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Beyond nutrition: social–cultural values of meat and meat products among the Borana people of Northern Kenya

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Abstract

To most indigenous communities, livestock plays important socio-cultural roles in addition to sustenance. Like many other communities in the world, the Borana people regard livestock and livestock products not only as nourishment but as an integral part of their cultural identity and social construct. The Borana are Cushitic-speaking people who reside in northern Kenya and southern Ethiopia and practise pastoralism as the primary way of livelihood. Livestock is reared by Borana people to obtain meat, milk and other by-products further to socio-cultural roles that were important for communal prosperity and resilience. The aim of this paper was therefore, to describe the various role of cattle and its significance to Borana people. For data collection, qualitative methods such as key informant interviews and focus group discussions were used. The interviews were audio recorded, transcribed and analysed. The results showed that cattle and particularly bulls were slaughtered for meat consumption, rituals and high-value ceremonial purposes. Moreover, as a desired form of wealth, cattle provide numerous resources to the owners and the prestige associated with herd of cattle accelerates social status and identity among the Borana community. Thus, according to participants' discussions and views, cattle are highly symbolic and have cultural meaning not only as the primary source of food but also in shaping social–cultural values embedded in their social structure. The various role of cattle and its products had significant implications on food security; the traditional practice of livestock wealth sharing shielded the Borana community in times of need and the practice of commensality led to greater social bonds. However, the changing socio-cultural environment caused by recurrent droughts has affected the traditional coping mechanism and led to alternative forms of livelihood.

Keywords: Cattle, Meat, Social–cultural, Borana people, Values, Food security

Introduction

The Borana pastoralist community of Northern Kenya has since time immemorial attached a lot of value to cattle and by extension to cattle products specifically meat and milk. The life of the Borana fully depended on livestock and entirely revolved around it, particularly on cattle where cattle wealth was revered beyond ranges, hills and valleys. Food has both biological and social value,

the biological value hinges on the nutritional importance of food while the social value embodies a patterning of social status based on age and gender [1]. In this context, it is important to understand the socio-cultural functions that livestock and meat products played in the Borana community social constructs, how this is affected by the changing socio-cultural practices and how this relates to the resilience of the Borana people.

The ownership of a large number of herds of cattle was valued only second to health as posited by the Borana saying “*Fayaan abba kaar*”, meaning health is wealth (referring to wealth only in the cattle context) Other

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cultural and economic contributions of cattle included the prestige inherent in their ownership and their place in custom, religion and festive occasions [2]. The significance of cattle to the Borana people was historical. Despite the many changing lifestyles, to date cattle economy forms the cornerstone of drought-coping mechanisms among the Borana referred to as “*buusa gonofa*” [3].

In its relevance as a symbol of status and wealth, cattle are highly regarded and songs and poems have been composed in praise of renowned cattle owners and herders. Leadership status has also been offered to individuals who owned large herds, signifying how much the Borana valued the herd numbers. Food is not just what we eat, it is an expression of who we are, how we live and the world we inhabit [4]. In Borana case, milk and meat indeed describes the community in all spheres and offers a cultural identity. Food, as a part of cultural practices which equips the individual with a social environment, is a significant indicator of the identity of individuals. Food not only nourishes but also signifies the social forces that the individuals are constructed by [5].

Livestock used to be slaughtered to obtain meat and other by-products such as hide, skin, hooves, horns, bones and blood. The use of processed meat and dairy products became more important as the supply of milk dwindled and when the dry season sets in, traditional meat products were used as drought-coping food [6]. Meat products among the Borana not only served as food but had other symbolic purposes. Borana has used cattle for food, ritual (*ariracha*), status, wealth accumulation and sacrifice (or *sorrío*) in birth, initiation, marriage and burial/memorial ceremonies. The actual slaughtering process was in itself a cultural procedure that demands well-regarded approaches such as the blessing ritual called “*ariracha*”, with family members lined up dressed in traditional regalia of a turban or “*ruff*” on the head of the family head in this case the father, with whisk or “*lichó*”, *thanis*”, in hand and for the woman donned in “*saqaa*” and “*siiqee*” and the children with respective *urgo/mirtu*, a blessed stick in hand. Hence, it is essential to remember that food is a social commodity that has cultural value. This was described by [7] that rituals and celebrations are usually centred around food; sometimes the type of food served can define the event, as with the thanksgiving turkey. The major transitional rites of passage, are marked in almost all societies by ritual or ceremonial distribution and consumption of food.

Women played a central role in pastoral livelihood systems as livestock keepers, natural resource managers, income generators and service providers, which are influenced by gendered norms, values and relations [8]. Even the cattle around the house were under their care

as the women would milk them and decide how much milk goes to the calves and how much for the people in the household to utilize. Daily cow care tasks are mostly performed by women with men attending to the more demanding work including slaughter, barn rebuilding, manure management, and leading the herd to water and pasture when needed, haying is also gender-specific [9]. Among the pastoral communities of Northern Kenya, women remain charged solely with the responsibility of handling, processing and preserving food. They more specifically handle dairy and meat products, in addition to securing water and firewood for food preparation at the household level [10]. As the managers of available local resources and knowledgeable about local resources and the environment, rural women are best placed to ensure sustainable food supplies and hence achievement of household food security [11].

Livestock is a family resource owned by both the man and the woman but for it to be exploited economically, the control mostly remains with the man who mainly engages in pastoralism [12]. Women, on the other hand, contribute towards the labour of herding and taking care of young animals, but have to consult the husband to utilize. Women are in charge of livestock products (milk and meat) and decisions of buying and cooking food are in the woman’s domain [13]. Noted that the gender of an individual actor and gendered institutional norms do have a major significance in influencing the entire process of food acquisition.

To acquire the meat product, the woman involves the man to either offer livestock for slaughter or avail money for the purchase from butchery [14]. Described that among the Borana, cattle are the basic form of subsistence where women have minimal control while men are expected to establish their herd early in life. However, men do not traditionally make/cook the meat product due to cultural conventions, and hence are excluded from the process of food preparation. The local meat knowledge was a result of a need to cope with food insecurity experienced during famine where livestock was slaughtered to preserve for future consumption. Indigenous knowledge and traditional approaches to food preservation, especially meat handling and preservation, helped avail meat to the pastoralist families and represent a valuable source of local solutions to food insecurity in terms of accessibility by the rural population, particularly during a seasonal food shortage or major stress periods such as droughts [15–17] indicated that indigenous knowledge is often seen to exist in a local context, anchored to a particular social group in a particular setting at a particular time. Besides being embedded, the traditional meat knowledge among the Borana is dynamic; due to social-economic and cultural changes caused by

urbanization and education, the practices have undergone some transformations.

