

# The DEDO forest conservation culture a means to conserves the Ororo (*Ekebergia capensis*) tree.

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## Abstract

The forest people around the world through their indigenous knowledge contribute to the sustainable management of forests. This article argues that the Sheka people in southwestern Ethiopia by their ecological knowledge, values, and spiritual use could manage the Ororo tree (*Ekebergia capensis*). The Ororo tree (*Ekebergia capensis*) is one of the most important endemic tree species in the Sheka zone southwestern Ethiopia and, at the same time, one of the most endangered species. Data collected on the indigenous ecological knowledge of the Sheka people and how the Ororo tree could be managed and conserved through the DEDO culture documented and the spiritual connection between the Ororo trees and the Sheka people traditional belief system measured. The findings revealed that through their traditional forest-related knowledge, the Sheka people conserve and manage a single larger tree called Ororo. The Ororo tree is a special type of tree that has cultural and spiritual attachments that are presently non-existent. This unique forest conservation practice has been referred to as the DEDO culture. The culture of DEDO comes up with worshiping around the Ororo tree. Thus, the culture of DEDO played an important role in maintaining the conservation of the DEDO sacred tree (Ororo) and biodiversity therein. Over time, the DEDO sacred tree (Ororo) conservation culture has been decline, and various factors have contributed to the decline of this useful ecological knowledge.

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Key words: *DEDO culture, Ororo trees, sacred tree, indigenous knowledge*

## Introduction

Recent developments in the field of traditional forest-related knowledge have led to renewed interest in the conservation, management, and sustainable use of natural resources. This interest has been increasingly recognized, documented, and utilized both in developing and developed countries (Parrotta, 2000; Parrotta

& Troper, 2012; Menzies & Butler, 2006). The role of indigenous knowledge in forest conservation in Africa has also been recognized in recent years. Its potential contribution to Africa's ecology has not been well studied. Recently, very few studies have been conducted to depict the contribution of traditional knowledge to biodiversity, climate change, and combating desertification.

Traditional forest-related knowledge has upheld the occupations, culture, personalities, and the woodland and farming assets of the neighbourhood and indigenous networks everywhere throughout the world (Parotta and Troper, 2012). Traditional forest-related knowledge (TFRK) is of specific significance to indigenous networks, people groups, and countries (Martinez Cobo, 1986/7). Numerous specialists have put accentuation on incorporating traditional forest-related knowledge and scientific knowledge for the protection of timberland nature forests (Baker, 1992; Michel. and Gayton, 2002).

The issue of traditional knowledge of forest management has received considerable critical attention. A good evidence of this is what Parrotta and Troper (2012) mention. The authors viewed that traditional forest-related knowledge, innovations, and practices contribute to sustainable development in several ways. According to the authors, widely used products such as plant-based medicines and cosmetics, agricultural and non-wood forest products, and handicrafts are derived from traditional knowledge of forest management. He also goes on to say that most indigenous and local communities live in areas containing the vast majority of the world's forest (and agricultural) genetic resources called biodiversity hotspots. The traditional knowledge and techniques used to sustainably manage and use these genetic resources and ecosystems can provide useful insights and models for biodiversity conservation practices and policies.

Human interactions with nature have shaped both the attitudes and behaviors of people towards nature (Cristancho and Vining, 2004). Thus, every culture has a system of beliefs that guides their interactions with nature. One of the traditional forest management practices commonly found in Sheka zone is DEDO.

The Sheka people have their own knowledge and perspectives regarding the conservation and management of trees. A tree in Sheka was conserved by local belief systems called the DEDO, the tree conservation culture. The DEDO tree conservation culture serves as a spiritual purpose. Traditional tree conservation knowledge by the rural community about forest resource use, management, and conservation practice got considerable attention globally. Communities at a grass-root level who possess a wealth of indigenous knowledge about forest resource use, management, and conservation should be encouraged to maintain and pass this practical and useful knowledge to the next generation.

Traditional forest-related knowledge in forest management practices is attracting greater attention from natural resource management (NRM) because if it is combined with scientific knowledge, it can play a far greater role in sustaining biodiversity and ecosystem services as well as increase forest productivity (Becker & Ghimire, 2003).

