Human Ecology, Vol. 33, No. 4, August 2005 (© 2005)
DOI: 10.1007/s10745-005-5159-9

Indigenous Common Property Resource Management in the Central Highlands of Ethiopia

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A better understanding of common property resource management systems and institutions is important for conservation and development, as fortress-based approaches towards conservation are increasingly questioned. This paper examines how an indigenous resource management system has operated and supported the protection of an Afro-alpine area in the Central Highlands of Ethiopia. The community was mainly concerned to regulate their own use of natural resources, including collection of firewood and thatch, and grazing by livestock. The original common property resource management system operated under a previously undescribed indigenous institution known as the Qero *system, which was enforced through sanctions and punishments imposed by the community. The* Qero *system was suspended following the Agrarian Reform in 1975, which resulted in the breakdown of the traditional land tenure and land rights systems within Ethiopia. In the Central Highlands, user rights and management responsibility shifted to include formerly marginalized groups. Nevertheless, the common property management system has shown sufficient resilience to withstand these changes and pressures, and is still functioning with defined user groups and byelaws to regulate resource use and manage the area. Nevertheless, attitudes to current and future management are polarized between former and present managers of the common property regime.*

KEY WORDS: common property resources; indigenous resource management institutions; *Qero* system; Guassa; Ethiopia.

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INTRODUCTION

The past few decades have witnessed the importance of understanding the linkages between social and ecological systems for managing the use of natural resources (Alcorn, 1997; Berkes and Farver, 1989; Little and Brokensha, 1987; McCay and Acheson, 1987; Ostrom, 1991, 1997). Until very recently, conservationists and policymakers accorded little credibility to indigenous common property resource management systems. This was often because many situations where a "Tragedy of the Commons" (Hardin, 1968) had resulted in overuse of resources were incorrectly viewed as common property resource systems, instead of being correctly viewed as situations of *de facto* open access (Berkes *et al.*, 1989; Feeny *et al.*, 1990).

The term "common property resources" in fact applies to those resources for which there exist both communal arrangements for the exclusion of nonowners and for the allocation of resources, as well as legitimate claims on collective goods for members of recognized groups. Therefore, indigenous common property resource management systems promote the ideals of communal welfare and responsibility (Berkes and Farver, 1989; Feeny *et al.*, 1990; McCay and Acheson, 1987). Instead of resulting in a "Tragedy of the Commons," functional common property resource management systems can very successfully conserve biodiversity (Berkes, 1985; Berkes *et al.*, 1989; Feeny *et al.*, 1990).

Recent interest by conservationists in indigenous resource management systems, however, has arisen from the failure of many other types of conservation initiatives and the search for viable and sustainable alternatives to current models for managing resource use, such the fortress-type approaches of establishing exclusive protected areas. From a social perspective, this renewed interest is partly due to a new-found pride in traditional values and institutions, and their value as a tool for conserving natural resources. Most cultures and practices in the developing world emphasize responsibility and a vested interest in the community, rather than individualism (Alcorn, 1997; Lalonde, 1993; Little and Brokensha, 1987; McCay and Acheson, 1987). Therefore, it is important to document a successful and resilient common property resource system in a country such as Ethiopia, which has suffered untold environmental disasters (Wolde-Mariam, 1991).

Ethiopia was once richly endowed with common property resource regimes among a variety of social groups (Admassie, 2000). Indigenous land tenure systems in Ethiopia were varied and evolved through a complex of processes. The major forms of land right and land tenure system that operated in Ethiopia were *Atsme Irist* and *Gult*, features of which were analyzed by Welde-Meskel (1950), Pankhurst (1961), Hoben (1973), Markakis (1974), and Rahmato (1984, 1994). However, these tenurial systems were

suspended by the 1975 Agrarian Reform, which came about as a result of a popular uprising that swept the whole of Ethiopia in 1974. This uprising deposed Emperor Haile Selaise and all the associated machinery of a feudal state. The subsequent Socialist Revolution (*Abiot*) was led by a military junta or *Derg* headed by Mengistu Haile Mariam.

One of the most popular mottos of the Socialist Revolution was "Land for the tiller" (*meret larashu*). On 4 March 1975, the *Derg* proclaimed the nationalization of all rural land through the Rural Land Proclamation No. 31/1975 (Provisional Military Government of Ethiopia, 1975). This declared as illegal the transfer of any land by sale, lease, or mortgage and, in essence, formally abolished private, communal, and organizational ownership of land in the country, resulting in all rural land coming under state ownership. Therefore, the proclamation gave a uniform usufruct right to all farmers within the framework of state ownership of the land. The same proclamation also provided for farmers to form peasant associations (*kebles*). Nevertheless, this transformation failed to recognize the role of communal management of rural land for various purposes by local communities. As a result, most common property resource management regimes in the country declined (Admassie, 2000). Although Mengistu's *Derg* regime was overthrown in 1991 by the current, more economically liberal government led by Prime Minister Zenawi, the key factor affecting the management of common property resource regimes across Ethiopia was the 1975 Agrarian Reform.

Nevertheless, one indigenous common property resource system in the Guassa area of Menz, in the Central Highlands of Ethiopia, has continued since 1975 to protect local livelihoods, as well as endemic and threatened biodiversity, including an important population of the Ethiopian wolf (*Canis simensis*), the world's most endangered canid (Ashenafi, 2001; Ashenafi *et al.*, 2005). However, the management of common property resources in this area has not been studied previously. Therefore, this paper has two parallel objectives. First, we aim to understand how the Guassa indigenous common property resource management system evolved in historical times, and how it has been affected through the 1975 Agrarian Reform. Second, we examine the attitudes of different sections of the user community towards the management of the common property resources since the 1975 Agrarian Reform.

To address the first objective, we sought to answer the following questions about the pre- and post-1975 common property resource management regimes:

- What factors determine past and current membership in, and exclusion from, the user group?

- How was and is authority transmitted between generations?
- What institutional arrangements were, and now are, used in the management of the common property resources?
- What constituted an agreement between members, and what sanctions and corrective measures were applied when members departed from agreed rules and conventions?
- What changes have occurred to affect the running of the traditional common property resource management regime, and how have these changes been accommodated to retain resilience within the system?

