crops can, for example, be expected to encourage soil-conserving crop choices and cropping patterns.

11. *Progressive land value taxation.* In countries with skewed land distributions and with low utilization level of the land on large land properties due to land and labour market imperfections, a progressive land tax may stimulate the land market and push in direction of a more equitable land distribution and better utilization of the land.

12. *Direct regulation* may be used when local incentives for conservation are insufficient or lacking and monitoring and enforcement costs are not too high. Direct protection, rehabilitation, conservation, and setting of technology and land use standards are instruments which may be relevant. Direct regulation may be a useful option for protection of particularly valuable ecosystems and biodiversity.

The choice of policy instruments may depend on (a) use efficiency of scarce information, (b) contracting, monitoring, and enforcement costs, (c) distributional effects, and (d) cultural norms and political preferences. An ideal instrument may be the one satisfying the goals of efficiency, equity, sustainability as well as political feasibility. A mix of regulatory and incentives approaches may be more useful.

The conceptual framework needs to be rooted in environmental and institutional economics as a theoretical basis for the analysis of appropriate policy responses. The actual and more optimal roles of institutions and markets may then better be assessed. Applying such an analytical framework to a second-best world with pervasive transaction costs and information asymmetries, where there are numerous market imperfections and policy failures, is complicating the identification of optimal policy. Choice of policy also requires caution when generalizing from one setting to another because outcomes may be sensitive to local circumstances.

One perspective on institutions and markets is that markets are embedded in some form of informal or formal institutional setting. Another perspective is to distinguish between market and non-market institutions. The market solution may then be seen as one type of institutional arrangement. Another dichotomy is to divide policy responses in command-and-control and market-based policies where the latter is thought to create incentives for optimal behavior while the first is depending solely on the rule of law. However, a combination of these approaches may often be needed as many markets may benefit or need a formal legal foundation. Command-and-control laws also create incentives.

Power Traps, Poverty Traps, and Resource Curse

The World Commission on Environment and Development (1987) emphasized that poverty was a major threat to the global environment and poverty reduction as a tool to save the environment. A recent literature on poverty dynamics and poverty traps has emerged based on a criticism of the more standard static poverty analyses (Carter and Barrett, 2006; Barrett and Swallow, 2006). The neo-Malthusian poverty-environment trap has also caught substantial attention and emphasizes the links between population growth, poverty, limited ability to invest, and resource degradation in low-resource areas. However, the proposition here is that in most cases severe poverty is the result of past government and institutional failures as illustrated in Figure 1.

Another literature emphasizes the problem of resource curse in countries with valuable natural resources, like mineral resources (e.g. Roth, 2006; Robinson, Torvik and Verdier, 2006; Mehlum, Moene and Torvik, 2006) and explains the curse as policy failures or institutional failures. Because the problem appears to have more to do with institutions and political will and interests than resources I choose to rename the problem as a power trap rather than a resource curse. The reason I call it a trap is that although it is easy to diagnose the problem it can be very hard to find solutions to break the power trap. The elite who is in power in a resource-rich country, is often in a very strong position because they have achieved control over valuable resources they can use to sustain their power. Democratic elections, transparency and achievement of the Millennium Development Goals may rather be seen as threats to their power and the same may be the case for many types of reforms, including land reforms, unless such reforms can be used to strengthen their power and control over resources. The elite can also be a powerful stakeholder group in countries where they do not have full political power, even in countries where democratic developments are attempted. In such countries the elite may also be able to manipulate reforms in favor of their interests and at the expense of the poor. This could be a major explanation why so many well-intended land reforms have failed.

The recent political economy literature has provided evidence that the resource curse can be prevented by good institutions (Mehlum, Moene, and Torvik, 2006), however, replacing scrupulous leaders with good institutions is easier said than done. Power traps therefore tend to feed into poverty traps and sustaining poverty traps can be essential to sustain power. Power traps therefore cause unequal resource and welfare distribution, low investment and low economic growth, and environmental degradation. The characteristics of one type of power trap are illustrated in Figure 2.