This study examines the types of traditional forest-related knowledge and management culture of Sheka communities inhabiting the Sheka forest. The analyses included how the role of traditional forest-related knowledge and culture and associated management practices in the conservation of forest resources. The study also examined the interdependence of the decline of traditional forest-related knowledge and forest cover change. Large tracts of dense and well-protected patches of community-owned primary forests can still be seen in many parts of the Sheka zone. This can be attributed to the traditional forest-related knowledge and management practices of the Sheka communities inhabiting the Sheka forest since time immemorial.

According to the traditional forest-related knowledge and cultural practices of the Sheka communities, the Sheka forest was conserved and managed into different types depending on their intended use. Locally, these forests are known as sacred forest (DEDO). In both Masha and Andracha woreda, a particular type of tree is managed. The sacred forest (DEDO) is frequently related to spiritual connections to the people in the village.

## Methods

### General Description of the Study area

The Sheka Zone is located at about 670km from Addis Ababa. It is found in the South Nations Nationalities and Peoples Regional State. The Sheka zone shares boundaries with the Oromia Regional State in the North, Bench Maji Zone in the South, Gambella Regional State in the West, and Kefa Zone in the east. The total area of Sheka was 2175327 ha. Geographically, the Sheka Zone lies between 7°24'–7°52' N latitude and 35°31'–35°35'E longitude. The Zone has three woredas namely: Masha, Andracha, and Yeki. In the Zone, there are 56 rural and 7 urban peasant associations (Pas) in three woredas.

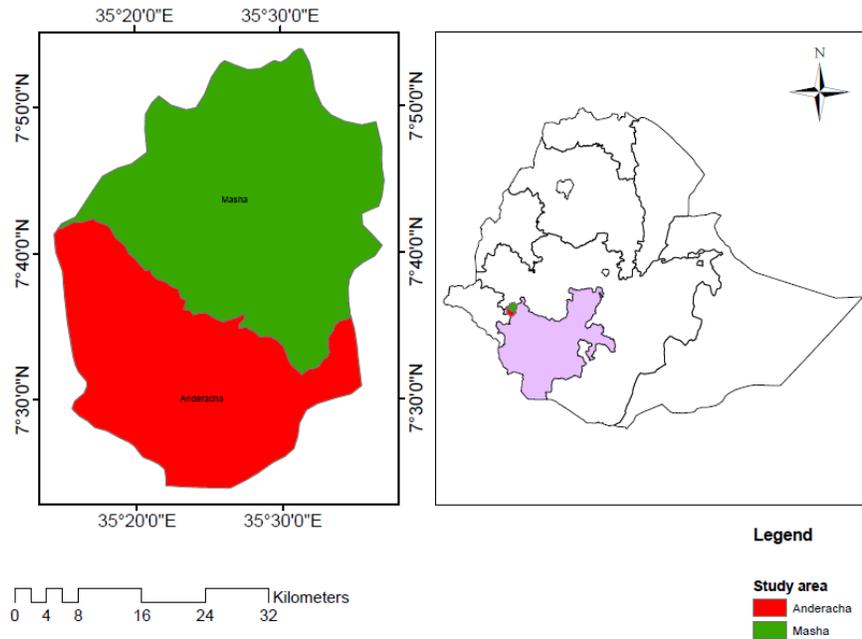


Figure 1: Map of study area

### Participants and setting

The researcher interviewed all research participants that belongs to Sheka ethnic group and other clan leaders (Gebi tato) had identified as "traditional forest-related knowledge experts," i.e., persons recognized by the Sheka community as knowledgeable about traditional forest-related knowledge. Besides clan leaders (Gebi tato) and community elders of Sheka people, the study has used additional potential informants from governmental and non-governmental organizations (NGO). The researcher has got permission from both the government office and traditional committee lead by clan leaders (Gebi tato) association.

During identifying of informants' clan leaders (Gebi tato) were consented to select research participants in providing an appropriate response to the research under investigation. Clan leaders (Gebi tato) and older men whose age is above 50 years and native Sheka ethnic are purposefully selected from members of the traditional committee. The inclusion of the research participant for the interview was based on the level of understanding of traditional forest-related knowledge of Sheka people, as judged by a traditional committee.

In each village, the cultural practice of forest management (DEDO) represented by a headman selected from among male adults; therefore, all females and younger males were purposefully excluded from the study. Younger men were not included in the interviews. This is mainly because the culture of forest conservation practices of Sheka people was forgotten for more than 30 years or longer, for this reason, only Clan leaders (Gebi tato) and older men whose age is above 50 years were purposefully selected.