Our results, as elaborated more fully below, showed considerable changes in the institutional arrangements for managing the resources in the Guassa area, and the weakening of the common property resource management system as a result of changes imposed by the 1975 Agrarian Reform. Consequently, we sought to address the second objective of our study by comparing the attitudes of common property resource users who were once in charge of the common property resource, but now live more distant to it, with those of more recently included users who now live closer to the Guassa area. Specifically, we examine the following:

- Attitudes on the effectiveness of the original indigenous management system between those now included but formerly excluded;
- Attitudes on the effectiveness of present management by those now included in the management, and the former managers who have witnessed widened access to the resource; and,
- What factors might determine the attitudes of different user groups.

STUDY AREA

This study was conducted in the Guassa area of Menz located in the Central Highlands of Ethiopia (Fig. 1). The Guassa area is located in the Amhara Regional State of North Shoa Zone, in the Gera-Keya Woreda (District) popularly known as *Menz*. It is 265 km north-east of the national capital Addis Ababa by road and lies at latitude 10° 15′–10′′ 27′N and longitude 39° 45′–39′′ 49′E. The total area of the Guassa is 111 km^2, and its altitude ranges from 3200 to 3700 m above sea level.

The climate of the Guassa area varies considerably because of altitudinal differences and the size of the mountain block. The vegetation of the Guassa area is characterized by a high altitude Afro-alpine vegetation, within which different habitat types predominate: *Euryops-Alchemilla*

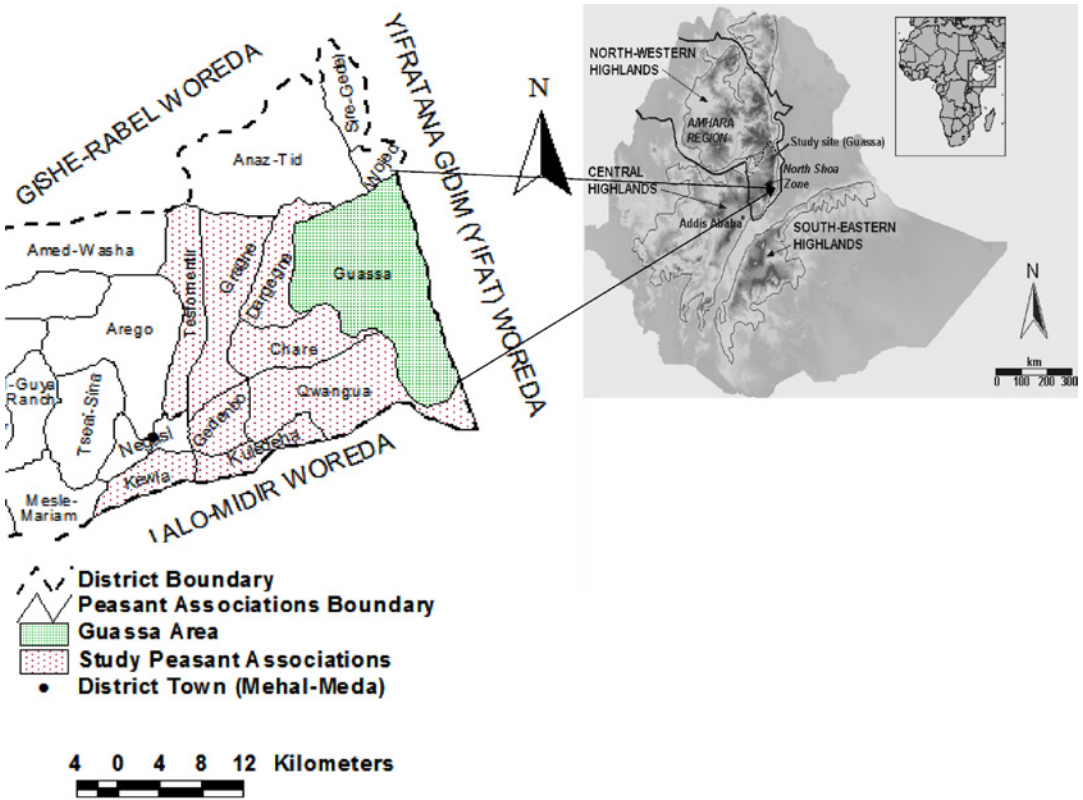

Fig. 1. Map showing the highland blocks of Ethiopia, and the location of the Guassa area and the peasant associations.

shrubland; *Festuca* grassland, *Helichrysum-Fesutca* grassland; and *Erica* moorland. The area derives its name from the so-called "Guassa grass," which comprises four species of *Festuca* highly valued by the local community. The area is rich in biodiversity and contains several endemic and threatened species of flora and fauna, including the second largest remaining population of Ethiopian wolves, and the largest population remaining outside a formally protected area (Ashenafi, 2001; Ashenafi *et al.*, 2005; Marino, 2003).

The Guassa area is a common property resource area managed by the community for various uses such as grazing land, firewood collection, and the cutting of Guassa grass for various purposes such as thatching and making household and farm implements like ropes and whips. The Guassa area is now managed by eight peasant associations (Fig. 1), the local institutions that were established across Ethiopia in 1975 for rural administration (Provisional Military Government of Ethiopia, 1975). The community protects the area by enacting various byelaws, which restrict community use of the natural resources.

METHODS

Preappraisal Dialogue (Group Discussion)

First we aimed to obtain a general overview of the historical background to common property resource management in the Guassa area. We undertook a preappraisal dialogue, using a group discussion method that has well-documented advantages and allows sensitive issues to be more freely discussed in groups, when individuals would not wish to discuss them alone with a stranger (Chambers, 1992). A group discussion took place in Amharic in each of the eight peasant associations that make use of the Guassa area. The size of group discussion meetings varied from 8 to 74 participants with an average of 35 participants. Open-ended questions on the history of the area, past and present management practices, types of resource use, historical and present distribution and abundance of resources were all discussed in Amharic. Discussion results were recorded and used to establish further detailed discussion points, which formed the basis for key informant interviews.

