

9 The Transformation of the Afar Commons in Ethiopia: State Coercion, Diversification, and Property Rights Change among Pastoralists

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Change in natural environmental conditions has constantly influenced pastoral livelihoods in the Afar Region of Ethiopia, though the uncertainty of ecological conditions and insecurity of property rights have increased only relatively recently (Scoones 1995; McCarthy et al. 1999). As a result of these changes, the reliable flow of life-sustaining goods and services previously wrought from the area's erratic rangeland ecosystems is diminishing, putting pastoral livelihoods at great risk (Gadamu 1994). The adaptation of these pastoralists is not confined to a simple human–land relationship in an isolated setting but is rather influenced by demographic change, agricultural expansion, attempts to incorporate them into the national economy, and insecurity arising from conflicts and border instability (Davies and Bennett 2007). Due to the widespread nature of droughts (Berkele 2002) and ethnic conflicts (Hagmann 2005) in several areas of Ethiopia, livestock mobility between alternative water and grazing areas has also been severely constrained (Padmanabhan 2008), weakening livestock and causing a significant increase in livestock mortality. The cumulative effect of these factors has led to the weakening of traditional authority, degradation of natural resources, and growing vulnerability of different pastoral groups to ecological and economic stress, often resulting in poverty (Unruh 2005; Rettberg 2006).

Historically, Ethiopian pastoralists have been the most marginalized groups in the policy arena (Helland 2002; Yemane 2003). During the Imperial regime (1930–74), pastoralists were considered aimless wanderers who led a primitive way of life (Getachew 2001; Abdulahi 2004); moreover, they were considered to have been using natural resources wastefully (Gebre 2001). Hence, during this time the main ambition of government officials, who were entirely from peasant or urban backgrounds, was to convert these “primitive” societies into sedentary farmers who would use resources more efficiently. Different government policies emphasized that efficient resource use was possible if the vast and “inefficiently used” resources in pastoral areas came under the control of the state, legitimizing government intervention (Gebre 2001).

This “modernist” discourse, viewing pastoralism as a stage in a gradual development toward agropastoralism and finally sedentary agriculture, had been

the basis for most policy formulation under the socialist regime (1974–91) and still causes great grievance and irritation in the public policy debates on pastoralists today (Hundie 2008). On the one hand, with its increasing involvement in land use politics since the 1960s, the state as a powerful external force has inflicted severe changes on the property rights regimes that govern pastoralist life. The influence of the state farms established in the Awash Valley on dry-season pastures has forced the institutional arrangements of the commons into diversification. On the other hand, the current endeavors of development interventions to promote farming are opening up other opportunities. Modernist thinking, characterized by a linear development path, has influenced the pastoral situation in the past through forced diversification, whereas today we observe voluntary farming activities.

In this chapter we discuss two cases of pastoralist involvement in agriculture and investigate the challenges and opportunities of this transition. We focus on the drivers of crop production from a dual perspective: first, as an outcome of state coercion and, second, as a voluntary response to natural calamities. Specifically, the chapter addresses the following questions: (1) Why was the Ethiopian government interested in transforming traditional communal rights at the beginning? (2) How smooth or how rough was the process of change? (3) What are the outcomes in terms of property rights arrangements and pastoral livelihoods? (4) What factors explain pastoralists' responses to drought-induced changes? The first case portrays the conflictive transformation of the traditional land use arrangements of Afar pastoralists, which resulted from coercive state intervention aimed at expanding commercial farming, while the second case shows a nonconflictive change induced by recurrent droughts in the presence of support from the state.

Property rights changes are at the center of this analysis of diversification. As we shall demonstrate, the state (through its functionaries) expropriated large tracts of the traditionally administered prime rangeland for mechanized farms, which resulted in deterioration of the livelihoods of pastoralists. With regard to responses to drought, there is considerable difference within pastoral communities in motivations for diversification, predominantly along the lines of factors such as per capita livestock assets, suitability of the land for farming in general, access to wage employment as an alternative income source, and external support for farming activities. The impact of these processes on property rights and collective action regarding poverty will also be discussed. In doing so, we shall show that the transformation of traditional property rights in Afar has involved two seemingly contradictory phenomena, conflicts and cooperation. Although the results of our study build on the existing information discussing the challenges of pastoralism in East Africa (for example, Rutten 1992; Markakis 2004; Lesorogol 2005; Mwangi 2005) and elsewhere in Africa (for instance, Galaty and Johnson 1990; Kirk 1999; Niamir-Fuller 1999; Blench 2001; Chatty 2007), it provides a unique insight into the situation in Afar, where information is relatively scarce.

With regard to the conceptual framework presented in Chapter 2, this chapter examines how natural assets (land) and rights to these assets, private and communal, shape the institutions of collective action. Political risks serve as a source of uncertainty, exacerbated by the sedentarization policies of the state (that is, legal and political structures). Increasing instances of drought or natural risks also lead to transformation in property rights institutions and the emergence of new collective action structures. These contextual factors result in the action situation of an interface between a pastoral lifestyle and collective farming (a sedentary lifestyle), where several types of internal actors (better-off and poorer pastoralists) interact with the state (external actor) by means of conflict and cooperation (patterns of interaction). The chapter carefully discusses these interactions to show their effects on the desired outcomes of fulfillment of basic needs, security, and social and political inclusion. The links between the institutions of collective action and property rights are also examined.

The chapter also provides further insight on some of the broader themes that are of interest to the authors represented in this volume. Situated in the natural resource management section, it shows that political risks are as important in shaping institutions of collective action and property rights as natural and economic risks, the two types that are most often mentioned in the literature, and how these institutions, in turn, are used by the poor to respond to these types of uncertainties. The interactions between the pastoralists and the Ethiopian state also touched on the theme of conflict and the fact that property rights lie at the heart of such conflicts and are changed as a result of it. The cross-cutting theme of power, including elite capture, is also spotlighted to show that it is an important factor to consider in poverty outcomes, especially when the powerful actors increase the vulnerability of their less powerful cohorts to natural and political risks.

The remainder of the chapter is structured as follows. The section that follows briefly discusses the theory of transformation of property rights, and the next section places the study at hand in the wider theoretical debate on property right changes. The following section describes the study sites and methods, and the one after that describes the current institutional arrangements of Afar pastoralists. The next two sections discuss the transformation of the traditional land use arrangements of Afar due to coercive state intervention and natural challenges, respectively. And the final section summarizes the main findings and provides policy suggestions.

Theoretical Perspectives of Property Rights Changes, Diversification, and Collective Action

The notion of property rights refers to a “bundle” of rights that individuals or groups have to a certain material or intellectual resource (Alchian and Demsetz 1973; Schlager and Ostrom 1992). Bromley (1991, 1998) defines these bundles

of rights as including the right to derive benefits from the resource, the right to exclude others, the right to manage the resource, and the right to transfer the resource to others through various arrangements, backed up and enforced by the collective. Rights may be time bounded or intermittent. Rights holders are claimants to a resource—including individuals, communities, or legal entities—that may enjoy all the rights in a bundle or be limited to only some of them. In most cases, conflicts arise among different individuals or communities regarding who should have command over a resource, how to use it, when to use it, and so on (Mwangi 2005). There are a great number of cases in which different people or communities bear overlapping claims to resources (Meinzen-Dick and Pradhan 2002; Di Gregorio et al., this volume, Chapter 2). For example, grazing lands in pastoral areas are common-pool resources to which a great number of herders have de facto rights (Swallow and Bromley 1995; Kirk 1999). For a detailed discussion of the linkages between land rights and access to water, see Beyene and Korf, this volume, Chapter 10.

Although rights imply the access of right holders to benefit streams, they do not guarantee the realization of benefits. Ribot and Peluso sharpen this distinction by providing a broader framework in which they highlight separate definitions for access and property. Accordingly, they write that “access is about all possible means by which a person is able to benefit from things,” while “property generally evokes some kind of socially acknowledged and supported claims or rights” (Ribot and Peluso 2003, 155). With this reconceptualization, they show how capability differences arising from access to different resources influence the quantity and quality of benefits that can be generated from them.

