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UNMAKING THE COMMONS

Collective Action, Property Rights, and Resource Appropriation among
(Agro-) Pastoralists in Eastern Ethiopia

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ABSTRACT

In Ethiopian development policies, pastoralist areas have recently attracted more attention. However, much debate and policy advice is still based on assumptions that see a sedentary lifestyle as the desirable development outcome for pastoralist communities. This paper investigates current practices of collective action and how these are affected by changing property rights in the pastoralist and agro-pastoralist economies of three selected sites in eastern Ethiopia. We describe forms of collective action in water and pasture resource management and analyze how changing property rights regimes affect incentives for collective action. We illustrate the distributional effects these practices are having on (agro-) pastoralist communities and how these practices are being influenced by the broader political and economic dynamisms of the area.

Keywords: pastoralism, collective action, property rights, conflict, Ethiopia, water management, rangelands management

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Collective Action, Property Rights, and Resource Appropriation among (Agro-) Pastoralists in Eastern Ethiopia

Fekadu Beyene and Benedikt Korf¹

1. INTRODUCTION

In Ethiopian development policies, pastoralist areas have recently attracted more attention. Funding for (agro-) pastoralist development has increased significantly in the past decade. However, much debate and policy advice is still based on stereotypical representations of "pastoralist" areas (as backwards, prone to starvation and food insecurity, hotbeds of violent conflict and contraband trade), on modernist thinking among the ruling elite that considers pastoralism to be an outdated mode of life that needs to be directed toward the path of modernity (for example, sedentary farming or urban life) and on technical interventions that focus on (partial) sedentarization of pastoralists (for example, making them "agro-pastoralists" who only move livestock, but not their homes) (Hagmann, 2006; Arsano Yacob, 2000; Fekadu Beyene, 2000; FDRE, 2002, 2003; Hogg, 1996; Moris, 1999). A kind of highlander (sedentary farming) versus lowlander (pastoralist) dichotomy continues to prevail in public discourse and provides a discursive "clash of civilizations" between the ruling elite that originates from the highlands and the Somalis (and other pastoralist lowlanders) who consider themselves as politically marginalized (Mohammad Abdulahi, 2004; Ayalew, 2001; Manger, 2000; Hogg, 1997).

This "highland" bias (Arsano Yacob, 2000) in the state's policies and politics toward the pastoralist lowlands has resulted in land tenure policies that have largely ignored the specificities of the pastoralist lowlands (Fekadu Beyene, 1994; Helland, 2006; Mohammad Abdulahi, 2007) and have continued to consider sedentarization as the precondition of progress in the pastoral rangelands (FDRE, 2003:31; Moris, 1999:51). Typically, the state aided the expansion of agriculture into the lowlands, but failed to regulate the tenure transformations that accompanied the diversification of rural resource use (Hagmann, 2006). The arid and semi-arid lowlands continue to be considered as a reserve of "large tracts of unsettled land" to be developed through sedentarization and agricultural resource use, best through irrigated cultivation along the river banks (FDRE, 2003:31, cited in Hagmann, 2006:210; Haldermann, 2004; Moris, 1999).

Somali region and the borderlands from neighboring regions, such as Oromyia, experience a precarious statehood, where the power of the (regional) state is limited in spatial outreach and at times appears to be superimposed from outside forces. While Somali region has been sidelined in national politics, it is at the same time of strategic importance to the central state. Somalis have often been suspected of not being reliable citizens, because of their links with neighboring

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Somalia – a legacy from the Ethiopian–Somali or Ogaden war of 1977 and 1978 and the continuing ideology of “Greater Somalia” that still finds support among Somalis living in Ethiopia. The central state considers pastoralist movements across borders as potentially a problem undermining its border control and economic resource base. The central policy of ethnic federalism has opened up new struggles among clan groups over access to the state’s financial resources on the regional and *woreda* levels – a struggle that is largely fought through expansion of territorial control (*sole* possession or occupation of a territory) as the basis for the state’s allocation of financial resources (Hagmann, 2005, 2007; Samatar, 2004).

In Somali and neighboring regional states, property rights to land are undergoing significant transformation that goes hand in hand with dynamic economic changes. Peri–urban places in pastoralist areas have become important market locations for cross–border exchange of livestock products and trading goods. New economic elites invest in peri–urban places and their surrounding spaces, whereby land tenure relations shift from communal and collective use to enclosed and individual use (rights). The influx of capital encourages opportunistic exploitation of ecological resources, for example charcoal production for export to Somaliland and the Gulf states. At the same time, the (agro–) pastoralist livestock economies continue to struggle for survival at the resource margins, hampered by repeated droughts in the last decades (Devereux, 2006; Hagmann, 2006).

These are, indeed, challenges to pastoralist livelihoods in those locations begging the question: How do pastoralist and agro–pastoralist households cope with and adapt to these livelihood shocks, be they natural (droughts, disease) or political (violent conflict, precarious statehood)? This paper investigates current practices of collective action and how these are affected by changing property rights in the pastoralist and agro–pastoralist economies of three selected sites in eastern Ethiopia. This paper describes forms of collective action in water and pasture resource management and analyzes how changing property rights regimes affect incentives for collective action. Additionally it illustrates the distributional effects these practices are having on (agro–) pastoralist communities and how these practices are being influenced by the broader political and economic dynamisms of the area.

