

ORIGINAL ARTICLE

Spiritual Stewardship and Contemporary Challenges of Sacred Forests in Zege Peninsula, North West Ethiopia: A Qualitative Study

Mindaye Shimekit^{1*} ; Yihenew Alemu Tesfaye² & Teferi Abate Adem³

Abstract

This study examined spiritual stewardship and contemporary challenges of sacred forests in Zege Peninsula, along the southern shore of Lake Tana in Ethiopia. The most important spiritual stewardship is the teachings and everyday religious practices of the Ethiopian Orthodox Tewahdo Church (EOTC) which foster sound tree management and land use systems around the church yard. Specifically, Zege stands out as a reserve of relatively dense trees and bushes amidst highland Ethiopia's intensively deforested and plowed landscape, primarily due to the continued enforcement of a 14th century religious covenant believed to have been entered between an EOTC saint, Betre Maryam, and residents. The covenant prescribed hoe-farming to cultivate coffee, fruits, spices, vegetables, and crops, while strongly prohibiting intensive plow-agriculture and cattle herding. Framed with the 'spiritual ecology' approach, the study discussed these issues based on ethnographic research design through rich qualitative data collected through a combination of participant observations and semi-structured interviews. A purposive sampling strategy was employed to select 46 participants for interviews, which include 26 men and 20 women, based on their capacity and relevance to the research questions. The data were analyzed using content and thematic analyses with an inductive analytical approach. While emphasizing the continued relevance of this deep-rooted spiritual stewardship and associated emotional affective ties of residents in enforcing pro-forest conservation behaviors and collective ownership, the findings also highlight recent trends and factors, such as climate change-related calamities, urban expansion, and increased commercial and demographic pressure on land that have threatened the continuity of the sacred forests. Mitigating these threats requires systematically integrating local ecological knowledge and sound forest management practices with community owned, co-designed, government and/or donor-supported natural resource conservation interventions.

Keywords: Sacred forests; Forest conservation; Traditional ecological knowledge; Spiritual stewardship; Spiritual ecology

1 Department of Social Anthropology, Faculty of Social Sciences, Bahir Dar University, Bahir Dar, Ethiopia (email: mindayes@gmail.com) .

*Corresponding Author email: mindayes@gmail.com

2 Visiting Scholar, Dire Dawa University, Department of Sociology and Social Anthropology, Dire Dawa, Ethiopia; and Adjunct Staff, Department of Social Anthropology, University of Gondar, Gondar, Ethiopia (email: yihenewtesfaye@gmail.com)

3 Senior Research Anthropologist, Human Relations Area Files (HRAF) at Yale University, USA; and Adjunct Associate Professor, Bahir Dar University, Bahir Dar, Ethiopia (email: teferi.abate@yale.edu)



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Introduction

Sacred forests, wooded landscapes protected by religious beliefs, are vital reservoirs of biodiversity, including endangered flora and fauna (Boadi et al., 2017; Cardelus et al., 2017; Khan et al., 2024; McNeely et al., 2010). In long-settled and highly deforested agricultural areas like the Ethiopian highlands, sacred forests represent an important, long-standing tradition of safeguarding the cultural, religious, and, to some extent, economic values people recognize in these landscapes (Aerts et al., 2016; Teku et al., 2024; Wassie et al., 2009). Their distinct biodiversity provides key insights for mitigating the adverse effects of climate change, offering practical models that integrate religiously enforced local conservation with government-funded national and sub-national climate action programs (Bhagwat and Rutte, 2006; Daye and John, 2015; Manikandan, 2011; Maru et al., 2023).

Religious beliefs and related spiritual practices have long been recognized for inculcating sound natural resource management practices that contribute to preserving forested landscapes by limiting unwanted tree cutting (Kala, 2017). As one of the first Christian denominations in Africa, the Ethiopian Orthodox Tewahdo Church (EOTC) has long fostered the preservation of indigenous forests as places of worship and cemeteries. Studies have shown that these enclaves of sacred forests have served the highland Ethiopian ecology as regional biodiversity hotspots and exhibit surviving plant and animal species (Maru et al., 2020).

As correctly noted by Wassie et al. (2009) and Teku et al. (2024), the EOTC did this by planting, protecting, and preserving trees. The impact of these efforts is physically observable in the presence of forest and grove pockets around the churches. All EOTC churches, whether smaller residential parishes (*debir*) or large monasteries (*gedam*), are typically surrounded by pockets of thick forests comprising tall trees and bushes. The wooded homestead of each church is regarded as a revered site where invisible holy spirits dwell.

Located on the southern shore of Lake Tana, the sacred forests of the Zege Peninsula owe their origin and continued presence to the teachings of the EOTC and associated spiritual beliefs. Surrounded by Lake Tana, the peninsula is home to four monasteries and five churches, all belonging to the EOTC. An estimated total of 10, 083 people live on the peninsula, in several scattered homesteads, often nucleated into hamlets encircling churches and monasteries (Asfaw, 2009; Bahir Dar city administration, 2019).

