

History of Natural Resource Management in Ethiopia

Subjects: **Social Issues**

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Ethiopia has undulating mountainous landscapes and volcanic soils. The rainfall in Ethiopia has large drop sizes and high kinetic energy. These terrain properties and rainfall characteristics induce high water erosion in Ethiopia. The mean annual soil erosion from actually measured catchments ranges from 15 Mt ha⁻¹ y⁻¹ to 17 Mt ha⁻¹ y⁻¹, which is higher than the global average of 12–15 Mt ha⁻¹ y⁻¹.

natural resource management

labor quota system

FFW

collective work

local administration

village organization

1. Natural Resource Management in Ethiopia

In the Haile Selassie Imperial period (1930–1974), villagers had the privilege of using natural and life resources in communal lands in exchange for collectively conserving them. The Imperial regime institutionalized a feudalistic landlord-tenant relationship in rural Ethiopia ^[1]. In this land administration system, landlords paid taxes to the government, and most villagers cultivated croplands as tenants. Up to the end of the Imperial regime in 1974, a traditional land tenure and property right system called *Irist* (Amhara), based on a blood-related group of people, was the dominant system from north to central Ethiopia¹ ^[2].

The socialist regime (1974–1991) that overthrew the Imperial government in 1974 prohibited private land ownership, confiscating land from landlords and distributing it to tenants. The socialist regime established an administration body, i.e., a peasant association (PA), in every village (*kebele*). Every villager over 18 registered as a PA member, and the PA gave them farmland. A land-reform proclamation issued simultaneously gave authority to PAs for communal natural and life resource management in the village. The land tenure and property rights system (*Irist*) in the Imperial regime was abolished. Hamlet dwellers were deprived of the privilege of communal land use. However, because the socialist government did not have any explicit policy on communal land use, and PAs could not substantially resolve land holding and tenure disputes, communal lands were gradually encroached upon, partly turning into individual croplands ^[3]. Villagers having critical feelings about vegetation reduction due to increases in human and livestock populations took the initiative and began natural and life resource management in various regions ^[4]. Its key feature was that hamlet dwellers in different areas continuously assumed communal land management. Grazing land management in Tigray, called *hizati* (Tigrinya), was undertaken by *qushet* (hamlet) ^[5]. In Amhara in 1999/2000, 53% of the villages had at least one communal grazing area managed by the village (*kebele*; 30%) and hamlet (*gott*; 70%) ^[6]. Villagers were motivated to participate in natural resource management

programs of the socialist regime by a combination of campaign-based mass mobilization and FFW [7][8]. PAs selected who would join in the work [9]. FFW was supplied to the participants. However, many farmers did not necessarily willingly or voluntarily participate in the programs² [10].

After the natural resource package programs with mass mobilization and FFW in the 1980s failed, the EPRDF regime (1991–2019), which defeated the socialist regime, introduced two policies following the recommendations of donor agencies. One was land registration, which was a neoliberal policy, and the other was a participatory natural resource management approach. The EPRDF began land registration and certification programs in 1998 [11]. The land registration program improved land use rights and tenure security for individual holdings [12]. A 1997 Ethiopian federal proclamation (law) devolved responsibility for land policy to the regions. Land use policies for personal land use, e.g., land registration, were more or less similar among the regional governments; however, considerable diversity in key policies was observed for communal land management among the regions³ [11]. Even in the EPRDF period, the Amhara and Oromia regional governments entrusted communal land management to PAs and did not implement any explicit communal land use policy. The Amhara agricultural office decided to exclose 61,178 ha of degraded hillsides between 1995 and 1998, and entrusted the exclosure hillside management to PAs; however, this trial failed, and encroaching started again [13].