Key Informant Interviews

Key informant selection involves enquiring who are experts and seeking them out (Chambers, 1992). In this study, the participants of

the group discussions nominated key informants. Most of the participants were elderly people who group discussion participants thought would have a good knowledge of chronologies of events and local histories, as well as of the resources of the area. The key informant interviews were conducted in Amharic with a written checklist of open-ended questions. Topics discussed: included peoples' accounts of the past; how things have changed; ecological histories; changes in land use patterns; changes and trends in resource use patterns; and, causes of changes and trends. A total of 126 key informants from the eight peasant associations who use the common property resources participated in this exercise.

Questionnaire Survey

A structured and semistructured questionnaire interview was conducted in Amharic among a sample of household heads from the Guassa user communities in the eight peasant associations. The interview began with questions to elicit demographic and socioeconomic data, including respondents' age, sex, residence, family size, marital status, and other information associated with the economic activities of the household. The questionnaire was administered to household heads in a random manner on the basis of first come, first served, and alternating male and female respondents as much as possible. Peasant associations varied widely in the size of their membership. Therefore, the sampling was designed so that not less than 5%, or not less than 50 household heads, were interviewed from each peasant association. The reason why the lower limit is expressed both as a percentage and in terms of a minimum number was to ensure a reasonable and statistically meaningful sample for data analysis (Patton, 1990). A total of 504 individuals were eventually interviewed across the eight peasant associations.

The data were analyzed using non-parametric Chi-squared tests to examine relationships between socioeconomic variables and factors affecting experience and attitudes. Multivariate analysis was also performed, using logistic regression for binary dependent variables and one or more continuous, independent variables (Freeman, 1987). Forward logistic regression was used, with criteria for entry and exit to the model specified at significance levels of $p < 0.05$. Logistic regression was selected because it is related and answers the same questions as discriminant function analysis, and the logit multiway frequency analysis with discrete dependant variables. However, logistic regression is more flexible than the other techniques. Unlike discriminant function analysis, logistic regression makes no assumption about the distribution of the predictor variable. In logistic regression, the

predictor does not have to be normally distributed, linearly related, or of equal variance within each group. Nor does the predicator need to be discrete, but it can be any mix of continuous, discrete, and dichotomous variables. Logistic regression analysis is especially useful when the distribution of responses on the dependant variable is expected to be non-linear with one or more of the independent variables (Tabachnick and Fidell, 1996). Model performance was tested by calculating the area under the curve (AUC) of Receiver Operating Characteristics (ROC) plots, with ROC values greater than 0.7 indicating a good model fit (Pearce and Ferrier, 2000). The dependent variable was taken as dummy of 0 if the response was negative and of 1 if the response was positive. The explanatory variables examined during the logistic regression include: peasant association; age; sex; length of residence in the area; education level; marital status; family size; distance of village from the Guassa area; and household capital or wellbeing score (total livestock and grain production of household calculated at present value).

RESULTS

System of Indigenous Common Property Resource Management Before 1975

The group discussion and key-informant interviews revealed that the pioneer fathers (*Aqgni Abat*) of Menz, Gera and Asbo, started the indigenous management of the Guassa area in the seventeenth century, following the defeat of Ahmed Gragn.[5] The pioneer fathers set the Guassa area aside for the primary purpose of livestock grazing and use of the guassa grass (*Festuca abyssinica)* and did not allow settlement. The right to use the resources of the Guassa area depended on the *Atsme Irist* land right and tenure system that prevailed in Menz (Hoben, 1973; Welde-Meskel, 1950). *Atsme Irist* conferred a right to claim a share of land held in common with other rightful landholders based on an historical ancestor. Those who could establish kinship through either parent could enter a claim to a share of the land from elders controlling the allocation. Hence, under *Atsme Irist*, the people in Menz who could trace their descent from the pioneer fathers, Asbo or Gera, could use the Guassa area.

To promote the rational use and protection of the resources in the Guassa area, the members of the land holding group (*ristegna)* in the

[5] Ahmed Gragn was the leader of the Muslim invasion, of the Christian-dominated highlands of Ethiopia between 1527–1540. Originally known by the name Imam Ahmad Ibn Ibrahim, later popularly known as Ahmed Gragn (see Pankhurst, 1998).

Astme Irst land tenure system adopted an indigenous institution to manage the common property resources, known as *Qero*, which was unique to the Guassa area and has not been described previously. The *Qero* system worked by choosing a headman (*Abba Qera* or *Afero*) responsible for protecting and regulating use of the Guassa area. The Asbo and Gera areas each had one *Abba Qera* (*Afero*). The *Abba Qeras* were mostly elected unanimously in the presence of all users of the common property resource.

The user communities of the Guassa were further subdivided at a *Tabot* or *Mekdes*[6] (parish) level. The Asbo users were organized under six parishes, while Gera users were organized under eight parishes. Each parish had one headman esquire (*Aleqa* or *Chiqa-shum*) who was answerable to his respective *Abba Qera*.

The *Qero* system could entail the closure of the Guassa area from any type of use by the community for consecutive periods as long as 3–5 years. The length of closure largely depended upon the growth and recovery of the *Festuca* grass and the need felt by the community for harvesting it. Several informants suggested that the length of closure depended on the success of the local crop harvest and on the frequency of drought in the Guassa area.

When the *Abba Qeras* of both Asbo and Gera believed that the *Festuca* grass was ready for harvest *(le akme Adam siders*), they would announce the date of the opening to the rightful owners of the Guassa user community, either at church ceremonies, market places, burial ceremonies (*Ider*), or at other public gatherings. On the particular day of the opening, before anybody cut the grass, a respected head priest from the area gave his blessing (*Egziabhire yeftahi*) and the senior *Abba Qera* announced the official opening of the resource for use. Then any user who could trace his descent from Asbo or Gera had the full right to ut as much grass as he could. The area was usually opened at the height of the dry season of that particular year, usually around February or March.