According to the EOTC, the 14th century wandering monk Saint Betre Maryam established a covenant (*Kidan*) with God over Zege Peninsula, pledging the people a living, protection from natural disasters (hailstorms, frosts, droughts, etc.) and wild animal attacks—provided they refrained from cutting trees, using ox drawn plows, raising large browsers,

and hunting (Asfaw, 2009; Boylston, 2012). This covenant, its social norms, and the community's respect for these prohibitions have preserved the peninsula's sacred forests for centuries, while also shaping Zege's distinctive identity rooted in forest stewardship.

Recently, however, there is a growing popular and policy concern that the currency of this covenant for ensuring the continuity of Zege's sacred forests has weakened. Asfaw (2009) and Belay et al. (2019) illustrated the same trajectories that have occurred in recent times in the study area, the Zege peninsula, where previously intact sacred forests have begun to degrade owing to the combined pressures of demographic growth, commercial interests, and climate change. Consequently, there is an urgent need for a detailed understanding of the unprecedented threats to the sacred forest reserves on the peninsula.

This study employed a 'spiritual ecology' approach—a dynamic pursuit at the nexus of religion, spirituality, and environmentalism—vital for conceptualizing conservation from a spiritual angle. Though sometimes criticized for lacking political commitment and uniform effectiveness, spiritual ecology remains influential, as spirituality operate powerfully on multiple levels: generating hopes, mobilizing followers, and guiding emotions through leaders, texts, and rituals often more effectively than secular environmentalism (Mickey, 2020; Sponsel, 2012, 2020). The approach emphasizes spirituality's role in mitigating ecological crises by fostering a deep, eternal human—nature connection (Sposel, 2012, 2020). These relationships have been studied across fields and traditions, encouraging biodiversity conservation—understanding them is essential amid growing resource exploitation and extinction (Marselle et al., 2019; Sponsel, 2012).

Sponsel (2012) and Zylstra et al. (2014) stated that humans' connection with physical nature fosters an intimate relationship that encourages pro-environmental behaviors. Spiritual traditions, ranging from indigenous to Christian cultures, embrace this harmonious relationship with nature, which is crucial for maintaining the natural environment. Egri (1997) and Zylstra et al. (2014) further elaborated the influence of spirituality on the human-nature connection as crucial, as connectedness with nature is a pro-environmental behavior that involves people's beliefs, emotions, and identities.

While existing studies acknowledge religion and spirituality's role in sustaining Ethiopia's sacred forest patches, their focus is largely limited to empirical bio-ecological assessments of selected forests, especially in the northwest. Consequently, nuanced ethnographic insight into how religious beliefs and associated spiritual practices actively shape and sustain conservation behaviors remains lacking. Previous research in and around the study area, by Belay et al. (2019), Cardelus et al. (2017), Amare (2017), Mequanint et al. (2020), and Wassie (2010), has predominantly emphasized ecological dimensions via quantitative methods. Belay et al. (2019) examined species diversity and bio-ecological links with coffee in Zege's sacred forests; Cardelus et al. (2017) quantitatively documented sacred church forest persistence in northern Ethiopia; Mequanint et al. (2020) addressed woody diversity and community structure in Zege Peninsula without explicit ethnography;

and Wassie (2010) explored structural diversity of highland church forests via quantitative approaches. This study complements these works by incorporating systematically collected qualitative ethnographic data, filling this critical gap and offering a more comprehensive understanding of the socio-cultural and spiritual mechanisms underpinning conservation.

This study has three aims: uncovering the EOTC's role in conserving Zege's sacred forests; examining residents' place-based attachment and emotional-affective ties that enforce pro-conservation behaviors and collective ownership; and assessing the changes and challenges confronting spiritual stewardship of the reserve. By providing evidence-based insights, Zege's forest conservation experiences offer a model for managing church forests and natural resources across Ethiopia.

Methods

Description of the study area

Zege Peninsula lies on Lake Tana's southern shore in Ethiopia's West Gojjam Zone, Amhara region. Formerly one of a dozen local units in Bahir Dar Zuria District, it has remapped into Bahir Dar's city administration in 2006 amid the city's rapid expansion toward metropolitan status (Asfaw, 2009; Ayalew and Alemu, 2021). Covering ~1,500 hectares, 11°40'—11°43'N, 37°16'—37°21'E (Figure 1), it is administratively split into two kebeles (the smallest political unit in Ethiopia), Yiganda Mehal Zege *kebele* and Ura Kidane Mihret. The remaining portion forming Afaf town, a transport hub and marketplace (Asfaw, 2009; Belay et al., 2019).