A campaign-based watershed management program, which began nationwide in 2012, did not supply FFW to the participants. The program introduced three new approaches that were not seen in the 1980s' package programs: (i) planning and implementation in the unit of the micro-watershed (200–500 ha); (ii) a micro-watershed association was organized at the PA level; and (iii) training was given to the participant farmers before the program implementation [8]. Practically, the micro-watershed association, which was composed of landless and deprived households, was organized⁴. The conservation techniques used in the program were almost the same as those used in the 1980's package program. Assefa [8] investigated three villages in the Boset district. The effectiveness of the hillside conservation was unclear⁵ [8]. Conflicts were frequently observed between the micro-watershed associations and farmers who lived near the micro-watersheds and between the micro-watershed association and a youth association [8]. Assefa [8] concluded that farmers are less motivated to participate in the program or adopt conservation technologies that will not generate short-term benefits. They are motivated to contribute labor and working tools with pressure from local government actors.

2. Participatory Natural Resource Management in Tigray

The principal features of participatory natural resource management in the Tigray region are, first, the hamlet (*qushet*) manages communal grazing lands and forests. In Tigray, 90% of the villages (*tabia*; the same as *kebele* in other regions) had an average of four communal grazing lands managed by hamlets [14]. In Tigray, 88% of the villages had at least one exclosed communal forest, of which the village managed 30% and the hamlet managed 58% [15]. In other Ethiopian regions, communal forests and grazing lands were encroached upon, turning into croplands most in the EPRDF period (1991–2019). In contrast, natural resource management programs in Tigray made tremendous progress in the EPRDF period. Exclosure hillsides in Tigray expanded from 143,000 ha in 1996 to 895,220 ha in 2011 [16]. During these periods, based on the *hizati* system, which was continuously maintained

since the Imperial period, hamlets managed communal grazing land⁶ [4]. In the 884 ha catchment studied by Ogawa et al. [17], the increase in enclosure communal forests, continuous communal grazing lands management, and livestock population increase resulted in (i) the disappearance of free-grazing areas (free grazing was allowed all year round), (ii) an increase in the rainy-season enclosure grazing land (free grazing was allowed only in the dry season), and (iii) an increase in enclosure communal forests (reforested areas where grazing and cutting trees were prohibited, but firewood collection from dead branches and cut-and-carry grass collection were allowed)⁷. The land use changes of (ii) above were based on mutual discussions between hamlets and those of (iii) were led by the regional government. A comparison between the Imperial period, the socialist period, and the survey year (2017) elucidated that, although the livestock population was highest in 2017, the vegetation in the survey catchment was the highest in 2017 [17].

The second prominent feature of the Tigray participatory approach is the integration of an indigenous hamlet-based labor quota system (the *baito* system; Tigrinya) into natural resource management programs. Haregeweyn et al. [18] investigated a campaign-based watershed management program that was implemented in a catchment (2343 ha). In Tigray, this program was launched in 2004 as a forerunner of the national-level program. A team comprising hamlet representatives, extension workers (development agents in Ethiopia), and agricultural officers makes management and collective work plans. An actual earthwork was implemented using the *baito* labor quota system. A continuous program implementation from 2004 to 2009 reduced runoff and soil loss from the catchment in 2009 to 27% and 89% of the 2004 level, respectively. Gullies in the catchment were almost rehabilitated.

Tigray People's Liberation Front (TPLF), the ruling party of the regional government, originally advocated a people's participatory approach. In 1991, TPLF took up the indigenous *baito* system for natural resource management programs and small-scale infrastructure development programs, including for roads, schools, and clinics [5]. Although FFW is sometimes paid for work participants, all adult men and women contribute 20–27 working days per year without payment under the *baito* [19]. In the two hamlets surveyed by Girmay [19] in 2003, 53% of the collective work was for cropland SWC, 18% was for hillside SWC, and 29% was for road maintenance, gully treatment, and communal pond maintenance. The *baito* has a bylaw that punishes villagers who do not participate in the collective work without any legitimate reasons. This bylaw, called *sirit* (Tigrinya), is codified in every hamlet.