Studies in diversification strategies (for example, Kituyi 1990; Little 1992; Holtzman 1996; Zaal and Dietz 1999) show that diversification may have mixed effects on the livelihoods of pastoralists. On the one hand, in pastoral areas some consider cultivation a major avenue of diversification for pastoralists and hence a viable risk management strategy (Campbell 1984; Smith 1998). On the other hand, others consider it an unsustainable or even destructive option that accentuates the risks pastoralists face (Hogg 1988). Fratkin (1991) and Nathan, Fratkin, and Roth (1996) show the potentially negative ecological and social effects of pastoral sedentarization and diversification. Yet for Holtzman (1996) diversification is seen as a cyclical rather than a linear process whereby herders combine different income strategies at different points in their life cycles. Equally, income diversification strategies among pastoralists, such as farming, do not necessarily lead to a diminished interest in livestock investments and production (Little et al. 2001).

One driving factor of property rights changes is diversification through the adoption of nonpastoral livelihood strategies. Berhanu, Colman, and Fayissa (2007) show the importance of human capital investment and related support services for improving the capacity of Borana pastoralists in southern Ethiopia to manage risk through a diversified income portfolio. The increasing privatiza-

tion of rangelands for crop production and private grazing along this diversification is explained by Kamara, Swallow, and Kirk (2004). They discuss how certain national policies have created an avenue for spontaneous enclosures, thereby resulting in conflicts between traditional and formal systems and in deterioration of human welfare. A study in Kenya also shows that households' gains from privatization depend on land tenure, patterns of diversification, and the way in which agriculture was integrated into the pastoral livelihood (Lesorogol 2005). In this case, local norms reinforced the value of land ownership for residents, thereby preserving the pastoral way of life.

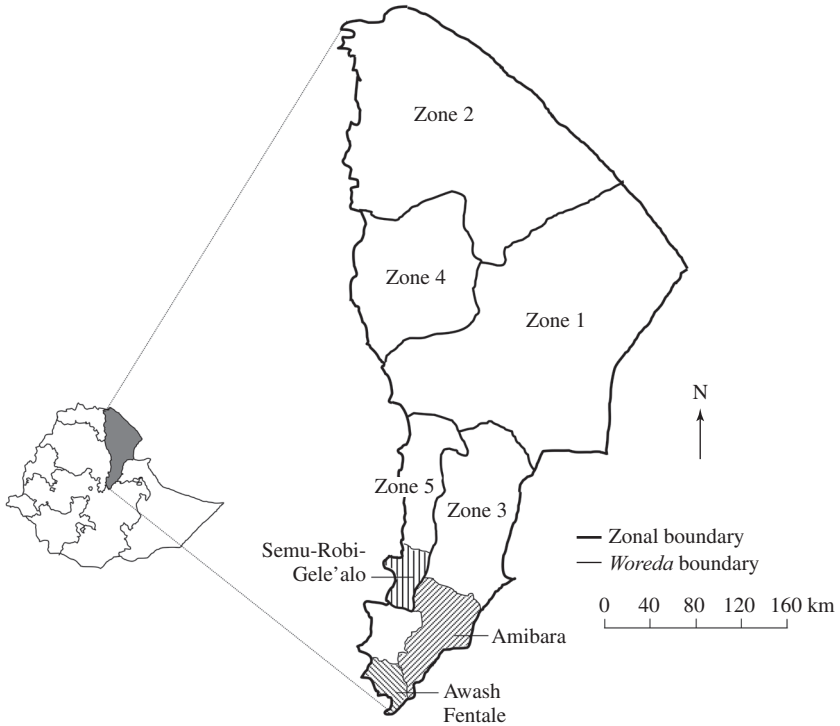
Collective action is a central feature structuring the use of rangelands by herders. On the one hand, collective ownership and differentiated use patterns in herd management are the preconditions for pastoralists' existence in a marginal environment (Hundie 2008). On the other hand, pastoralists react to changes in property rights by venturing into crop production as a means of livelihood diversification (Ahmed et al. 2002). If collective action is the voluntary action taken by a group to achieve a common interest (Meinzen-Dick and di Gregorio 2004), herding as well as commonly adopted agriculture is aimed at improving the welfare of the group members.

Study Sites and Methods

The Afar Region extends from central to northeastern Ethiopia, following the East African Rift Valley. The study districts—namely, Amibara, Awash-Fentale, and Semu-Robi-Gele'alo—are found in the southern part of the Afar (Figure 9.1). Amibara and Awash-Fentale are located in the middle Awash Valley, within the Rift Valley, whereas Semu-Robi is found across the lowland–highland interface, toward the western border of the Rift Valley. All study areas are characterized by a semiarid climate, with average annual temperatures ranging from 21 to 38°C; the lowest temperatures occur between December and February and the highest between April and June. The average annual rainfall is about 697 millimeters, coming primarily in two rainy seasons, namely *karma* (July–September) and *gilel* (March–April).

The dominant source of livelihoods in the study areas is pastoralism, and there are limited levels of crop cultivation and other activities (Table 9.1). Afar pastoralists raise mixed species of primary livestock, including camels and cattle, and keep supplementary herds of goats and sheep, usually for commercial purposes. They manage their livestock under an extensive mobile system, with natural pasturage the main source of livestock feed.

To investigate both historical and recent changes in the traditional property rights of Afar pastoralists, we pursued both primary and secondary data sources and employed various procedures for data collection. “Coercive Means of Property Rights Change” is based mainly on secondary data, including several unpublished documents accessed from the Middle Awash Agricultural

FIGURE 9.1 Location of the Afar Region and the study districts

SOURCE: Authors.

NOTE: A *woreda* is the second-smallest formal administrative unit, equivalent to a district. Ethiopia has five levels of formal administrative units: they are, in descending order of size, the federal state, the regional state, the zone, the *woreda*, and the *kebele*.

Development Enterprise (MAADE), the Melka Werer Agricultural Research Center, and the Afar Region Administration. The information obtained from these and other documents was augmented with data generated through key informant interviews and discussions with groups of pastoralists.

“Noncoercive Means of Property Rights Change” is based mainly on the data collected from 180 pastoral households dwelling at six purposely selected sites: Ambash and Qurqura in Amibara District, Doho and Dudub in Awash-Fentale District, and Harihamo and Daleti in Semu-Robi District (see Table 9.1). Spatial variability in resource endowment was taken into account while selecting the study sites, based on the presupposition that resource endowment can influence both conflictive and cooperative interactions among actors as well as pastoralists’ response to natural calamities. In this regard, each of the study sites can be placed in one of the following three categories: (1) areas with potential

TABLE 9.1 Backgrounds of the three study sites

Location	Amibara	Awash Fentale	Semu Robi
Household economy	Pastoralism, farming	Pastoralism, farming (recently begun)	Pastoralism, farming (recently begun)
Ethnic and clan groups	Afar clans: Sidhabura, Rakkbadermella Non-Afars: Amhara, Oromo, and others	Afar clans: Rakkbadermella, Mafay, Ayraso	Afar clan: Sidhabura
<i>Kebeles</i> ^a studied	Ambash, Qurqura	Doho, Dudub	Harihamo, Daleti
Number of households interviewed	60	60	60
Location	Southern part of Afar Region (in the middle of Awash Valley)	Southern part of Afar Region (in the middle of Awash Valley)	Southwest part of Afar Region (across the lowland–highland interface)

SOURCE: Authors.

^aA *kebele* is the lowest formal administrative unit, also termed a peasant association.

for rainfed agriculture (constituting Harihamo and Daleti), (2) areas with potential for irrigated agriculture (constituting Ambash and Doho), and (3) areas without agricultural potential (constituting Qurqura and Dudub). It is also worthwhile to note that one of the sites, namely Ambash, was selected because of some historical events with respect to property rights changes.¹

A two-stage procedure was used to select the sample households. First, using lists of household heads at each site (generated for the purposes of this study), with the help of the local elders pastoral households were stratified into three groups: poor, medium-income, and better-off. Thereafter, 10 households were selected from each stratum using systematic random sampling technique. In most cases, household heads (usually male) were interviewed, though in a few cases responses were taken from an adult family member who was not the household head. A group of trained enumerators conducted the interviews with individual sample households, guided by a structured questionnaire prepared for this purpose.