The reason for the exclusion of female participants from the study is the cultural practice of forest management (DEDO) represented by a headman selected from among male adults only. The Clan leaders (Gebi tato)

and older men had experience of forest conservation culture through traditional forest-related knowledge. Therefore, the likelihood of the information they provided mostly reliable. Other criteria that decide whether people who take part in the examination understudy are their readiness to be met and their accessibility while the interviewer was in the network.

All research participants were asked to review and sign a consent form before conducting full interviews. The consent form described the nature and purpose of the study. In the consent form, each informant was notified that their response to the research question entirely confidential and just individuals from the exploration group will approach the data. No data published in dissertations or journals will contain any information through which focus group members may be identified. Their anonymity is therefore ensured. In addition to this, the examination member may pull back from the investigation whenever they, along these lines, take an interest wilfully until the point that such time as they ask for something else.

Twenty participants volunteered for this study. This included ten Clan leaders (Gebi tato) and older men from Masha woreda and the remaining ten from Andracha woreda. All research participants were native Sheka ethnic and lived in the study area for more than 40 years and above. Clan leaders (Gebi tato) and older men were recruited from a member traditional committee that was facilitated by a traditional committee. All research participants were gathered for focus group discussions through appointment in advance this was facilitated by a traditional committee.

The most appropriate day was Saturday because it is a market day for both Masha and Andracha woreda and afternoon was the most convenient time for focus group discussion. This is due to after-market all the research participants may come to Clan leaders (Gebi tato) home. However, for an individual interview, the researcher uses the research participant own schedule and needs to travel to their home by appointment. All working hours and weekends were used for the individual interviews.

With regard to their choice of the interview setting, in both woredas, all focus group research participants had their first interview at Clan leaders (Gebi tato) home but for an individual interview, the research participants prefers to be interviewed in their own home. Interviews with government and non-government organizations were held at their respective offices during working hours by appointment. The arrangement for research participant was done after giving them a brief introduction about the nature and purpose of the study. During the interview, apart from the researcher and the research participant, any other person was not allowed to enter the room, and the door could be closed until the interview was done.

Being a fluent Amharic and Shekinonoo speaker, the researcher took advantage of his bilingual skills and conducted the interview in either Amharic or Shekinonoo, depending on the preferences of the research participant. In order to gain more credibility by research participants the principal investigator hire the co-researcher that is a native and first speaker of the Shekinonoo. The co-researcher was trained for three to four hours about the goals and rationale of the study and interview process and the interpreter's role. The co-researcher helped in guiding the principal investigator by organizing the interview and transcribing the audio data.

A single interview lasted for one to two hours. The length of each meeting relied upon the lucidity and detail of data that the examination member enthusiastically gave. In order to avoid interruptions and background noise, interviews were done in a closed room. Since the practice of forest conservation and management is a little bit older practice, the researcher, needs to patiently listen to the research participant to recall that factual event (or story). Then, the researcher must listen to the research participant to complete their views and opinions on how was the culture and knowledge of Sheka people that could serve as forest conservation and management practices that are the key elements that need to be investigated.

Each informant was asked to discuss the factors that might cause the forest cover change in their village. The interview was less structured and open-ended. The aim was to let the research participant explain how the culture of DEDO was used to manage and conserve the Sheka forest and how they the research participant viewed the current expansion of investment agriculture in their village.

The respondent's views on the interview and FGD were audio recorded. The audio recordings were converted to Amharic, written text data. In fact, there were research participants with whom the researcher conducted the interview and FGD in Shekinonoo as they preferred to be held in it even if they knew Amharic very well. Therefore, part of the audio records were converted into Shekinonoo written text. Then the transcribed Shekinonoo and Amharic data were translated into English by the researcher and an experienced translator who was fluent in Amharic and Shekinonoo, in order to see its consistency.

Accordingly, the data were proven consistent. The translation was context-based. It prioritized content over form because it is unlikely to find a word for word concordance between the local languages and English. Hence, the translation was made by finding equivalent meanings that are rendered in word and deemed most appropriate in the English language. Finally, the translated English text data were analyzed and interpreted thematically.