The crucial questions are: Why is the rent-seeking elite successful in sustaining their power in some countries but not in others? Can international collective action be strengthened to modify the behavior of rent-seeking elites in affected countries? How can benevolent donors and central governments avoid that local elites undermine well-intended institutional reforms?

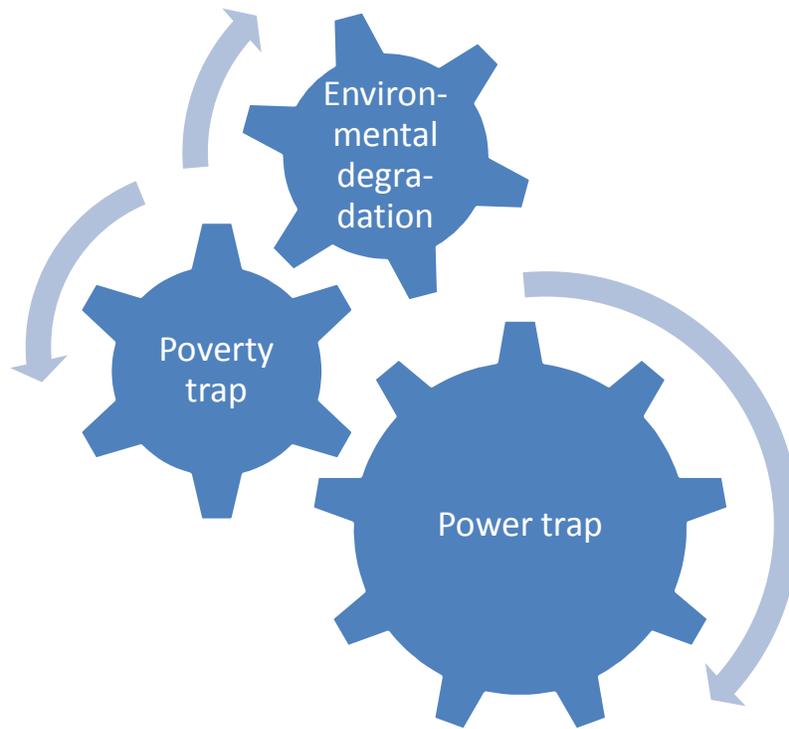


Figure 1. Power traps cause poverty traps and environmental degradation

Puzzles on Property Rights and Land Reforms

Acemoglu and Johnson (2005) find that property rights institutions have a first-order effect on long-run economic growth, investment, and financial development, while contracting institutions only appear to matter for the form on financial intermediation. The property rights institutions protect citizens against expropriation by the government and powerful elites, while contracting institutions enable private contracts between citizens. Their finding therefore supports the property rights school which gives high priority to securing private property rights that are protected against expropriation by the political elite as well as the government. This finding seems also to be in line with the views of Hernando de Soto (2000), emphasizing the need to formalize private property rights. A basic question is, however, how do we reconcile this with the recent very high rates of economic growth in China under a property rights regime without private property rights and with high threats of eviction by the government? Similarly, as I will illustrate in more detail in this paper, low-cost land certification, providing restricted property rights to farm households in Ethiopia appears to have been much more successful in achieving positive impacts than land titling programs in many other African countries. Also, many scientists, including economists, are still supporting customary tenure rights and collective solutions over individualistic solutions in relation to management of forests and grazing lands, especially in risk-prone dryland areas where flexibility and mobility of livestock are crucial to mitigate risk, prevent resource degradation, and facilitate restoration, even though such customary tenure systems tend to be gender biased and collective action failures are common (if not the rule). Extremely skewed distributions of property rights are found in some countries, especially in Latin-America but also in some African states, like South Africa

and Zimbabwe. The colonial history may explain this but can it explain why land redistribution policies aiming at creating more egalitarian land distributions have been so unsuccessful?

