



Full Length Research Paper

## Human-Bird Interactions: An Exploration of Oromo Cultural Beliefs and Practices Associated with the Northern Ground-Hornbill (*Bucorvus abyssinicus*)

Addisu Asefa (PhD)

Ethiopian Wildlife Conservation Authority, Addis Ababa, Ethiopia, E-mail address: [aa.mitiku@gmail.com](mailto:aa.mitiku@gmail.com)

Submission Date: October 26, 2022

Acceptance Date: June 25, 2023

---

### Abstract

*This article explores the cultural beliefs and practices of Ethiopian Oromo society's related to the Northern Ground-Hornbill (the Hornbill) (*Bucorvus abyssinicus*), a vulnerable bird species native to Africa, and consequences of these beliefs and practices on conservation of the species. A netnography research approach, via Facebook platform, was employed to identify and describe the cultural beliefs and practices. Accordingly, text comments posted by Facebook users in response to a question asking the cultural significances of the Hornbill posted on a popular community Facebook page, which then was shared by many Facebook users, were collected from 59 Facebook pages both through observation and participation techniques. A total of 870 discrete text comment posts were downloaded on 27 December 2019 from the 59 Facebook pages and analyzed. Data were analyzed by means of qualitative, thematic content analysis. Four main themes and 14 categories (types of beliefs and practices) were emerged from the data that elucidated Oromo cultural beliefs and practices related to the Hornbill. The Hornbill is viewed as: a signal of good omen (i.e., as signifier of child delivery, gaining wealth, longevity and fortune); curator from disease and protector from harmful animals; omen of bad luck (death/loss); and time indicator (season change). These findings show that Hornbill has significant cultural values to the Oromo society and that some of the cultural practices appeared to be having negative influence on the species' survival. Knowledge gained from this study can contribute to conservation of the species, for example, by reinforcing the practices assumed to have potentially protective influences, and by implementing intervention strategies on the practices having destructive consequences.*

**Key Terms:** *Ayyaana, Bucorvus abyssinicus, conservation, Facebook page, Gadaa system, Huummoo, Waaqeffannaa*

---

---

## Walquunnamtii Namaafi Simbirroo: Qorannoo Amantiifi Gochaalee Aadaa Oromoo Huummoo (*Bucorvus abyssinicus*) wajjin walqabate

### Axareeraa

*Barreeffamni kun amantaafi gochaalee aadaa hawwaasni Oromoo Huummoo (*Bucorvus abyssinicus*), sanyii simbirroo ardiirraa baduuf saaxilamoo ta'eefi Afrikaa keessatti qofa kan argamu wajjin walqabatee jiruufi dhiibbaa itti fayyadaminsi amantaafi gochaaleen aadaa kunneen kunuunsa simbirroo kana irratti qaban qorata. Akaakuu amanta fi gochaalee aadaa adda baasuufi ibsuuf saxaxa qorannoo Neetinoogiraafii (Netnography) hordofuun yoon ta'u, kunis karaa walquunnamtii hawwaasaa Feesbuukiitti dhimma bahuunidha. Qorannoo kanaaf bu'ura kan ta'e, gaaffiin "Huummoon gama faayidaa aadaatiin hawwaasa Oromoof qabu" gaafatu fuula Feesbuukii hawwaasaa beekamaa tokko irratti maxxanfamee turedha. Maxxansichi booda immoo fuula fayyadamtoota Feesbuukii hedduun qoodamee ture. Haaluma kanaan, yaadota/deebii barreeffamaa fayyadamtoonni Feesbuukii kennan fuula Feesbuukii 59 irraa tooftaalee raga funaanuu daawwannaa fi hirmaannaa fayyadamuun walitti qabamaniiru. Walumaagalatti, barreeffamoonni yaada 870 fuula Feesbuukii 59 irraa gaafa Muddee 27, 2019 buufamanii xiinxalamaniiru. Ragaaleen funaanaman mala matadureetiin qoqqoodamuun xiinxalamaniiru. Argannoon qorannoo kanaa amantaafi gochaaleen aadaa hawwaasa Oromoo Huummoo waliin akka walqabatan kan ibsan ragaaleen 14 adda ba'aniiru. Isaanis, uummata Oromoo biratti Huummoon akka: mallattoo raaga gaariitti (akka agarsiisa dhalachuu daa'ima, badhaadhiina, umurii dheeraafi qabeenya argachuutti) ilaalama; dhukkuba irraa nama fayyisuu (qorsa)-fi bineensota miidhaa geessisan irraa eegduu; raaga carraa badaa (du'a/dhabuu); agarsiiftuu yeroo (jijjiirama waqtii) ilaalama. Argannoowwan kunniin Huummoon hawwaasa uummata Oromoof faayidaa aadaa guddaa akka qabuu kan agarsiisan yoo ta'u, gama biraatiin immoo gochoonni aadaa tokko tokko lubbuun jiraachuu sanyii Simbirroo kanaa irratti dhiibbaa hamaa kan geessisuu danda'an ta'uu isaaniis agarsiisu. Hubannoon qorannoo kana irraa argame, kunuunsa sanyii simbirroo kanaaf gumaacha ta'uu danda'a. Fakkeenyaaf, gochoota eegumsaa simbiroo kanaaf faayidaa qabaachuu danda'u jedhaman cimsuudhaan, akkasumas gochoota dhiibbaa qaban irratti immoo dhiibbaa sana habisuuf yookaan, xiqqeessuuf tooftaalee barbaachisoo ta'an hojiiarra oolchuun simbirroo kana dadiinsa jalaa baraaruun nidanda'ama.*

