VALUING "INDIGENOUS KNOWLEDGE" RELATED TO WATER USAGE AMONG GARRI PASTORALISTS OF SOUTHERN ETHIOPIA: WHICH / WHOSE KNOWLEDGE?

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ABSTRACT Valorization of local knowledge related to natural resource management constitutes a backbone of development interventions carried out in pastoral areas of southern Ethiopia. Still, the possibility of clearly identifying "indigenous knowledge" and putting it at the disposal of development planners may be at odds with local realities. This paper focuses on a major feature of water use among Garri pastoralists inhabiting the region around Moyale and Hudet, Ethiopia, namely the spread of private water access points. These are considered among the most important water sources in the region, but they are being constructed to the detriment of communal access points. This practice brings into question the effectiveness of "participatory development" and invites acknowledgement of the social embeddedness of natural resource management and indigenous environmental knowledge. This type of private ownership of water access points, which has been adopted by the Garri, may have affected the social organization of pastoralists in the southern Ethiopian lowlands over the past decade.

Key Words: Development; Ethiopia; Indigenous knowledge; Pastoralism; Water.

> To construct a technology is not merely to deploy materials and techniques;
> it is also to construct social and economic alliances,
> to invent new legal principles for social relations (Pfaffenberger, 1988)

INTRODUCTION

This paper focuses on institutional changes related to water resource management among the Garri, a pastoralist people inhabiting southern Ethiopia's lowlands along the Ethio–Kenyan border. I analyzed their contemporary water-management practices in light of the community-based natural resource management model aiming to value local environmental knowledge, which constitutes a major concern to international development organizations working in these regions.

Today, a main trend in water use among this group is the use of private, hand-dug water access points, a practice that became common starting in the early 2000s according to local informants. Ownership tenure does not involve strict and clearly demarcated individual rights, and water is distributed through personal negotiation and daily bargaining. This kind of water access is quite simple in structure and combines different techniques, as it may draw from shallow aquifers or collect water run-off. Nowadays, private water access points are considered

more important than communal wells, which used to be the main sources of water.

The spread of private water access points among the Garri brings into question the "community-based natural resource management" model governing development interventions and encourages a reanalysis of the implications of this practice on "participatory development." These models risk creating an idealized concept of "local community" when, in practice, water management in this region may be the result of long-term relationships among pastoralist groups with different levels of natural resource use and may reflect the dynamics of social change.

The case of Garri illustrates how local knowledge related to natural resource management cannot be viewed simply as an expression of "ecological wisdom" that can be used to assure optimal use of natural resources, as assumed in development discourse (Agrawal, 1995; Sillitoe et al., 2002). The type of knowledge that is relevant and more valued among the Garri nowadays is a type of "relationship management" among different actors managing natural resources (traditional authorities, government officials, and non-governmental organizations [NGOs]), and this knowledge activates social relationships of a different nature, i.e., based on kinship, commercial activities, and political alliances, as resources for gaining water access.

In the present analysis, which draws upon the results of fieldwork carried out in the Moyale and Hudet regions of Ethiopia in 2011 and 2012, a new form of ownership of water access points is considered. Changing ideas of property, rights, and entitlements regarding water access must be considered a new form of social organization among Garri groups.

THE QUEST FOR "INDIGENOUS KNOWLEDGE"

In southern Ethiopia, valorization of local knowledge through participative approaches is a backbone of development interventions related to natural resource management. This model was first implemented in the early 1990s following the dismissal of a top-down, modernist development approach characterized by technological transfer.

Anthropology questioned the possibility of treating indigenous knowledge as a specific field that can be outlined and put at the disposal of development planners (Sillitoe, 1998; Sillitoe et al., 2002; Dove, 2006). For example, the community-based natural resources management model often assumes that indigenous knowledge is homogeneously distributed within a local community (Mosse, 1999). However, as discussed below, the case of the Garri illustrates that their current water-management practices result from political differences and economic gaps within their society. This case shows that the analysis of natural resource management and of the knowledge regulating this management must be framed in a wider context of social and economic change. From this perspective, a new form of water ownership regime is only one among many different factors that must be considered. Other variables must be taken into account, such as changes in the decision-making process related to water use due to external interference (colonial and government authorities, NGOs), differences in wealth, links to

regional commercial markets, immigration, and demographic pressure with respect to natural resources (Little & Brokensha, 1987).

Additionally, the multiplicity of indigenous knowledge has been stressed. Development discourse assumes that local knowledge will assure the optimal use of natural resources, especially water, which is considered a scarce resource. However, conservation may not be the primary goal of natural resource management among the local population, and different groups may have different rationales regarding natural resource use. The discursive construction of scarcity as a natural and universalized characteristic of water resources, reproduced at the local level by relief and humanitarian agencies, contributes to the homogenization of diverse perspectives on water and obscures the cultural complexity of this resource (Mehta, 2001). The present analysis stresses the links among various conceptions of water (not just water as a scarce resource) and takes an anthropological approach to indigenous knowledge that acknowledges that optimal use of water may be one among many factors regulating water management.