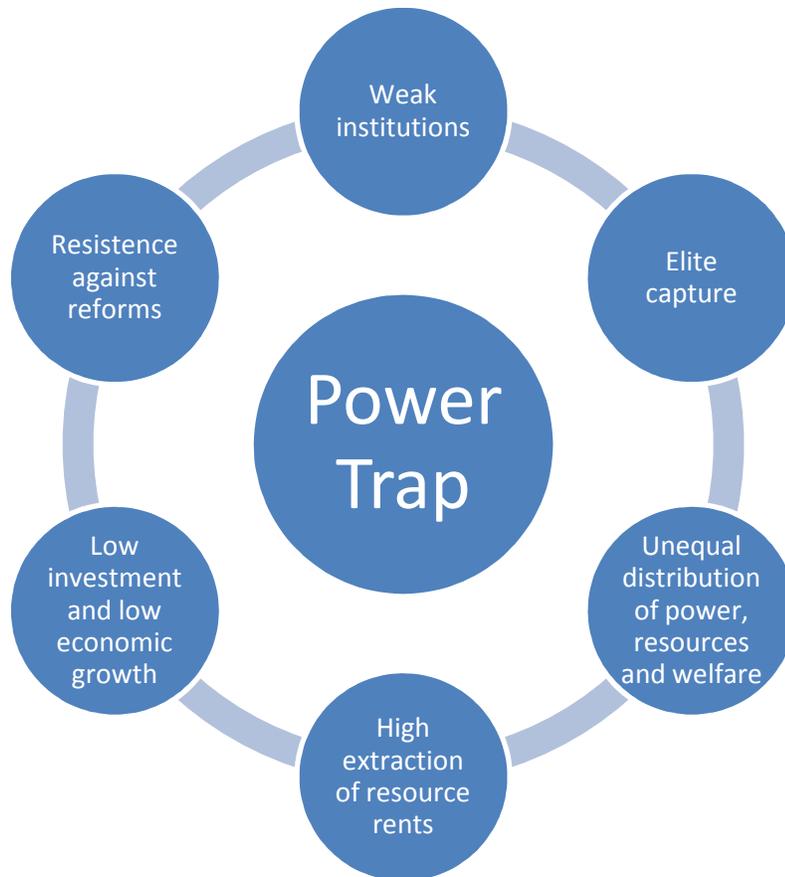


Figure 2. Characteristics of one type of power trap

The common link may be that skeptics against private property rights think that primarily the rich and powerful will benefit from such rights and this will be at the expense of the poor. They may jump to the conclusion that private property rights are a threat to the poor who depend more on accessing resources under common property regimes and who may lose out if these resources are privatized. Resistance against reforms is therefore not only there among the elite but also among the poor and those supporting the poor.

This resistance is there also against opening markets for property rights. Many fear that land sales markets only will lead to a further concentration of land resources in the hands of the rich. The recent energy and food crises with high energy and food prices triggered an international scramble for land that also hit Africa with significant momentum where Arabian and Asian countries and private investors were in the forefront. While these global market forces have been cooled down by the financial crisis, there is still a lot of strategic activity that has made it evident that also African land is becoming increasingly scarce and more highly demanded. Without strong legal institutions that protect the interests of the

poor and the environment, there is no doubt that the poor may lose out and land resources are under increasing threats of degradation. Uncontrolled market forces can therefore also be a threat to the environment, not only to poor people.

The financial crisis has demonstrated the limitations of markets and the need for wise governmental interventions although the debate goes about the package of wise interventions. This debate also ties into the core of de Soto's approach to "making dead capital alive" by formalizing property rights to enable the poor to borrow by using their property as collateral (de Soto, 2000). While this instrument can create strong growth-investment linkages it has also been identified as a main cause of the financial crisis and the Achilles heel with potentially strong negative growth linkages during a severe crisis like the current one.

Distress land sales may occur in Africa even though mortgaging of land has not been implemented. Such distress sales can be caused by covariate or idiosyncratic climatic, economic and health shocks. However, a recent study of land markets in Ethiopia, Kenya, Malawi and Uganda did not reveal that such distress sales were widespread or that they resulted in a more in-egalitarian land distribution (Holden, Otsuka and Place, 2008). Land was in most cases bought by landless or land-poor households. However, with big international investors entering the arena, political tensions may arise, like in Madagascar and Kenya. While the Korean company Daewoo Ltd. did not succeed in obtaining land access in Madagascar, many Arabian and Asian countries and private agents are trying to get access to land resources in African countries, like Madagascar, Mozambique, Kenya, Tanzania, Uganda, Ghana, Sudan, and Ethiopia. This could bring economic growth and employment to Africa but there are also high risks that political elites skim the benefits while the poor are marginalized due to power traps that inhibit proactive institutional developments. International organizations like the UN and the World Bank here have important roles to give advice and support to local governments for the development of implementable legal standards to prevent even more rapid resource depletion and livelihood degradation. They may not succeed unless the power traps are broken such that institutional reforms can be introduced that trigger market development and environmental rehabilitation, like illustrated in Figure 3.