### Recruitment Process

Access in qualitative research refers to how a research investigator going to gain access to the people he needs to interview. For qualitative research that employs ethnographic methodology like this, it is heavily dependent on key informants (community leaders and clan leaders). The Sheka zone has organized a community leader and clan leader for consolidate the tradition of the Sheka people. For any research purpose, the information required in relation to the Sheka people's tradition is obtained from community elders and clan leaders (Gebi tato). Accordingly, the zone administration allowed me to gain access to make interviews with community elders and clan leaders (Gebi tato).

This research employed criterion sampling for this study in line with an ethnographic methodology that examines the shared patterns of behaviour, convictions, and dialect inside a social gathering, and to do this requires broadened times of perception by the researcher (Petty et al., 2011). Criterion sampling involves reviewing and studying 'all cases that meet some predetermined criterion of importance' (Patton, 2002, p. 238). To know the knowledge and practice of traditional forest-related knowledge, there must be explicit inclusion/exclusion criteria that include specifications for methodological rigor.

This required the direct participation of Sheka community elders and clan leaders were sought for recruitment in order to investigate their views on culture and practice on traditional forest-related knowledge. Recruitment of participants was required in order to document the traditional forest-related knowledge via semi-structured interviews. The inclusion criteria for this study were as follows:

1. Consenting community elders and clan leaders (Gebi tato) currently working in Sheka traditional committee. This ensured that all community elders and clan leaders (Gebi tato) participants once had traditional forest-related knowledge.
2. Consenting government officials who are currently working on environment, forest, and climate change in the Sheka zone
3. Consenting government officials who are currently working in the Sheka zone of the culture office

The study recruited participants from the community elders and clan leaders (Gebi to) currently working in Sheka traditional committee from the three zonal woreds (the largest administration unit zone). The study recruits three kebeles (Kebele is the smallest administrative unit of zone).

The main objectives of this research is

The Sheka people traditional knowledge of forest includes biodiversity conservation and management of the Ororo tree. In the Ethnographic analysis of the DEDO culture the study:

1. Explain how indigenous ecological knowledge of Ororo tree could be managed and conserved through the DEDO culture.
2. Explore the spiritual connection between the Ororo trees and the Sheka people traditional belief system.

### Results

Today, deforestation is one of the major environmental challenges affecting the world; however, the Sheka people through their indigenous knowledge of forest conservation strategies can sustainably manage the Sheka forest. The Sheka people have long been sustainably managing and conserving the Sheka forest by utilizing different procedures. Shockingly, these indigenous methods for normal asset administration and nearby adjustment techniques are ordinarily absent from scientific forest management and not archived. The DEDO culture demonstrates how the Sheka people through their indigenous culture can provide valuable, appropriate, and effective forest conservation strategies.

The study findings including the major themes and sub-themes emerging from the data. Data obtained from two woredas in Sheka zone was derived through purposive sampling technique in 2016-2017 to assess the impact of traditional forest-related knowledge in environmental conservation. Data were collected through a combination of interview and focus group discussions with research participant and government officials. Interviews were held with **20** research participants composed of Clan leaders (Gebi tato) and older men drawn from 3 agricultural investment in **2** local government areas in the Sheka zones.

Here under results of the analysis of " the DEDO culture" are explained in detail by considering key points

Table 1 Key points to consider during interviews about the sacred Ororo tree (*Ekebergia capensis* ) and the DEDO conservation culture among interviewees in selected villages

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Statement about the sacred forest (GUDO) belief

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- Do you believe the spiritual connection between the DEDO forest conservation culture with the Ororo tree (*Ekebergia capensis*)
  - Do you believe the DEDO forest conservation culture could manage and conserve the Sheka forest
  - Do you believe the sacred tree(DEDO) very useful for the life of the human being
  - Do you believe Tender an lightning will damage the villager if the Ororo tree (*Ekebergia capensis*) is felled
  - Do you believe the protection of the sacred tree(DEDO) associated with abundances of yield in the harvest season
  - Do you believe Cutting of the Ororo tree (*Ekebergia capensis*) associated with loss of life and property
  - Do you believe the sacred tree (*Ekebergia capensis*) believed to be the house of angels
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Traditional sacred tree, People's beliefs, and conservation mechanisms in the study area

Six belief systems were identified, and eight conservation mechanisms observed to be in practice in the area, which were relevant to sustainable conservation and management of the Ororo tree. The sacred tree (*Ekebergia capensis* ) and the DEDO culture are the most common cultural institutions in all villages, and they have a direct bearing on the lives and behaviors of the people.