2. PASTORALISM, PROPERTY RIGHTS AND COLLECTIVE ACTION

Collective action can be understood as an action taken by a group of individuals to achieve common interests (Marshall, 1998). These individuals sharing a common goal or interest are characterized by well–defined group membership or boundaries without necessarily encompassing the whole society. In pastoralist economies, collective action is essential for managing natural resources for livestock herding, in particular water and pasture.² Property rights to natural resources do not necessarily imply sole authority to use and dispose of a resource (equating to full ownership), but these rights are often differentiated according to specific users and benefit streams. Property rights are relational in the sense that they define rights and duties of an individual vis–à–vis a collective (Bromley, 1991). In pastoralist

² As well as herding itself, though it is not subject to the analysis in this chapter.

societies, many resources are based on communal property rights, meaning those resources used by a group of users, normally the (sub) clan who holds customary rights over a specified territory. Secondary user rights exist in territories held by other clans. Secondary access and user rights are subject to negotiation with the primary rights holders.

In the theoretical literature on collective action, a number of factors have been identified that induce cooperative behavior in natural resource management: asset ownership (McCarthy, 2004; Place et al., 2004; Aggarwal, 2000), homogeneity of group members (Banerjee et al., 2004; Gächter et al., 2004; Bardhan, 2000; Dayton–Johnson, 2000), mutual vulnerability of group members (Singleton and Taylor, 1992) and dependence on the resources (Runge, 1986; Wade, 1987). In addition, Ostrom (1998) has emphasized the institutional arrangements that induce cooperative behavior. Elements of these arrangements include establishment of penalty systems and enforcement of rules (Grebmedhin et al., 2004), social norms (Cleaver, 2000) and encouragement by peer groups (Kandel and Lazear, 1992). The latter factors are particularly important, because interaction among group members is not confined to activities in resource management, but embedded in broader social networks. Benin and Pender (2006), for example, demonstrate that even in the absence of monitoring, rule violations can be limited when rule obedience is based on mutual trust that others would do the same.

The mobile, transhumant mode of livestock keeping of (agro–) pastoralist livelihoods demands a flexible tenure regime based on non–exclusive use rights to pasture and water resources (Cousins, 1996; Scoones and Graham, 1994). Rules governing access to resources are flexible, based on multiple negotiations and rules (Thebaud and Batterbury, 2001). These flexible access regimes of property rights are practiced through social networks of kinship and economic exchange where settlement and mobility patterns of members of a group favor a spatially diversified risk–sharing arrangement to adapt to erratic climatic conditions (Vanderlinden, 1999). These access regimes are based on the principle of reciprocity and balance out rights and duties of different groups (primary and secondary rights holders to specific resources). There is often an implicit assumption in these studies that livelihoods in those environments were static in their rules, norms and practices (the so–called “customary” practices), although many pastoralist societies are undergoing dynamic processes of social and economic transformation. More recently, market–based, individualized arrangements have emerged in the form of contract grazing (Ngaido, 1999; Vedeld, 1998), where outsiders (secondary rights holder) pay grazing fees to insiders (primary rights holder), meaning those holding customary property rights, or where secondary rights holders share benefits with primary rights holders that they derive from using communal resources of another group (Ayalneh and Korf, 2007).

In eastern Ethiopia, embedded customary practices in the management and use of the pastoral commons involve various forms of collective action that are governed by a set of rules. These practices have evolved in parallel to environmental stress (drought), political vulnerability (violent conflict, precarious statehood) and economic threats and opportunities (such as contraband trade). These kinds of stress and instability are endemic to pastoral lives in Somali region and the borderland of Oromiya region with Somali region. They are not of recent

origin as is often implicitly or explicitly assumed, but their dynamics and significance for the lives and vulnerabilities of pastoralists has changed (Kassa et al., 2005). What sorts of collective action prevail, how do changes in property rights affect incentives for collective action and what are the distributional consequences in the welfare of pastoralist households? These are the core questions that we will investigate.

3. THE STUDY SITES AND RESEARCH METHODS

This case study focuses on three districts (*woreda*) in eastern Ethiopia: Mieso (Oromia region, formerly jointly administered with Somali region), Kebribeyah and Harshin (both Somali region). These three sites represent different (agro-) pastoralist household economies and political settings that demonstrate the complexity of (agro-) pastoralism in the semi-arid parts of eastern Ethiopia, which have reasonable market access. In Mieso, we have studied agro-pastoralists belonging to the *Oromo* ethnic group, whereas in Kebribeyah, agro-pastoralists are from the *Somali* ethnic group as are the pastoralists from Harshin, although the latter two belong to different clans. While the term “agro-pastoralist” has also a political connotation in Ethiopian politics (because it implies a linear progressive advancement from pastoralism toward agro-pastoralism toward sedentary farming, and this kind of thinking is believed to drive the mindset of Ethiopian policy makers), the term is here utilized to differentiate the household economies. Agro-pastoralist means a household, which derives a significant part of its income from farming activities, whereas it is very low in the case of a pastoralist household, that is, pastoralist households may also do some farming, but to a lesser extent.