When the wet season approached, the community prepared to leave the Guassa area. The date of closing was culturally predetermined as the 12 July (*Hamle Abo*) following the opening. This date is the breaking day of the "Apostle's Fasting" (*ye hawariat som*), which is the second longest fasting season next to Lent for the Monophysite Coptic Orthodox Church, to which all of the people in Menz belong.

[6]Tabot is an icon-like replica of the Ark of the Covenant, central to the belief of Ethiopian Monophysite Coptic Orthodox Church. It is kept in the Holy of Holies, which is called Mekdes, of each church. In rural Ethiopia, particularly among the elders, it also represents the church and the parish.

Enforcement of Rules in the Management of Common Property Resource before 1975

The entire community, under the leadership of the two *Abba Qeras*, worked together to enforce the byelaws, thereby to protect the common property resource through the *Qero* system. The *Abba Qeras* frequently patrolled their respective areas with the household heads (*gollmassa*) on dates chosen by the *Abba Qeras*. Every able male household head was obliged to go out on patrol, and failure to participate would result in severe punishment for absentees. In some instances, punishment could result in burning down of the absentee's house.

Rules were in place that prohibited the use of the Guassa area during the closed season. Various byelaws were enacted by the user community to enforce the protection of the common property resources. All informants made reference to fines that someone found cutting grass or grazing livestock in the Guassa area during the closed season was supposed to pay. All these following fines were particularly severe for Guassa users, as none of the items were readily available in the area:

> *100 daula of gomen zer* (100 sacks of cabbage seeds); *Irtib yeanbessa lemd* (a wet lion skin); *Andi kolet barya* (a one-testicled servant); *yebirr zenezena* (a silver pestle); and, *Yekechemo mukecha* (a mortar made out of a shrub which never grows a trunk).

When someone was found cutting grass in the Guassa area, the most effective and enforced byelaws were those that involved a serious beating. Furthermore, if someone thatched his house using *Festuca* grass cut during the closed season, his house was burned down. If livestock was found grazing in the closed season, the livestock was slaughtered and the skins given to the parish church to make a drum (*kebero*). If a trace of freshly cut *Festuca* grass was found in someone's homestead, or if someone was seen to have made a fresh rope, he was considered to have cut the Guassa grass, and measures were taken by the *Abba Qera* of his area. If fresh dung was found in the Guassa area, it was the responsibility of the respective headman esquire to find out whose cattle had been in Guassa.

Change in the Management of Common Property Resource After 1975

The proclamation of 4 March 1975 declaring the nationalization of all rural land dissolved the relationship between tenant and landlord, and between customary tenure and privileges (Provisional Military Government of Ethiopia, 1975). The proclamation abolished private and community ownership of land, thereby giving a uniform usufruct right to all farmers

within the framework of state ownership of the land. The same proclamation also provided for farmers to form peasant associations (*kebles*). As a result, the *Qero* system of the Guassa area, together with its associated common property resource management rules and enforcement mechanisms, ceased to formally exist.

This resulted in a complete transfer of power and responsibility for enforcing the byelaws to newly formed peasant associations adjacent to the Guassa area. A Guassa Committee was formed from the user community to replace the former *Abba Qeras* and to oversee the protection of the Guassa area by eight peasant associations. The main function of the Guassa Committee was to control illegal uses of the Guassa area during the closed season. The Committee usually uses the local militia from the adjacent peasant associations of Dargegne and Qwangue to conduct patrols. Offenders should be charged at the local court to which they should pay the designated fine (*afelama*), while repeat offenders should be taken to the Woreda police, to be charged at the district court. The activity of the Guassa Committee is supervised by the Woreda Administration Council and an evaluation of their activity is undertaken whenever the Woreda Administration Council thinks it is appropriate.

Most key informants, however, described the management of the Guassa since the 1975 Agrarian Reform as ineffective and very bureaucratic. There was little protection provided by the local militias, which have only infrequently taken action against offenders, because of corruption and inefficiency. Furthermore, some key informants noted that *afelamas* paid by offenders for violating current byelaws are smaller for those living in adjacent communities than for those living at greater distances. Our key informants also led us to understand that illegal sales of *Festuca* grass have increased in the last few years. Three quotes from different informants illustrate different aspects of management issues since 1975.

> Since the revolution the Guassa was only once or twice closed properly. I remember clearly in 1982 we got news that the Guassa was being farmed from the Yifat side. Then we went out and pulled their crop and destroyed their farm, and later a serious conflict broke between the Yifat people and us. The local administration had to intervene to stop this situation and after a big problem they stopped coming again. After that it closed only for a few months in the wet season and it will be open again in the dry season. I think there are lots of people who need the Guassa grass and the number of livestock has increased, so closing it for long period like in the old days has become a problem. (A 64-year-old key informant from Gragne Peasant Association)

> The Woreda does not care about the Guassa because they always tell us you have to catch the offenders in the act of cutting (*Ige kefinge*). Otherwise it is not possible to accuse somebody of cutting grass. Then the people started cutting it at night when no one can see them. The police do not understand how we value the Guassa grass, they do not know that the Guassa grass is "our cloth, bread and butter" (*libsachin ina gursachin*), we cannot afford to buy corrugated iron sheets to cover our house. The

Table I. The Key Characteristics of Different Peasant Associations, Including Distance from the Guassa, and Their Past and Current Inclusion or Exclusion from Managing the Common Property Resource

Peasant association	Mean ± SE distance from Guassa	Peasant association members included in pre-1975 traditional management	Peasant association members incorporated in to management only after 1975 Agrarian Reform
Chare	6.4 ± 0.23	Partly included	Secondary controllers and resource users
Dargegne	2.1 ± 0.12	Partly included	Prime controller using their local militia
Gedenbo	11.5 ± 0.33	Totally included	Secondary controllers and resource users
Gragne	8.5 ± 0.21	Totally included	Secondary controllers and resource users
Kewula	19.8 ± 0.55	Totally included	Secondary controllers and resource users
Kuledeha	19.59 ± 0.46	Totally included	Secondary controllers and resource users
Qwangue	1.8 ± 0.12	Excluded	Prime controller using their local militia
Tesfomentier	17.26 ± 0.72	Totally included	Secondary controllers and resource users

only cloth we have is the Guassa grass. (A 58-year-old respondent from Gedenbo Peasant Association)