In semi-arid areas of the Horn of Africa, despite the current emphasis on "participation" and valorization of "indigenous knowledge" in development discourse, local knowledge, including knowledge of the environment, has long been at the center of social relationships between pastoralists and colonial and state authorities.(1) During colonial and postcolonial times, "indigenous knowledge" was discredited and considered an obstacle to "modernity." Different prejudices oriented the implementation of development activities in pastoral areas of the Horn of Africa: Nomadic groups came to be represented "either as [an] unpredictable nuisance or even a threat, or (at best) as a resource to be tapped and exploited in the 'national' interest" (Doornbos 1993: 118). In northern Kenya, these representations legitimated interventions such as the demarcation of grazing and water boundaries and the implementation of irrigation schemes (Hogg, 1987; Little & Brokensha, 1987; Sobania, 1990). In southern Ethiopia as well, water constituted the main tool through which colonial and national authorities extended their control over local populations, "water development" being the cornerstone of political projects aimed at settling nomads (Gadamu, 1994). Pastoralists were perceived as being incapable of conserving the rangelands, and their practices of resource use were considered the main cause of the deterioration of the vegetation and decreased stock carrying capacity,(2) which was attributed to overpopulation and/or land mismanagement. In modernizing discourse, water development and irrigation schemes were intended as "remedies" for the incorrect ecological practices of pastoralists, who came to be viewed as a "problem."(3)

External interferences in water and land management prompted changes in the social organization of local groups. This had to do mainly with the modification of local decision-making processes due to a decline in the political power of local authorities. Elders were traditionally responsible for deciding when to open dry-season fodder reserves and water access points, impeding permanent settlements and persecuting herdsmen who did not comply with the rules.

Official documents issued by international development organizations in the 1960s were still reporting that "perpetuating nomadism would in the best of cases represent a waste of potential agricultural land" (cited in Bocco, 2000: 202).

From the late 1980s, however, the top-down modernist approach that governed interventions in pastoral areas started to be questioned due to the perceived failure of development projects, and an emphasis on rehabilitating traditional indigenous knowledge emerged in development discourse as a new paradigm for intervention, Through concepts such as "non-equilibrium environment," flexible management, and the abandonment of blueprint planning (Behnke & Scoones, 1993; Scoones & Graham, 1994), a new development paradigm recognized the need to preserve the mobility of pastoralists instead of relegating them to specific sites. Despite this change in approach, the emphasis on valorization of indigenous knowledge did not reflect a step toward recognition of the social embeddedness of natural resource management. Planners still determined the value of water resources based exclusively on ecological factors, without recognizing the social dimension of natural resource use.

In the 1992 Rio Convention on Biological Diversity, an environmental dimension of development was given special attention, together with the affirmation of the principle of preserving indigenous environmental knowledge. Autochthony became a reference criterion for development projects related to natural resource management, and local populations were presented as competent in conserving nature and culture (Dahou, 2011). The UNESCO initiative instituting a "Database of Best Practices on Indigenous Knowledge" exemplifies the cultural assumptions that characterize this viewpoint. Indigenous knowledge is defined as knowledge that "belongs to a specific ethnic group, which is locally bound, indigenous to a specific area, culture- and context-specific."[4] Such a perspective reproduces an idea of knowledge uniformly shared within a given community, which is viewed as being bound to the local dimension and separated from economic and political networks.[5] This approach fails to recognize that indigenous environmental knowledge is not isolated within "tradition" but reflects recent and ongoing changes in the relationship between local populations and their environment (Ellen, 1999).

In southern Ethiopia, some attention has begun to be paid not only to customary regulations for conflict resolution and cooptation of local leaders to mediate and settle disputes (Pankhurst & Assefa, 2008) but also to local knowledge and traditional social institutions governing natural resource management (Oba, 1996; Helland, 2000). Development agencies sought out local interlocutors to implement projects without acknowledging that forms of local authority have evolved over time and reflect influences from colonial administrations and Ethiopian governments. Emphasis on indigenous knowledge in development discourse has almost coincided with federal restructuring of the Ethiopian state and demarcation of regional boundaries along ethnic borders. Ethnicity and primordialism have influenced both national politics and development discourse (Kefale, 2010), and relief agencies have started to implement participatory approaches grounded in the assumption of cultural specificity, where each ethnic group is assumed to have its "own" culture.