Table 1: Background of the three study sites

Location	Mieso	Kebribeyah	Harshin
Household economy	Agro-pastoralist	Agro-pastoralist	pastoralist
Ethnic and clan groups	Oromo, <i>Ittu</i> , <i>Alan</i> and <i>Nole</i>	Somali, Abskul and others (Akisho, Bartere and Ogaden)	Somali, Isaaq and others
<i>Kebeles</i> ³ studied	4	2	2
No. of households interviewed	80	40	39
Pastoralist water management issues studied	Communal ponds; communal wells	Communal ponds, communal wells, private & communal cisterns	communal wells; private & communal cisterns
Location	Borderland of Somali and Oromiya regions, close to highway/railway to Addis Ababa road	55km east of the regional capital Jijiga	Borderland with Somaliland (30 km afar) – trading routes mainly to Hargesa, Somaliland

Source: own research

The region is considered to be semi-arid with a bi-annual rainfall pattern (*gu* rains from March to June and *deyr* rains from October to November) with a mean annual precipitation ranging from 600–700 mm. The annual precipitation,

³ Kebele is the lowest formal administrative unit also termed as ‘peasant association’.

temperatures and as a result the rangeland capacities vary significantly between the different locations and from year to year. Overall, Somali region has experienced repeated droughts in recent decades. This has severely affected stock levels and the resource base. While the literature on pastoralism tends to emphasize climatic risk (Little et al., 2001), a historical comparison of rainfall patterns by Devereux (2006) indicates that rainfall has not been more erratic than in previous periods, hence that the exposure to climatic variability and drought has been a persistent feature in Somali region.

To collect data we employed a mixed methods consisting of: (1) focused group discussions using rapid rural appraisal techniques to familiarize research team and the local population, to gain a basic understanding of community perceptions, needs and aspirations, to collect basic information on demographic and socio-economic characteristics of the communities; (2) a detailed household survey where we gathered data on assets, incentives and opportunities of households in resource management. Household data were collected with the support of enumerators and experienced translators; and (3) key informant interviews with government bureaucrats, NGO staff, local elders and other key informants generated information on institutions of resource governance. Data were collected in two phases: in the first field phase (2004–05), the focused group discussions, the household survey and selected key informant interviews were carried out. The second field phase (July to August, 2006) focused on key informant interviews to complement the prior data collection and on filling specific knowledge gaps.

Consequently, we undertook a qualitative in-depth analysis of selected cases and looked into the specific factors that affect the rules governing collective action and property rights. The latter also allowed some analysis of the distributional effects of these institutional arrangements. In particular, we used a comparative approach to sort out similarities and differences across the study sites with respect to the different resource management practices and property rights arrangements as well as the different technological artifacts that are in use for water management. Our empirical study provides a one-shot collection of perceptions, assets and rules – with retrospective information on the past. It cannot deliver an in-depth longer-term perspective of historical changes over the last decades, a weakness shared by many similar studies on livelihoods.

4. COLLECTIVE ACTION IN WATER MANAGEMENT

Two types of resources are essential in the (agro-) pastoralist livestock economy: (1) pasture and fodder and (2) water (for livestock and farming). Mobility patterns across seasons and across different years need to take account of both resource types. A herder's possibility to transform pasture resources into economic value depends on the quality of the pasture as much as on the availability of water, because both are complementary inputs to livestock production. Management of water sources and water points has become even more important due to erratic rainfall patterns. Collective action around water sources is point or location specific, meaning water sources are spatially fixed (immobile), whereas collective action relating to herd management requires spatial mobility and therefore different organizational forms of collective action.

We study here three types of technical artifacts that make water available for various uses: ponds, cisterns and wells. Each of the three types is governed through different sets of rules-in-use and practices. These will be discussed in the subsequent sections which discuss the (i) physical attributes of the artifacts, (ii) rights and duties and (iii) the political economy of practices of collective action and property rights changes.

Wells

Hand-dug wells are a very important communal water source for livestock and human consumption. Wells are traditionally established, managed and used by a group. They are often located far away from settlements on strategic places of mobility routes of livestock herding. Traditional wells have been a common feature in pastoralist livelihoods in the last decades and centuries and some wells can look back to more than hundred years of lifespan as reports of early travelers to the region indicate. While wells are a well-established artifact to use water for human and livestock consumption, elders report about declining levels of maintenance of communal wells. Why is it that traditional rules governing maintenance and use of traditional wells for so long have partially become ineffective or less efficient?

Physical attributes – hand-dug wells vary in depth. Well discharge depends on its depth and the users' ability to manage it. Digging deeper wells is costly and requires extensive labor, but maintenance is easier compared to ponds. Elders from Mieso reported that in their locality, a properly managed well can serve its purpose for up to 60 years. This lifespan may differ in other sites. Wells, however, require high extraction costs, mostly by hand. Water extraction is highly labor intensive, in particular for watering animals. In our three study sites, Mieso and Harshen had shallower water tables compared to Kebribeyah making well construction less costly.

Rights and duties – user rules are quite differentiated, but there are some commonalities across different locations and ethnic groups. In all sites, the usual norm in defining watering priorities is "first-come, first serve" – but users with a small number of livestock usually get priority over large livestock owners, because they require relatively little time to water their animals. "Membership" is usually defined based on a household's contribution of labor to the digging and maintenance of the well. Initial well "diggers" who do not contribute to maintenance in one season are expected to do so in the following season. Repeated non-cooperation will lead to access restrictions. These internal rules are tailored toward preventing continuous free-riding other than occasional contributions. There are internal informal sanctioning mechanisms in place where members observe who has done maintenance, but this seems to be upheld as a principle rather than being practiced, because in real life, it is difficult to distinguish users who have contributed to maintenance work and those who have not as the time of contribution is variable. Monitoring contribution is therefore virtually impossible. Therefore, only in principle is delineation of use rights based on the consideration of a group member's contribution to maintenance.