Figure 3. Institutional reforms are the basis for market development and environmental restitution

Institutions, Markets and Environmental Rehabilitation Case: Ethiopia

The Ethiopian highlands represent one of the most densely populated parts of the African continent due to the favorable climate and fertile soils. However, these highlands were identified as one of the environmental hotspots by the World Development Report 2008 (World Bank, 2008). They suffer from severe environmental degradation due to erosive cropping and livestock production systems, insecure property rights, civil war, climate risk, poverty, and an inter-related set of market-, institutional- and policy failures. The Ethiopian case resembles a neo-Malthusian poverty trap but it may be questioned whether this poverty trap was caused by a power trap due primarily to policy and institutional failures (a long civil war under a communism-inspired military regime (1974-91) following a long history with a feudal oppressive system).

One of the most important land-related effects of the military regime (Derg) was the 1975 land reform where all land was made state land. No household was allowed to have more than 10 ha of land and the landlord class was excluded from leadership positions in local Peasant Associations that were given the responsibility for land distribution, organization of collective agriculture, collection of taxes and production quotas. This effectively eliminated the earlier so powerful elite that dominated in Southern Ethiopia in particular. Land was allocated to households based on household size and followed up with land redistributions to sustain the egalitarian land distribution. All land transactions were prohibited and so was hiring of labor as markets were considered to be “evil capitalistic creatures”. Collective

agriculture was promoted but failed like in many other countries where it was tried and the land redistributions created tenure insecurity (Alemu, 1999).

The long civil war, droughts and famines in the 1980s demonstrated that the country had moved from one power trap to another. High military expenses during the civil war crippled other types of investments. Poor infrastructure and poor market access, high population growth, stagnant technology, a weak non-farm sector, rapidly shrinking farm sizes, food insecurity and increasing dependency on food aid, and accelerating land degradation were key characteristics of the Ethiopian highlands in the 1980s. And this led to it being characterized as a poverty-environment trap and environmental hotspot.

Institutional Responses

The problem of environmental degradation first caught attention during the devastating famine in Wollo in 1973/74. The Peasant Associations that were established under the new regime also became the local institutional tool for implementing conservation activities. The World Food Program and other international agencies came into the picture from the early 1980s and promoted conservation activities through food-for-work (FFW) incentives in accessible food-deficit areas. The Ministry of Agriculture was also organizing much of this soil conservation activity through a top-down planning and implementation approach emphasizing quantity rather than quality, using a standardized technological approach that often was inappropriate, and where coercion was a common element. Studies found that such FFW-established conservation structures had been partially or fully removed by the local farmers. The reasons why farm households preferred to even remove conservation structures on land that clearly suffered from land degradation due to soil erosion were that the structures took up space, harbored pests and made plowing more difficult (Shiferaw and Holden, 1998). More severe land scarcity appeared to enhance removal of conservation structures while stronger perceptions of the importance of the problem reduced the probability of removal of structures. Research in the Amhara and Oromiya regions revealed that farm households on average had very high discount rates and that the discount rates were correlated with their level of poverty and imperfections in credit markets and these were limiting their willingness to pay to protect and conserve their natural resource base (Holden, Shiferaw and Wik, 1998; Holden and Shiferaw, 2002; Yesuf, 2004). Low or negative returns to conservation in the short run caused lower adoption of conservation structures in higher rainfall areas than in drier areas, like in Tigray, where there were higher short-term gains due to the moisture conservation effects of such structures (Kassie et al., 2008).