It was a taboo and an insult in our forefathers' time to sell Guassa grass. How can someone sell something that is not his own property? We got the Guassa from our forefathers and we should hand it to our children as we received it. The situation is different, now the Guassa grass has become a commodity to sell and buy in the market. When the drought intensifies the poor take the Guassa grass to buy some barley. (A 67-year-old informant from Tesfomentier Peasant Association)

Consequences of Changing Management to Peasant Associations after 1975

Eight peasant associations were included in the study of current attitudes, based on previous and present management control of the Guassa area (Table I). The boundaries that were drawn around the peasant associations are based on political and topographic considerations, rather than including homogenous kinship descent groups. Nevertheless, the group discussions and key informant interviews were able to characterize the peasant associations in terms of their past and present levels of management control, in order to serve as the basis for understanding differences in attitudes of the user communities around Guassa.

Group discussion and key informant interviews showed that members of some peasant associations living near Guassa had been excluded from the past management because they were not direct descendants of Asbo or Gera. Key informants mentioned that residents of Yedi, Ferkuta, and Yehata villages (*Gote*), which now form the present Qwangue Peasant Association, were born outside the legitimate marriage of Gera, which was an important criterion for land distribution in the *Atsme Irist* land rights system. Fewer members of peasant associations such as Chare and Dargegne fell into this category of formerly marginalized users. In all cases, the formerly marginalized were settled in agriculturally marginal land close to Guassa, while the rightful owners remained settled in the low-lying agriculturally productive land further away from the Guassa area. Thus, from 1975, peasant associations lying closest to the Guassa became the prime controllers of access to the Guassa (Table I). The Qwangue Peasant Association has taken responsibility for the Gera side, while the Dargegne Peasant Association has taken responsibility for the Asbo side.

Attitudes towards the Common Property Resource Management System

Success in Conserving the Guassa Area

Overall, 66.1% of respondents thought that the Guassa area had decreased in size over the last 20 years, but there was a marked difference of opinion between peasant associations ($\chi^2 = 68.62$, df $= 7$, $p < 0.001$). Therefore, 87.9% of respondents from Kewula, 78.3% from Tesfomentir, 78.1% from Kuledeha, and 76.0% from Gedenbo believed the Guassa area had decreased in size. In contrast, 65.2% of respondents from Qwangue and 43.9% from Dargegne thought that the size of Guassa area had not changed. More male (72.3%) than female (56.0%) respondents believed the Guassa had decreased in size ($\chi^2 = 14.27$, df $= 1$, $p < 0.001$). No differences in views were observed between different age groups ($\chi^2 = 4.38$, df $= 6$, $p > 0.05$), different lengths of residence ($\chi^2 = 4.19$, df $= 5$, $p > 0.05$) or different levels of education ($\chi^2 = 0.34$, df $= 2$, $p > 0.05$).

The distance of the respondents' villages from the Guassa was strongly associated ($\chi^2 = 52.18$, df $= 3$, $p < 0.001$) with views on the change in size of the Guassa area over the last 20 years. Overall, 52.0% of respondents from areas near to Guassa assumed that the size of Guassa area had not decreased over the last 20 years, while most respondents living at greater distance believed it had decreased (Table II).

Table II. Views of Respondents on the Change in Size of the Guassa Area in Relation to Distance of Their Village from the Guassa Area

Distance (km)	*n*	Decreased (%)	Not decreased (%)
<5	196	48.0	52.0
6–10	112	70.5	29.5
11–15	86	86.0	14.0
>15	110	78.2	21.8

Respondents cited various reasons for the decrease in size of the Guassa area, including: farming by the communities living adjacent to the Guassa area (49.5%), forest plantation at the southern edge of the Guassa area by the Forestry Department of the Ministry of Agriculture (11.4%); and continuous encroachment by neighboring Yifat Woreda residents (12.9%). A few (26.1%) respondents had no idea why the area had decreased in size in the past 20 years.

Knowledge of Past and Present Management Systems

All respondents acknowledged the effectiveness of the *Qero* system in the past management of the area and in protecting the resources from outside forces. Furthermore, 99.6% of respondents agreed that protection was undermined following the 1975 Agrarian Reform in Ethiopia.

Overall, 57.7% of respondents correctly believed that current management responsibility for the Guassa area lay with the communities through the Guassa Committee. However, 34.1% of respondents incorrectly believed the Woreda Administration Council was responsible for the management, while 8.1% of respondents incorrectly attributed the present-day management both to the Guassa Committee and the Woreda Administration Council. Each peasant association held different ($\chi^2 = 33.77$, df = 14, $p < 0.01$) views on who was currently responsible for managing the Guassa area. Thus, 68.0% of respondents from Chare, 64.0% from Gedenbo, 63.0% from Qwangue, and 62.2% from Dargegne correctly believed that the community was responsible for managing the Guassa area through the Guassa Committee. In contrast, 50.0% of respondents at Tesfomentir incorrectly attributed current responsibility to the Woreda Administration Council, while 17.4% of respondents attributed it to both the Guassa Committee and the Woreda Administration Council.

More male (65.9%) than female (48.0%) respondents correctly attributed current responsibility to the Guassa Committee ($\chi^2 = 27.83$, df = 2, $p < 0.001$). No differences in views were observed between different

Table III. Views of Respondents on Current Management Responsibility in Relation to Distance of Their Village from the Guassa Area

Distance (km)	*n*	Guassa Committee (%)	Woreda Administration (%)	Both (%)
<5	196	65.8	32.1	2.0
6–10	112	52.7	36.6	10.7
11–15	86	58.1	30.2	11.6
>15	110	48.2	38.2	13.6

age groups ($\chi^2 = 21.16$, df = 12, $p > 0.05$), different lengths of residence ($\chi^2 = 10.98$, df = 10, $p > 0.05$), or different levels of education ($\chi^2 = 1.37$, df = 4, $p > 0.05$).