Table 2 Traditional sacred tree, People's beliefs, and conservation mechanisms in the study area

Cultural institution	Name of sacred tree	People’s beliefs	Conservation mechanisms
the DEDO culture	the Ororo tree ( <i>Ekebergia capensis</i> )	Cutting of the Ororo tree ( <i>Ekebergia capensis</i> ), believed to cause damages and loss of life and property to the villagers. anyone who cuts the the Ororo tree ( <i>Ekebergia capensis</i> ), would suffer from horrible disease People worship the Ororo tree ( <i>Ekebergia capensis</i> ) through the DEDO culture The Ororo tree ( <i>Ekebergia capensis</i> ) believed to be the house of ghosts. Tender and lightning will damage the villager if the Ororo tree ( <i>Ekebergia capensis</i> ) are felled in the village No cutting of the Ororo tree ( <i>Ekebergia capensis</i> ) believed to be very useful for the life of the human being.	The Ororo tree ( <i>Ekebergia capensis</i> ) cutting restrictively prohibited in the sacred forest (GUDO). Felling of the Ororo tree ( <i>Ekebergia capensis</i> ) is restricted for every individual of the village the Ororo tree ( <i>Ekebergia capensis</i> ) are not unnecessarily felled The Ororo tree ( <i>Ekebergia capensis</i> ) are allowed to grow freely. The Ororo trees ( <i>Ekebergia capensis</i> ) are protected from any kinds of destruction. Touching of the Ororo tree ( <i>Ekebergia capensis</i> ) is not allowed The Ororo trees ( <i>Ekebergia capensis</i> ) are protected from damage by wild animals. Do not use any parts of the Ororo tree ( <i>Ekebergia capensis</i> ).

People’s knowledge of the sacred ororo tree (*Ekebergia capensis* )

The vast majority of respondents (97%) were aware of the presence of the Ororo tree (*Ekebergia capensis* ) and the DEDO culture in and around their village. It is found near to villages of the community. Older people (>55 years of age) could more accurately describe Ororo tree and DEDO culture than younger people could, but this difference was not significant. All research participants from Masha and Anderacha woreda knew where these Ororo tree (*Ekebergia capensis* ) stands. All of them worshiped at least once in the Ororo tree (*Ekebergia capensis* ).

The spiritual connection between the DEDO forest conservation culture with the Ororo tree (*Ekebergia capensis* )

The forest people around the world through their indigenous knowledge contribute to the sustainable management of forests. The Sheka people in southwestern Ethiopia by their ecological knowledge, values, and spiritual use could manage the Ororo tree (*Ekebergia capensis* ). The Ororo tree (*Ekebergia capensis* ) is one of the most important endemic tree species in the Sheka zone southwestern Ethiopia and, at the same time, one of the most endangered species. Eighty-five percent (85%) of respondents confirmed that the sacred Ororo tree (*Ekebergia capensis* ) is a cultural symbol related to indigenous beliefs and signifies spiritual connections to the forestland and with Sheka people.

The Sheka people in southwestern Ethiopia had a well-defined social structure that is closely associated with forest management. Through their traditional forest-related knowledge, the Sheka people conserve and

manage a single larger tree called Ororo. The Ororo tree is a special type of tree that has cultural and spiritual attachments that are presently non-existent. This unique forest conservation practice has been referred to as the DEDO culture. The culture of DEDO comes up with worshipping around the Ororo tree.

Participants of FGD both in Masha and Anderacha woreda explained the historical connection of the Ororo tree with the DEDO culture. "According to Sheka people traditional belief once upon the time in the history of Sheka people, there was a drought for a long period. The drought had damaged all trees except the Ororo tree. The survival of Ororo trees from the rest made the Ororo tree as cultural symbols and related to the indigenous belief that signifies spiritual connections to God (Shemayo tato).