The overall data collection process encompassed two phases. The first phase (December 2004–May 2005) involved several tasks, including implementation of the household survey, collection of secondary data, and collection

1. Ambash was selected mainly because of the existence of historical state intervention to expand commercial farming.

of detailed qualitative data through group and key-informant interviews. The second phase (October 2006) was organized for a short period in order to strengthen the evidence gathered from the first phase by reviewing secondary sources and conducting expert interviews.

Traditional Institutional Arrangements

Clan is the lowest and de facto most important unit of traditional administration in Afar, although there are also smaller social units, such as the *dahla*, or sub-clan. As Getachew (2001, 54) notes, each clan comprises “a group of people related to each other by descent, living within shared territory and sharing common rituals and political leadership.” Each clan has a well-established gerontocracy, whereby decisionmaking power regarding land and other natural resources resides within the clan council, consisting of the clan leader, elders, the *feima*, and local wise men.²

Each clan manages its resources collectively based on customary principles. Accordingly, herd management follows rotational grazing patterns. When rainfall is normal for successive seasons, clan members are instructed not to use reserved pasture areas. These areas are made accessible to the members only after other areas have been exhaustively used. Although each clan member has an inalienable use right to the resources, intraclan customary laws (or operational rules) regulate these use rights.

The traditional institutions of the Afar allow two types of resource users. The first category includes clan members who use the rangeland permanently. They are primary rights holders (*waamo*) who have the right not only to use the resources on the rangeland but also to exclude others and to transfer the resources to their heirs. The second type of resource users comprises groups of neighboring pastoralists whose demands for pastoral resources go beyond their own endowments, particularly during drought years. These groups are secondary rights holders. They can be classified as rights holders because they frequently have access to clan resources that is generally recognized and accepted by clan members and traditional leaders. However, secondary rights holders must fulfill certain obligations in order to obtain access to the resources. Ex ante negotiation is required with *waamo* rights holders, the success of which depends on the relationship between the two groups and resource conditions. If they are allowed access, secondary rights holders are required to honor the customary rules of the host group. For instance, they should refrain from actions such as cutting trees, allowing other herders to use the resources, and rushing their livestock into reserved areas.

2. A *feima* is a rule-enforcing authority in Afar traditional administration. It consists of a principal leader (*feima-abba*), a deputy leader (*erenna-abba*), and ordinary members.

Coercive Means of Property Rights Change: The State Subverting the Commons

Triggers and Processes of Coercive Change

The intervention of the state in Afar was very limited prior to the 1960s. Farming was limited to the lower Awash flood-fed plains, where some pastoralists in the Asahimarra section of Afar had been practicing mixed crop–livestock farming for generations (Getachew 2001). However, since the 1960s state interventions in these areas have increased, mainly for two reasons. First, the Afar plains—specifically areas in the middle Awash Valley—were found to have great potential for wide-scale irrigated farming. The most attractive feature of these areas was their suitability for cotton production, which was critically important for expanding the country’s textile industries, a primary focus of the first and the second five-year national development plans (IGE 1957, 1962). Second, pastoralism was not accepted as a livelihood strategy in the reigning national political mindset of the time. Rather, it was considered a primitive and nonviable way of life, to be avoided rather than preserved (Getachew 2001; Abdulahi 2004). Thus, the intention of the policymakers was to change this mobile mode of life to sedentary farming. However, the pastoralists neither participated in the decisionmaking process nor were convinced about the goal of change.

In 1962, the Awash Valley Authority (AVA) was established by decree as an agent of institutional change. AVA was responsible for undertaking several activities, such as the founding and management of state farms, coordination and financing of pastoral settlements and other schemes, and monitoring of the overall transformation process, for which some 70,000 hectares of dry-season rangeland was targeted (Getachew 2001). AVA had direct military and financial support from the government to implement the planned changes, using its military power, for example, to threaten the pastoralists. MAADE began operations on the expropriated rangeland with the main objective of satisfying the demand of domestic textile industries for cotton. Initially, it had an operating area of 300 hectares, which was increased to 13,116 hectares in 1985. In addition to MAADE, several pastoral development schemes were implemented with directives coming from AVA. These included collective settlement farms and irrigated pastures.³ The costs to cultivate the settlement farms were covered by the state, while the pastoralists contributed nothing except their labor. The output of the settlement farms was distributed among registered households.

3. The irrigated pasture scheme was envisaged to plant a variety of improved grass seeds through the participation of the settler pastoralists so that the latter would appreciate the improved techniques and thereafter manage the irrigated pastured independently. However, this did not take place, and the irrigated pastureland served the dairy farm that had been established to fulfill the milk consumption needs of the staff of the state farms.

The implementation of the state-driven projects resulted in a mixture of property rights in the area. First, by using its coercive power the state became a *de facto* owner of part of the land over which the pastoralists had had inalienable rights for generations. Second, the introduction of collective settlement farms brought a new variant of common property, apart from the traditional communal ownership of the rangeland. Indeed, the nonriverine parts of the area remained under the control of the pastoralists and were allocated entirely to live-stock grazing, whereas traditional rights at the riverine sites were nullified by order of the state. This implies that the intervention of the state created a “legal dualism”: claims to the riverine sites were governed and protected by statutory laws, whereas the nonriverine sites remained outside direct state protection and legitimacy.

Because the state, by the power vested in it, redefined the land use rules without consulting the pastoralists, the process of change was not smooth, with the pastoralists resisting every action of the state. Indeed, throughout the 1980s and 1990s Afar pastoralists put great pressure on the administration of the state farms.⁴ The pastoralists expressed their dissatisfaction with and opposition to the implementation of the commercial farm schemes, mainly by damaging mature crops in the field; a typical example was the recurrent damage caused by local people on banana plantations, which eventually forced the state farms to abandon banana production. Initially, the state farms allocated compensatory funds to be paid to clan leaders and elders in the form of employment benefits that would, it was hoped, placate the dissatisfied pastoralists. This reward system did not put an end to the grievances, however, because the power of the pastoralists emanated from their great number, which was increasing over time.

In the course of time, the relative power of the two actors has changed in favor of the pastoralists. At the beginning, AVA had the power to mobilize resources to constrain the choices of the pastoralists and was capable of controlling their actions. However, it could not maintain this power to continuously influence the choices and actions of its counterparts. This is partly attributable to a decline in the attention paid by the government to state farms after 1989. Especially after the economic reform of 1991, the stake of the state in business ventures dramatically declined. As a result, AVA did not receive enough financial, political, and other support from the government to maintain its power. In addition, the shift in the national political structure toward ethnic-based federalism and the concomitant establishment of the Afar National Regional State recalibrated the power balance in favor of the pastoralists.

4. The resistance was also supported by the Afar Liberation Front, which declared armed struggle against the government on June 3, 1975, following the dramatic expansion of the commercial farms by the military government. See <http://www.arhotabba.com/alf.html>, accessed June 23, 2005.

These changes had effects on the existing property rights and land use arrangements. With the efforts of the Afar regional government and in line with a decision of the Transitional Government of Ethiopia, MAADE handed over a significant part of its land, including irrigation infrastructure and facilities, to the Afar in 1993.⁵ This, in turn, resulted in the existence of two distinct forms of property relations, increasing the number of actors involved. First, the pastoralists subdivided part of the returned farmland and started private farming in collaboration with highlanders, implying the individualization of the traditional communal rangeland. Second, the pastoralists leased out part of the returned land to local investors, who annually transfer cash payments to the pastoralists, implying the introduction of a lease contract regime into the area.⁶

In general, this subsection shows that the state is the major source of property rights changes in the middle Awash Valley of Afar. Empirical evidence from other areas of East Africa also confirms the significant role of the state with regard to property rights changes in pastoral areas. In some East African countries, such as Kenya and Uganda, the intervention of the state in forming modern ranches subverted traditional property rights arrangements and the existing ways of life (Helland 1977; Rutten 1992; Fratkin 1997; Muhereza 2001; Mwangi 2005). By the mid-1980s, Kenya was promoting and titling its extensive lowland plains for individual cultivators. Given the inadequacy of rain in the lowland areas for crop production, irrigation was considered a feasible solution to enable farming, as was clearly indicated in its national development plan of 1989–93 (Markakis 2004). As a result, significant numbers of pastoralists in some districts (such as Kajiado and Samuburu) became crop cultivators (Rutten 1992; Lesorogol 2005). Sudan has been even more aggressive than Kenya in expanding agriculture in its rangelands. The central wetlands and the eastern clay plains of the country experienced expansion of large-scale commercial farms as early as the 1940s (Shazali and Ahmed 1999). Although the expansion of commercial farms was slow and did not trespass the grazing basins before the 1960s, it rapidly increased after this time (particularly after 1968) and covered substantial areas of dry-season rangelands. The same was true in Tanzania, which adopted a radical reform under the Ujamma movement (Kirk 1999).