The distance of the respondents' villages from the Guassa was associated with a different understanding ($\chi^2 = 21.04$, df = 3, $p < 0.01$) of current management responsibility for the Guassa area. Most respondents from nearby areas (<5 km) correctly stated that Guassa Committee was responsible. As distance of the village from the Guassa increased, the numbers of respondents correctly attributing the current management to the Guassa Committee decreased, while those incorrectly attributing the present management to both the Guassa Committee and the Woreda Administration Council increased (Table III).

Effectiveness of Present Management

Overall, 98.6% of respondents acknowledged the current existence of a penalty for using the Guassa area in the closed season. However, 60.9% of respondents thought that current management was ineffective, but views differed among peasant associations ($\chi^2 = 42.07$, df = 7, $p < 0.001$). Therefore, 56.1% of residents from Dargegne and 54.3% from Qwangue considered current management effective, whereas most respondents from the other peasant associations considered it ineffective.

There was no significant difference in views between respondents of different age groups ($\chi^2 = 5.59$, df = 6, $p > 0.05$), of different sexes ($\chi^2 = 0.86$ df = 1, $p > 0.05$), of different lengths of residence ($\chi^2 = 6.04$, df = 5, $p > 0.05$) or different levels of education ($\chi^2 = 1.37$, df = 2, $p > 0.05$). However, there was a strong association between views on the effectiveness of current management and the distance of respondents' villages from the Guassa ($\chi^2 = 34.11$, df = 3, $p < 0.001$). As distance of the village from the Guassa increased, so too was there an increase in numbers of respondents who considered the current Guassa management to be ineffective (Table IV).

Table IV. Views of Respondents on the Effectiveness of Current Management in Relation to Distance of Their Village from the Guassa Area

Distance (km)	*n*	Effective (%)	Not effective (%)
<5	196	54.6	45.4
6–10	112	33.0	67.0
11–15	86	30.2	69.8
>15	110	24.5	75.8

Respondents cited various reasons for the ineffectiveness of current management, including: lack of ownership arising from the decline of the *Qero* system (39.4%); drought (31.5%); population increase (15.1%); and, weak enforcement of byelaws (10.7%),

Preferred Options for Future Management

Overall, only 11.5% of respondents overall thought that it would be appropriate to return to the *Qero* system to ensure that future management of the Guassa area becomes more effective. In contrast, 49.2% of respondents thought that future management responsibility should remain in the hands of the community, but with new byelaws and better enforcement. However, 8.7% of respondents suggested that the local government should completely take over the management of the area and allow the Guassa community to use the resources when the administration so decided. Another 20.6% of respondents suggested that the area should be under the joint management of both the state and the community.

Peasant associations differed ($\chi^2 = 40.81$, df $= 21$, $p < 0.01$) in their views over future management responsibility for the Guassa. All the peasant associations generally favored community protection, but with varying degrees of support. There was also difference in opinion among different age groups ($\chi^2 = 41.69$, df $= 18$, $p < 0.001$). Overall, 69.9% of the youngest (<20 years of age) and 59.4% of the middle aged (31–40 years of age) groups wanted future management responsibility to remain with the community alone. However, 61.6% of older respondents (>61 years of age) favored a return of the *Qero* system. Males and females also differed ($\chi^2 = 46.32$ df $= 3$, $p < 0.001$) in their views over future management responsibility for the Guassa area. Overall, 59% of male respondents believed that management responsibility should remain with the community, while 17% favored joint management by the state and the community. Some 14.4% of male respondents wished to see the return of the *Qero* system. Among female respondents, 36% favored community management, 30.6%

Table V. Views of Respondents on Suggested Future Management Options in Relation to Distance of Their Village from the Guassa Area

Distance (km)	Community (%)	*Qero* system (%)	State (%)	Community and state (%)
<5	57.1	11.7	18.9	12.2
6–10	46.4	11.6	19.6	22.3
11–15	45.3	11.6	15.1	27.9
>15	40.9	10.9	20.0	22.7

favored state management, and 26.4% favored joint management by the state and community.

Views as to who should be responsible for the future management of the Guassa area also differed ($\chi^2 = 26.50$, df $= 15, p < 0.05$) with the length of residence in the area. Those who had lived longer in the area were less committed to community management than more recent arrivals.

The distance from the respondents' villages to the Guassa was also important ($\chi^2 = 17.36$, df $= 9, p < 0.05$) in determining views on the options for future management. Respondents living close to the Guassa mostly suggested that the community should be responsible for future management. As distance from Guassa increases, respondents increasingly favored joint management by community and state. Nevertheless, a few people wished to see a return of the *Qero* system and views on this remained constant at all distances from the Guassa (Table V).

Factors Determining Attitudes to Management

Factors that might best explain attitudes were examined with logistic regression only for the two questions that produced dichotomous responses as the dependent variable, namely on change in size and on effectiveness of management.

The model for factors that might best explain whether or not respondents thought that the Guassa had decreased in size had an ROC value of 0.75, indicating an accurate fit. The peasant association in which the respondents reside was most important in determining responses, and respondents from Dargegne and Qwangue were most likely to say the area has not changed in size. Furthermore, males were more likely to say the size of the area has decreased (Table VI).

The model for factors that might best explain whether or not respondents thought that current management was effective had an ROC value of 0.67 indicating a fairly accurate fit. Age, level of education, family size, and distance from the Guassa area were important in determining responses.

Table VI. Results of a Logistic Regression to Determine Which Factors Best Explain Whether or Not Respondents Thought that the Guassa Area Had Decreased in Size

Variable	*B*	SE	df	Significance
Peasant association		0.47	7	0.000***
Chare	−0.79	0.43	1	0.098
Daregegne	−1.25	0.49	1	0.004**
Gedenbo	−0.21	0.49	1	0.667
Gragene	−0.26	0.48	1	0.596
Kewula	0.62	0.52	1	0.239
Kuledeha	−0.01	0.49	1	0.984
Qwangue	−1.97	0.42	1	0.000***
Sex (male)	0.82	0.21	1	0.001***
Family size	0.13	0.05	1	0.191
Constant	0.27	0.45	1	0.547

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Older age groups were more likely to think that current management was effective, whereas participants with secondary level education, with larger family sizes, and living far from the Guassa were more likely to think that current management was ineffective (Table VII).