During drought time in the history of Sheka, there is a saying that the angel of GOD rest under the Ororo tree because of this if people pray or worship under the Ororo tree, the angel of God will take their prayer to God. As many Sheka people do believe that the angel of GOD rest under the Ororo tree because of this if people pray or worship under the Ororo tree, the angel of God will take their prayer to God. Because of the spiritual connection to this particular tree of Ororo, the Ororo tree will not be used for any other economic activities like the production of honey and other domestic uses. Therefore, the conservation of the Ororo tree has a direct spiritual connection and has contributed to the conservation and protection of the Ororo tree.

#### The Ororo tree and DEDO cultural ceremonies

Overall, 86% of respondents "agreed" with the Statement that the ororo sacred tree and the DEDO culture are used by sheka people as cultural symbols related to indigenous beliefs and signify spiritual connections to the forests" (Table 1). The belief that tender and lightening will damage the villager if the sacred Ororo tree (*Ekebergia capensis*) are felled in the village was very popular—86% "agree" response (Table 1).

The DEDO culture was celebrated once in a year in the months of December around Christmas as Thanksgiving Day. Offerings were made each year at this time. One of the key informants in Gecha Town explains how the DEDO culture was celebrated each year. During the months of December, when yields were harvested, people in the village were gathered together to celebrate Thanksgiving Day around the DEDO sacred tree (Ororo) under the advice of clan leaders (Gebi tato). The DEDO sacred tree (Ororo) culture was celebrated near to village according to their clan and the clan leaders (Gebi tato) as "traditional forest-related knowledge experts," i.e., persons recognized by the Sheka community were responsible for making and enforcing rules related to the DEDO cultural ceremony.

The purpose of the offering was to giving thanks to GOD (Shemayo tato) for the harvest season. After giving thanks to GOD (Shemayo tato) for the good harvest of the season, the Sheka people pray to GOD (Shemayo tato) the next season to be a season of health, fortunes and good harvest. Therefore, the DEDO sacred tree (Ororo) was believed to bring health, fortune, and good harvest.

The other key informant in his description the way the DEDO culture was celebrated he cogently explained that the DEDO culture was celebrated each year seven days before Christ-mas. local cereals (Teff) were harvested around Christ-mas time and for the DEDO celebration foods and alcohol, drinks were mostly prepared from local cereals called Teff. Wednesdays is a day used for the celebration of DEDO culture. The aim of the DEDO culture was praying to GOD (Shemayo tato) for the next good harvest and for the health of the people.

Another relationship between the DEDO culture and the Sheka people is that long years before the Sheka people did not have health facilities access because of this many young and adult parts of the population died at an early age. In fear of this killing disease, all the village members gathered around the Ororo tree and celebrated the culture of DEDO and pray to GOD (Shemayo tato) about their health. Therefore, the Ororo tree is believed to bring health to the Sheka people. According to the Sheka belief, the DEDO tree is untouchable. No one was allowed to cut the Ororo tree. It is conserved and protected well for centuries for spiritual purposes.

The interview and FGD results provide useful examples of the DEDO sacred tree conservation culture and traditional forest-related knowledge possessed by the Sheka people. As an informant recalled:

In the past, the Sheka people have held ceremonies to pray for a successful harvest season and express their thanks to GOD (Shemayo tato). The Sheka people participate in rituals for GOD (Shemayo tato) on the month of December, according to the Ethiopian calendar each year. They collectively participate in traditional rituals of food preparation and beverages (made from Teff) before they put the harvest into the granary. These rituals play an important role in encouraging relationships between members of the community.

#### Cutting of Ororo tree (*Ekebergia capensis*)

The majority of respondents (80%) said they the DEDO tree conservation culture could manage and conserve the Sheka forest. Spiritual connections and beliefs were the main reasons why people worship around the sacred Ororo tree (*Ekebergia capensis*). The protection of the sacred Ororo tree (*Ekebergia capensis*) enables the conservation of natural forests from earlier anthropogenic disturbances, allowing trees and other plant species to reproduce. The entire the sacred Ororo tree (*Ekebergia capensis*) was put under the imposition of local cultural beliefs.

The Sheka people considered the Ororo tree to be sacred and believed to protect the village from natural calamities, famine, and diseases Therefore the culture of DEDO sacred tree (Ororo) contribute positively to the conservation of Ororo tree. Access to DEDO sacred tree (Ororo) is forbidden by Sheka culture, and the DEDO sacred tree (Ororo) is untouchable and no person is allowed to cut or make use of the DEDO sacred tree (Ororo) for another purpose. Therefore, the DEDO sacred tree (Ororo) is considered to be the king of the trees in the village.