The norms of access to water are differentiated taking into consideration labor investment costs and (potential) reciprocal gains. In fact, the rules and norms governing access and exclusion to well water are further differentiated beyond a cost-benefit logic that considers the contribution of users to well construction and maintenance. For instance, a household who contributes much to well maintenance may temporarily migrate away while other members are utilizing the resource. In most cases, it appears that any contributing member from a village or sub-clan can use as much water as needed irrespective of the amount of labor contributed. Poor clan members often contribute significantly although they only use small amounts of well water. They do this to gain wider social recognition within the clan. The practices of granting access to well water further consider the livelihood interdependence among clan members and with outsiders.⁴ While members reserve the right to exclude non-members from access to water, they do so in consideration of longer-term reciprocal relationships. Rights to access water are usually granted in expectation of future reciprocity. A good example of those reciprocal arrangements can be observed in Mieso between *Ala* and *Ittu* clans, where water tables are shallow and labor contributions for the construction was not immense. These kinds of longer-term reciprocal relations are important because of the spatially very differentiated rainfall patterns that can bring water scarcity to one location but not necessarily to another location not too far away. In other locations where water tables are deep and well construction requires high labor inputs, access to water is usually restricted or denied for non-members. This indicates that reciprocal sharing is more common where initial investment costs have been low.

Political economy – communal well management and maintenance has faced several challenges since the late 1980s, especially after the downfall of the Siad Barre regime in Somalia when violent fighting in Somalia brought a large influx of refugees to the Somali region in Ethiopia. In many sites, elders reported about declining water tables indicating over-extraction of water resources. The second challenge derives from more severe droughts in recent years that have increased the pressure on well-endowed wells. In times of crisis and feed stress, pastoralist households seek to use grazing resources and well water based on kinship relations, for example, they will access water of a well where a relative is a member, meaning where the latter has contributed to well construction and management. Those relatives from another territory are granted access to the well, although they have not contributed and are not members of the group. Mostly, elders facilitate and negotiate the decision to grant access that is then collectively binding. However, when this influx of non-members with kin relations becomes extraordinarily common, it reduces the incentives of the members to contribute their share to the maintenance of the well. In particular, when this well is located far away from the settlement area, it is used only randomly and exclusion is difficult. Collective herding, meaning several households that pool their livestock for herding, further exacerbates the pressure on water wells (extraction largely surpasses surcharge rates), because even those households who have not

⁴ "Outsiders" (= non-members) are those neighbors or other (sub-) clans who have not contributed.

contributed can water their livestock as part of the larger pool of animals thereby gaining access to water wells that are managed by others.

Broadly speaking, it is almost impossible to exclude non-members from using well water, either because the resource location entails greater cost of monitoring or because of clan and kinship relations. It is considered to violate commonly accepted cultural norms to exclude someone who is, even remotely, related. Furthermore, especially among Somali clans, entitlements to use water are often based on multiple clan relations and social obligations, which persist over generations. Contributions from non-members that date back several decades or generations may continue to enfold access rights for the family and clan members even though the current generation has not contributed. In effect, this creates a system of customary rules where even non-members gain rights of access to well water (see also, Devereux, 2006; Hagmann, 2007; Unruh, 2005). It is not appropriate among Somali clans to exclude someone in need, in particular in times of crisis. This means, on the other hand, that incentives for members to contribute to well management declines the more often crisis situations prevail and multiple users from different clans make use of communal water wells – well water is thereby transformed from a club good to an open access resource, because the sanctions and enforcement rules for members cannot be applied to non-member, and the latter can still utilize the resource.

Cisterns

Cisterns are only constructed in Kebribeyah and Harshin, the two sites in Somali region. They are normally cemented and are locally known as *birka*. In these locations, *birkas* are often the main water supply source for livestock and humans (Boku Tache, 2000). The construction of *birkas* started in the 1960s, but increased significantly after the 1970s due to increasing competition for water from communal wells between pastoralists and refugees from neighboring Somalia. Communal wells tended to deteriorate, because of neglect: the massive in-migration of refugees weakened the ability of user groups to enforce their traditional rules (Sugule and Walker, 1998). In addition, several aid agencies constructed *birkas*, but many of those have been abandoned due to poor maintenance. For example, many *birkas* in Kebribeyah disappeared due to conflicts over ownership and control after the SERP⁵, the aid program that had constructed the cistern, left the location. Property rights disputes around communal *birkas* are widespread and beg the question why it is that clan elders fail to enforce user rights and duties, although water from *birkas* is essential for pastoralist livelihoods.

Physical attributes – as *birkas* are cemented, infiltration and leakage is reduced, evaporation can also be limited by covering the cistern. In Harshen, communal cisterns can be quite large and deep, with dimensions of 30*40*4 cubic meters (m³), private ones are typically smaller. The most expensive part of the investment is paying for skilled labor (masons) and the purchase of cement. Private *birka* owners either pay those skilled laborers in cash or transfer user rights to them in

⁵ SERP = South East Rangelands Project

return for labor contributions. In communal cisterns, all users contribute labor and other inputs, but often, construction of communal cisterns is subsidized by aid agencies (which distorts investment costs).