DISCUSSION

Ethiopia once had a rich variety of functional common property resource regimes among a variety of indigenous groups. However, the functioning common property resource regime in Menz in the Central Highlands that still successfully protects resources used by the local community, as well as important endemic and threatened biodiversity (Ashenafi, 2001), has not previously been studied. This paper describes

Table VII. Results of a Logistic Regression to Determine which Factors Best Explain Whether or not Respondents Thought that Current Management of the Guassa area was Effective

Variable	*B*	SE	df	Significance
Age	0.018	0.01	1	0.016*
Education	0	0	2	0.018*
Primer level education (1)	−1.39	0.50	1	0.057
Secondary level education (2)	−1.42	0.52	1	0.006**
Family size	−0.10	0.05	1	0.035**
Distance	−0.07	0.13	1	0.000**
Constant	1.30	0.57	1	0.022*

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

how this indigenous resource management system once operated to control resource use in Guassa, and how it has responded to modernizing forces. The *Qero* system that once operated in the Guassa area showed all the hallmarks of a classic common property resource management system, and following the 1975 Agrarian Reform in Ethiopia, has evolved as a new institution for common property resource management that continues to manage resources in Guassa.

The *Qero* Indigenous Resource Management System

The *Qero* system in the Guassa area was an indigenous common property resource management institution that arose based on the existing *Atsme Irist* indigenous land tenure system. The rules of exclusion governing access to resources were aspects of the *Atsme Irist* land tenure system that conferred usufruct right on the living members of a group tracing their lineage to the pioneer fathers, Asbo and Gera *(ristegna)*. All persons who did not belong to the two *ristegna* groups were formerly excluded from access to the resources of the Guassa area.

The *Qero* system was organized on the basis of two formally elected headmen (*Abba Qera*) who mobilized the beneficiary communities for equitable resource distribution, and enforced the byelaws protecting the common property resources. Rules of protection and utilization, as well as of enforcement, were essential aspects of the *Qero* system, based on traditional tenure patterns, and reflected the prevailing feudal system. Thus, the management of the common property resources was part and parcel of the wider tenurial and administrative system.

The common property resources of the Guassa area were managed for several hundred years by these rules. Outsiders, and even rightful owners not abiding by the rules and regulations governing the mode of resource appropriation, were excluded or subject to severe punishment. Our group discussion participants and key informants pointed out that the further organization of the user community into parishes gave the Guassa area the status of consecrated land, under the protective patronage of the parish, which reinforced the *Qero* system with the prestige, power, and authority of another important local level institution. In the process, the Guassa common property resources became a kind of sacred entity.

The Guassa area has not been brought under crop cultivation or extensive tree plantation, despite the general craving for land in Menz, due primarily to its peculiar physical attributes. It lies above the tree line, and neither trees nor crop cultivation yield good returns. Hence, there is no permanent human settlement in the area. However, the area plays an important role in the economics and survival strategies of adjacent communities,

particularly in times of drought, so it is not surprising that the community has a vested interest in safeguarding its resources.

The Decline of the *Qero* System

In Menz, the undermining of the *Qero* system was the most debilitating impact of the 1975 Agrarian Reform. The transformation of land ownership into state or public land tenure, meant that the common property regime that had formerly guaranteed the sustainable availability of resources on which all rightful owners collectively depended was no longer fully functional. The change to state ownership had the potential to move to an open access system, with quite different implications for sustainability and equity (Berkes *et al.*, 1989).

The common property resources of Guassa are now managed by the newly formed peasant associations, which are the new state machinery for administration of rural communities. The peasant associations are structured on the basis of geographical location and the premise that "everybody is equal" rather than on the old system based on kinship and parishes, both of which are tremendously important to communal belief and unity. This has resulted in the erosion of the sense of "belongingness" in the community, and created tension and conflict between the old and the newly authorized users and managers (Table I). On the basis of information obtained from the group discussions and key-informant interviews, three important factors were identified as responsible for the decline of effective management in the Guassa area following the 1975 Agrarian Reform, namely: institutional failure; repeated land redistribution; and villagization.

Institutional failure was singled out as the most important factor in the decline of the *Qero* system. The local government-sponsored peasant association passed accountability for resource management to the Guassa Committee, without considering the concerns of those communities who believed they were the only rightful resource owners. Some of those who currently belong the Guassa Committee and to the current user groups were in fact previously marginalized from resource use under the *Qero* system because they were not the direct descendants of the pioneer fathers (Table I), and the former managers accused them of being inefficient in enforcing current byelaws to protect the Guassa. Very little effort is now invested in patrolling the Guassa area. It has been shown elsewhere that illegal harvesting of resources can only be reduced by increasing detection rates through intensive patrolling (Leader-Williams and Milner-Gulland, 1993).

Two major, and five minor, redistributions of land have taken place since the 1975 Agrarian Reform in Menz. Other studies in the Central

Highlands have found that 85.5% of households have less land than before the 1975 Agrarian Reform (Wolde-Mariam, 1991; Admassie, 2000). Whenever land redistribution has taken place, this has also brought a partial or complete change to farming. The repeated redistribution of land has decreased the size of private crop and grazing land holdings, which has ultimately increased pressure on the Guassa area for grazing and as agricultural land. In turn, this has resulted in the inability of the community to be self-sufficient in food production, as well as to lose interest in land management practices.

The villagization programme is another state-sponsored social change that seriously affected the Menz population. The Ethiopian villagization campaign began in late 1985. Its aim was to move the majority of the rural population into the new villages by the end of 1995. The policy was part of the drive by the Socialist Government or *Derg* towards agrarian socialism in an undeveloped, predominantly peasant-based, rural society. The change was intended to have a radical and uplifting effect on the social and political life of the peasantry (Pankhurst, 1992; Tafesse, 1995). The impact of the villagization program in Menz was to establish new villages close to the Guassa area which resulted in a considerable increase in the number of users, and the extensive collection of *Festuca* grass for thatching. Furthermore, the long distances from the new villages to other grazing land forced people to move their livestock into a semipermanent residence in the Guassa area because there was no area in the villages where livestock could graze under the watchful eye of a household member. If left unsupervised, the animals were likely to trample someone else crops. Pressure from within and from outside forced the Socialist Government to abandon its villagization program in March 1990, and peasants quickly responded by abandoning the new villages and returning to their former homesteads across most of Ethiopia.