Currently, the above-elaborated *Sanga* slaughtering practices are not undertaken or rarely happens. This was mainly due to changing lifestyles and modern practices. The changing grazing environment where land ownership drastically changed from communal to private tenure systems, series of severe droughts leading to dwindling herd numbers, changing trends from pastoralist economy to school going, urbanization, and the existence of modern markets for meat supplies, leaves little room to practise traditional *sanga* rearing and processes. According to [18] cattle are the most affected livestock type during severe drought due to higher input requirements than other livestock types. Yet, it is the potential top priority of society due to its principal role in socio-economics and cultural heritage. However, there has been a changing food culture among the Borana, where reliance on meat and milk has shifted to alternative food sources, such as food crops—cereals, pulses and vegetables, concurrently with changing occupations from herding to other forms of employment [19] described that alternative livelihoods in northern Kenya are based on a variety of strategies, including the marketing of livestock, dairy products, hide and skins, and cultivated crops; a variety of wage-earning occupations ranging from professional to manual labour; and entrepreneurial activities including shop keeping, craft production, sales, and transportation. Ownership fosters the efficient utilization of resources needed to increase the production of milk, meat, butter, and eggs. It was noted that joint resource ownership is positively linked to food security and the techniques utilized to prepare and process foods and the ways of serving and consuming them, which vary from culture to culture, can have an important influence on social and familial relationships [20, 21]. Thus, the objective of this study was to determine the social–cultural importance of Borana traditional meat processing and meat products, and the current relevance of these practices. The study considers various aspects including the value of cattle, the social and cultural aspects of bull slaughtering, meat sharing and *koche*, different gender roles related to cattle and changing livelihood.

Methods

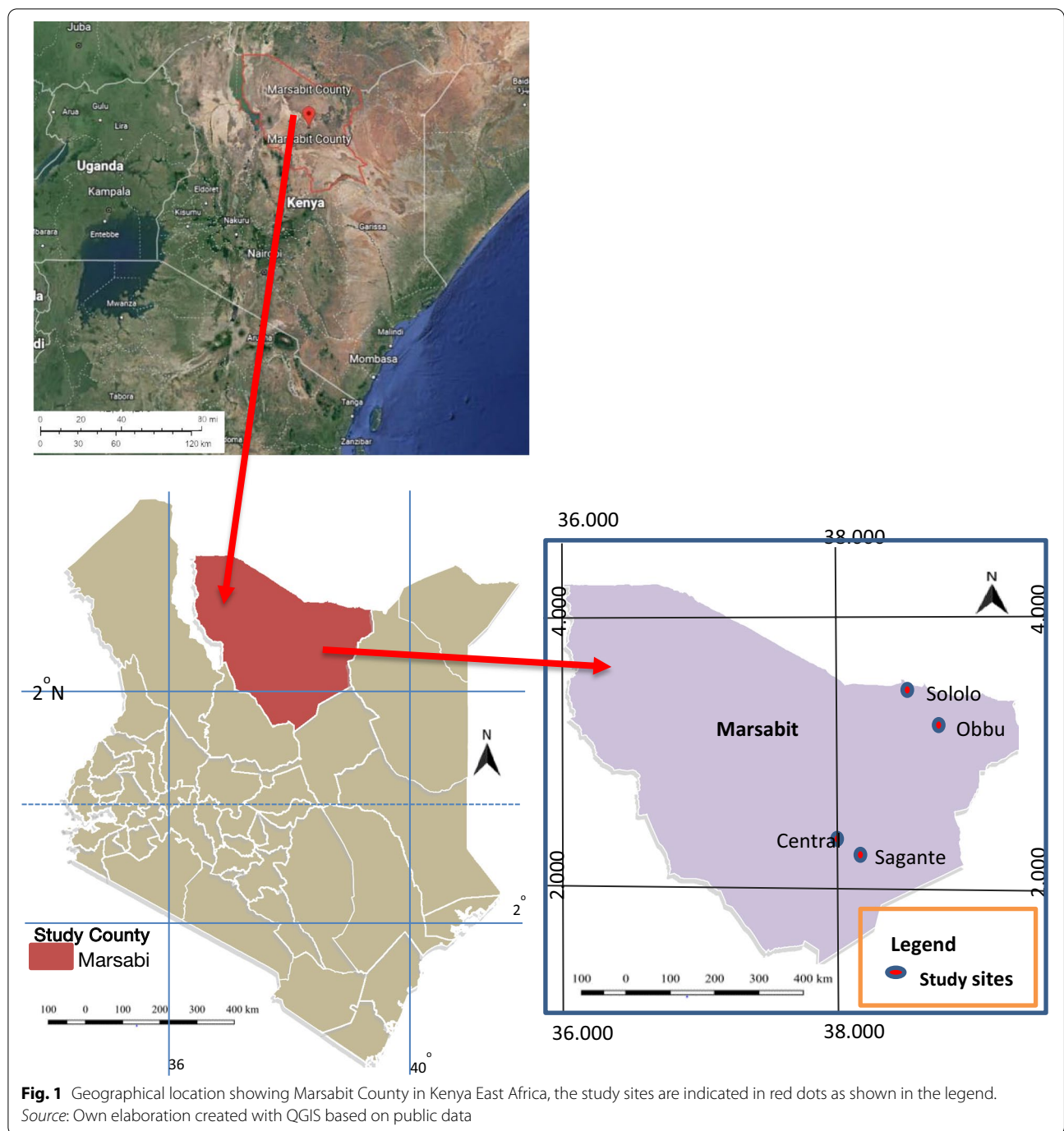
The study was conducted in Sagante, Central, Sololo and Obbu wards of Marsabit County in Northern Kenya (Fig. 1). To document Borana meat culture, the study adopted qualitative in-depth interview methods such as key informant interviews and focus group discussions. Semi-structured in-depth interviews are utilized extensively as interviewing format possibly with an individual or sometimes even with a group [22]. To begin with,

village elders and area chiefs in all the study sites were contacted to recommend key contacts who were knowledgeable women and women groups in traditional meat processing. Consent was sought from the area chief and village elders to conduct the interviews in their locality. The research ethics were addressed by briefing the respondents about the purpose of the study and the processes involved and were assured of confidentiality. Verbal consent was then obtained from respondents to conduct the interviews. Interviews were scheduled depending on the availability and consent of participants.

Interviews focused mainly on women because traditional meat products are usually prepared by women and is considered their domain. The groups were contacted where a meeting was scheduled and discussions on the study topic were conducted. After the initial group discussion, knowledgeable women were identified.

During interview sessions, participants were selected based on their knowledge and interest in the traditional meat system. In addition, more inquiries were made for recommendations of women knowledgeable in traditional meat and social–cultural linkages. More contacts were established leading to the process of snowball. To achieve optimum use of interview time, interview guides serve the useful purpose of exploring many respondents more systematically and comprehensively as well as to keep the interview focused on the desired line of action [23]. The criteria for selection for all the interviews were that they were women from Marsabit county recommended by key contacts and had knowledge of Borana traditional meat and its importance in social–cultural linkages. The interview lasted between one to two hours.