Rights and duties – there are marked differences in the case of private and communal cisterns. In Kebribeyah, private cisterns are dominant, whereas in Harshen, both private and communal ones exist. In the case of private *birkas*, the owners use them to generate revenue and thus, are seen as profit-seeking entrepreneurs. Water users have to pay for water. Prices may vary from 5 Birr (ETB)⁶ per barrel in the rainy season to 20ETB per barrel in the dry season. In some places, there are fixed rates for each animal species. Private owners normally allow their relatives to use *birkas* freely or levy a lower price. In communal cisterns, those who contributed labor gain access and user rights. Moreover, revenue generated from water sales to non-members, such as livestock traders crossing the area and neighboring clan members, is shared among group members.

Political economy of birka construction – the proliferation of private cisterns, in particular in Kebribeyah, in the 1980s and 90s, brought water prices down and reduced incentives to maintain communal cisterns and wells, because it was more convenient to buy water at low prices from private *birkas*. However, with the gradual decline of communal water points, private *birka* owners realized their strategic importance in supplying water. They subsequently increased water prices. Because of a decline in artifacts providing access to water, water became unaffordable during prolonged dry seasons, when it is scarce and prices are going up.

The move of wealthier clan members to construct private cisterns has been a turning point in collective action for joint management of *communal* water resources. Wealthier segments of the clan did not have further incentives to contribute to the maintenance of communal water points (cisterns, wells, ponds). In other words, it was the potential leadership group, the elite of the clans, who failed to deliver their share of collective action and thereby weakened the organizational capacities of the remaining clan members to act collectively for resource management. In effect, communal *birka* maintenance was not considered an issue for the whole clan, but for the remaining, often politically less influential and/or economically less powerful clan members. This transformation of intra-clan responsibilities and duties toward the pastoralist commons effectively changed the genealogical and social networks and connections of a rights-duties dialectic inherent in customary rules.

Cistern owners had gained strong power over a strategic resource in the pastoralist economy which potentially disfavors the poor and vulnerable clan members who depend on buying water from their cisterns (because communal water points have declined). Clan elders have often tried to negotiate with cistern owners in times of acute water scarcity to keep water prices at affordable levels for less wealthy clan members, but their action has not always been successful or only temporarily so. In Kebribeyah, clan elites have also tried to establish rules that

⁶ 1\$ US ~8.6 Birr (May 2007).

forbid the construction of new private cisterns. Cistern owners stated they were worried that additional cisterns would further disturb the grazing patterns and reduce the availability of grazing land – it could increase pressure on the remaining pasture and lead to its eventual degradation. Cisterns also compete for watershed space, because they require a long water inflow channel. Those wishing to build new cisterns argued that the current cistern owners wanted to keep potential competitors out of the water market in order to be able to uphold water prices and secure oligopolistic gains from a limited number of cisterns.

Interestingly, in neighboring clan areas, similar agreements (not to allow establishment of new cisterns) can be found: in 1996, members of the *Habr Yoonis* clan in Gashamo district south of Kebribeyah made agreements not to establish new cisterns as was done in the *Ogaden* and *Isaaq* controlled territories (Sugule and Walker, 1998). The rapid spread of this rule has put pressure on clan elders in Kebribeyah to follow suit. In effect, this rule may increase wealth disparities at the expense of more vulnerable clan members, because those who in earlier years established the rule to allow construction of private cisterns now exclude potential newcomers to join the club. The bargaining power of poor and vulnerable clan members to influence the elites in rule making is thereby limited. The individualization and marketization of water as a commodity rather than as a common (club = clan) good has not only increased wealth disparities, but also power differentials within the clan. It is a case of elite capture.

Box 1: Communal cistern program by Oxfam

In Harshin, Oxfam (UK) has launched a project of communal cistern construction and management for poorer pastoralists in 2002. Group members had to contribute labor and land whereas Oxfam provided funding. To pay for maintenance costs, users had to pay a (low) price for water – a management committee composed of formal elders, women, local administrators is to enforce these rules. Clan leaders insisted that communal cisterns were to be built in enclosed land (enclosure is a piece of land fenced off the communal land for private use). Group members had to select one member with a large enclosure to construct the cistern on this land. This provides the group member who owns the land with a strategic power resource, but secures property rights and deters potential disputes if cisterns were constructed on communal land. The communal cistern in this case is a club good available only to a clearly defined group of user. Non-members have to pay higher fees. Since the project has only recently been implemented, it is too early to judge its success or failure, in particular the sustainability of the committee's role in rule enforcement. The program is still ongoing and an evaluation of its sustained impacts is too early to be concluded.

Ponds

Pond construction is a low cost water harvesting technique propagated by the central government in various campaigns and regional programs of community-based water management. This type of water harvesting technique is tailored toward increasing farm productivity and toward encouraging the production of high

value crops. Pond construction has been a traditional water harvesting technique of agro-pastoral groups even prior to the government's intervention, but the government programs reinforced those traditions.

Physical attributes – User groups need to provide labor for the construction of the pond as well as for maintenance (silt removal, fence constructions and renewals, channel clearing). The capacity of ponds varies: on average, a communal pond contains up to 5000 m³ of water, while privately constructed ones range from 150–200 m³. If effectively managed, such ponds can retain water up to six months after the end of the major rainy season and water availability from the pond is quite predictable and reliable. At the same time, infiltration losses are high, because walls and surface of the reservoirs are generally not cemented. Even cemented ones experience water losses, because the poor soil quality leads to cracks in the cement and resulting seepage. These technical limitations are site-specific and predominant in Mieso. To reduce infiltration losses, the government propagated plastic sheets that were supplied for user groups on credit basis. However, most plastic sheets are used in private ponds rather than communal ones, because the sheets are not sufficiently large to cover larger communal ponds.