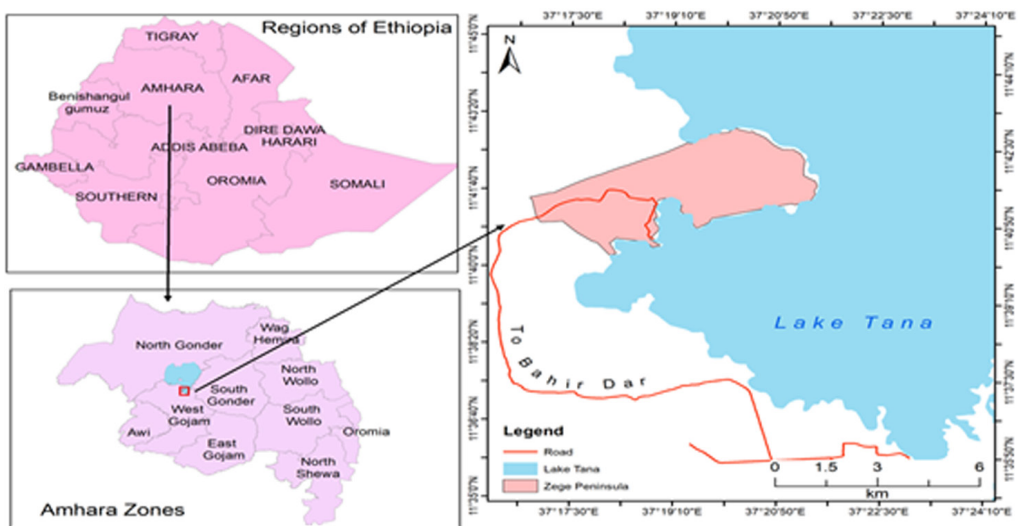


Figure 1: Map of the study area, Zege peninsula

According to the 2007 Population and Housing Census of Ethiopia, the total population of the Zege Peninsula was 8,372 (CSA 2007). By 2019, the population had increased to an estimated total of 10,083 (Bahir Dar City Administration 2019). While most residents are Orthodox Christians, the Peninsula is also home to a Muslim minority that accounts for 3% of the population. Muslims, mostly concentrated in Afaf Town, engaged in trading and off-farm activities (Asfaw, 2009; Belay et al., 2019).

Zege Peninsula has a *weyana dega* (temperate) climate, with temperatures ranging from 10 to 26°C and annual rainfall of 1,029–1,501 mm. Coffee gardens are the primary income source, supplemented by fruit trees, vegetables, and spices such as ginger, *ades* (*Myrtus communis*), and *gesho* (*Rhamnus prinoides*). Uncultivated areas contain tall and thick savannah trees of indigenous species, including *Albizia schimperiana* (sesa), *Ficus* sp. (warka), *Cordia africana* (wanza), *Olea capensis* (woyra), and *Africarpus falcatus* (zigba). The peninsula hosts one of Ethiopia's remaining dry Afromontane forests, valued for biodiversity, economic role, and spiritual significance, attracting local and international pilgrims (Alelign et al., 2007; CARE Ethiopia, 2001; Teklehaymanot & Giday, 2007).

Data collection and analysis

Grounded in constructivist research paradigm, this study adopted a qualitative approach, which asserts that reality is socially constructed through human interaction and shared meaning. Following an ethnographic design, we actively interacted with people and observe places, events, and challenges in their natural setting over the course of more than a year, from April 3, 2024, to May 5, 2025. Data were collected using qualitative methods, including semi-structured interviews and participant observations. The informants included community members, religious figures, elders, *kebele* and district officials, agriculture development agents (DAs), and professionals working in non-governmental organizations (NGOs).

Using purposive sampling, 46 informants (26 men and 20 women) were selected based on their relevance to the study. Of these, 33 were community members, including religious figures, elders, and local gardeners, from scattered hamlets across the two *kebeles* and one town administration, providing data on the EOTC's role, community engagement, and conservation challenges. The remaining 13 were key informants: five *kebele*/district officials, four Agricultural Development agents (DAs), and four NGO professional (from ORDA, NABU, and JCCDO) working on the peninsula. This approach secured insights from well-acquainted experts on community engagements, inter-relationships, and specific challenges facing sacred forests conservation.

Having determined that a qualitative approach and semi-structured interviews were appropriate for the study, we developed an interview guide and conducted the interviews individually. 33 semi-structured interviews were carried out in the study setting, which

include community participants living in scattered hamlets in Afaf town, Ura Kidane Mihiret Kebele, and Yiganda Mehal Zege Kebele. The remaining 13 key informants were interviewed both in the study area and in Bahir Dar city. All interviews were conducted in Amharic, as all interviewees were native speakers of the language. Each session lasted between 45 minutes and one hour, and the recordings were later translated into English for the purposes of this study.

Participant observation was also employed, yielding unique insights beyond interviews and helps to contextualize findings gathered through semi-structures interviews. The first author observed churches' hands-on conservation practices on the peninsula, captured spiritual entities' practical challenges, and actively participated in key social, religious, and public events relevant to the study. Acting as a participant observer, he immersed himself in daily community life to observe behaviors, interactions, and norms; he built rapport with community leaders, religious figures, and residents, and, since the study setting was unfamiliar, recruited a local assistant. Observational data were systematically recorded and organized by defining objectives, preparing a checklist, documenting behaviors in real time, and applying strategies to ensure reliability and validity.

Data collection continued until saturation—when new information, themes, or insights ceased. The dataset comprised transcripts from digitally recorded interviews and field notes from participant observations. The first author and an assistant translated and transcribed all recordings. Manual coding used *in vivo* codes (derived from participants' own words to capture authentic voices) and *a priori* codes (informed by research questions, theory, and literature); together, these deepened interpretations and validated outcomes. Content and thematic analyses extracted shared meanings, recurring patterns, and trends from the qualitative data, which progressed from meaning units and codes to categories, themes, and interpretations. Secondary sources included relevant online materials and local/regional reports from government agencies and NGOs active in the area.