For key informant interviews purposive and snowball sampling was used to identify informants who in turn led to more knowledgeable women on traditional meat preservation techniques. The key informant interviews lasted between one to two hours. These types of interviews are conducted once only, with an individual or with a group and generally cover 30 min to more than an hour [23]. Eleven key informant interviews were conducted, in the four wards and their responses were recorded. Focus group discussions were held at the women's group's place or one of the member's residences who agreed to host the group. The aim was to understand the group's view, perception of traditional meat, knowledge and opinions of the subject when people are together, their interactions and responses of different ages and in some cases gender. In focus group discussions, invited groups of people were interviewed in a discussion setting in the presence of the session moderator and generally, these discussions last for ninety minutes [24]. The number of people who participated in focus group discussion was eight to ten per group. In total four focus group discussions



were conducted in Marsabit Central, Sagante, Sololo and Obbu Wards. As for data analysis, key informant interviews and focus group discussions were tape-recorded whereas, a field notebook was used to write down verbatim the responses of those who were not comfortable with tape-recording. To have the interview data captured more effectively, recording the interviews is considered an appropriate choice. The recording of the interview

makes it easier for the researcher to focus on the interview content and the verbal prompts and thus enables the transcriptionist to generate a “verbatim transcript” of the interview [25]. Once the recorded interviews had been transcribed verbatim, it was analysed according to the themes such as the value of Cattle, Social-cultural value of meat and Changing cultural practices and implication on food security.

Results and discussion

The respondents were all from Marsabit county $n = 50$ as shown in Table 1. The majority of respondents were women 88% and all the respondents were married and over 35 years of age. They were pastoralists and tended to their day-to-day activities.

Value of the cattle and the bull—“Sanga”

Cattle and especially bulls (*sanga*) were slaughtered for meat consumption, rituals and high-value ceremonial purposes (Fig. 2). The slaughtering process was an elaborate activity which involved communal consultation to formulate coping strategies, particularly during the severe dry season and impending drought [26]. Among the Maasai, if a household has food, they have a responsibility to share it with other households that do not have it. The belief in socialism ensures food sharing and availability. Communal participation was essential in the slaughtering process. The place to slaughter *sanga* was in the cattle “*Kraal*”. The slaughtering process had gendered tasks where men did the actual slaughtering and women initially stood by to collect the blood from the slaughtered bull. The carcass was then skinned artistically by men, separating meat parts at the various joints.

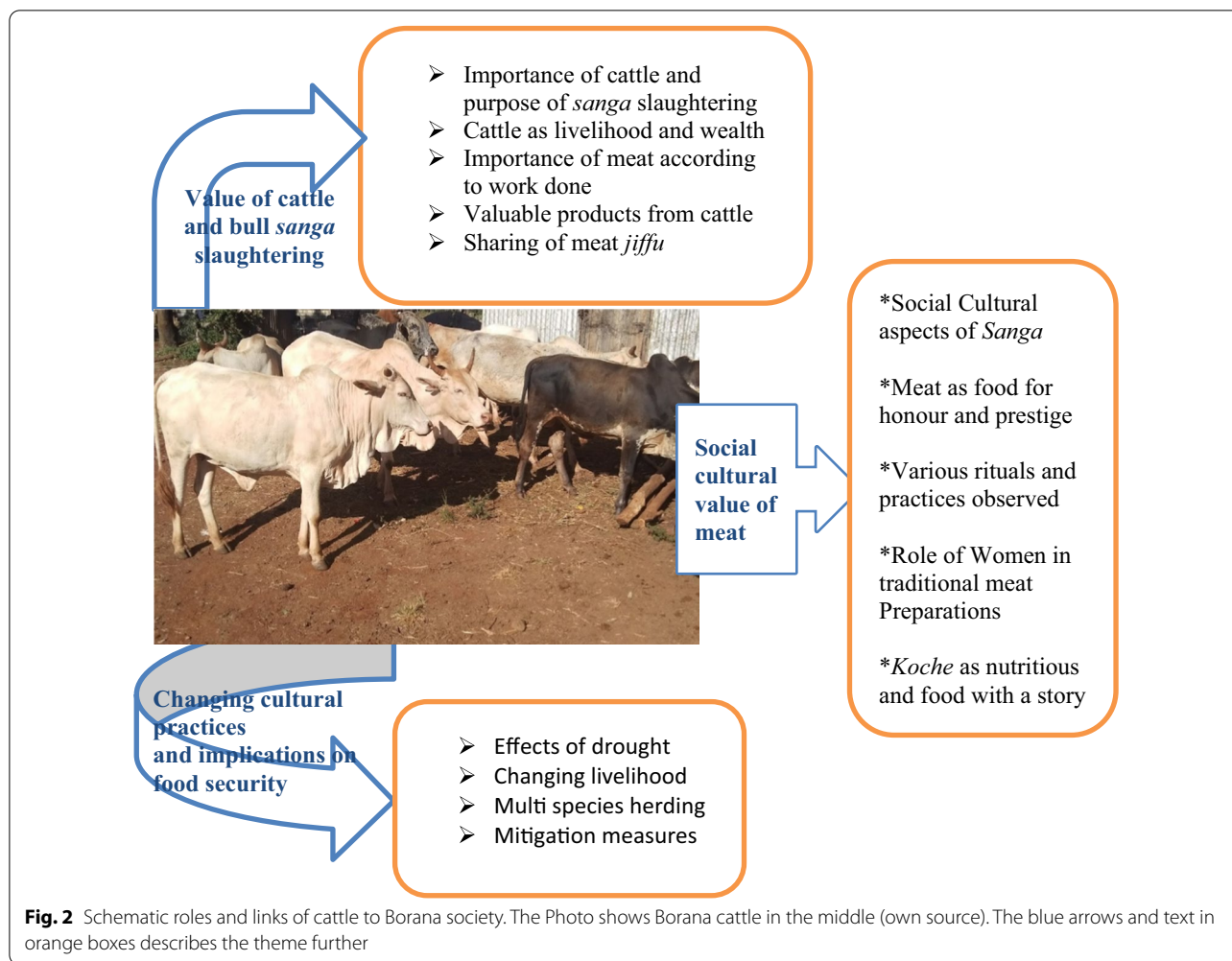
While the slaughtering process was ongoing, the elders and experts referred to as *uuchu* would gather and observe the intestines to predict future events, a process called “*uss lalan*”. This was done to foretell unforeseen

fortunes and or misfortunes and how they would impact the family and the community at large. These unforeseen events ranged from setting in of severe drought, floods, livestock migration in search of pasture and death of family member/s, increase or decrease in herd among others. Animals are sacrificed, and in that context, they are the prime vehicle or conduit for abreacting the problems emerging in human social life. Their intestines are used for divination and, most importantly, cattle provide people, especially men, with symbolic elements of prestige and personal identity [27].