Furthermore, the pro-conservation policies of many East African governments resulted in the transfer of large areas of rangelands from pastoralists to the state (Fratkin 1997; Lane 1998; Kisamba-Mugerwa 2001; Markakis 2004),

5. The state farms handed over about 6,547 hectares, with the entire irrigation infrastructure intact (MAADE 2005).

6. As we learned from group discussions, investors pay 30 percent of their annual profits to pastoralists in the form of rent. In addition to making financial payments to the pastoralists, the investors have promised to improve local infrastructure, including schools, watering trenches, and health stations. However, the pastoralists complain that none of the investors have honored their word regarding infrastructural development.

as did the pro-farming policies that facilitated the rapid expansion of large-scale commercial farms in pastoral areas of these countries (Rutten 1992; Fratkin 1997; Shazali and Ahmed 1999; Lesorogol 2005). None of these state-led transformations of traditional common property regimes were characterized by peaceful interaction between the state and the local people, and all took coercive lines.

Impacts of Coercive Change on the Livelihoods of Pastoralists

The direct intervention of the state has, step by step, changed the traditional property regime of the pastoralists and brought about new forms of land use arrangements that have direct implications for their livelihoods. Four distinct forms of land use arrangements have been realized since the initial interventions of the state: state farms, settlement farms, individual small farms, and private large-scale farms. These new variants of property rights have one main feature in common: they are all related to the production of crops. However, each of them is unique in terms of the types of actors interacting with pastoralists and the impacts on the rights and capabilities of pastoralists to secure livelihoods that they entail. The existence of state farms implies de facto state ownership as well as the nullification of customary rights that pastoralists had had to the land for generations. Indeed, the contemporary rights of pastoralists to this portion of the former commons have been limited to use rights to crop residues, and those can be exercised only with the consent of officials from the state farms. On the other hand, the expropriation of large tracts of dry-season rangeland without compensation has resulted in the reduction of the capability of pastoralists to secure their livelihoods through the traditional means of livestock production. In this respect, the present vulnerability of Afar pastoralists to recurrent droughts is at least partly associated with such expropriatory actions by the state (Sen 1981; Getachew 2001; Yemane 2003).

The settlement farms, established for compensatory reasons, reflect a kind of interaction between the state and the pastoralists. In this case, the new resources necessary to produce crops were entirely supplied by the state. The existing irrigation infrastructure and the road networks were built by the state through a large outlay. Similarly, farm machinery and facilities were purchased by the state. The technical personnel and the management staff had also been installed through the efforts of the state. Although these resources defined capabilities to exercise rights within the parameters of the new land use system, pastoralists already had well-recognized rights to the benefit streams from the land. In other words, they had the rights as well as the capabilities to generate benefits from the settlement farms.⁷ However, the state was not “benevolent” forever but rather stopped its support in the mid-1980s. The termination of state

7. In fact, pastoralists were restricted to using the land consistent with formal regulations for the area. For instance, they could not use it as rangeland.

support and the concomitant transfer of all machinery and facilities to the state farms have debilitated the capability of the pastoralists to extract benefits from their land, although their rights to the land have remained intact. Lacking the knowledge and physical resources needed for farming, the pastoralists have not been able to continue crop production on the former settlement farms, despite their rights to do so. As a result, the entire settlement farm has been out of production and is covered, at present, by an inedible exotic weed (*Prosopis juliflora*). In fact, this part of the former rangeland is neither cultivated nor efficiently used for livestock production, which has direct implications for the livelihoods of the pastoralists.

The return of the confiscated land in 1993 was an important action that reduced the influence of the state on the traditional lands of the pastoralists. Actually, the pastoralists were free to decide what to do with the returned land. Accordingly, the land was partly allocated to clan members and was partly leased to local investors. In regard to individual parcels of land, the Afar have established partnerships with agriculturalists from the highlands. Individual landowners have the right to choose their partners, define and redefine the land use contracts, and terminate contracts if required. In the lease arrangements, the new partners of the pastoralists are local investors. Under this form of contract, the pastoralists collectively earn 30 percent of the investors' profits in return for the use of their land, which they distribute among themselves based on pre-defined criteria. They have formed a standing committee, including an accountant, to monitor all transactions of the investors. The committee has been entrusted to defend the rights of its principals and, hence, to take action when errors or other problems arise.

Although the current situation shows the restoration of the rights of the pastoralists over their traditional land, capability limitations are apparent in terms of maximally exploiting the new venture. First, the pastoralists have poor knowledge of farming techniques and lack the resources (such as farm implements) necessary to cultivate crops. As a result, the highlanders are responsible for all farm operations in return for larger shares of the net farm proceeds (up to 70 percent), whereas the contributions and earnings of the pastoralists are minimal. Actually, the share of the highlanders reflects the costs to be paid by the pastoralists due to their limited capabilities to produce crops on their own. Second, the capacity of the committee to actually carry out its responsibilities concerning the lease arrangements is questionable. The members have no accounting knowledge, and some of them do not even read or write. Hence, everything is done based on trust, implying the possibility that the pastoralists could be cheated if the investors desire to do so. Again, this implies the weak position of the pastoralists under such arrangements.

It is also worthwhile to pinpoint the distributional effects of the changes in property rights. Traditional property rights allowed a multitude of users to share a resource system in accordance with certain predefined rules. Under the

traditional arrangements, all clan members had equal rights to grazing resources and, hence, could extract benefits, provided that they had livestock. However, equality in rights to the communal heritage has not been ensured following the state-induced changes in property rights. During the initial period of the transformation, elites and their allies abandoned the customary rules and facilitated their own entitlement to the benefits from the settlement farms. Others used their physical fitness and connections with project leaders to secure their own benefits, while those households lacking such resources were denied access to them (Getachew 2001). The procedures following the subdivision of the newly returned land have also not been immune to discrimination. Contrary to the traditional land law, about 31 percent of the sample households were left out of consideration during the subdivision. A closer look at the assets of the sample pastoralists chosen for this study shows that those who have not been benefiting from the subdivided land are poorer (with an average 0.89 total livestock unit [TLU] of per capita livestock asset) than those who have been benefiting (2.91 TLU). This inequity and mistreatment are even more visible with regard to women. Female-headed households neither were considered when the returned land was distributed among clan members nor have they been beneficiaries of the leased-out land because of tradition-based criteria: women are *de facto* minors in Afar customary laws.⁸

The Afar pastoralists are not unique in being affected by antipastoralist policies. Other pastoral groups in Ethiopia and other East African countries are also victims of such policies. For instance, Gebre (2001) shows that Karrayyu, Somali, and many pastoral groups in southern parts of Ethiopia lost large tracts of their best rangeland for different irrigation projects and other development schemes initiated by the state (Tolera 2000; Gebre 2001; Yemane 2003). Similarly, pastoralists in other East African countries lost their traditional land to state-driven agricultural projects. In Sudan pastoralists lost large tracts of their land due to the expansion of large-scale farms in the central wetlands, the eastern clay plains, the west (Habila in Nuba Hills), the southeast (Agadi-Grabeen and Dali-Mazmoum complexes in Blue Nile), and the south (Renk in Upper Nile) under the auspices of the Mechanized Farming Corporation (Shazali and Ahmed 1999). In Tanzania, a large number of pastoralists were displaced when their prime grazing lands were given to modern companies such as the National Agricultural and Food Corporation, international seed companies, and breweries (Fratkin 1997; Markakis 2004).

8. Women have no ownership rights to land or other resources, including livestock. They hold conditional rights and thus are entitled to benefit streams only via their husbands. When a woman's husband dies, all jointly owned assets, including livestock, are transferred to her husband's family, and the widow loses the right to control "her" former resources. As a small form of compensation, she can, though, maintain control of the livestock given to her as presents by her husband during their marriage.