This study triangulated multiple data sources and methods indicated above to cross-verifying information. The study employed qualitative quality assurance procedures, including peer debriefing, an important validation strategy where we the authors consults impartial and knowledgeable colleagues expert on issues under the study. As qualitative data are subjective and interpretative, this study also involved verification of data analysis and interpretations to ensure credible and systematic findings through recognized strategies.

The study adhered to ethical guidelines, securing ethical clearance and approval from Bahir Dar University's Faculty of Social Sciences, Department of Social Anthropology. Key procedures included prior informed consent, cultural respect, privacy protection, and anonymity during analysis. We also remained reflexive throughout the study to prioritize participants' voices.

Results and Discussions

The Role of Ethiopian Orthodox Tewahdo Church (EOTC) in Forest Conservation

Originating from 14th-century monastic settlements founded by Saint Betre Maryam, the Ethiopian Orthodox Tewahedo Church (EOTC) has played a pivotal role in conserving the sacred forests of the Zege Peninsula to the present day (Asfaw, 2009). The Church acts as the spiritual guardian of the sacred forests through what can be termed ‘Sacred Cosmology and Conservation’, a framework encompassing its beliefs in invisible holy beings, its perception of the forests as earthly representations of heaven, and its adherence to the covenant of Saint Betre Mariam. Additionally, the Church has reinforced forest protection through ‘Religious Norms and Environmental Governance,’ which include holy-day restrictions, spiritual sanctions, and explicit prohibitions against tree cutting.

Sacred Cosmology and Conservation

Zege Peninsula was first settled in the 14th century by EOTC monks and nuns following the footsteps of Saint Betre Mariam, whose monastic life is credited with the flourishing of the sacred forests (Asfaw, 2009). The long-established institutional presence of demographically significant church community led to vigorous doctrinal and spiritual practices that played a considerable role in protecting the sacred forests of the peninsula. More specifically, the peninsula has long featured two forms of monastic life. The first is coenobitic monastic life, which emphasizes communal worship and discipline. The other is hermetic monasticism, which focuses on solitary devotion (cf. Risse, 2008; Tamanini, 2017). Together, these monastic types upheld spiritual values and sustainable practices that led to the formation of a community of de facto conservation managers with a collective responsibility for careful stewardship and deep respect for local ecology (Howard, 2024). Beyond their outward role as conservation managers, these monastic communities also endeavored to maintain a peaceful and decent life in the forest to comfort ecclesiastical community members, including monks and nuns, during devotion. In this regard, Zege’s churches and monasteries experience shows a striking similarity with the ways Buddhist monks and nuns in the Far East used sacred forests for solitary meditation. As described by Sponsel (2012), non-monastic community members and visitors are forbidden from disturbing the natural environment, including animals, plants, or other natural occurrences there or nearby, to create a peaceful environment for the monks and nuns of the Buddhist religion.

Crucial to maintaining this tranquility is the widespread belief among residents that sacred forests are inhabited by hundreds of invisible holy beings, ranging from benevolent spirits to God-favored fathers, particularly in dense areas near Lake Tana and in church compounds. Informants reported hearing voices or prayers from these beings, who

are considered malevolent to anyone harming their forest dwellings. As a result, the community of the peninsula safeguards the forests by collectively avoiding large-scale human invasions and unnecessary disturbances, including making loud noise while in the forest. These prohibitions show deep respect for the invisible supernatural beings believed to live in the forest. This concern bears striking similarities to Zhu et al.'s (2022) study of spirit-appeasement practices that maintained the sacred forests and water bodies among China's Hani society.

The EOTC, including churches and monasteries in Zege, has also been fostering forest protection for aesthetic considerations. Religious leaders and ordinary farmers alike believe that improved forest coverage around churches and monasteries creates an aesthetically beautiful habitat for both humans and non-human beings. Beyond their aesthetic value and spiritual services, such forests also serve as comfortable shade during outdoor religious processions and periodic ceremonies. An elder community member described this stating “ዛፎች የሌሉት ደብርና ጢም የሌለው መምህር አንድ ናቸው”, meaning ‘a church without a forest is like a monk without a beard’. This symbolic analogy emphasizes the significance of forests as major identifiers of the location and spatial separation of churches and monasteries from other landscapes.

This physical separation points to deeper theological reality, because for Orthodox Christian Ethiopians, Zege's sacred forests, together with many other church forests, exemplify a glimpse of life in heaven. In addition to having different life forms, including wild animals, plants, and other animate and inanimate beings, heaven is believed to be a place of eternal peace where no creature threatens or destroys others. A priest informant described this presumed connection as follows:

Our forefathers, including Saint Betre Mariam, taught us that the peninsula's natural environment is a replica of Jerusalem and heaven. Consequently, if we protect and take care of the peninsula's natural environment, we will be blessed and join Heaven in the afterlife. However, if we disobey to this prohibition, we will face curses and end up in sickness, animal attacks including tigers' and snakes', thunderstorm hits, and death (interview conducted on September 18 2024 at Zege).

The core of all the above-discussed EOTC mechanisms for protecting Zege's sacred forest is the covenant that Saint Betre Maryam is believed to have made with God, through which the community's protection is guaranteed as long as they refrain from cutting trees, keeping large browsing animals, farming the land, and hunting wildlife. The community extends this protective reverence to Lake Tana, as they believe that Saint Betre Mariam used to pray within the lake wearing his 'iron-plated cloth.'