Attitudes to Current Management of the Guassa Area

Many respondents have noticed a decrease in the size of the Guassa area due to farming by the people living adjacent to it. The neighboring Woredas and the adjacent peasant associations have been implicated as the prime causes of farming along the boundary. The areas affected are the low-lying valley bottoms, which are regarded as agriculturally productive. However, any changes over the last 20 years are viewed differently, as evidenced by the responses and the logistic model (Table VII). Respondents from Daregene and Qwangue peasant associations generally believe there has been no change in the size of the Guassa area. However, they border the Guassa area and most of the blame for using it in the closed season

rests with them. Furthermore, current management activities are largely carried out by the militias from these two peasant associations, So they may be defending themselves from blame for their failure to protect the area adequately.

All community members acknowledged the *Qero* system is the most effective common property resource management institution. However, most accepted that it is no longer possible to operate by the byelaws of the system under present socioeconomic conditions in Ethiopia. Nevertheless, most respondents believe that the community is still managing the Guassa area, although a few incorrectly think that the Woreda Administration Council has responsibility for management. The peasant associations of Chare, Dargegne, and Qwangue, living closest, generally believe the Guassa area is managed by the community because most of the Guassa Committee members and the militias patrolling the area are from their own peasant associations. Most respondents acknowledged the ineffectiveness of the present system of common property resource management, except for those from Dargegne and Qwangue. The responses and the logistic model show the importance of distance in explaining attitudes to the effectiveness of current management, with respondents from villages further away more likely to say that the current management is ineffective. The age of respondents and their level of education were also important in determining their response, i.e., older and literate people tend to believe current management is ineffective.

Various reasons were given for the ineffectiveness of the Guassa Committee: the lack of ownership of the Guassa resource by the community once the *Qero* system was abolished, the interference of the local administration, and the frequent droughts that force the opening of the area for livestock grazing, have all made management difficult. Other factors such as weak byelaw enforcement, an increase in the number of people making use of the area, market-led demand for the *Festuca* grass, overexploitation of the resource when it is open, and illegal use by neighboring Woreda, were all mentioned as important factors in reducing the effectiveness of management.

Views on the best approach to the future management of the common property resource showed that the majority of the respondents thought that the community should manage the area. However, peasant associations differed in their views, with most respondents from the associations of Dargegne, Qwangue, and Gragne indicating their preference for community management, while associations farther away preferred a combination of state and community protection. This could be because neighboring and formerly marginalized peasant associations are now responsible for resource management and they wish to continue with that responsibility. In

contrast, respondents from peasant associations further from the Guassa who were in charge of management before 1975 (Table I), see current management as ineffective and wish to ensure joint management as means of improving its effectiveness.

The Future Management of the Common Property Resource

Gibbs and Bromley (1989) described common property resource management institutions as having the capacity to cope with changes through adaptations. This in turn leads to the stability of the management system and an ability to cope with surprises or sudden shocks, which further increases the resilience of the system. This has been evident in the Guassa area. When the *Qero* system was abolished, the community complained to the local administration, and the *Qero* system was then formally replaced by the Guassa Committee, which took over as sole manager of the Guassa area.

Following the recent drought in 2002–2003, the community has shown much greater resolve in managing its common property resources. The former Guassa Committee was dissolved and a series of new Guassa committees have been formed in each of the eight peasant associations, while a new overarching Guassa Committee has been formed at Woreda (District) level with one representative from each peasant association. This new Guassa Committee works with the Woreda administration, police, and justice offices to prosecute offenders who break the byelaws which themselves have been strengthened. The recent byelaws work under the *Idir* system, which is an indigenous institution formed to help members in times of difficulty. Prosecutions under the *Idir* system are respected at every level of Ethiopian society. The Guassa area has been closed since July 2003 and its next opening is planned for April 2007.

In conclusion, we have shown how the common property management regime in the Guassa area of Menz, Ethiopia, has proved resilient under the imposition of many social and political changes. Therefore, unlike the "Tragedy of the Commons" model proposed by Hardin (1968), the common property resource owners of the Guassa have responded to these changes by maintaining their traditional values, so preventing the resources on which they depend becoming *de facto* open access. While the management of the area has not been perfect, the Guassa users' community has moved to ensure that their area retains the conditions necessary to ensure common property management continues (Berkes and Farver, 1989; Feeny *et al.*, 1990; McCay and Acheson, 1987). This case study provides a salutary

lesson for conservationists interested in preserving important and endemic biodiversity, such as the Ethiopian wolves (Ashenafi *et al.*, 2005), by means other than establishing protected areas. The case study also provides a beacon of hope in a country like Ethiopia, beset with environmental disasters, and now adopting national policies that return decision-making powers to local communities (Federal Democratic Republic of Ethiopia Environmental Protection Authority, 1998)

ACKNOWLEDGMENTS

We are grateful to the people of Menz who had the patience to discuss and answer the questions and openly share their own life experiences. Special thanks also to the Darwin Initiative for the Survival of Species, DEFRA for funding the project from fieldwork to the write up stages. The Zoological Society of London (ZSL) and the Durrell Institute of Conservation and Ecology (DICE) managed the project and provided help at all stages. Zelealem T. Ashenafi was awarded grants by the Charlotte Fellowship Programme of AWF and WWF-US for tuition and write up of his PhD. A special thanks to our field assistants: Gebreyesus Tenagashaw, Woldemedhin Zebene, and Abebeche Demissie. We are also grateful to help provided by Tim Coulson, Alexandra Dixon, Claire Belsham, Claudio Sillero-Zubiri, Karen Laurenson, Stuart Williams, and Matthew Linkie.

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