Noncoercive Means of Property Rights Change: Voluntary Adoption of Farming

Triggers of Voluntary Change

Afar pastoralists in the study areas have been threatened not only by the coercive actions of the state but also by recurrent droughts. Two major droughts have hit these areas since the mid-1990s, and short dry spells are common as well. The prevalence of drought has adversely affected the pastoral economy in two ways. First, it has reduced the total livestock assets and productive capacities of the area, thereby increasing mortality and morbidity rates. Sanford and Habtu (2000, cited in Mesfin 2003) have estimated that a 5–15 percent reduction in livestock assets occurred in Afar due to the drought of 1999/2000. In fact, this estimation corresponds to the best-case scenario. Under the worst-case scenario, livestock loss has been estimated to range from 15 to 45 percent. The emergency assessment reports of various development organizations and relief agencies indicate that the prolonged drought of 2002/03 had even more serious consequences for the Afar pastoralists (FEWS NET 2002; UN-EUE 2002a, 2002b).

Second, the successive droughts have resulted in calibration of the terms of trade against the pastoralists. Although no systematic records have been found yet, the assessment reports of aid agencies indicate a sharp decline of livestock prices during the droughts. A United Nations (UN) assessment mission in the area indicated that pastoralists faced a reduction of more than 50 percent in livestock prices following the drought of 1999/2000 (UN-EUE 2000). Similarly, livestock prices fell by 50 to 60 percent due to the drought of 2002, while maize prices simultaneously rose by about 235 percent (Davies and Bennett 2007). The adverse effects of the droughts on the terms of trade were compounded by other factors, such as export restrictions imposed by Saudi Arabia in September 2000 following a Rift Valley fever outbreak and insecurity around the northern border of the Afar Region in the aftermath of the war between Eritrea and Ethiopia in 1998.

These livestock losses coupled with the deteriorating terms of trade against pastoralists worsened food insecurity in the study areas, with the degree of food insecurity reaching its climax in 2002/03 because of the intensified drought. A serious famine hit the area during which a large number of pastoralists lacked anything to eat. On July 12, 2002, the Disaster Prevention and Preparedness Commission issued a special alert that publicized the deterioration of food security in several parts of the country, particularly in the Afar Region and the neighboring East Shewa zone of Oromia. According to the special alert, 448,500 people in the Afar Region needed emergency aid, of whom 45.3 percent were located in Zone 3 (constituting Amibara and Awash-Fentale) and Zone 5 (constituting Semu-Robi).

The deterioration of food security in pastoral areas in general and Afar in particular necessitated an intensified intervention of external agents (governmental and nongovernmental organizations) in pastoral livelihoods. Although the most immediate external intervention was the provision of food aid to save human lives, a number of programs and projects—financed by the government and nongovernmental organizations (NGOs) such as the Food and Agriculture Organization of the UN (FAO), Farm–Africa, CARE–Ethiopia, and Oxfam GB—were designed to improve the livelihoods of pastoralists. One intervention was focused on designing projects and programs to facilitate the expansion of crop cultivation in these areas.

Both traditional authorities and external agents were important facilitators of collective action to begin farming operations. In this respect, external agents (local governments and NGOs) sponsored meetings at the *kebele* level.⁹ Although there are no formal records on the number of local meetings at the study sites, the average number of meetings reported by the sample households ranged between 7.2 (for the Dudub site) and 18.6 (for the Daleti site) for the year preceding the survey. During the meetings, the external agents explained their visions of and commitment to improving the livelihoods of pastoralists, mainly through programs tailored to farming. The interventions of the external actors were even more direct at three of the study sites, namely Harihamo, Daleti, and Doho. In Harihamo and Daleti, the government directly supported collective activities in relation to farming through its food security program. Assistance included providing farm tools, covering the initial costs of farm operations (for example, the costs of a tractor for tillage), providing oxen, and offering other logistic and advisory support. At the Doho site, support was provided mainly by an FAO livestock recovery project office at Awash-Fentale that provided financial support for the initial development of irrigation infrastructure and farm inputs, mainly seeds. Moreover, district-level experts on agriculture were responsible for providing advisory support to the “agropastoralists.”

Similarly, the role of traditional authorities was substantial. Specifically, activities such as mobilizing clan members for meetings; organizing and supervising all activities, such as bush clearing and land leveling; and imposing sanctions on free riders required the active participation of the *feima* members. Traditional sanctions were to be applied, including asset penalties, such as slaughtering the breeding cows of free riders, and corporal punishment, such as beating free riders in public to shame them.¹⁰

9. A *kebele* is the lowest formal administrative unit, also termed a peasant association.

10. Although all of the sample households were aware of the existence of these sanctioning mechanisms, none of them reported having faced any sort of punishment in relation to the collective preparations for farming.

Here *collective action* applies only to activities groups performed together prior to the allocation of the land to the participants. These activities included bush clearing and leveling the fields to facilitate tillage. Although individual pastoralists were free to decide whether to participate in collective action to start farming, involvement in those activities was a prerequisite to obtain farmland and associated support from external agents. Therefore, we can argue that in the case at hand the decision to engage in collective action cannot be distinguished from the initiative to start farming. The collective land clearing was the compulsory entry point to plant production. Only after this initial collective effort could the decision to continue or terminate agricultural enterprises be made in an individual fashion. Although there are strong reasons to assume that our analysis captures the factors influencing the decision to engage in collective action, we cannot completely dismiss the fact that the analysis also captures factors that favored a switch to crop farming, independent of whether this switch required collective action as a precondition. Individuals were supposed to continue their cultivation practices by their own efforts once they were given an initial impulse, but this long-term outcome is beyond the scope of this study. The preparatory activities were undertaken intermittently for about four months in Semu-Robi and for two months in Awash-Fentale. The exact duration in Amibara is not clear, but according to sample respondents it ranged between 30 and 180 days. The overall rate of participation in these cooperative activities across districts was 39.1 percent ($n = 70$), with 13.3 percent ($n = 8$) in Amibara, 23.3 percent ($n = 14$) in Awash-Fentale, and 81.4 percent ($n = 48$) in Semu-Robi.

Analytical Model and Variables

“Triggers of Voluntary Change” indicates that farming is an enterprise that has been induced because of natural shock to the area. Engaging in farming presupposes participation in collective action to gain access to the common land. Understanding the movement of pastoralists toward farming entails comparing the situations under farming and pastoralism. Thus, assuming that individuals make decisions by comparing the expected utilities associated with the two enterprises, this binary choice can be modeled following the utility function approach. Let U_{i1} and U_{i0} be the utilities of individual associated with farming and pastoralism, respectively. We expected that community members would be heterogeneous in terms of the level of utilities generated from farming. We also expected that community members would vary in terms of the level of utilities they would generate from pastoralism. Thus, U_{i1} and U_{i0} can be formulated as a function of other variables such that $U_{i1} = \alpha_{i1} + \beta_{i1}X_i + \epsilon_{i1}$ and $U_{i0} = \alpha_{i0} + \beta_{i0}X_i + \epsilon_{i0}$, where α and β are parameter estimates and X is a vector of exogenous variables that cause heterogeneity among community members. As a utility maximizer, individual i decides in favor of farming if $U_{i1} - U_{i0} > 0$ and otherwise if

$U_{i1} - U_{i0} < 0$.¹¹ Accordingly, participation in collective activities to start farming reveals that $\epsilon_{i0} - \epsilon_{i1} < (\alpha_{i1} - \alpha_{i0}) + (\beta_{i1} - \beta_{i0})X_i$. If we replace $\epsilon_{i0} - \epsilon_{i1}$ by ϵ_i , $\alpha_{i1} - \alpha_{i0}$ by α_i , and $(\beta_{i1} - \beta_{i0})X_i$ by $\beta_i X_i$ for brevity, the probability that individual i will participate in collective action to start farming can be specified as $P(C_i = 1) = P(\epsilon_i < \alpha_i + \beta_i X_i)$. If a normal distribution function is assumed for ϵ_i , the model turns out to be a probit model (Amemiya 1981). Alternatively, if a logistic distribution is assumed, the model becomes the logit one (Amemiya 1981). The two alternative models produce similar outputs, except in rare cases when the data concentrate around the tails of the distributions (Amemiya 1981; Greene 2000). Here the logit model is used because it lends itself to easier interpretation.