This covenant is reinforced by the churches and monasteries regular teaching on spiritual ecology, which draws on specific verses from the Holy Bible (Figure 2). One frequently cited verse on the centrality of ecological stewardship is Genesis 2:15, which states that God put man in the Garden of Eden “to work it and keep it,” explicitly highlighting the human duty to safeguard the Earth and its natural environment. A second equally relevant verse is Genesis 2:9 which states that God deliberately created trees as vital and beautiful, implying human responsibility to care for them (Holy Bible, 1996). There is a growing body of literature that shows how the Bible has been used to foster human stewardship of the earth’s natural environment (see, for example, Chuvieco (2012), Horrel (2025), and Timmer (2013) noting that religious leaders and communities launching promising conservation schemes by drawing on pro-environmental sacred texts, rituals, and symbols.



Figure 2: Prayer and preaching session at Ura Kidane Mihiret church (photo by first author, February 12, 2024)

Religious Norms and Environmental Governance

The uninterrupted presence of revered EOTC churches and monasteries has been crucial to Zege’s sacred forest survival. The community views these forests as divinely enshrined homes of sacred beings, making protection a religious duty passed across generations. Leaders and laypeople alike stress safeguarding it, sustaining the forest for centuries. As Mekonen et al. (2019) and Reynolds et al. (2017) noted, the EOTC has long-standing experience preserving sacred forests within its compounds, employing traditional institutions, religious norms and social customs, that embody its conservation ethics and eco-theology.

The resident community actively enacts these conservation ethics through prayers, periodic feasts, and sacrifices to saints inhabiting the peninsula, appealing for divine protection from natural calamities—heavy rain, hail, and severe frosts—that threaten both the community and economically vital plants like coffee and fruit trees. Alongside church and monastery activities, some members engage in a presumably hazard-preventive practice known in Amharic as *Bird Tebaki* ('guardian of severe frost and hailstorm'), wherein local specialists with spiritual ties to the environment pray to safeguard the peninsula and its key plants from those perils. Despite its social and spiritual value, some residents view this practice as superstitious.

Beyond event-based rituals, Zege's churches indirectly conserve forests through regular holy-day calendars. Residents refrain from physical labor, especially cutting trees or plants, on weekly Sundays and revered saintly days honoring figures such as Jesus Christ, Virgin Mary, and Saints, including Michael, Gabriel, George, and Betre Maryam. As respect, they stay home or visit religious sites, leaving nearly half of each month free from strenuous activities. This has reinforced norms of strict forest management. Thus, these religious beliefs and norms function as informal environmental governance—shaping behavior, reinforcing collective stewardship, and bolstering socio-ecological resilience among Zege's community.

Alongside these prohibitions, Zege's churches and monasteries has undertaken practical conservation activities for centuries. They coordinate community and stakeholder efforts to protect the peninsula's sacred forests, soil, and water bodies. Specific actions include conducting terracing work to prevent soil erosion and organizing tree-planting initiatives in and around churches and monasteries. Furthermore, representatives from churches and monasteries are worked as active members of the local Forest Protection and Enforcement Committee or *Timret*, meaning 'unity', which also comprises local administrative officials, agricultural development agents, and representatives of the local community to strengthen conservation efforts on the peninsula.

These collective efforts are further reinforced by the tangible socioeconomic incentives. In the context of Zege, the economic value of the EOTC's spiritual ecology is practically revealed in the knowledge of artisanal craftsmanship and local medicinal plants. It is widely believed that knowledge of these domains is divinely given only to individuals whom God favors, primarily because of their efforts to protect sacred forests. These individuals and their descendants maintain deep affective ties to sacred forests because of the economic gains and unique social status they provide vis-à-vis other community members. For these reasons, both craftsmen and users of herbal medicines stand out in the community as frontline defenders of the sacred forest. Congruently, Sponsel (2012) documented that forests are revered because people respect the spiritual power they hold and this power is manifested in the form of material, food and medication.

The Role of Community's Attachment and Identity in Forest Conservation

A key legacy of the 14th-century EOTC Covenant has a strong collective responsibility for enforcing shared land use norms. Field observations and interviews show that Zege residents hold deep emotional and psychological attachments to the peninsula and its forests. This collective belonging supports conservation for two reasons: first, the combined emotional and economic benefits derived from religiously enshrined land use practices; second, the forests' socio cultural significance as a source of a distinct peninsula wide identity by which residents identify themselves and are recognized by other communities near and far.