Women would thereafter receive the meat parts to begin cooking. The parts of the meat were identified and cooked in sequence in the order of perishable softer parts to be cooked and consumed first and then other parts preserved to be cooked accordingly for later use. The women with artistic culinary skills cooked and served the softer parts (liver, heart, kidney, intestines) immediately after the slaughter. This is in agreement with the study by [28], that due to its affordability and unique taste, offal makes classic, frugal and essential parts of the cultural “food basket. The serving was made to all those who had participated in supporting lifelong herding of the slaughtered bull and is categorized according to seniority, with priority of tasting the initial cooked pieces “*dandaam*” given to the owner *Abawarra* then to herder (or “*tissa*”), *obaafu/totu* (water men), and “*hamtu*” (usually women, who are hay gatherers for young calves or the

Table 1 Demographic profile showing age, gender and marital status of key informant interview and focus group discussion respondents

Code	No. of participants	Age range	Gender		Study sites	Marital status
			Female	Male		
K11	1	38	Female		Sololo	Married
K12	1	43	Female		Sololo	Married
K13	1	55	Female		Sololo	Married
K14	1	70	Female		Sagante	Married
K15	1	34	Female		Sagante	Married
K16	1	48	Female		Obbu	Married
K17	1	51	Female		Obbu	Married
K18	1	42	Female		Central	Married
K19	1	57	Female		Central	Married
K20	1	63	Female		Obbu	Married
K10	1	66		Male	Central	Married
FGD 1	10	50–65	8 Female	2 Male	Sagante	Married
FGD 2	9	45–55	Female		Obbu	Married
FGD 3	10	50–60	Female		Sololo	Married
FGD 4	10	35–50	7 Female	3 Male	Central	Married
Total	50		44	6		
%	100		88	12		



vulnerable livestock fed from homestead) and all family members. Among the Turkana people, livestock-meat cuts serve to identify the different gender, age as well as their status in the homestead, sociologically, the format of meat distribution demonstrates the hierarchical performance of a major social function based on the coded rules of age, age grades and order of marriage [29]. The process of bull slaughtering had many contexts according to the respondent KI5, it was communal decision-making where elders, men and women were involved. It was a collective responsibility touching on food security and how to tackle other misfortunes that occurred to a family or clan members like illness and calamities from natural disasters and human or wildlife conflict. *Busa-gonofa* in Borana support people in need and also maintains solidarity and sharing of wealth. This strategy ensures their survival despite the losses caused by drought [30]. If the slaughtering was due to hunger and the community was experiencing severe drought, people met for consultations and decision-making. Households who could afford

and own a herd of *sanga* would volunteer to slaughter the bull. The poor in the community was given some shares and this was institutionalized in the clan systems as a decree or *muraa gosa*. By doing this everyone was catered for. It is a traditional food that carries a trademark quality of eliciting strong emotion, experience, and sensation among the people in question, such that individuals are united in shared feeling to a collective experience joined with that of the past [31].

This was elaborated by a key informant KI8 below.

Among the Borana, it was culturally regarded that when abrassa month was sited 'born' then a ceremony called (chonni) was celebrated. Households who celebrated chooni normally would slaughter an old cow 'dulach gara balaa' or sanga and villagers were invited. If it happens that one was not able to slaughter a chonni during the month of abrassa then those who have slaughtered were required to share some ribs, meat parts and some offal meat (chin-

nacha chormi). This is a cultural set of rules (*murti*) which must be obeyed for everyone to give to those underprivileged

Cattle hold a lot of importance in daily routine and life discourses of the Borana society (Fig. 3). For the love of cattle, the Borana's categorize an individual status according to cattle ownership—as the have and the have-nots of cattle “*dhureess loon kaar ethuu bobbass*” or “*qoole guutu ihkhama*” Songs and poems have been recited in praise of *sanga*, *karab*, cows and the cattle owners.

K20 narrated some lines of *sirb looni* in praise of *sanga*;

*“Aan akh faayaa hima, kotol kiya
Aan akh bekhun hima,
yo bekh aan akh dhedha hima.
Fula hogo bae, kotol kiya
awan bekhun qaba;
aantatii lobaa,
agarsun dosaa,
dhahndin folonsaa,
dhiiben fontosaa,
udhudhi qosa”.....*

The lines above describe how *sanga* mightily uses its hooves and horns in Borana range land for pasture and leaves behind trails. It also acclaims the meat products of *koche* and *cho'omm* in *dhiibe*. (Traditional meat storage) and below are lines from a song in praise of cow;

*“Shaare sharamadee, naqee amburadee,
aburo omacha ijooleen jalatee,
anan quloo mucha elemtun jalatee.
Badadhen kiy wachokey;*

*gamee dhubra chokey,
Abbo gurr chokey,
galee mona chokey,
ititun madhalaa waraa gherii chokey”..*

The above lines outline benefits of cows and its products; including but not limited to milk, fermented milk, butter for hair care and heifers used in marriage rite. It further describes the organoleptic features such as tastes, appearance and aroma of milk nostalgically known to Borana children and people.

The first aspect of importance was the economic value of cattle, its products and the prestige it commanded. The numerous resources of milk, meat, hide and skins were obtained by every household from their herd. Herders and cattle become profoundly used to each other and mutually dependent, the herders benefiting from the products of their animals (milk, meat, blood, hide, etc.) as they provide them with food, water, shelter, and care [32]. Cattle do more than provide readily available sources of food products whereas oxen contribute to farming activities like ploughing—land preparation (*gargalcha*) after bush clearing (*golgolaa*) is done, planting (*fachaasa*) and weeding (or *shalanshalo*). Cows were also used to pay fines or ransom (*qakhe*) or loaned to the less fortunate in the family or clan as “*dabareh*” to consume the milk over its milking period as a coping strategy of “*Buusa gonofa*”. Most respondents described the importance of cattle in the focus group discussion FGD1;

Back in the day, the cattle were kept in great numbers such that there was no need for selling them. During the rainy season, people would drink milk.



Fig. 3 Borana cattle resting under the shade of an acacia tree waiting for their turn at a watering point (own source)

Additionally, they would churn the milk into butter and ghee for future use during the dry season. When the drought season sets in, bulls were slaughtered and meat products were preserved and consumed

The preparation of these traditional meat products also has a communal role, when one homestead slaughters a bull, the neighbouring women assist each other in preparing the products, while creating a festive occasion and networking. The cooking and serving of food are embedded in a discursive framework that defines female care, as a vital element in the maintenance of family relatedness and proper femaleness [33]. It is also a norm among the Borana to share the meat, *Jiffu* with close relatives and pregnant women. Cooking and sharing of portions “*Jiffu*” of the slaughtered cattle parts were important activities after slaughtering process. Meat sharing was always regarded as an important aspect in Borana when they slaughter the bull. This practice not only enhances social-cultural relations among the people but was also important in promoting economic welfare activities, especially for families who did not have *sanga* to slaughter during the time of hunger [34]. Food and how it is shared have special significance for the individual, group and society. Food includes a symbolic and relational meaning that goes beyond its nutritional value and the physical need to feed oneself. The people who were entitled to *jiffu* and have customary rights are the siblings, relatives and the affine. Other members of the communities who receive shared parts were pregnant women, neighbours and less fortunate families. The parts to be shared were predetermined and households who give and those who receive are aware of this habitual practice. *Jiffu* parts included beef chunks, ribs, vertebrae and intestines. Food was also an occasion for sharing, distributing and giving, for the expression of altruism, whether from parents to children, children to in-laws, or anyone to visitors and strangers [35].