Our research in the Tigray region, starting from 1998, revealed a more participatory approach to land conservation at the community level, although coercion may also here have played an important role to prevent free-riding and enhance collective action. The major differences compared to earlier conservation efforts through FFW that we had observed in other parts of Ethiopia were;

- i) A compulsory labor tax on all adult members of society of 20 man days of work per year for communal purposes. This was also actually the entry ticket for being able to participate in FFW activities. A lot of this labor was used for soil and water conservation activities. A watershed approach was used starting from the top of the watershed and treating the landscape downwards. The upper parts of the watershed were typically communal land. The

work was largely organized by the communities themselves with expert help. Soil and water conservation experts identified the most suitable conservation technologies for the different types of landscapes and environmental problems, such as stone bunds, soil bunds, terraces, gully control measures, micro dams, cut-off drains, etc. Collective action was also used to construct conservation structures on land controlled by individual households. The need to coordinate this activity across farms, the need for technical support, and the need to mobilize labor were the main arguments for collective action also for conservation of the private land.

- ii) Two types of Food-for-work (FFW) projects were used in addition. The first was employment generation schemes (EGS) that served as a safety net for food insecure households, the other was FFW for soil and water conservation where the investments were the primary objective while provision of employment and food was a welcome form of payment. Some cash-for-work activities were also used. Typically households had to have completed their compulsory work duties before they were allowed to participate in FFW activities (Holden, Barrett and Hagos, 2006).
- iii) Establishment of area enclosures to rehabilitate degraded communal lands, and to prevent further degradation by humans and livestock (Holden and Hagos, 2003).
- iv) Investments in different types of irrigation to make more efficient use of water (water harvesting) and enhance dry season production (Gebregziabher, 2008).

One may also look at these interventions as a form of Payment for Environmental Services where the local people themselves pay through their own labor and with some additional food aid from outside to protect and increased their own future environmental services. The achievements through these organized activities throughout the 1990s were impressive. They demonstrate that a lot can be done by poor communities living in risky and marginal drylands provided that they collaborate and mobilize their surplus labor during seasons when there are few alternative income generating activities.

The second major institutional reform was the land registration and certification reform that was implemented first in the Tigray region in 1998-99 and followed with similar reforms in the Amhara, Oromiya and SNNP regions from 2003. This reform was based on a new federal land law of 1997 as well as regional land proclamations in each of these four regions. These land laws retained the state as owner of all land, prohibited all land sales and mortgaging of land, and restricted the duration of land rental contracts. However, these laws strengthened the user rights of farm households by making them perpetual and inheritable and declaring that land redistributions should stop. Such redistributions had been a commonly used tool under the previous regime to prevent landlessness to occur and to maintain an egalitarian land distribution. However, the redistributions had also created tenure insecurity (Alemu, 1999; Holden and Yohannes, 2002; Deininger and Jin, 2005). The land registration and certification reform, providing the rural households a written documentation as a proof of their user rights was therefore a very welcome undertaking. The approach was quite remarkably different from the titling upon demand approach that has been used in many other African countries and that has been criticized for being anti-poor. The key elements of the low-cost reform included:

- a) Use of staff with limited training to organize the local land registration

- b) Use of only local tools for demarcation and measurement of farm plots
- c) Coverage of all land in a village through a sweeping survey where households walked the fields together with the organizers, and agreed on the plot demarcations and ownership of the individual plots
- d) All plots were listed on forms through identification of the name of the owner, the name of the location, the size of the plot, the land quality class, and the names of the neighbors to the plot, and with the neighbors as witnesses of the plot borders
- e) All the information was written into registry books that were kept at the community level and with a copy at district level
- f) Finally, certificates were issued in the name of the head of the household, where information on all the plots of the household was listed as in d) above.

Deininger et al. (2008) assessed the early impacts of the Ethiopian rural land certification program and its possible implications for other African countries. The Ethiopian reform was characterized as having very low-cost compared to land titling programs in other countries and had been rapidly scaled up and had provided certificates for more than 20 million plots and 8 million households within a few years. While the reform was found to have many weaknesses, it was still found to be highly cost-effective as a first-time registration and provides important lessons.

One of the important conclusions that may be drawn from this case study is that technical and resource constraints cannot explain the failure of many other and less poor African countries to implement pro-poor land reforms. Therefore, the main obstacle is political and rests in the local power structures.