Psychosocial and Economic Benefits of Religiously Enshrined Land Use Practices

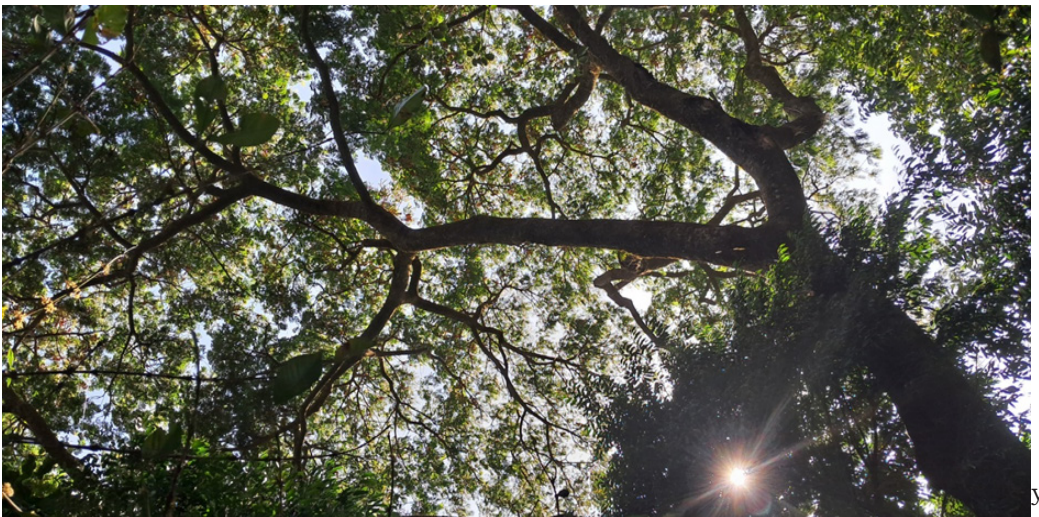
The economic and psychosocial value gained from Zege's religiously enshrined land tenure system has been another incentive for the continuity of sacred forests. Residents of the peninsula access, use, and control land based on a shared covenant that long prohibited oxen-drawn plow agriculture in favor of hoeing agriculture. In addition to fostering biodiversity and resilience to ecological stress, hoe gardening inside evergreen forested areas is known to generate a deep sense of psychosocial attachment between humans and the land. Seebunruang and Arnberger (2026) discussed the role of affective feeling and deep attachment to forested areas in developing pragmatic impacts on residents to have pro-forest behavior. In addition, Zylstra et al. (2014) posit nature as revered, and humans are spiritually connected to it that manifest a sense of responsibility to care for the environment. Fieldwork results also reflected similar dynamics that have fostered in the sacred land of Zege among the residents.

Encircled by thick bushes and often dotted with tall shade trees, household plots in Zege are typically used for cultivating a mix of coffee bushes, garden vegetables, spices, and staple crops. While performing seasonal farm work, such as hoeing and harvesting, residents shared that the work is felt like a spiritual act. This affecting feeling fosters a profound connection between the people and their environment. Informants noted that they often felt unhappy whenever they left Zege for an extended period, even when they are in the nearby city Bahir Dar. Many reported feeling restless and unsettled in urban areas, longing to return to their quieter gardens and peaceful, sacred forests. This experience is best reflected in the following response from one informant:

I spend most of my time in the sacred forest, which my family and I depend on for a living. I have plots of coffee, *gesho*, and fruit trees needing constant care, so I often stay weeks in the jungle without leaving the peninsula. I feel uneasy away from my village; I'd rather go to the local churches and monasteries to

pray and worship in silence and peace, surrounded by sacred trees, than anything else (interview conducted on October 18, 2024 at Zege).

The psychosocially beneficial services of hoe farming are further complemented by the economically gainful values people gain from their deep connection with certain tree species that they select for their practical utility, physical strength, and spiritual significance. This connection motivates residents to protect and, in some cases, plant valued trees. One of such trees is sesa (*Albizia schimperiana*) which is revered and personified as ‘mother’ and ‘father’ sesa. Naturally large and evergreen, the expansive branches of sesa trees shelter the community’s homes and outdoor areas. Even more than that, sesa trees provide much-needed shade to coffee bushes, mitigating possible damage from exposure to harsh sunlight, heavy rains, and violent winds (Figure 3). The community regards these trees as irreplaceable guardians and ensures that they remain standing for generations to come.



first author, December 14, 2024)

Another revered tree in Zege is *eshe* tree (*Millettia ferrugine*). This tree holds a particularly honored position. Although it takes many years for them to mature, the community patiently nurtures them until their true value emerges. Once fully grown, Eshe trees become generous providers; their fresh fruits offer nourishment, and their expansive canopy shelters bushy plants under their branches with evergreen leaves. Beyond sustenance, every part of the Eshe tree serves a medicinal purpose within the community. Their leaves, bark, stems, fruits, and roots are used in traditional healing practices, making these slow-growing trees a living pharmacy for the community. This multifaceted usefulness explains why generations of Zege residents have cultivated a deep respect for

and connection to these trees.

Other economically valued trees include *tid* (*Juniperus procera*), *grar* (*Acacia albida*), and *weira* (*Olea europaea*). They are valued and protected for their exceptional strength and spectacular presence. The list of valued trees also includes *warka* (*Ficus* species) and *zigba* (*Africarpus falcatus*). All of these trees are believed to be the favorite dwellings of invisible supernatural beings and are protected for this ecological service. These trees often adorn monasteries and their surrounding areas, with their expansive canopies providing shade. Beyond their religious importance, they demonstrate astonishing generosity by sheltering economically important plants, such as coffee and fruit trees, from the harsh sun and creating ideal growing conditions under their protective branches.

Having lived closely with the sacred trees for generations, the residents of Zege have developed a profound understanding of the impact of different tree species on their lives. For instance, they avoid planting *wanza* (*Cordia africana*) trees close to homes and gathering areas, believing that they attract thunderstorms to these areas. Experts have also proven that *wanza* trees are more likely to attract thunderstorms because of their high iron content (Lelamo and Kemal, 2021). This orientation of Indigenous wisdom and scientific insight underscores the community's remarkable ecological knowledge and close attachment to the forest.