The DEDO sacred tree (Ororo) once exists in every village as spiritual or sacred sites. These trees are usually very tall and long. The Sheka believe that these trees can provide safety, fortune, and good harvests for their villages. According to one of the key informants in Masha woreda, Yepo Kebele the clan leader (Gebi tato) said, "no one is allowed to cut down these trees, and any person who cuts these trees will be punished because of the curse that is associated with indigenous belief.

According to the research participant, there was a true story about a person who violated the culture of DEDO. In Masha woreda, there was a person who cut down a DEDO sacred tree (Ororo): he was dead by thunder and lightning immediately. The above quote about a person reminds that the Sheka people represent the DEDO sacred tree (Ororo) has direct connections to their GOD (Shemayo tato). According to Sheka traditional belief, if any person who cuts down the DEDO sacred tree (Ororo) rain will become abnormal, usually resulting in floods. There is a similar story in Anderacha woreda about the death of a young man after he cut down the DEDO sacred tree (Ororo) he died consequently.

Even though the younger generation has limited knowledge of the DEDO sacred tree (Ororo), all Clan leaders (Gebi tato), and older men who participated in this research work agreed that they firmly believe in the supernatural meanings attached to the DEDO sacred tree (Ororo). All twenty research participants from the study area knew how and where the DEDO sacred tree (Ororo) conservation culture was practiced. All of them had worshiped in the DEDO sacred tree (Ororo) for many years in their lifetime.

According to research participants from the community elderly: no one dares to touch the DEDO sacred Ororo tree. According to the research participant (KI-9, 28 Jan 2016 Masha Town), those who touched the DEDO sacred tree (Ororo) would be cursed and died. During the interview, both Clan leaders (Gebi tato) and older men told us that before 30 years ago, the DEDO culture was a very common traditional belief in almost every village in the Sheka zone. However, this tree conservation cultural has gradually disappeared, particularly in recent decades.

#### Discussion

Over the years, there have been increasing concerns about the decline of traditional forest-related knowl-

edge, leading to calls for effective responses to ensure forest sustainability (Parrotta and Agnoletti, 2006). This concern has been increasingly recognized, documented, and utilized both in developing and developed countries (Berkes et al., 2000; Bürgi et al. 2013; Ramakrishna,2007) In Ethiopia, forest conservation and management range from state-owned forest to privately owned forests. There was no room for traditional forest conservation and management approaches. The first approach such as state-owned forest management (Dessalegn Rahmato, 2001; FDRE, 2007). The latter approach advocates privately owned forests. However, it has been argued that both of this approach alone often fails biodiversity conservation unless it is supported by traditional forest conservation and management approaches.

The role of indigenous knowledge in forest conservation in Africa has also been recognized in recent years. Its potential contribution to Africa's ecology has not been well studied. Recently, very few studies have been conducted to depict the contribution of traditional knowledge to biodiversity, climate change, and combating desertification. Traditional forest-related knowledge has upheld the occupations, culture, personalities, and the woodland and farming assets of the neighbourhood and indigenous networks everywhere throughout the world (Parotta and Trosper, 2012). Traditional forest-related knowledge (TFRK) is of specific significance to indigenous networks, people groups, and countries (Michel H & Gayton DV 2002). Numerous specialists have put accentuation on incorporating traditional forest-related knowledge and scientific knowledge for the protection of timberland nature forests (Michel H & Gayton DV 2002; Menzies, CR, & Butler, C 2006).

The negative attitude towards traditional forest conservation culture can undermine local, national, regional, and international conservation initiatives. Gadgil et al. 1993, Gadgil M, Berkes F 1991, and Gadgil M 1985 argue that traditional forest conservation culture plays a pivotal role in forest conservation and management. Therefore, it is crucial to recognize and incorporate the importance of such conservation culture into forest resource management plans. The recognition of traditional forest conservation culture in forest management will not only affect population viability but may also have broader environmental impacts. The recognition of traditional forest conservation culture is also necessary for ensuring that forest management policies are both effective and sensitive to local realities (Gupta, H.K. 2005 and Gupta, H.K. 2006). In this regard, it is important to continuously conduct studies on forest management to inform area-specific policies as the conservation culture toward forest often differs from one setting to the other. Few studies to understand traditional forest conservation culture in forests are situated in Ethiopia (Desalegn Fufa, 2013). This is despite the fact that Ethiopia is wealthy in its flora, and it is evaluated to harbor more than 6000 types of higher plants, of which around 125 are endemic (Ib Frus 1982), requiring their protection and conservation.