The third feature of the Tigray participatory approach is a unique local administration system that connects the district (*woreda*), village (*tabia*), and hamlet (*qushet*), called the *baito* administration system. The cadres of the village and hamlet levels are elected, and the village representatives become a member of the district *baito* administration. Disputes between hamlets and conflict in a catchment between upper and lower streams are resolved at an upper-level *baito* administration. The primary factors of the successful campaign-based watershed management program in Tigray were a democratic local administration system that planned a micro-watershed management program and the *baito* labor quota system that implemented the work [18].

Kumasi and Asenso-Okyere [20] surveyed villagers' perceptions of the *baito* system from twenty hamlets in three districts⁸. The hamlet dwellers were connected directly or indirectly to each other through the network of

information on collective work. Those who were at the center of the information exchange were (i) the Ethiopian Orthodox priest, (ii) the development group leader, and (iii) the *baite* leader at the hamlet level [20]. The construction of social capital through the institutionalization of the indigenous hamlet-based labor quota system and incorporation of the hamlet into the local administration system is part of successful CPR management in Tigray [21].

¹ In an Afro-alpine area (Menz district) in the Central Ethiopian Highlands, pioneer fathers of Menz began the indigenous management of the Guassa grass (*Festuca abyssinica*) area in the seventeenth century [22]. The Guassa areas were periodically exclosed to regenerate grasses by their rules. The rules were enforced with punishment. Under the *Irist* land rights and the tenure system prevailing in Menz, only people who could trace their descent from the pioneer fathers used the Guassa area [22]. In the semi-arid Ethiopia Rift Valley, swampy lands and hillsides unsuitable for crop cultivation were regarded as communal lands, which landlords managed. In the early days, a hamlet (*gott*) comprised pioneer settlers and their paternal relatives. Under the *Irist* system, *gott* was a unit of communal land use; dwellers of two to three *gotts* exclusively used one communal land area. In the Boset district, communal lands were opened to tenants; villagers used them without the landlord's permission [9].

² A survey conducted in the Amhara region in 2000 [10] found that, out of 133 sample household heads, 35–40% of the farmers voluntarily participated in the cropland SWC work. The remainder, over 50%, asserted that they participated simply because the village administration and the development agents (DAs; extension workers) forced them to do so.

³ The Southern Nations, Nationalities, and Peoples' Region (SNNPR) left the decision to distribute communal lands to each village's (*kebele*, i.e., PA's) discretion. The Amhara and Oromia regions still entrusted communal land management to PAs. The Amhara region decided to distribute the land to households in 2003 (see Note 13 for details). The Tigray region took a mixed approach, and part of the less unutilized communal hillsides has been distributed to landless/deprived households since 2011 [11].

⁴ The average number of micro-watershed association members was 7 [23] (p. 10).

⁵ From 2011 to 2015, the micro-watershed associations in the three villages constructed hillside SWC (terraces with trenches) and cropland SWC (soil bunds) having a mean length of 6 km. Parts of communal hillsides in two villages were exclosed and reforested every year. However, the survival rates of the seedlings planted were nearly zero, while the grazing areas in the three villages decreased by 54%, and the forest areas increased by 188% between 2009 and 2016.

⁶ At this point, there is a contrast between what happened in Tigray and the other regions. Even in other regions, examples of hamlets managing grazing land and natural resources were observed, e.g., communal grazing land management by *gotts* in Amhara [6]. North and South Wollo zones (Amhara region) are in the semi-arid Highlands. After severe droughts damaged this area in 1984 and 1985, many domestic and international NGOs opened offices and began relief activities in Wollo. To resolve confusion about communal land management in the 1980s, the