In sum, centuries of religiously enshrined intensive gardening have ensured the sacred forests' continuity, which in turn has cultivated deep community bonds, pro-environmental behaviors, and enforcement mechanisms. Large, wide-canopied trees are especially prized as shade for coffee—essential not only for harvest success but also for the ecological health for the peninsula and all its living beings. This illustrates the interdependence—or “mutualism” (Zystra et al., 2014)—between coffee, the broader forest, and all living things, including humans. Sato et al. (2021) similarly argued that Zege's forest continuity must be understood through the broader “connectedness” among people, economically valuable trees, and all other natural environment components.

The Role of community's Identity in Forest Conservation

Zege community's collective stewardship of sacred forests is further reinforced by a strong sense of place-based identity as *Zegegna*, resident of Zege peninsula. Similar to the forest-dwelling communities studied by others, including Mbuvi and Kungu (2021), the *Zegegna* feel great pride and pleasure in safeguarding the monasteries, their cultural heritage, and the peninsula's natural environment, including the sacred forests. This dedication reflects an unwavering commitment to faith, profound respect for sacred forests, and a deep-felt attachment to the peninsula. The net effect of all these factors has been the emergence and consolidation of a range of pro-environmental behaviors and enforcement mechanisms. In this regard, a local community member stated:

I am blessed to be a resident of the Zege Peninsula, which our community regards it as a replica of heaven and Jerusalem. It gives me greater comfort and a blessing to worship in my home village as the area is extremely sacred. Moreover, as a proud member of this sacred peninsula's community, I consider myself a guardian of the churches, cultural heritage, and natural environment, including the area's sacred forests (interview conducted on August 19, 2024 at Zege).

Sacred forests are central to Zege residents' identity, deeply embedded in their culture and religion. The towering trees and protected pathways do not merely surround them; they constitute what it fundamentally means to be Zege' community member, making conservation an act of preservation of cultural identity and social order. Tatay and Merino (2023) noted that sacred forests harbor ecology and symbolize community identity/spiritual heritage and motivating protection. However, Yuliani et al. (2023) caution that identity-based conservation may not always be as positive as Zege's experience—it can breed resistance when tied to distrust, dispossession, or outside control, as seen in Sulawesi's resource conflicts.

The residents of Zege have long protected the peninsula from external threats. For generations, they have practiced intra-community marriage, although this tradition has recently begun to loosen, as some members have intermixed with outsiders. Furthermore, the sacred forests and monasteries of Zege were historically restricted to outsiders, including people from other communities and religions. However, in recent times, the peninsula has opened to visitors to promote tourism, which has boosted the local economy, while the community strives to maintain its deep-rooted spiritual and cultural values.

The Zege community is exceptionally tight-knit, united by a shared location on a small peninsula, similar occupations, and Orthodox Christian faith. This solidarity is institutionalized in five strong religious associations (*Yetswa Mahiberat*), which provide spiritual and practical support across generations. This strong connection motivates individuals born and raised in Zege to return annually, even if they have moved far away, especially during the Easter period. This tradition mirrors the cultural pilgrimage practiced by the Gurage community to the Gurage Zone of Southern Ethiopia during Meskel (the finding of the true cross) festivities in Southern Ethiopia as documented by (Shack, 2018).

Moreover, Zege Diaspora groups have founded associations to preserve their cultural identity and the peninsula's ecological integrity. Deeply committed to their roots, they actively support conservation efforts through financial backing. Even if they live far away from their home village, they often return to Zege to meet their families and receive blessings, as they believe that the land is a replica of Jerusalem and heaven. Surprisingly, some community members who have lived outside the peninsula frequently send their siblings back to the peninsula to help them experience and feel their roots, identity, and sacred land, including the religious sites and the surrounding sacred forests.

Changes and Challenges to Spiritual Factors in Forest Conservation

Zege's long-protected sacred forests have been lately threatened by a host of factors. The most important of these are climate change-related calamities, rising demographic and commercial pressures, rapid expansion of towns in and around the peninsula, and apparent neglect of religious sites. Together, these factors have adversely influenced the sacred forests by threatening the spiritual practices and related community engagements that have long fostered pro-conservation resource-use practices.

As climate-related calamities and some associated plant diseases reduce major agricultural productivity, such as those obtained from coffee and fruit cultivations in the peninsula, the residents are obligated to rely on trees for survival, which weakens their collective stewardship. The reduction in income from garden plots and the increasing demand for charcoal and fuel wood from the surrounding towns and cities have strongly threatened the existence of Zege's sacred forests. Asfaw (2009) and Belay et al. (2019) also recognized the impact of poverty-driven forest loss in Zege, which was precipitated by demographic pressure, urban expansion, and adverse climate change-related calamities, despite the presence of deep-rooted religious and cultural prohibitions.