A common thread in developing and applying conservation policies requires gaining the support of traditional forest conservation cultures and engaging these conservation culture in collaborative conservation efforts (Gadgil et al. 1993; Gadgil M, Berkes F 1991; Gadgil, M. 1985; Gupta, H.K. 2005, Gupta, H.K. 2006). Therefore, studies in traditional forest conservation culture contribute to the development of effective forest conservation and management policies that are sensitive and relevant to local conditions and the degree to which local communities are willing to coexist with forest resources (Gadgil et al. 1993; Gadgil M, Berkes F 1991, and Gadgil, M. 1985).

Traditional forest conservation culture in sub-Saharan Africa has vast indigenous knowledge that has kept its forest ecosystem pristine and protected for decades (Mumma, A. 1999, and Tengeza A, 2000). Other than the spiritual attachment to their environment, rural communities were historically dependent on forest resources for their livelihoods (FAO 2014). However, the introduction of state-sponsored deforestation and markets influencing agricultural expansion in the African continent resulted in centralized control over natural resources by state, which resulted in the taking away of decision-making concerning forest resources from rural communities (GRAIN 2008, Cotula et al. 2009; Deininger and Byerlee, 2011). Consequently, rural communities became passive observers of the forest resources around them. The state forest law of the southern nations, nationalities, and people's region (SNNPR) put community forest under state forest.

The government of Ethiopia adopted state forest laws that put community forest under state forest; therefore, these laws limit the local population forest resources utilization and introduced a total ban on using forest at one point (Dessalegn,2001). This state of forest conservation practice is the detriment of local communities.

As a result, there is an ongoing conflict between the state and the local people in southwestern Ethiopia, which is attributable to the hostile relationship between conservation and livelihoods of communities living adjacent to and within the sheka forest.

To our knowledge, this is the first study to analyze traditional forest conservation culture of forest, using DEDO tree conservation culture as a proxy, how the Sheka people through their indigenous culture can provide valuable, appropriate, and effective forest conservation strategies. The analysis is important in providing insights on how tree conservation culture and current practices may influence forest sustainability and its supporting institutions. This is crucial for rethinking the design of conservation policies that allow for effective management and planning, sensitive to local realities. Specifically, this study analyzes the spiritual connection between Ororo trees and the Sheka people traditional belief system could be managed and conserved through the DEDO culture.

## Conclusion

The case study presented on DEDO culture demonstrates that the Sheka people have their own indigenous knowledge, beliefs, and management practices related to forest. This cultural and belief system is inherited from their ancestor since time immemorial and evolving over generation. The culture of DEDO described in this article shows that it still exists in every element of local forest utilization, protection, and management and allocation of forest. As the study clearly shows, the DEDO culture is productive and efficient for forest management, and this useful culture has demonstrated its significance in the protection of various forest types and tree species, contributing to the conservation of biodiversity. Thus, the DEDO forest conservation culture is illustrated in the Sheka people forest utilization, protection, and management provide important insights into the protection of various forest types and tree species, contributing to the conservation of biodiversity. The culture of DEDO played an important role in maintaining the conservation of the DEDO sacred tree (Ororo) and biodiversity therein. Over time, the DEDO sacred tree (Ororo) conservation culture has been declining and various factors have contributed to the declining of this useful ecological knowledge. These include anthropogenic factors, modernization, and religion.

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**Data Availability statement:** data publicly available in a relevant repository such as Dryad

## Declarations

**Ethics approval and consent to participate:** The study was approved by the CAES Research Ethics Review Committee at the University of South Africa (UNISA) on 10/02/2015 with Ref #: 2015/02/004, name of applicant: Mr GH Shoddo, student #:53342852. Decision: Ethics Approval, Supervisor: Prof Teshome Soromessa Aurgessa, Qualification: Postgraduate degree.

**Consent for publication:** “Not applicable”.

**Availability of data and materials:** All data generated or analyzed during this study are included in this published article (see literature cited).

**Competing interests:** The authors declare that they have no competing interests.

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