Table 9.2 describes the independent variables considered for logistic regression analysis and their hypothesized signs. The dependent variable takes on a value of one if a pastoralist participated in collective action to start farming and zero otherwise. The explanatory variables had been tested for their importance by using descriptive statistics before they were subjected to regression analysis. The results show that participants are significantly different from non-participants with respect to all but one variable.¹²

Regression Results and Discussion

The outputs of the regression are shown in Table 9.3. The signs of the coefficients in the regression are all in agreement with prior expectations. The chi-squared statistic is significant, implying that the explanatory variables (taken together) are important in explaining the variability in the dependent variable (cooperation to start farming). The model was able to correctly predict 86 percent of the cases vis-à-vis participation in collective activities. Because the standard coefficients in the logistic regression equation are not directly interpretable, the marginal effects of explanatory variables were computed by using an additional algorithm in the LIMDEP statistical software version 7.

Four variables are important for explaining cooperation of pastoralists in collective activities geared toward starting farming: suitability of the area for agriculture, per capita livestock holding of a household, access to wage employment, and external support. Each of them will be discussed in some detail as follows.

The proxy variable for suitability for farming (SUITAGR) is positively related to the level of cooperation for farming. This variable was supposed to capture the variability among the study sites with respect to their potential for crop cultivation. In this respect, the study areas were classified into two groups

11. There could be indecision if $U_{i1} - U_{i0} = 0$, but this happens with zero probability if $U_{i1} - U_{i0}$ is a continuous random variable.

12. The exception was EDUCATE.

TABLE 9.2 Description of variables and working hypotheses

Variable code (X_j)	Description	Mean of X_j (percent of $X_j = 1$)	Hypothesis
AGEHH	Age of household head in years	40.1	Older pastoralists were expected to be more conservative and therefore to resist the adoption of farming.
EDUCATE	A dummy variable that takes on the value of one if the household head is literate, zero otherwise	(25.7)	Education was expected to have an effect on pastoralists' decision to start farming, either negative or positive. The sign depends on the person's judgment whether he or she would make a better living from livestock or crops.
ACTIVLB	The number of household members within the age range 10–60 years ^a	4.9	A larger number of active family members to provide labor implies the potential of the household to engage in different activities. Hence, a larger active labor force was expected to enhance one's decision to engage in farming.
SUITAGR	A dummy variable that takes on the value of one if the area is either suitable for rainfed agriculture or can be irrigated given existing water resources and capacity to irrigate, zero otherwise	(66.5)	The suitability of the area for farming was expected to increase the likelihood of one's decision to adopt farming because it shows the potential to benefit from farming.
PERCPLS	Per capita livestock holding of household (total livestock unit)	3.1	Livestock holding was expected to relate negatively to the adoption of farming because a smaller livestock holding implies (within the context of pastoral areas) higher vulnerability to natural shocks and hence higher potential gains from a diversified livelihood.

EMPOPP	A dummy variable that takes on the value of one if the household generates income from wage employment, and zero otherwise	(10.6)	Wage employment was supposed to compete with farming in terms of labor and hence was supposed to reduce the probability of engaging in farming. Moreover, an opportunity for wage employment implies less vulnerability to natural shocks, which may reduce the probability of being engaged in farming as a strategy of postshock recovery.
SUPPORT	A dummy variable that takes on the value of one if external agents provided direct support ^b before and during collective activities, zero otherwise ^b	(49.7)	Support from external agents in relation to farming was expected to increase the probability that pastoralists would start farming.
LJVDIVRS	Index of heterogeneity among pastoralists as measured by the coefficient of variation (measured as the standard deviation of livestock holding at each site divided by the corresponding mean)	0.953	A higher level of heterogeneity was supposed to affect the level of collective action negatively because it implies a divergence of ideas among pastoralists and might reduce the degree of consensus among them.

SOURCE: Authors' survey data.

^aClassification was made based on local information.

^bExternal support includes financial, material, and advisory services. Moreover, the role of external agents in organizing local meetings has been taken into account to define the variable.

TABLE 9.3 Determinants of cooperation among pastoralists to start farming

Determinant	Coefficient	Standard error	Marginal effects
Constant	-3.0032*	1.3431	-0.5146
AGE	-0.0121	0.0153	-0.0020
EDUCATE	0.5912	0.5531	0.1013
ACTIVLAB	0.0721	0.0792	0.0101
SUITAGR	3.9420**	1.1715	0.6755
PERCPLS	-0.1623**	0.0610	-0.0279
EMPOPP	-2.0276*	0.8911	-0.3474
SUPPORT	1.7735**	0.6607	0.3039
LIVDIVRS	-0.3240	0.2693	-0.0555
Chi-squared	110.2745**		
Log likelihood function	-64.65321		
Percentage of correct prediction	86		
Number of cases	179		

SOURCE: Authors' survey data.

NOTES: For descriptions of the determinants, see Table 9.2. * means significant at the 5 percent level; ** means significant at the 1 percent level.

based on the perceptions of the pastoralists. Ambash, Doho, Harihamo, and Daleti were classified as potential sites for agriculture either because of the presence of irrigation infrastructure (Ambash and Doho) or because of better rainfall distribution (Harihamo and Daleti). On the other hand, Qurqura and Dudub were classified as nonpotential areas. The heterogeneity of the study sites with respect to their potential for agriculture implies the existence of spatial variation regarding the costs of running a new enterprise (that is, crop production). In areas where shifting to farming is easier, because of either better rainfall or the possibility of irrigation, mobilizing people for collective action is easier because people anticipate that they would incur relatively low costs in realizing benefits that would be reasonably higher than the alternative engagements. The regression result indicates that the probability of cooperation in collectively organized action to start farming increases by about 68 percent in areas where people perceive the possible benefits of farming. The perceptions of the pastoralists on the potential of their localities vis-à-vis farming influence their decisions because expectations about the benefits of cooperation in farming arise from individual perceptions. However, note that other location characteristics (such as roads) are not controlled for in this regression (for example, we have not included location fixed effects), and to the extent to which these are correlated to the suitability of the area for farming, the coefficient on SUITAGR will be biased.

The second influential factor is the level of wealth of pastoral households, as implied by per capita livestock ownership (PERCPLS). The expectation was that households with few livestock assets would have a relatively high incentive to go into cultivation compared to better-off households, for the simple reason that livestock are not dependable sources of livelihood. This expectation holds true, as confirmed by the regression analysis results. More specifically, the probability that a household will cooperate in farm-preparing activities increases by about 2.8 percent for each TLU reduction in per capita livestock holding, implying that households with few livestock assets are more likely to cooperate.¹³ In this regard, the variation among the pastoral households can be explained from a number of different perspectives.

First, the possible differences in labor demands between those with fewer livestock assets (<4.5 TLU)—hereafter called “poor households”—and those with more livestock assets (>4.5 TLU)—hereafter considered “better-off households”—can be associated with differences in cooperative behavior between the two groups.¹⁴ Actually, better-off households own significantly larger quantities of livestock (67.3 TLU) than do poor households (11.2 TLU), whereas, in terms of active labor-force potential, the better-off households are in a slightly lower position (4.4 persons) compared to the poor households (5.0 persons). Given the fact that those with more livestock assets require more labor to properly manage their animals, the output reveals that labor is scarcer among households with more livestock assets. Thus, it can be deduced from the results that the introduction of crop production into the existing system would lead to greater pressure on better-off households with regard to labor allocation. When competition occurs between crop cultivation and livestock husbandry, it is less likely that better-off pastoralists would prefer to shift their labor to the “imported” enterprise (that is, crop cultivation).

Second, the decisions of the pastoralists concerning farming activities reflect their ways of reacting to natural hazards, mainly droughts. Pastoralists have exercised several traditional portfolio management techniques to mitigate their risk. Livestock accumulation is one way to mitigate risk (Herren 1991; McPeak and Barrett 2001). McPeak (2005) shows that a larger precrisis herd size implies a larger postcrisis herd. Diversification of livestock ownership is another *ex ante* risk management strategy in which pastoralists adjust the composition of their livestock in a direction that could minimize asset loss due to disaster. Pastoral households also spread their livestock spatially throughout their personal networks to reduce risk.