following trials were undertaken in Wollo [24]. The Amhara regional government indicated it would not entrust communal land management to PAs, which did not show interest in communal hillside management. The regional government would instead assign enclosure and user-rights of communal hillsides to relevant groups or individual households. Two primary opinions were offered. Based on the achievement of the Meket community-based natural resource management project (1996–1998), an international NGO, SOS-Sahel, suggested entrusting the user-rights to the “informal local community (*kire*; Amhara)”. *Kires* are indigenous hamlet-level (*gott*) organizations that manage funeral occasions and make informal insurance arrangements (similar to *iddirs* in other regions [25]). Participatory land use planning and implementation (PLUPI) was undertaken on a hamlet basis. In the hamlet where a PLUPI was approved, the PA and district agricultural office issued the *kire* association a certificate to guarantee the user-rights of the resources in the enclosure hillsides. This significantly increased the *kire* association members' incentive to conserve the communal hillsides (1% level [26]). SOS-Sahel enclosed 523 ha of hillsides in 50 hamlets from 1996 to 1998 [27]. This was a trial of entrusting the administration to the entrepreneurship farmers' groups. However, the regional government did not give consent for this trial. The regional governmental officers strongly opposed granting the user-rights to an informal hamlet-level community organization, i.e., a *kire* association [24][28]. From 1998 to 2001, the Amhara government distributed 9600 ha of communal hillsides to 55,000 households. Of that, however, 857 ha (8% of the distributed communal hillsides) was reforested until 2001. Considering more than half of the distributed hillsides were already reforested during the socialist regime period, the reforestation rate was low. The landless/deprived households were generally interested in croplands but not in hillsides. Thus, they were indifferent to hillside conservation, which was a major factor in the low reforestation rate [24].

⁷ Oniki and Negusse [29] surveyed 113 *qushets* (hamlets) in five *tabias* (PAs), southern Tigray, in 2013. All the sample *qushets* had communal forests, and 44% of the *qushets* planted trees in communal forests from 2003 to 2012. By enclosure, 67–73% of the surveyed communal forests prohibited grazing by livestock. Most communities hired guards, or people took shifts as guards. The average daily wage for hiring a guard to protect a community forest was 9.9 birrs. The average annual fee collected from *qushet* members for communal land protection was 19.9 birrs per household. Compared to the average value of Eucalyptus timber (41 birrs per cord) and the average wage for a farm worker (32.6 birrs per day), the cost of a guard was not high [29].

⁸ Kumasi and Asenso-Okyere [20] found that those who mobilized villagers to undertake collective work were the (i) *tabia* head (or PA head; 41% of the respondents), (ii) development group leader (31%); and (iii) extension workers (28%). The regional government initially established a development group for the diffusion of innovative agricultural technologies; later, TPLF modified it to mobilize villagers into development activities at a hamlet level [30] (p. 13). About 45% of the respondents did not think they faced any challenges participating in compulsory free labor for community work. However, more than half of the respondents mentioned various activities that conflicted with collective work, including domestic work (22%), taking care of livestock (19%), and other business activities (13%). Most respondents (78%) had not observed any form of resistance to compulsory free labor for community work. Conversely, the other 22% felt resistance to participation. These villagers' complaints and the various problems that occurred were mediated through discussions with the entire community (39%), through the use of group elders in a

conflict resolution committee (30%), through the use of the bylaw as a point of reference in a local court (16%), or through the involvement of the PA (15%).

² Using a sociometry method [31], Mukai [9] explored the village unit or organization that had a dense interpersonal connection in the Boset district. He asked villagers who had close personal relationships in their daily life, such as (i) agricultural activities and livestock rearing, (ii) labor exchange, (iii) religious affairs, (iv) money transactions, (v) mediation of disputes and conflicts, and (vi) marriages and funerals. He found that most aspects of villagers' daily lives were concluded within the sphere of hamlets (*gotts*). Compared to other village and kinship units, e.g., paternal relatives and villages, more power was concentrated in hamlets (*gotts*), i.e., many villagers in a hamlet commonly recognize the same leader as an influential person in the hamlet [9]. He concluded that hamlets in the Boset district had an affluent social capital similar to that of the Tigray region.

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