Impacts on Natural Resources and Livelihoods

More rigorous impact studies of the Ethiopian land reform are emerging and Holden, Deininger and Ghebru (2009) is the first published comprehensive impact assessment of the reform that uses household panel data. Their study took place in the Tigray region where the reform was first implemented from 1998. The household-plot panel data includes a balanced household sample with data from just before the implementation of the reform in 1998 and up to 2006, 8 years after the reform was started. The study shows that land certification has stimulated tree planting and maintenance of soil conservation structures and has enhanced land productivity. Holden, Deininger and Ghebru (2009b) also find, using the same data base, that land certification has stimulated the land rental market, and particularly poor, female-headed households have become more willing to rent out their land because they feel more tenure secure. This appears to have enhanced the role of the land rental market as a safety net and has also had a poverty-reduction effect for female-headed households (Ghebru, unpublished). Holden, Deininger and Ghebru (2009c) found that, based on a survey of 400 local land conflict mediators in 90 communities in Tigray, the land registration and certification reform also had resulted in a reduction in land-related disputes, especially for land border disputes among neighbors.

The Ethiopian policy-makers are attempting to further enhance sustainable land management (SLM) by revising their land laws and have introduced revised laws and regulations in the four big regions. These clarify the SLM responsibilities of the land users with various forms of penalties for violations. The establishment of Land Administration Committees (LACs) at community level is intended as the

institutional instrument to enforce these laws and regulations. It remains to be seen how successful this recent element of the reform will be. Our research has revealed that the local knowledge of these aspects of the law is very limited. There will be a high need for training of the local LACs.

Role of Markets

Market development in Ethiopia is not only severely constrained by the rugged topography and poor infrastructure that causes very high transaction costs and information asymmetries, but also by political constraints due to scepticism towards certain types of markets, particularly land sales markets. The fear is that the poor will be forced to sell their land and become destitute while the land policy, emphasizing an egalitarian land distribution, has used the land as a primary safety net and also an important instrument to stay in power and control migration and prevent excessive rural-urban migration.

Beyond that, Food-for-work for conservation programs represented an institutionalized mechanism to interlink labour and food markets providing a safety net (insurance market) through investment in land rehabilitation (Holden, Barrett and Hagos, 2006). There is clear evidence that these public efforts have contributed substantially to land conservation (Holden, Deininger and Ghebru, 2009) although there is some mixed evidence regarding whether they have crowded in or crowded out private investments in conservation (Hagos and Holden, 2006). The most successful of these FFW programs have been those with local participation in the identification of investment priorities, timing of the operations, and organization of the work.

Evidences on the impacts of land rental markets on sustainable land management from Benin and Pender (2008) for Ethiopia and Nkonya et al. (2008) in Uganda are indicative of less use of sustainable practices on rented land than on owner-operated land. Since the studies in Holden, Otsuka and Place (2008) revealed that land rental markets are expanding in Africa, it is becoming a relevant policy issue how to promote more sustainable land management on rented land. The Ethiopian laws that restrict the duration of such rental contracts (maximum 2-5 years) may in this regard have a negative effect on tenants' land use practices.

In the future the non-farming economy has to be expanded in Ethiopia to provide alternative employment as an exit option from agriculture and as a safety net when climatic shocks cause failures in the agricultural production. Good infrastructure and functioning markets are essential for poverty reduction.

A Comparative Perspective

Why has the Ethiopian land certification been so successful as compared to land reforms in other African countries? There is substantial evidence that the Ethiopian land registration and certification reform was demanded and appreciated by most households as it enhanced their tenure security. An important reason for this success was the non-existence of local elites that resisted the reform or conspired to change it in their favor. The broad and sweeping approach with strong local involvement, simple technology and low cost also ensured equitable participation. The fairly well-established peasant

associations at community level were also important for the successful environmental rehabilitation in Tigray.