Despite a shift from a modernist to a sustainable development approach and from the imposition of "scientific rationality" in water management to the valorization of indigenous environmental practices, indigenous knowledge continues to be conceived "[…] as neutral information that can be provided like any other commodity if it is properly organized, archived, and transmitted" (Molle, 2008: 148). This

perspective fails to acknowledge that an important quality of indigenous knowledge is its use by social actors in different contexts to pursue specific needs. In other words, is the contemporary perspective still lacks a recognition of the "political nature of natural resources management" (Molle, 2008: 133).

PRIVATE WATER ACCESS POINTS AMONG THE GARRI

The Garri are the most important of the pre-Hawiya Somali clans (Lewis, 1955: 26–27; Kassa, 1983). Studies analyzing the formation and development of various ethnic groups in this area have postulated that southern Ethiopia's lowlands, which extend into contemporary northern Kenya, were inhabited by a population sharing a common culture of camel pastoralism before the Oromo and Somali expansion (Turton, 1975; Schlee, 1989).

Historically, the Garri became the main commercial partner of the Oromo Borana groups thanks to their prominent role in controlling caravan traders. Along with commercial cooperation, relationships between local groups were formed through local agreements to fetch water from deep wells, known as *tula* in Oromo, perennial water sources that were critical for pastoralist activities during the dry season. Among the Borana, every *tula* belongs to a specific clan, and clan identity is important for gaining access to water.

The Garri are engaged in a variety of economic activities (pastoralism, commerce, farming, and occasional agriculture), which implies that they are not restricted to local kinship relationships as are subsistence-oriented herders (Sato, 1996: 292). This is relevant to contemporary practices of water management, where kinship relations based on clan or lineage membership make up only one among many criteria that can be used to distribute water rights. Since the early 2000s, Garri pastoralists inhabiting the Moyale and Hudet regions have been constructing private, hand-dug water access points. Usually constructed in clusters, these water access points are used for watering cattle as well as for domestic consumption. They do not exceed 4 m in depth and are designed either to collect rainwater or to exploit shallow aquifers near small seasonal streams. They are closed during the rainy season. The presence of a type of grass or a tree species may guide the selection of a location. During excavation, the identification of limestone (locally known as *katchawa*) confirms the presence of water beneath the surface. The type of ownership and management of private water access points has also been stressed (Gomes, 2006). One or more herdsmen may finance the construction, and this entitles them to the water and the right to make decisions that determine water use.

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Private, hand-dug wells are shallower than traditional wells, and water can be fetched more easily, without the need to involve a large number of people. In light of the high drop-out rate from pastoralism and propensity to settle in urban

areas, especially among younger generations, this kind of water management is a suitable response to a scarcity in labor. Today, pastoral activities are mostly carried out by hired workers. The choice of herders to take care of livestock, as a Garri herdsman explains, "is largely a matter of trust." However, the practice of building private water access points cannot be considered simply a response to water scarcity or simply referred to as a "Garri tradition" in natural resource use. A higher degree of independence from traditional social institutions regulating access to natural resources, especially the role of the *abba herega* ("father of the watering order" in Oromo), who used to regulate water access at communal wells before the spread of private water access points, has accompanied a reconfiguration of clan and lineage belonging, which is no longer considered a primary criterion for selecting collaborators to run pastoralist activities, as it was in the past.

Two major features characterize the management of water access points. These are summarized below.

a) Cyclic water use

Water distribution at private water access points is regulated over 3-day cycles, the first two days being reserved for owner(s). Owners are not expected to adhere to any particular constraints, and thus they may give priority to those who have financially contributed to the realization of the well or determine the watering order based on relationships (kinship, commercial alliances, and political contracts between lineage groups). The third day is available for users who have reserved a turn at the water access point.

Allocation of water rights is based on reciprocal relationships of trust and on daily negotiations. Water bargaining among Garri herdsmen results in a higher degree of decision-making autonomy from Village (*kebele*)[6] interference in natural resource management. This practice may allow the Garri to extend their control over the rangeland and implies a higher degree of decisional independence in planning nomadic movements across administrative boundaries.

b) Different forms of payment

Water access can be bought with money, which is in line with the Garri's goal of economic diversification. Due to different ability to withstand thirst, the watering fees for animal use differ between cattle and camels. For camels, a pastoralist is expected to request access each time and to provide a few liters of milk as payment. For cattle, the owner can apply to use the well for an entire dry season; in this case, he would pay money (usually 100–200 ETB depending on herd size).

If this new ownership regime reflects economic stratification among Garri herdsmen, arrangements regulating water rights are not limited to monetary transactions, and payment-based water access cannot be considered merely as a source of vulnerability for poorer households. Through water agreements, which are highly flexible and contextual, kinship relationships, as well as other types of relationships, are continuously redefined and renegotiated. Kinship relationships are still relevant to natural resource use among the Somali Garri, even if agnatic relationships are only one among many criteria that can be used to grant water

rights. This demonstrates the flexibility of lineage among pastoralists, which overlaps with other informal decision-making networks and is constantly adapted to real situations (Lewis, 1961).