Social-cultural values of meat

Cattle are highly regarded in social-cultural links which defined social processes and are a cultural marker. Bulls and cows had special purposes necessary during the occasions of ceremonies and thanksgiving and most importantly cattle played major social relation roles linking neighbours and relatives that shaped the standing rules of sharing cattle resources among Borana people. Cattle are often the most valuable asset, they serve as a measure of wealth and social prestige. Beyond their practical benefits, cattle also play an essential role in the culture and connections among their herders. They are central to many ceremonies and marking major life events [36].

A fifty-year-old key informant KI4 narrated “The slaughtered animal for ceremonies and special events depended on the magnitude of the jill (ceremony). For instance, during the naming ceremonies of the firstborn (gubbis) a bull must be slaughtered. On the other hand, when children came from a journey or when a special visitor arrives, meat bought from the butchery was used to make koche

The ceremonial slaughter of *sanga* and old cows had many rituals that were observed. The ritual of *ariracha* is an important act that women and men performs by carrying traditional artefacts such as *saqaa* and *siquee* as explained by a key informant respondent KI6;

The Borana culturally carry ‘orro’, ‘lich’ and ‘saqaa’ (Ceremonial regalia) during traditional ceremony. They also believed that before slaughtering sanga, they should first bless it (ariracha). The slaughter process is done gently and the animal’s soul is respected hence the need for ‘nu orsis saa namaan’ (ariracha) which is simply a prayer for the blessing to nourish and prosper both people and livestock.

The rituals surrounding traditional meat consumption also had a perception of time in Borana culture. Meat rituals were organized following a time schedule. For example, *chonni* a thanksgiving ceremony was usually observed in the Borana month of (*abrassa*) similarly, *sorio* is also a ceremony observed during thanksgiving and memorial events like *sodhu* KI7. Among pastoralist, cattle are kept as a status symbol and cultural medium, while in other cultures they, also, plays a major role in marriages, weddings, sacrifices, and funerals [37]. During the interview it become clear that there were knowledgeable women who are enthusiastic and nostalgic in the subject of traditional meat and cultural importance associated with it.

Traditional meat, *koche* was a special food which was mostly consumed during ceremonies and prepared for important guests and persons. This was elaborated by [38] that beyond merely nourishing the body, what we eat and with whom we eat can inspire and strengthen the bonds between individuals and communities. There is no closer relationship than the one with the family, and food plays a large part in defining family roles, rules, and traditions. *koche* is an important food made to express passion and love. Its elaborate preparations were both social and communal affairs involving elders, women, herders and villagers. The careful artistic handling gave it a special status and those who handled it did these activities with expert skills. Cooks had culinary agency, not only because their work required considerable technical skill but also because cooking and ultimately serving food was



Fig. 4 The photo shows the traditional meat preservation by Borana people. (1) The meat was sliced thinly and air-dried for a few days then cut into small pieces and deep-fried to make *koche*. (2) The wall is decorated by different earthen colour. (3) The hanging black item is *gathi* used for restraining cows during milking (Own source)

an act of exchange, in these ways cooking shapes social relations [39]. Because of its artistry work, the preparation of *koche* took days and involved elaborate planning (Fig. 4).

During *koche* preparation, the women had to fetch water and firewood and make a mat-like structure called *sage* for meat holding. In all these processes the involvement was not individual but collective, women usually sing *karillle* a festive song as they build *galm gubbis* hut and prepare *koche*. Food is fuel, not only for our biological selves but for our social selves, as humans living in groups which eat together in ways which explicitly and implicitly make statements about identity and belonging [40]. *Koche* played important role in enhancing social relationships, where the woman who had control on its processing and consumption gave it to her lover as an expression of her love and passion for him. This lover did not necessarily need to be the husband, but even a secret lover, who if found could be fined a cow to appease the husband. Such women, therefore, used *Koche* as a tool to gain economic mileage in the community as they gained status because of their artistic knowledge and cultural cuisine of cooking “*Koche*” that would find its way into a man’s heart. Cuisine constitutes an intangible cultural inheritance symbolizing cultural identity passed down from generation to generation, and its existence is a measure of the richness of the culture of a community [41]. This was elaborated by focus group discussion respondent from FGD3;

It would be embarrassing for a Borana woman to have her dhibe/Ejito a (traditional storage container

for meat) empty at any one time; particularly, if she values herself and can showcase her pride through availability and offering of koche

Traditional meat products are not consumed as a day-to-day meal but as delicacies given to respected members of the family, guests, in-laws and husbands mainly when they come home from distant travels. It is regarded as a welcoming gesture and hospitable food. Furthermore, these meat products are abundantly available during special occasions such as ceremonies and weddings. To eat for pleasure, rather than for survival, is probably the most important factor behind human food culture and the development of food habits. We prefer to consume foods with a story, especially when they are also useful for the body [42]. For instance, during the naming ceremony for the first-born son, referred to as *gubbis* by the Borana, *koche* a (type of traditional meat (Fig. 5) is prepared to be lavishly enjoyed and its container unfastened in a special way by the father of the child and his age mates to feast KI1. To exercise profound control over resource like meat products, a woman can also present *Koche* as a gift at her lover’s naming ceremony of “*guubis*” in exchange for a reciprocated reward for a cow from the lover. As (7) described, food has always been linked to social prestige and status; some foods confer high status on the eaters, others assume high status because of the groups who habitually eat them. This traditional practice used to be common among the Borana and was seen to harmoniously unify the community through “Cows” as a symbol of love and communal continuity [43]. Argued that food works as part of caring for their families, but also an

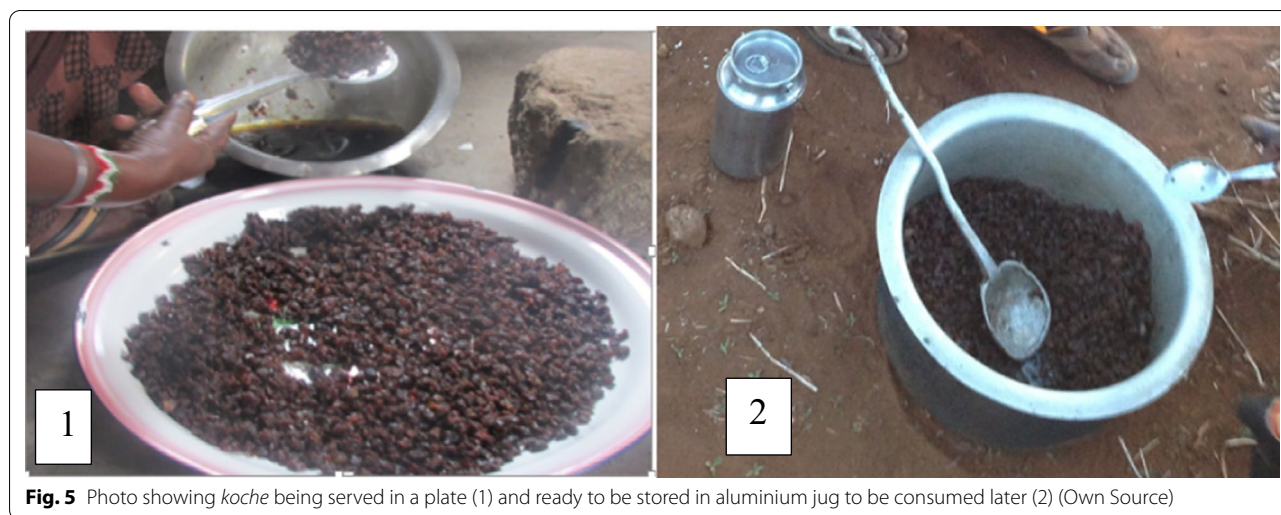


Fig. 5 Photo showing *koche* being served in a plate (1) and ready to be stored in aluminium jug to be consumed later (2) (Own Source)