13. For instance, 1 camel = 1 TLU; 1 head of cattle = 0.7 TLU; 1 donkey = 0.5 TLU; 1 sheep = 0.1 TLU (ILCA 1992).

14. In this region, 4.5 TLU per capita (or about 5 cows) is the minimum threshold level required to sustain family members without requiring additional income from other sources (McPeak and Barrett 2001).

Although these *ex ante* risk management strategies (though not exhaustive) may be used in many pastoral areas, the poor and better-off households do not have equal capability to exercise them. The poor appear to have less capability to exercise any of the indicated options simply because livestock are large investments for them. In this regard, the poor occupy lower positions not only in terms of total amount of livestock but also in terms of the diversity of these assets. A comparison made between the two groups *vis-à-vis* diversification (within pastoralism) shows that better-off households keep more livestock types (3.6 species) than poor ones do (3.3 species). Moreover, better-off households own more camels (about 30 head) than do poor households (about 3 head), which shows that the former are in a better position to withstand recurrent droughts.¹⁵ Although keeping livestock at different locations across personal networks seems a rational way of mitigating risks, especially those arising from localized, not regionwide shocks, this strategy is also less likely to be feasible among poor households because they do not have enough livestock to distribute spatially.

Differences in *ex ante* risk management strategies and capabilities between the poor and the better off also affect their *ex post* risk management strategies and capabilities to cope. In this respect, better-off households possess better resources to meet basic needs without resorting to other occupations, whereas poor households need to find opportunities outside of pastoralism to sustain their families. Therefore, the differences in cooperative behavior observed between poor and better-off pastoralists with regard to farming are also attributable to their differences with respect to *ex post* risk management strategies.

Third, the difference observed between the two groups with regard to cooperative preparations to start farming can also be seen from the perspective of property rights. Common property regimes allow multitudes of users to share a resource system in accordance with certain predefined rules (Ostrom 1990, 1992). Nevertheless, this does not mean that all rights holders derive equal benefits from the resource system. Rather, benefits are a function of the rights and capabilities of individual actors to use a resource system (Ribot and Peluso 2003). A pastoralist who has limited financial ability to purchase additional stock obviously derives less benefit from the communal pasturage than his livestock-rich neighbor given that the rate of livestock ownership is below the optimum. In other words, the poorer pastoralist exploits only a small portion of his rights compared to the better off, although, in principle, he has the right to derive as much benefit as his neighbor. Indeed, not only rights but also capabilities determine the actual benefit structure among a group of people. This is

15. Camels are best suited to arid areas such as Afar. In times of water scarcity, they can endure without water for more than two weeks, whereas cattle need water at least once every three days. Moreover, camels feed on the foliage of trees and bushes, which fare better in resisting drought than do the grasses on which cattle are dependent.

particularly apparent with regard to common-pool resources, particularly in the case of rangelands, where there is *de facto* open access for all group members.

Capability differences among rights holders to realize benefits from a communal resource system may result in differences in their reactions to new challenges or opportunities that may affect benefit streams. For the nearly stockless Afar households, the incentive to cooperate in farming activities would be high because in this way they could better exercise their rights over the resource system. The current literature indicates that traditionally pastoral communities do provide opportunities for poor members with little or no livestock to make grazing contracts with better-off community members or outsiders so that they can build their own herds (Ngaido 1999). However, our evidence shows that, with regard to contractual arrangements, there is no special institutional treatment of poor households, implying that the only feasible option that is available to them for exercising their rights is to take up crop production, provided that entry is made possible for them.

Pastoral areas are generally marginal in terms of intensive crop production. Consequently, livestock production appears to be the best and, in some areas, the only option under the existing technologies (Ahmed et al. 2002). However, as a result of challenges (mainly drought) that have caused rapid deterioration of pastoral livelihoods, these days pastoralists usually seek out alternative means of survival, at least on a transitory basis. Because opportunities are lacking in most pastoral areas, resorting to agriculture is the main option that pastoralists pursue. Indeed, a growing trend toward crop cultivation is now observable in many pastoral areas of Ethiopia in general and Afar in particular (Yemane 2003). In areas where alternatives are available, it is expected that pastoralists will make choices from the “bundle” of nonpastoral activities to sustain themselves, at least until the conditions for their main occupation improve. In such situations, alternative activities compete for pastoralists’ resources and, hence, the decision to cooperate in farming activities is a matter of evaluating the existing opportunities from the perspective of each pastoral household, differentiated as they are in terms of existing assets and capabilities. In this vein, our results indicate that wage employment opportunities (EMPOPP) tend to have a negative influence on the decision to cooperate in farming activities. The probability of opting for cooperation declines by about 35 percent if a household earns income from wage employment. Nevertheless, it is possible that the decision to take or give up wage employment is itself influenced by the decision to start farming (rather than vice versa), so there may be a problem of reverse causality with this variable, though the income opportunities differ largely in amounts and security.

Almost all (about 93 percent) of the sample pastoralists we surveyed indicated that their livestock ownership had shown a declining trend within a few years before the survey. The main reason for this was the devastating drought that occurred in 2002/03 rather than the demand for farming. Our data from

secondary sources also indicate that the underlying trigger for farming in the area was the drought, which caused significant livestock losses among the pastoralists. Nevertheless, the question of reverse causality is reasonable, because it is plausible that the pastoralists dropped their employment because of their decision to start farming. However, the survey asked about the level of connectedness to organizations such as NGOs, local administrations, agriculture offices, state farms, Awash National Park, health stations, schools, and others over time in recent years, as well as whether the trend was improving, declining, or unchanged and for what reasons. Seventy-two percent of the respondents responded that their rapport with state farms—the monopolistic source of employment—showed no change, while 24 percent reported a slight improvement. Only 4 percent indicated that their connection has declined. Even those who indicated a declining relationship did not offer withdrawal from employment by state farms as a reason. Rather, a change of residence was responsible for the decline of the relationship with state farms.

State farms are the major sources of wage employment for pastoralists in the study areas, particularly in some locations of the middle Awash Valley. Although the Afar is recruited only for lower-level positions, those who are given the chance do not hesitate to join state farms. All in all, about 11 percent of the sample pastoralists were employed on commercial farms. There are reasons that pastoralists prefer employment on state farms to farming by themselves. First, they can generate a more stable (and perhaps higher) income by being wage laborers, whereas farming is a risky business. Second, in most cases pastoralists are employed as guards to protect crops (mainly cotton) from livestock, which is less tiresome than farmwork and is preferable to pastoralists, who are well versed in tending animals.

Gaining employment on state farms is one cause of conflict between the pastoralists and the state farms, because the pastoralists feel that it is their right to benefit from development opportunity on their land. As a result, the state farms have allocated large amounts of money to employing local people on the state farms. Information obtained from MAADE indicates that there is great pressure from the surrounding areas to feed livestock on cotton stocks. Although cotton harvesting normally comprises three rounds, pastoralists have been rushing their animals into the cotton fields immediately after first-round picking. In order to reduce this pressure from the local herders, guards are recruited from different clans. A large amount of money is allocated by MAADE to mitigate the problem by using the guards as social capital. For instance, a total of 294,335 birr (~US\$34,000) was allocated in 2004/05 for this purpose (MAADE administrative officer, personal communication with author BK, February 2005). This supports the interpretation of econometric findings that farming is not superior to wage employment on state farms and, hence, that pastoralists are less likely to drop their wage employment in favor of farming.

Finally, support from external actors (SUPPORT) has been found to be positively and significantly related to participation in collective action to start farming. The probability that a household will participate in collective action increases at the mean level by 30.3 percent in the presence of external support. There are two possible explanations for this result. First, the participation of external actors in organizing meetings facilitates discussions and information exchange among pastoralists. Some pastoralists may not participate because they are completely unaware of the intervention. Others may be ambivalent because of incomplete information with regard to the intended activities. Thus, the existence of external support increases the likelihood of participation of those households that fail to cooperate, either unwittingly or due to ambivalence, thereby improving their awareness regarding what has been intended for their locality, the costs and benefits of cooperation and noncooperation, the commitment of external supporters, the reactions of other members of the community, and the “rules of the game.”¹⁶

Second, financial and material support provided by external actors could increase the likelihood of participation. Such support, which augments the capacity of households to invest in the new venture, can particularly increase the participation of the poor, who may otherwise refrain from participation due to financial and material limitations. The positive effect of this variable is not, however, exclusively associated with poor households. Even the participation of better-off households can be enhanced in the presence of financial and material support as a result of possible reductions in costs of participation vis-à-vis the anticipated benefits. Moreover, better-off households may be persuaded to have their “share” of the resources externally injected into the system.