User rights and duties – A communal pond is a common property of *kebele* residents. The Ethiopian government has invested great efforts in encouraging the construction of communal ponds as a means of water harvesting. According to the specifications in most government-initiated programs, user groups have the duty to contribute labor during construction and for maintenance. Non-contribution will result in oral warning and financial fines. When a user remains absent during a day of communal labor, a warning is issued after the first day of absence. If he or she fails to contribute repeatedly, a fine will be imposed. The amount of fines is set in advance to avoid bias and ensure fairness. But it is subject to revision depending on a defector's health, physical ability and wealth – the rich pay higher fines. Enforcement is exercised through the "team leader" – a person selected among the users – with the support of elders. The team leader reports about payment of fines in village meetings. Poor users who cannot pay fines may compensate this by providing double amounts of labor in the future. These are the kind of rules "on paper"; they provide some flexibility to account for the specific needs of poorer group members, but enforcement is often difficult due to other social obligations and reluctance to punish.

In principle, all members who have contributed have the right to use water from communal ponds, but access to water may be prioritized among users according to criteria, such as numbers and types of animals to be watered or human versus livestock consumption. The rules (or enforcement of rules) for those who failed to contribute differ from place to place. In some locations, those who did not contribute will be excluded from water use. In other places, rather than excluding defectors, users collectively push defectors to contribute, because exclusion is difficult to enforce, first due to the organizational challenge to monitor water use and second, due to social obligations which may make it inadequate to refuse water use for a member in need. Many communal ponds are located in considerable distance to the place of residents, often in the middle of crop fields.

Most of them are not fenced off, so that stray animals can water in the ponds and exclusion is difficult to enforce without guards, making rule enforcement costly.

Political economy – in our sample, ponds were only constructed by agro-pastoralists in Mieso and Kebrebeyah. Pond water allows some intensive farming and livestock keeping activities, but only in locations with good market access and natural conditions conducive to water harvesting. A number of agro-pastoralist households have started cultivating high value crops (vegetables, fruits, *k'hat*) using water from the ponds. Other agro-pastoralist households use water for livestock fattening in conjunction with intensive feeding (stalks and practicing a cut and carry system), because the road to Addis Ababa provides good market access for livestock. In areas where water from ponds supplements crop farming, oxen ownership serves as an incentive to contribute labor during pond construction. However, those households without oxen (asset-poor) often rent oxen from wealthier farmers in order to ensure their contribution to pond construction. However, not all asset-poor households are able to pay for the rental and those who cannot are potentially unable to derive benefit streams from their rights to use water – they are effectively excluded from these entitlements.

Government-led programs, such as those for water harvesting, tend to construct an additional organizational structure (for example the “team leader”) and layer of rules that co-exist with the established clan rules. Users will prioritize clan rules and clan relations over rules and structures developed in the state-driven programs, as those programs are there for a short period of time only, whereas the clan, clan rules and the genealogical relations will prevail. This makes enforcement of rules difficult, because it requires the consent and tacit or explicit support from clan elders. Where the economic benefits that can be appropriated from ponds is significant, for example due to good market access, clan elders have a greater incentive to support the construction and management of ponds.

5. MULTIPLE ARTIFACTS, MULTIPLE USES, MULTIPLE RULES

Different artifacts are available in the pastoralist economies to make water available for human consumption, livestock watering and irrigation purposes. Differential sets of rules-in-use have emerged around these different artifacts depending on technology, social relations and economic incentives. Table 2 summarizes the attributes of the three artifacts (ponds, cisterns, wells) in use among (agro-) pastoralists across the study sites.

Table 2: Comparison of artifacts for water management

	Ponds	Cisterns	Wells
Sites	Mieso, Kebribeyah	Kebribeyah, Harshin	All sites
Uses	Livestock, irrigation	Livestock, water sales	Livestock, drinking water
Resource location	On farm	Communal and enclosed land, close to settlement	Communal land, far away from settlements
Labor inputs	Constructing channels, silt removal, fencing, planting perennial trees	Digging, cementing, maintaining cracked walls, sharing costs of skilled labor	Digging, covering and opening, preventing inflow of runoff, fencing
Physical attributes	Poor water retaining capacity, water loss through evaporation, watershed required to capture water inflow.	High investment costs, lower seepage. Requires large watershed to capture water inflow.	High investment costs (digging), but durable if well maintained. Point source.
Access rules	Members only, unclear or underspecified user rules	Members only, reciprocal use for non-members, water sales to non-members	Members, non-members on reciprocal basis, first-come, first serve" rule, priority to small herds.
Enforcement	Enforcement through fines, but exclusion difficult in practice.	Exclusion relatively easy to monitor (close to settlement).	Exclusion from water use close to impossible due to cultural norms and kinship obligations
Property rights	Club good, but exclusion difficult to enforce	Private or communal	Attenuated due to reciprocity obligations
Management challenges	High water losses	Conflict of interest between established cistern owners and potentially new ones	High extraction costs, poor maintenance, disputes over who comes first
Effects on livelihoods	Incentives for crop production	Elite capture of water resources	Reciprocity principle dominates

Source: Focused group discussions and interviews (elders, district experts)

We can see from the three different artifacts and from the different localities that the incentives for collective action in managing water artifacts depend on economic cost-benefit considerations as well as on social norms. In all three cases, exclusion of non-members is difficult to enforce, either because it is impossible to monitor water access or because it is socially unacceptable to exclude non-members. This reduces the incentives to contribute to collective action in maintaining those artifacts – a problem particularly pertinent in the case of communal wells. While in the latter case, reciprocal and social obligations instill a kind of inclusive access practice, it is the opposite in the case of cisterns, where an elite of wealthy clan members has appropriated the technology of water use and established an oligopoly of cistern owners who have imposed new rules that forbid others to construct their own cisterns. In effect, we can observe here a case of elite capture that comes at the expense of poorer segments of the clan and that increases economic inequalities *within* clans. Constructing communal ponds has been encouraged by aid agencies and the state in order to provide access to water for poorer segments of the population. But ponds suffer from technological deficiencies (high water losses) and seem economically viable only in places with good market access and where agro-ecological conditions are conducive for vegetable production.