Table 2 Nutritional composition showing proximate profile, mineral content and vitamin content of beef *koche* a traditional meat product

Proximate profile %		Mineral content mg/100 g		Vitamin content	
Ash %	1.79 ± 0.14	Calcium	184.95 ± 1.65	Thiamin (mg/100 g)	0.15 ± 0.01
Crude fibre %	1.80 ± 0.24	Iron	7.28 ± 0.23	Riboflavin (mg/100 g)	0.07 ± 0.01
Protein %	65.71 ± 3.36	Zinc	4.64 ± 0.06	Niacin (mg/100 g)	3.69 ± 0.20
Moisture content %	5.87 ± 0.84	Potassium	702.51 ± 8.90	Pyridoxine (mg/100 g)	0.48 ± 0.08
Crude fat %	10.49 ± 1.29	Magnesium	52.99 ± 0.60	Retinol (µg/g)	19.54 ± 0.35
		Sodium	264.40 ± 4.84	α-tocopherol (µg/g)	5.19 ± 0.32

opportunity to showcase their culinary talents. Having a recipe for a particular dish was seen as a source of pride and influence.

Koche is a food that evokes memory and is embedded with deep social symbolisms and meanings signifying kinship ties and friendship. This symbolism is defined as commensality, which means more than just sharing and consumption of food [44]. As shown in Table 2, *koche* is a nutritious and rich food both in macronutrients like protein, fat and ash and micronutrients; minerals and vitamin.

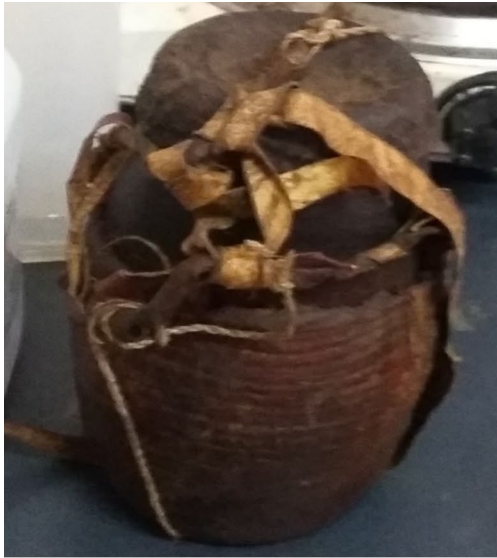
As described earlier *sanga* slaughter process consisted of several categories of meat utilization; some meat parts were consumed immediately and some parts preserved for future use. The ribs and other meat on bone were eaten and bones repeatedly boiled and the soup consumed over time. The beef head and lower legs parts were roasted then boiled to make soup. The dried strip meat was prepared to make *koche* and *guba*. The fat and fatty parts were fried to extract fat and stored as *cho'omm* and stored in a *dhool*. In addition, by-products like skin, hides and horns were processed and utilized as clothing and other ornamental items, e.g. *gathi*, rope made from

hide/skin for restraining cows when milking and preserved into making beddings *itille* and other decorative artefacts as shown in Fig. 6.

Unfortunately, these vital skills and practices as well as indigenous meat preservation knowledge by Borana women are often underrated and at risk of fading. Consequently, it is important to know why there is a decline in the use of knowledge especially, among younger people who are either ignorant about the knowledge or abandoning it. Knowledge in all its forms is so tenuous and the need to retain and promote what still exists is vital. Indigenous women who have retained this knowledge need recognition and support in their efforts to practise it and pass it on [45].

Changing cultural practices and implication on food security

Further to various activities undertaken during the slaughter of the bull, the more important need of satisfying hunger was fulfilled. Therefore, *Sanga* played an important role in mitigating food insecurity, as it fed not only the family or “*warr*”, but also “*jiffu*” parts shared with relatives and neighbouring villagers according to KI9.



1



3

4

Fig. 6 Traditional Storage containers for *koche*; 1. *Dhibe 2 Ejitto*, made from hide, skin and wood. 3. *itille*, beddings and other ornamental items made from hide and skin; 4. *Gorf* for milk storage and *khalo* for beautification (own source)

The rest of the meat was preserved and prepared into products such as “*Koche*” and “*guuba*” to be consumed over time. It was therefore, a key coping mechanism enshrined within the Borana food culture. In the past, Borana pastoralists shared food items for love and affection rather than as a form of security [46]. However, in recent times things have changed due to the occurrence of frequent droughts that the Borana refer to as *oollaah*. Almost all responses tended to emphasize the devastating effect of these droughts that lead to a high herd mortality rate, making Borana communities more vulnerable and food insecure. Reasons for food insecurity ranged from recurring drought that led to the reduced number of herds, poverty which was manifested through food unavailability, flash floods and diseases that led to deaths of livestock in large numbers. In severe cases, droughts have compelled destitute families to abandon their nomadic lifestyles and settle in urban centres but many have fallen deeper into poverty as a result. In the Borana zone, the frequency of livestock population fluctuations may increase. With droughts becoming more and more frequent, pastoralist drop-out is increasing, leading to the migration of men to nearby towns in search of wage labour [47].

Traditional meat was important as it offered both economic and nutritional advantages as well as social-cultural values which are essential elements of food security. Participants FGD2 used remarks such as “*we were strong and healthy*”, “*people don't get tired*” and it's a “*happier moment bringing people together to share*” in regards to consumption of meat and signifying the strong cultural linkages to traditional meat. The questions on the livestock and the role it played in food security among the Borana and the changing scenario, generated rich narratives from the participants who recounted that livestock especially cattle was not only used as a source of livelihood but had other purposes in social-cultural functions, cultural identity and services such as dowry (*loon arara* and *qarat*), ransom payment (*qakhe*) and prestige. Mbororo tendency to sacrifice a bull and distribute its meat in celebrations of all kinds is related to the idea of collective belonging to the pastoral group/lineage, which is of equal importance to both men and women, each of who receive their share of the sacrificed beast [48].