During interviews, herders suggested that the distribution of watering rights strictly based on clan or lineage membership is a "bad habit" that the Garri should erase and forget, even through training activities conducted by development organizations. This perspective reflects a marginalization of traditional social institutions such as the *abba herega* in the decision-making process for water access distribution.

> We need our community to be trained on the issue of lineage relations and the disadvantage that may arise out of it. My community needs lineage memory to be eroded. (Author's interview with Garri pastoralist in Chamuk Village, Moyale District, 14/Nov./2011)

This interview was conducted in the outskirts of Moyale town among a group of former pastoralists. Thus, it is important to take into account the impact of settlement and the experience of abandonment of nomadic life while considering the opposition of our informant towards traditional social institutions related to natural resources management.

At the same time, the perceived failure of "tradition" in assuring a proper management of water point among Garri pastoralists has to be put in relation with the cooptation of traditional authorities in the framework of "participatory development" introduced previously in this paper. Local leaders, traditionally in charge of "managing" clan and lineage relations, were appointed by Ethiopian governments and international organizations to mediate disputes but also to encourage settlement of nomadic groups. The loss of decisional autonomy and independence of local leaders in the eyes of the herdsmen is reflected in a more individualized form of water access distribution, where the watering order is defined using kinship as one among many criteria.

For the purpose of our discussion, these considerations are relevant to understanding local representations of development, expectations regarding humanitarian interventions, and the impact of the "participatory approach" in the framework of development projects. The demand for external interventions to reduce the importance of kinship in the assignment of watering rights contradicts development organizations' attempt to value indigenous knowledge regulating natural resource use. Within the framework of development programs, traditional social institutions may no longer be able to respond to the needs and priorities of the local population regarding natural resource use.

CONCLUSION

The current quest for indigenous knowledge and community-based natural resource management must be placed within a wider social and historical process. It must take into account the long history of external interference in local

environmental practices among southern Ethiopia's pastoralists, which has deeply influenced how natural resources are used and shared. The spread of private water access points among Garri pastoralists cannot be considered simply a practice to cope with water scarcity. This case demonstrates that local knowledge and practices of water management are less about preserving water than about managing social relationships among resource users. The management of private water access points is deeply connected with the need to reorganize pastoral activities beyond clan or lineage boundaries. This could be accomplished by changing ownership tenure, where different sorts of social relationships (based on kinship, political contracts between lineages, economic cooperation between herdsmen) serve as bases for the distribution of water rights.

Furthermore, the development of private water access points may reflect ongoing attempts to counteract the high degree of interference from state authorities in nomadic movements and access to land. This is why analyses of the impact of this development on pastoralists' livelihoods should not be limited to assessing economic stratification, the vulnerability of the poorest pastoralists, and the "intrusive penetration" of the market economy in Garri society. Doing so would fail to take into account the cultural complexity of water contracts and the means by which different relationships are negotiated through the watering order. The adoption of indigenous knowledge related to water use serves as a means of reconstructing the local community in a changing social and ecological environment.

We should not consider the spread of private water access points among pastoralist groups a mere result of the weakening of traditional social institutions regulating water access distribution. Such an analysis would risk taking a "hegemonic temporal view of environmental change in development discourse" (Mosse, 1999). From this perspective, a mythical time of "equilibrium" during which indigenous knowledge was collectively shared and reproduced is contrasted with a time of "decay," when a breakdown in indigenous knowledge undermined moral integrity and social cohesion within a given community. This interpretation, which recalls the contraposition between tradition and modernity, prevents us from considering different social, economic, and political relationships that give rise to changes in environmental knowledge.

NOTES

(1) Cornwall (2006) analyzed various "permutations" of discourses of participation during colonial and post-colonial times.

(2) This concept is a good example of how the sociocultural complexity of natural resources can be disregarded. The value of rangeland only takes into account the size of herds that can be fed without considering local agreements and social relations regulating grazing rights. As Hobart (1993: 6) observed, scientific knowledge "requires the homogenization and quantifiability of what is potentially qualitatively different."

(3) An FAO report (1964: 2) advocating the construction of an irrigation system in northern Kenya stated that "no solution of the Turkana problem is possible by which all the people can continue their traditional way of life."

(4) http://www.unesco.org/most/bpindi.htm, accessed September 2012.

(5) Social scientists played a major role during colonial and post-colonial times in "mythicizing local community" as a homogenous and unified unit of analysis. Ethnographic attention focused on locality often reinforced a reified and functional vision of agnatic social institutions and kinship relations, seen as a predominant criterion governing social life in rural societies, thus failing to acknowledge multiple networks and the agency of social actors (Dahou, 2011).
(6) The lowest administrative unit of the Ethiopian state.

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