The dialectical relationship of water and pasture resource use

In the (agro-) pastoral economy, access to water and pasture resources is intertwined, although access to both resources is differentially negotiated between different clans. There is a differentiated and complex customary set of rules to grant access to grazing land for secondary users, meaning those neighboring clans who ask for permission to utilize the communal grazing resources of another clan. In principle, each clan possesses primary user rights over its own clan territory and is expected to confine herd movement within the boundaries of this clan territory under "normal" conditions. Secondary user rights, meaning asking for permission to enter another clan's territory and use its communal grazing resources, is only considered adequate when the own clan territorial resources are inadequate due to drought or inaccessible due to violent conflict with other clans and often subject to prior inter-clan negotiation rituals.

The right to pasture is not necessarily linked with the right to access water points, but generally, it is granted in combination, because exclusion from water while granting access rights would make enforcement costs prohibitive and would be likely to create disputes at water points. Nevertheless, negotiating access to grazing resources is easier compared to gaining access to water points. Where water is not available from communal sources, secondary users either have to negotiate individual access to private water sources (and pay for the water) or the granting of grazing rights (including the right to use *communal* water sources) does not provide a sufficient condition for transforming their access rights to pasture into economically viable user rights, because of inadequate access rights to water. This situation differentiates secondary users – those wealthy enough to buy water from private cistern owners can make use of the access rights whereas less wealthy households experience an entitlement failure, meaning they are unable to grasp economic benefits from their access rights to pasture, because they lack effective entitlements to water. This condition particularly affects poorer clan members, because they cannot afford to buy water from private cistern owners.

The dialectics of reciprocity and social obligation

Negotiation is akin to inter-clan cooperation. Inter-clan cooperation is based on kinship relations and the reciprocity principle, meaning access to clan territories and its resources is granted on the expectation that similar treatment will be returned by the clan or another clan in similar conditions. Negotiations encompass discussions over the rights to use *communal* water points, the length of stay (extent of grazing rights), the number of livestock admitted, agreements not to trespass enclosed land of hosting clan members, complete payment of "blood money" (*mag*)⁷, and the reassurance that the livestock entering into the clan territory is healthy (to avoid spread of disease). Clans define each calendar year as normal or bad (drought) years by considering the rainfall conditions. The decision to grant or not grant access rights to secondary users depends on this assessment.

⁷ "Blood money" is a compensation for resolving inter-clan conflict where a clan whose member is a victim of the conflict will be paid in kind based on the extent of lives lost.

Entrance to another clan's territory generally requires prior negotiation, even though the hosting clan is socially inclined to grant access. Violent conflict over access to pasture resources in times of crisis is very uncommon, because the entrenched moral economy inclines clans to grant access rights when another clan is in need. Violent conflict mainly emerges during the rainy season, when different clans try to expand spatial control and recognized clan territory (improving their future resource endowment) but this actually varies across locations (Fekadu Beyene and Hagedorn, 2005; Ayalew, 2001; Hagmann, 2007).

Inter-clan kinship relations are important in negotiating and differentiating access to grazing resources, meaning clan members have relatives within other clans with distinct territories. These lineages and networks across clans or sub-clans have played an essential role in establishing the reciprocity principle (Unruh, 1995). The Somali pastoral society is organized on a genealogical basis where lineages and their segmented units are the basis for defining rights to clan territories and their communal grazing (and water) resources (Lewis, [1961] 1999). Access to communal grazing is based on membership of a lineage responsible and capable of defending such rights against competitors. Co-users from other clans on the clan territory when based on inter-clan genealogical linkages can thereby hold primary user rights and become an important agent to negotiate secondary access rights for their fellow clan members who lack those genealogical linkages.

The spread of private enclosures in Kebribeyah and Harshen has further complicated the reciprocal system of granting access to grazing resources, because in some cases, clans have subdivided their territory and distributed the land to individual private rights holders or influential clan members have violated clan rules and created "facts on the ground" by unmaking the commons and constructing enclosure fences for cisterns or pasture. A significant part of clan territories in northern Somali region has thereby become enclosed, meaning privately owned, and thereby is not subjected to inter-clan negotiations (Hagmann, 2007). In other words, the overall availability of communal resources (pasture and water) that could be subject to reciprocal exchange in the longer term is continuously shrinking. This has created discontent with neighboring clans, because it makes mobility patterns across seasons and years more complicated and restricted and decreases the options for adapting to and coping with drought conditions. It has disturbed the customary genealogical rights-duties dialectic of reciprocal obligations based on multiplicities of relations across space and time.