Summary and Policy Implications

Traditional communal landholding has been prevalent in Afar, accommodating the interests of different user groups for many generations. This is attributable to the ecological conditions of Afar, which entail the use of pastoral resources scattered over a wide area of land to produce livestock. However, this traditional land use system is changing because of pressures from both governmental policy and natural events (UN OCHA-PCI 2007). The study reported in this chapter has examined both political and natural forces that have induced the transformation of the traditional land use arrangements in selected areas of Afar. State intervention, which has been imposed mainly since the early 1960s, had detrimental effects on the livelihoods of pastoralists. First, through the employment of coercive means, the state expropriated large areas of dry-season

16. There is also a possibility that external agents may romanticize the outcomes of forthcoming cooperative efforts to persuade those who have not yet decided to join them.

rangeland, resulting in the exacerbation of feed scarcity in the area. Second, the state had been enforcing the transformation of pastoralism into sedentary farming without taking into account pastoral households' capacities to produce crops. More specifically, the development schemes initiated and financed by the state could not enhance the capabilities of pastoral households in a way that would enable them to derive full benefits from their land. Devoid of public participation, these schemes paradoxically fostered a dependency syndrome among pastoralists that remained even after their termination. Third, state intervention created a window of opportunity for some pastoralists, while others such as women and the poor were deprived of benefits from the new arrangements.

When faced with challenges, pastoral households employ coping strategies that may involve different ways of using the available resources, even looking beyond pastoralism. The situation of recurrent drought, which was intensified in 2002 and 2003, imposed difficulties on pastoral livelihoods in Afar. On the one hand, the emergence of this natural challenge triggered the intervention of external actors to facilitate cooperation among pastoralists, providing a catalyst for the motivation of the pastoralists to take up farming. On the other hand, this natural challenge increased the expectations of people that they would be able to generate greater levels of utility by participating in such collective efforts, given the existence of external assistance. These expectations, whether realized or not, produced cooperative decisions to engage in organized activities. However, individual households are heterogeneous in their capability to withstand the natural challenge. In the case studied, our results show that poor households are more interested in farming and, hence, promote the transformation process. Whether this demand on the part of the poor could lead to permanent individualization of the previously communal land remains to be seen.

Overall, the study indicates that communal land ownership, which forms the basis for pastoralism, is under pressure as a result of state intervention and natural challenges, as has also been depicted by several other studies in pastoral areas (Ensminger and Rutten 1991; Blench 2001; Helland 2002; Markakis 2004). Though the same collective property rights might be shared, the individual capability of the rights holder to use the resource varies to a great extent. This explains why diversification into agriculture with the help of external intervention is more attractive to poor households with less livestock. Nevertheless, the transformation of the property rights regime is an effect of coercive and voluntary collective action.

This chapter also provides insight into the relationships between certain parts of the conceptual framework from Chapter 2. First of all, it shows that political risks play an important role, similar to that of environmental risks, in shaping the institutions of the poor. Forced collectivization, land confiscations, and other antipastoralist actions of the Ethiopian government introduce new risks to the traditional pastoral livelihoods, creating incentives for collective

activities around farming. Therefore, this type of uncertainty can be linked to the emergence of new collective action institutions, which in turn trigger the transformation of property rights arrangements, highlighting the interconnectedness of these two types of institutions in pastoral areas. The involvement of external actors (the Ethiopian state, in this case) created additional incentives for the emergence of new forms of cooperation around farming, which is consistent with the findings on collective action institutions from the literature. These findings also show how action resources held by various actors, such as the decisionmaking and enforcement power of the state, shape the institutions of collective action and property rights and the outcomes of greater personal and livelihood security, on the one hand, and political exclusion, on the other. Interestingly, the patterns of interaction that emerge from the action arena in this case are both cooperation (around farming activities) and nonviolent conflict (damaging crops on the banana plantations). The transformation of property rights arrangements from communal ventures, with equal access to resources by all pastoralists, to state farms and subdivision into private plots also led to certain forms of elite capture, across both asset endowments and gender, as a pattern of interaction, leading to more social differentiation of assets in the future (feedback effects).

A remark is required with regard to the quantitative results. Our units of analysis are pastoralists who were randomly selected. This indicates that our results can be extrapolated to some extent to similar locations. However, due to the fact that the locations we studied were selected purposely, extrapolating the results requires some degree of care. Given that, the following two points are worthy of policy attention:

- *The importance of averting possible continuation of state coercion.* The coercive expropriation of pastoral land has been slowed down since 1991, and Afar pastoralists have regained some of the rights to the traditional land they lost. However, the current national policies are not immune from an antipastoral ethos. For instance, the 2005 national land use proclamation declared the possibility that communal rural landholdings will be converted to private holdings if the government finds such transformation necessary (Article 5, No. 3). There is also a clear plan to expand the existing irrigated land in the Awash Basin (about 66 percent in the Afar Region) from 68,800 hectares to 151,400 hectares (Flintan and Tamirat 2002). The implementation of such a plan would be impossible without evicting pastoralists, and the costs of eviction are usually underestimated.

Moreover, it is usually assumed that simply providing financial compensation will be sufficient for those who lose their land. However, for pastoralists who do not have enough skills to engage in other occupations, providing financial compensation without further assistance is akin to facilitating their movement toward destitution. The failure of past “com-

pensation” schemes in Afar (as discussed earlier in this chapter) indicates that investment expansion through compensation schemes may not lead to a situation in which all stakeholders benefit. Current experiences in non-pastoral areas of the country also show that critical problems are associated with the expansion of investments in rural areas of Ethiopia: undervaluation of land, a great variance between what investors pay and what evictees receive in compensation, and ultimate failure of evictees to start new livelihoods (Bekure et al. 2006). These problems are attributable to a lack of effective institutions and appropriate governance structures, including (1) a lack of clear guidelines on land valuation, (2) marginalization of landholders in the process of land transfers, and (3) a weak organizational setup to administer the transformation process. Indeed, such experiences provide good lessons that should be taken seriously in the national and regional policy arena before promoting investments in rural areas of Afar.

- *The need to harmonize policy emphasis with the potentials of pastoral areas.* The transformation of property rights due to natural challenges has had important implications for the livelihoods of pastoralists. In this regard, this chapter has shown that poor households (in terms of livestock assets) are more interested in farming compared to better-off households. The decisions of pastoralists to commence farming activities could reflect their reactions to recurring natural hazards; farming is considered a postshock source of livelihood by those households that cannot call upon their pastoral assets in seasons following a drought.

With regard to farming, two points can be noted. First, efforts to produce food crops under rainfed conditions may not provide any substantial remedy to the decline of food security that occurs with a drought; during a prolonged drought, it presumably will not. This is because crops are also biological products (like livestock) and, hence, can be negatively affected by drought. Livestock appear to be even somewhat more tolerant of drought conditions than crops, because they are mobile. The existence of mobile pastoralism in dry regions of the world implies the relative viability of livestock production compared to rainfed agriculture in these regions. Second, although crops can be produced using irrigation in some ecological niches (for instance, near major rivers), an irrigation-based production system is less appealing in many parts of Afar, given the scarcity of water. Consequently, livestock production appears to be the best and, in some areas, the only option under the existing technologies. The relatively low level of participation of better-off pastoralists in collective action to start farming also implies that crop production is not a substitute for livestock production in such dry areas but rather is subsidiary to the raising of livestock. Therefore, instead of overrating the sustainability of farming and its impact on poverty reduction, it would be worthwhile to focus on livestock production (that is, the core enterprise in pastoral areas). In this regard,

improving key services such as the livestock-market information system as well as veterinary and financial services, investing in infrastructure (roads and other facilities), and enhancing feed management are key to turning the silent transformation of the commons into a viable development path for the Afar. Moreover, there is a need for policies to introduce some form of drought insurance system. In this regard, the current investigations and experiments into livestock insurance schemes, such as those in northern Kenya (Orindi, Nyong, and Herero 2007), are a promising new institutional mechanism to enable pastoralists to restock after drought and to save the value represented by surplus male animals in pastoral systems.

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