Whether the approach or elements of it are replicable in other African countries requires careful scrutiny. Implementing pro-poor land reforms is first and foremost about breaking the power traps. Ethiopia succeeded in breaking the feudal power trap and eliminated its powerful landlord elite and established an equitable land distribution but went into another power trap and lost valuable time during the anti-market period with civil war and famines. The period after 1991 with local collective action, FFW for conservation, area enclosures and land registration and certification has put the Tigray region on a better track but still many challenges remain to create strong growth and poverty reduction to break out of the poverty trap caused by the past power traps.

Failed Land Reforms in Africa

Place and Migot-Adholla (1998) found that the impacts of land registration and titling had weak impacts on tenure security, credit access, crop yields and concentration of holdings based on studies in four Kenyan sites. They found no evidence of increased land market activity after land titling in Kenya although one of the objectives of the Swynnerton plan was that titling should lead to transfer of land to more able, energetic and rich farmers.

Jacoby and Minten (2006; 2007) also found no significant positive impacts of land titling in Madagascar. Benjaminsen et al. (2009) found that the formalization of land rights in Mali played into the hands of those with power, information and resources while the Nigerien case resulted in more conflicts.

Benjaminsen et al. (2009) assessed the situation in southeastern Mali where population and commercialization pressures have triggered a conversion from inalienable customary tenure to various forms of alienable and exclusive holdings. Land titling has become possible and titles can be obtained but at a very high price, beyond what is affordable for ordinary farmers, through bureaucratic and corrupt processes. At the same time untitled land has become very tenure insecure and can be expropriated with little compensation paid. The main beneficiaries of the system are the wealthy, powerful, well-informed and well-connected.

Holden, Kaarhus and Lunduka (2006) found that the planned new land reform in Malawi had been blocked by the traditional chiefs in the Parliament because they felt that their power was threatened by the proposed reform. Elements of the proposed reform included establishment of Local Land Committees and Land Tribunals to handle local land administration and land disputes to create more democratic, transparent and accountable land administration and conflict resolution processes. Traditionally the chiefs had this responsibility but they did not have to provide any documentation of their decisions.

Market-assisted land redistribution and restitution programs in South Africa and Zimbabwe have aimed to reduce the extremely skewed land distributions that were introduced by the colonial and racist policy regimes in the past (Binswanger and Deininger, 1993; Deininger, 1999). Like similar programs in Latin-America, these programs have not been able to scale up and meet the ambitious targets set due to lack

of political will and low investments in administrative capacity to handle the programs (Adams and Howell, 2001; Lahiff, 2001).

The new scramble for land that has emerged in Africa following the high energy and food prices in 2006-2008 has created a need for policy and land reform action to prevent emerging conflicts and protect the land rights of poor groups that otherwise can be marginalized and left landless. Political instability and conflicts can easily emerge like recently experienced in Madagascar after the Korean company Daewoo Ltd. attempted to gain access to 1.3 million ha land for production of maize and oilpalm to be exported to South Korea. A large number of such large land deals have been attempted and many of them signed over the last 1-2 years. An overview of these is provided by von Braun and Meinzen-Dick (2009). Establishing good institutional frameworks that can handle and monitor such deals will be crucial to avoid political instability.

This brief review indicates clearly that land reforms are blocked by powerful elites or transformed to benefit the interest of the elites. This has therefore reduced the trickle down effects of such reforms that instead have led to trickle up effects. There are therefore very good reasons to pay very close attention to the rapid changes taking place in the arena of land rights and land transfers that is rapidly expanding in Africa.

China: A Growth Success with Similar Land Tenure System as Ethiopia

What did China do differently to create growth and poverty reduction? After failed experiments with state ownership and collective agriculture, China implemented the Household Responsibility System (HRS) from 1978. Agricultural land was then allocated to rural households based on need, which implied that household size determined farm size, and this created a very egalitarian land distribution within communities, similar to that in Ethiopia after 1975. Community leaders were in charge of land distribution and redistribution, collection of taxes and collection of production quotas, like in Ethiopia. The consequences for tenure security and investment have been studied by Carter and Yao (1998), Jacoby, Li and Rozelle (2002), Brandt, Rozelle and Turner (2002), and Rozelle et al. (2002). These studies have documented that increasing expropriation hazards have a negative effect on investments.