6. CONCLUSIONS

In the beginning of this article, we have noted the widely held stereotypes about pastoralism and Somali region in Ethiopian politics. These stereotypes represent pastoralism as an outdated and anarchic lifeworld, which requires technological and managerial interventions toward sedentarization, settlement and modernity. Our empirical observations do not match these stereotypes; quite the contrary. Property rights regimes to pastoral resources have undergone dynamic changes as can be observed in Somali region, Ethiopia. These changes affect incentives for and benefits from collective action to manage the pastoral common property resources and the different technologies and artifacts that make benefit streams available

from water and pasture use. These processes of change have further differentiated socio-economic livelihoods and capabilities within the Somali pastoralist society.

There seems to be a pertinent trend toward privatizing and individualizing benefit streams to resources, whereby rights to those benefits are individualized, but duties, such as to maintain commons resources, are externalized. We could see this in the case of private cistern construction that has reduced incentives to maintain communal wells and water points. We observe this as well in the trend toward land enclosure in some parts of Somali region. The impact of this on regulating access to the pastoral commons (pasture, water) has been problematic. It has disturbed the reciprocal resource sharing arrangements between different clans, has induced inter-clan disputes and has restricted mobility patterns and thereby coping strategies in times of resource scarcity.

De facto privatization and individualization has provided some clan members with secure access to resources and additional income, for example by selling production inputs to other users, but *potentially* excludes others from resource access. Such a process may affect asset-poor households in some cases, but not necessarily in all places: While wealthier households are able to pay for access to privatized resources (such as water, contract grazing), asset-poor households cannot afford to do so and experience entitlement failures and a shrinking of their coping spaces and capabilities. In particular, while inter-clan negotiation may entail access to pasture commons, asset-poor households may fail to capture the associated benefit streams, when water access is privatized and prohibitively priced. In that case, clan members may have endowments to some commons resources (here: pasture), but will not enjoy the entitlement to actual benefit streams because of exclusion from others (in this case: water).

It can be concluded that while processes of individualization and privatization of benefit streams to pastoral resources – the unmaking of the commons – disturb customarily practiced reciprocity patterns, the direct effects on the livelihoods of poor pastoralists are ambivalent. This process of privatization, individualization and enclosure – or the subdividing of the pastoralist commons (Mwangi, 2007:815) – has become a widely observed phenomenon in pastoralist societies with unclear property rights, precarious statehood and ambivalent clan rule. Customary mobility patterns as a strategy of risk coping are increasingly disturbed and this increases the risk marginal pastoralist households are experiencing in the face of climatic variability. The effects of enclosure on socio-economic differentiation are complex: Some poor households also practice enclosure, which offers them control over some types of benefit streams (such as cultivation, charcoal burning). Overall, however, the enclosure and privatization process excludes many poor households from access to resources that are essential for livestock keeping (such as access to water from private cisterns for which they have to pay high prices). These distributional effects exhibit a temporality as well: some of the practices linked with privatized benefit streams are environmentally and economically unsustainable in the medium term. For example, many poor households use their enclosed land to sell its charcoal resources to private traders. This promises a short-term windfall gain, but degrades the pasture basis and deprives users from future benefit streams.

7. POLICY IMPLICATIONS

Any kind of policy recommendation needs to be read within the context of the Ethiopian state's *politics* of pastoralist development and "ethnic federalism." Past and present land tenure policies have tended to discriminate against the communal interests of pastoralist communities (Hagmann, 2007; Helland, 2006; Mohammud Abdulahi, 2007). The federal government's policy has not yet resulted in a balanced land tenure policy on regional levels that would account for both, customary modes of communal land use and emerging trends for privatized land use (Helland, 2006). The latest version of the federal Rural Land Administration and Land Use Proclamation No. 456/2005 reinstates the doctrine that all land is state property with ambivalent effects for the communal rights of pastoralists: it is written that "[the] Government being the owner of rural land, communal rural land holdings can be changed to private holdings as may be necessary" (FDRE, 2005, para 5:3). This means that communal land can be easily appropriated for private purposes and user rights be individualized, thereby substantially weakening communally held rights.

Collective action on a local scale – cooperation among a group of users of communal resources – is insufficient to counter the unmaking of the commons. It needs to be complemented by a land tenure policy that ensures the rights of communal users. Externally induced incentives and programs for collective action to manage communal resources, such as the Oxfam program on communal cisterns in Harshen (Box 1), still have to demonstrate that they can provide a sustainable basis for an alternative communal – here confined to a sub-group of less well endowed users – form of water management that can survive in parallel with the trend of privatizing water (and subsequently pasture) access by influential, wealthy clan members. The latter process often comes at the expense of less endowed pastoralist households who lack access to clan power and financial resources to even out the diminishing returns from communally managed resources. We have seen that property rights to land and its multiple resources (including pasture, water, and wood) are central in defining incentives for collective action. Even genealogical rights–duties dialectics of reciprocal obligations – the "clan" factor in Somali society – come under scrutiny when privatization and individualization of property rights takes place.

At present, the Somali regional state has handed over definition of communal versus private user rights to clan rule with ambivalent results: Elite capture has encouraged some clan elites to drive forward a politics of enclosure, which excludes asset-poor households from benefit streams, encourages unsustainable land use practices (such as charcoal production as windfall gain) and disturbs customary reciprocity patterns among and between clans potentially encouraging violent disputes over resource access. This indicates that neither are clans and customary rule systems "innocent" or most adapted to environmental and social requirements, nor has the state found a constructive role yet in the encounter with pastoralism and clan societies. It is the re-definition of this relationship that is needed most urgently to deal with the unmaking of the commons.

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