Several respondents said that the effects of successive droughts were felt for a long time. The increasing frequency of these droughts also made recovery more difficult. During Focus Group Discussions FGD4 and Key Informant Interviews KI3, what came out strongly was devastating outcomes that had been caused by recurrent droughts. In all the study sites, respondents emphasized that the majority of the population had suffered serious livestock losses and that most of the

population had become poor, with recovery in some cases never to happen again. During drought and famine, men move away with their livestock and women have reduced access to livestock products and may have to depend on firewood collection and other income-generation activities [49].

This was elaborated in a focus group discussion FGD3 as follows.

Unlike in the past when we used to slaughter sanga (bull) and process meat products that lasted a long time, now, we mainly feed on dry grains. There are barely any more sanga. We no longer churn or ferment the milk. Personally, I have two cows because the rest were killed by a recurrent drought

The pastoral Borana were vulnerable to droughts, they lost a large number of livestock and many of them became destitute and hungry with severe water shortages. As shown in (Fig. 7) in some instances, the drought was compounded by livestock diseases leaving people more vulnerable. This made many people abandon pastoralism and settle in peri-urban centres in search of other means of livelihood. The Borana herders experience food insecurity as a result of recurring droughts causing huge losses of cattle and are thus increasingly shifting from cattle pastoralism to multi-species herding [50].

From the responses FGD1, the recurrent drought led to less practise of the traditional coping mechanism of “*buusa and gonofa*” due to the impoverished status of the community, these gave way to the introductions of relief food and aid, food for work, cash for food that has become modern strategies to cope with the effect of drought to reduce immediate hunger. This was elaborated by respondents who mentioned the many Non-Governmental Organizations that operated in their area. Many people in the Borana region are food insecure due to the recent pattern of droughts. As a result, food aid is common in the region. Women depended on food aid and supplementary food to survive. This food is distributed by the government and is donated through the World Food Program, Save the Children and others [51].

Modern development and urbanization not only increased varieties of foods but has also caused a shift in eating pattern and food consumption activities in households. While in the past the Borana depended on livestock and livestock products, currently they consume grains and pulses, in addition to using livestock as sources of subsistence and income, Borana households also depended on non-pastoral livelihood activities. These include crop cultivation for subsistence, sale of crop produce, food for work, collecting and selling gum Arabic, incense, wage employment, petty trade, remittance, charcoal and firewood sale [52].



Fig. 7 Due to recurrent drought the community of Marsabit county experiences water shortage, donkeys are mainly used for water transport (own source)

Similarly, the response below from key informant, K10 emphasized the satiety property of meat compared to cereals.

These days, the drought has become too much. Instead of slaughtering sanga, people were forced to sell them for money. Moreover, the money is not sufficient to sustain family meals and nutrients density of maize is 'low' children keep asking for more food unlike the meat products which make them play longer before they ask for more food

Respondent K12 explained that apart from the numerous droughts that have decreased the herd numbers, the introduction of formal education and urbanization have also had a great effect on livestock keeping as many people abandoned the practice after repeated losses and changed to other forms of livelihood like small scale trade and casual work. Children are not taught about livestock and natural resources at school and how to manage them. Many youths are becoming increasingly disinterested in working in pastoralism [8] meanwhile lack of labour to cater for livestock was also cited as another setback as more children are now enrolled in school, making livestock rearing challenging for lack of herders. As resources in pastoral areas dwindled as a result of climate change, more pastoralists dropped out of the system, migrated to urban areas, and took economically inferior jobs. Increasingly, more households are willing to invest in their children's education for future generations to be able to diversify their livelihood strategies [53] this has

further been aggravated by more herding space being lost to commercial land owners and shrinking grazing zones. The trend of change in the pastoral land use system is shifting towards resource "privatization", relating to the spontaneous expansion of private enclosures [19].

Conclusion

Livestock and livestock products are an integral part of the Borana community, in addition to providing food and sustenance, it forms social-cultural identity and community expressions. The findings from the respondents indicated that livestock and livestock products, mainly the aspects of sharing meat products and practices, strengthen social ties among Borana people while mitigating risks such as food insecurity during the dry season. However, this elaborate meat culture is being threatened by the changing lifestyle and reduction of livestock numbers caused by a variety of factors such as consistent drought and rural-urban migration. Consequently, the preservation of Borana traditional meat culture and knowledge on meat heritage is vital to ensure its continuity and transfer to future generations in this shifting sand of pastoralism.

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Author contributions

The first author conducted field work, interviews, and wrote the manuscript, all authors read, revised and approved.