Following the HRS reform for agricultural land a similar reform, the “Three Fixes” policy was implemented for communal forest land by allocating forest land to individual households although there was substantial local variation in the degree to which this forest tenure reform was implemented (Xu and Jiang, 2009). There were also mixed experiences with this forest tenure reform, causing a partial reversal in some provinces. Poor performance of the forest sector and increasing incidents of forest fires were among the reasons for a new wave of the individualization reform for forest land after year 2000. A new element of the most recent reform is provision of forest tenure certificates to households contracting and documenting their rights to the plots for 30-70 years. Holden, Xu and Jiang (2009) find that such forest land certificates have significantly improved the perceived tenure security on forest land but further work is needed to investigate the investment and productivity impacts.

Land redistributions may not have been used only to ensure an egalitarian land distribution and to facilitate collection of taxes and production quotas, but also as an instrument for rent-seeking by local

cadres (Brandt, Rozelle and Turner, 2002). Such rent-seeking activity is also an important reason for the recent forest tenure reform as it is thought that village leaders tend to exploit their positions, have insufficient incentives to enhance investments on communal forest land, and distribute too little of the revenues from such land to the households. This together with a falling revenue from the forest sector, less dependence on rural taxation, introduction of more democratic elections with the Villager Committee Organization Law in 1998, and greater attention to rural development by national leaders through the New Countryside Development Initiative, paved the way for removal of rural taxes and introduction of other reforms to reduce rural poverty. These factors have then contributed to the gradual removal of the power trap and facilitation of more market friendly institutional reforms that also may promote more sustainable forest land management.

It remains to be seen whether the new individualized approach that is attempted in China will be more successful than the past collective management. China has adopted a more cautious and proactive experimental approach to reform that may be a key to identification of more optimal tenure systems.

Another important reform worth noting in China is the Sloping Land Conversion Program, also called the Grain for Green. It was introduced in 1999 aiming to reduce soil erosion and desertification and to increase China's forest cover by converting steep and marginal agricultural land. It targeted to convert 14.7 million ha of cropland to forests and by 2003 it has reached 7.2 million ha. The program uses payments for environmental services (PES) as an incentive system through public payment of subsidies and voluntary participation by individual households. Both cash and in-kind subsidies are paid. These have been in form of annual provision of grain subsidy of 1500-2250 kg/ha and free tree seedlings worth about 90 US\$/ha while the cash subsidy has been about 36 US\$/ha. The subsidies are for 8 years for ecological forests, 5 years for economic forests, and 2 years for planting of grasses. The program was implemented in a fairly top-down approach in terms of choice of trees to plant or farm plots to include and participation was not always voluntary (Bennett, 2008). It also demonstrates that an incentive approach can work when the government is committed.

Conclusion

The main constraint to implementation of institutional reforms that foster market development, poverty reduction and environmental restoration is political. Resource wealth may make it even harder to break the power traps that inhibit such reforms. Elite capture at national and local levels can be efficient blocking mechanisms, that I have chosen to call **power traps** and these mechanisms can feed into and strengthen poverty traps which again can lead to more rapid land degradation. The main claim of this paper is that such power traps are the primary reason for failed land reforms in most African countries where such reforms have been attempted. The reason why Ethiopia has succeeded in implementing a low-cost and broad-scale land reform in recent years is that the power of the rural landlord elite was eliminated during the 1975 land reform. The recent land registration and certification reform was therefore not anti-poor because of elite capture. However, the reform has far from resolved the severe rural poverty and land degradation problem in Ethiopia. It needs to be combined with other instruments which require technical as well as institutional innovation, promoting a greener Green Revolution in the agricultural sector and expansion of the non-farm economy, combined with family planning. The

community and watershed level organization of land rehabilitation in the Tigray region of the country has demonstrated that a lot can be achieved by mobilizing the abundant labor for rehabilitation and investment while at the same time providing a safety net in this highly food insecure dryland area. Ethiopia and other African countries may also have a lot to learn from China but no blueprint to success exists. Rather there exists only a menu of policy options that need further systematic testing for its feasibility and palatability in the different political, cultural, bio-economic African settings. Closer collaboration between policy-makers and researchers is needed for efficient piloting and scaling up of the most promising approaches.

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