The unprecedented adverse influence of urban expansion onto the peninsula is undermining the community's spiritual and cultural integrity. Many residents are increasingly adopting urban lifestyle that conflicts with the peninsula's strong religious and monastic traditions. A significant portion of the community, particularly the youth, now regards the religiously dictated social customs and norms that have protected the sacred forests for centuries as old-fashioned. Consequently, these sacred forests and their associated cultural and spiritual values now face an imminent danger. These threats are accelerated by rapid cross-cultural mixing and erosion of traditional values among younger generations. In this regard, a religious figure stated:

The rapid expansion of urbanization toward Zege, coupled with the growing influence of worldly life, has led many young residents to embrace urban life and, consequently, abandon their religious commitments. As a result, our monastic traditions, along with the cultural and spiritual values that have long protected the sacred forest, now face imminent danger (interview conducted on September 23, 2024 at Zege).

The peninsula's limited and inheritable land leaves many young residents landless, deepening their sense of hopelessness. Simultaneously, the forces of urbanization draw a significant portion of the community, especially the youth, to seek a better life and standard of living in surrounding towns and cities like Bahir Dar. As generations, especially the youth, abandon the peninsula seeking better opportunities elsewhere, the existence

and survival of the sacred forests of the peninsula, including the spiritual and religious integrity of the community, face a huge challenge. The large degree of out-migration of the youth section, which has contributed a considerable share in conserving the sacred forest, creates a larger gap and puts the forest reserve under an imminent danger of loss.

Urbanization is adversely affecting Zege's sacred forests, as Bahir Dar's rapid expansion intensifies commercial and demographics pressure. Crucially, Zege's incorporation into the city administration opens the door to urban expansion and developmental pressures. For instance, the nearby Afaf town is expanding toward the forest, with legally authorized housing associations constructing buildings in the buffer zone, backed by the city's land-use plan. Within the peninsula itself, a shift from traditional, fire-resistant mud-and-stone houses (*Esat Kela/እሳተ ከላ*) to larger concrete-block buildings is underway (figure 4). This transformation poses a substantial threat to the peninsula's ecological balance and spiritual well-being.

Field observations also revealed that it is difficult to see *Esat Kela/እሳተ ከላ* houses as only a few of them left in the peninsula. In this case, an elder informant explained:

In past decades, communities relied on *Esat Kela (እሳተ ከላ)* houses for their fire-resistant qualities, which safeguarded sacred forests and private property from accidental blazes. Today, however, residents have turned to large concrete buildings—a shift largely driven by the growing urban influence on the peninsula (interview conducted on September 19, 2024 at Zege).



Figure 4: *Esate kela/እሳተ ከላ* house made with mud and stone in the sacred forests (Photo by the first author, January 3, 2025)

Infrastructural developments in Zege also have its own impact on the forest reserve. While the introduction of new road infrastructure to Zege brings economic benefits and easier access to the peninsula, residents are deeply concerned that this infrastructure threatens the area's ecological and spiritual integrity. They argued that expanding road networks expose previously isolated sacred spaces to outsiders and potential intruders, ultimately diminishing the peninsula's cultural and spiritual wellbeing. The community is also worried about clearing a significant portion of the peninsula's limited forest cover due to infrastructural development and road construction (Figure 5). This situation in Zege bears striking similarities to the Sebat Bete Gurage communities' experience discussed by Shiferaw et al. (2023), in which infrastructure expansion and human encroachment inherently damage the spiritual essence and decency of the area's sacred landscape.



Figure 5: New road under construction (photo by first author, February 16, 2025)

Furthermore, improved transportation access to and within the peninsula has reported to be accelerator of the exploitation and depletion of forest resources. Easier entry and exit enable individuals to extract resources on a larger scale. Contrary to what the local government's plan, the community proposed to construct narrowly designed walkways instead of wider road networks to avoid this problem, though their proposal was rejected. Religious fathers are also worried about the expansion of infrastructural development in the peninsula, as it strongly disturbs the peaceful spiritual life of the ecclesiastical community, including the invisible holy beings that are believed to have dwelt in the sacred forest for centuries.

Conclusion

This ethnographic study examined the role of spiritual stewardship and contemporary challenges in conserving the sacred forests of Zege Peninsula in Ethiopia. In comparison to the greatly deforested agricultural landscapes of highland Ethiopia, the sacred forests of the Zege Peninsula have remained protected for a long time. The most important agency for this continuity has been the EOTC's religious teaching and practices that have long inculcated sound practices for planting, protecting, and preserving trees and wooded land covers.

Community members' connection to the sacred forests is embraced through enduring psychosocial connections and economic-related ties, which are the indirect outcome of residents' deep spiritual and affective ties to the protected trees. This enables them to have a deep-rooted attachment to forests and helps them develop pro-conservation behaviors. Place-based identity with the presence of community solidarity has also led the community to collectively enforce forest protection. More than just a geographic feature, the sacred forest reserve serves as a foundational pillar of Zege community identity, deeply woven into their cultural consciousness and religious traditions.

However, this does not mean that the forest reserve of the Zege Peninsula is free from any form of threat. The forest reserve is facing imminent threats of destruction due to changes and challenges occurring on the peninsula because of rapid urbanization, climate-related natural calamities, and high degree economic and demographic pressures. Therefore, there is a need to integrate local ecological knowledge and proven conservation practices with current environmental policies to develop more effective and locally responsive natural resource conservation strategies. Large-scale awareness programs and successive studies should also be conducted to help protect and preserve sacred forests of the Zege Peninsula and sacred forests elsewhere in Ethiopia and beyond.

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