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Declarations

Competing interests

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References

- Nguni D, Mwila G. Opportunities for increased production, utilization and income generation from African leafy vegetables in Zambia. *Afr J Food Agric Nutr Dev*. 2007;7(4):1–20.
- Desta S, Berhanu W, Gebru G, Amosha D. Pastoral drop out study in selected Weredas of Borana Sone Oromia Regional State. Addis Ababa: Care International Ethiopia; 2008.
- Oba G. The importance of pastoralists' indigenous coping strategies for planning drought management in the Arid Zone of Kenya. *Nomadic Peoples*. 2001;5(1):89–119.
- Kurlansky, M.: The food chains that link us all. Time [Canadian Edition] 2007; pp. 41–43.
- Can Emmez B. Plants and foods as identity markers: an ethnographic analysis on the case of the (Y)Ezidis from Batman (Turkey). *J Ethn Food*. 2020;7:5. <https://doi.org/10.1186/s42779-019-0038-y>.
- Jalata, A.: Oromo peoplehood: historical and cultural overview. 2010; http://trace.tennessee.edu/utk_socopubs/6/.
- Fieldhouse, P.: Social functions of food. In: Food and nutrition. Springer, Boston (1995). https://doi.org/10.1007/978-1-4899-3256-3_4
- Flintan F, Beth C.: Pastoral women's thoughts on change: voices from Ethiopia. In: Paper presented on international conference on the future of pastoralism. Citeseer; 2011
- Crate SA. Walking behind the old women: Sacred Sakha cow knowledge in the 21st Century. *Hum Ecol Rev*. 2008;15(2):115.
- Keya, G A., Ngutu M., and Adongo A.O.: Bridging the gap between agricultural technologies, KARI pastoral risk management project. 2005
- Ibnouf FO. Challenges and possibilities for achieving household food security in the Western Sudan region: the role of female farmers. *Food Sec*. 2011;3:215–31.
- Rao N. From abandonment to autonomy: gendered strategies for coping with climate change, Isiolo County, Kenya. *Geoforum*. 2019;102:27–37.
- Kelkar M. Local knowledge and natural resource management: a gender perspective. *Indian J Gend Stud*. 2007;14(2):295–306.
- Nyamongo IK. Factors influencing education and age at first marriage in an arid region: the case of the Borana of Marsabit District Kenya. *Afr Study Monogr*. 2000;21(2):55–65.
- Asogwa IS, Okoye JI, Oni K. Promotion of indigenous food preservation and processing knowledge and the challenge of food security in Africa. *J Food Secur*. 2017;5(3):75–87.
- Field, C.: Milk and meat preservation in pastoralist areas of Kenya, unpublished research report of the agriculture/livestock research support project jointly funded by KARI and EU; 2000
- Agrawal A.: Indigenous and scientific knowledge: some critical comments. *Antropologi Indonesia*. 2014
- Mengistu, D.: Impacts of drought and conventional coping strategies of Borana community, Southern Ethiopia. 2016; Research on humanities and social sciences. ISSN (paper) Vol. 6, No. 23, pp. 2224–5766.
- Flintan F, Tache B, Eid A.: Rangeland fragmentation in traditional grazing areas and its impact on drought resilience of pastoral communities: lessons from Borana, Oromia and Harshin, Somali Regional States, Ethiopia. 2011; Oxfam: Oxford
- Claxton, M.: Culture, food and nutrition. *Présence Africaine*. 1998;(2):99–115. <http://www.cairn.info/load>.
- Galiè A, Mulema A, Mora Benard MA, Onzere SN, Colverson KE. Exploring gender perceptions of resource ownership and their implications for food security among rural livestock owners in Tanzania, Ethiopia, and Nicaragua. *Agric Food Secur*. 2015;4(1):2.
- Corbin J, Strauss A. Basics of qualitative research: techniques and procedures for developing grounded theory. 3rd ed. Thousand Oaks: Sage Publications; 2008.
- DiCicco-Bloom B, Crabtree BF. The qualitative research interview. *Med Educ*. 2006;40:314–21.
- Creswell JW. Qualitative inquiry and research design: choosing among five approaches: international student edition. Thousand Oaks: Sage Publications; 2007.
- Jamshed S. Qualitative research method-interviewing and observation. *J Basic Clin Pharm*. 2014;5(4):87–8. <https://doi.org/10.4103/0976-0105.141942>.
- Chege PM, Kimiywe JO, Ndungu ZW. Influence of culture on dietary practices of children under five years among Maasai pastoralists in Kajjado, Kenya. *Int J Behav Nutr Phys Act*. 2015;12:131. <https://doi.org/10.1186/s12966-015-0284-3>.
- Abbink J. Love and death of cattle: the paradox in Suri attitudes toward livestock. *Ethnos*. 2003;68(3):341–64.
- Magoro, M.: The nutrient composition of raw offal-containing sausages developed for the less affluent sectors of the South African Society. 2007; <http://www.saafof.org.za>
- Lokuruka MNI. Meat is the meal and status is by meat: recognition of rank, wealth, and respect through meat in Turkana culture. *Food Foodways*. 2006;14(3–4):201–29.
- Tadesse, B., Beyene, F., Kassa, W., Wentzell, R.: The roles of customary institutions in adaptation and coping to climate change and variability among the Issa, Ittu and Afar Pastoralists of eastern Ethiopia. *Change and adaptation in socio-ecological systems* 2015; 2(1).
- Pieniak Z, Verbeke W, Vanhonacker F, Guerrero L, Hersleth M. Association between traditional food consumption and motives for food choice in six European countries. *Appetite*. 2009;53(1):101–8.
- Dubosson, J.: Human 'self' and animal 'other'. The favourite animal among the Hamar. *Ethiopian images of self and other*. 2014; 83–104.
- Haukanes H. Sharing food, sharing taste? Consumption practices, gender relations and individuality in Czech families. *Anthropol Food*. 2008. <https://doi.org/10.4000/aof.1912>.
- Douglas M., Isherwood B.: The world of goods: towards an anthropology of consumption, 1979; Barthes R., "Mythologies", 1957; Muller K., "Piccola etnologia del mangiare e del bere", 2005
- Fox, R.: Food and eating: an anthropological perspective. *Social issues research center* 2003; <http://sirc.org/publik/foxfood>.
- Dessie, T. and Mwai, O. (eds.): The story of cattle in Africa: why diversity matters. Nairobi: ILRI. 2019
- Kubkomawa HI. Indigenous breeds of cattle, their productivity, economic and cultural values in sub-Saharan Africa: a review. *Int J Res Stud Agric Sci*. 2017;3(1):2454–6224.
- Stajcic N. Understanding culture: food as a means of communication. *Hemisph Stud Cult Soc*. 2013;28:77–87.
- Adapon J. Culinary art and anthropology. Oxford: Berg; 2008.
- Janowski M. Introduction: consuming memories of home in constructing the present and imagining the future. *Food Foodways*. 2012;20(3–4):175–86.
- Jordana J. Traditional foods: challenges facing the European food industry. *Food Res Int*. 2000;33(147–52):6.
- Svanberg I, Ståhlberg S, Bekkin R. Horsemeat in the culinary traditions of the Mishār Tatar diaspora in the eastern Baltic Sea region: cultural and historical aspects. *J Ethn Food*. 2020;7:38. <https://doi.org/10.1186/s42779-020-00072->
- D'Sylva A, Beagan BL. 'Food is culture, but it's also power': the role of food in ethnic and gender identity construction among Goan Canadian women. *J Gend Stud*. 2011;20(3):279–89.

44. Edwin S. Subverting social customs: the representation of food in three West African francophone novels. *Res Afr Lit.* 2008;39:39–50.
45. Loo KK, Espinosa M, Tyler R, Howard J. Using knowledge to cope with stress in the NICU: how parents integrate learning to read the physiologic and behavioural cues of the infant. *Neonatal Netw.* 2003;22:31–7.
46. Anbacha AE, Kjosavik DJ. Borana women's indigenous social network-marro in building household food security: Case study from Ethiopia. *Pastoralism.* 2018;8:29. <https://doi.org/10.1186/s13570-018-0128-2>.
47. Riché, B., Hachileka, E., Awuor, B. C., Hammill, A.: Climate related vulnerability and adaptive capacity in Ethiopia's Borana and Somali. 2009; International Institute of Sustainable Development and International Union for Conservation of Nature (IISD and IUCN), Commissioned by CARE International.
48. Virtanen T. Between cattle and Islam: shifting social and gendered significance of cattle among the mbororo pastoralists in Cameroon. *Good Eat Good Live Nomads Anim North Eur Afr Northeast Asian Study Ser.* 2010;11:123–40.
49. Watson C. Gender issues and pastoral economic growth and development in Ethiopia. Addis-Ababa: Department for International Development; 2010.
50. Megersa B, Markemann A, Angassa A, Valle ZA. The role of livestock diversification in ensuring household food security under a changing climate in Borana. *Ethiop Food Secur.* 2014;6(1):15–28.
51. Hurst, M., Jensen, N., Pedersen, S., Shama, A., Zambriski, J.: Changing climate adaptation strategies of Boran pastoralists in southern Ethiopia. 2012
52. Abebe D, Little PD, Mahmoud HA, Stites E, Bushby K. Resilience and risk in pastoralist areas: recent trends in diversified and alternative livelihoods. The USAID east resilience learning project; Feinstein International Center, Friedman School of Nutrition Science and Policy, Tufts University. 2016
53. Mahoo, H., Radeny, M. A., Kinyangi, J., Cramer, L.: Climate change vulnerability and risk assessment of agriculture and food security in Ethiopia: which way forward? 2013; Working Paper No. 59 CGIAR research program on climate change, agriculture and food security (CCAFS)

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