**Jechoota Ijoo:** *Ayyaana, Bucorvus abyssinicus, kunuunsa, fuula Feesbuukii, sirna Gadaa, Huummoo, Waaqeffannaa*

### 1. Introduction

Birds are important to humans in many ways; they play a significant role in the lives of people across almost all cultures globally (Muiruri and Maundu, 2010). The diversity and variations in size, morphology, anatomy, song, foraging and social behaviour of birds have aesthetically inspired humans since time immemorial (Fernandes-Ferreira et al. 2012; Bird Life International 2018). This inspiration and the direct and regular contact of people with specific bird species—especially with those birds that possess prominent visual, auditory or behavioural characteristics (Coetzee et al. 2014)—have led most cultures to develop significant beliefs in relation to such birds (Alves 2012). Such beliefs, which are usually constructed through a process of social interactions (Muiruri and Maundu, 2010), in turn, give rise to a variety of practices and behaviours that centre around these bird species. These practices and behaviours include direct uses, such as hunting certain bird species for food and using birds in cultural practices, including in rituals, ceremonial acts, and the making of traditional medicines (Muiruri and

Maundu, 2010; Alves, 2012; Coetzee et al., 2014). Such humans' use of birds, depending on the type and extent of uses and species involved, could have positive, negative or neutral consequences on the persistence of the species (Coetzee et al. 2014). For example, some traditional practices (e.g., food taboos and using a species as symbolic representation) prevent killing of species, leading to their protection (Alves 2012; BirdLife International 2018). On the other hand, the use of animals or their parts for food and for making traditional medicines usually entails that the birds be killed and thus pose a destructive influence on the species (Fernandes-Ferreira 1997; Gaoue 2017; BirdLife International 2019). This destructive influence could be a major conservation concern, especially when the species involved is of conservation-dependent (Coetzee et al. 2014; BirdLife International 2018, 2019). Destructive use of conservation concern species can not only lead to loss of the species but also to loss of people's knowledge and cultural values associated with that species (Gaoue et al., 2017).

The Northern Ground-Hornbill (hereafter referred to as 'Hornbill') (*Bucorvus abyssinicus*) is a native bird species to Africa, north of the equator, where it ranges from Mauritania, Senegal and Guinea in the southern to Eritrea, Ethiopia, Somalia, Kenya and Uganda in the northeast (Kemp and Boesman, 2017; BirdLife international, 2018). In Ethiopia, Hornbills are found almost throughout the country except in the south-eastern and northern highland regions (above 3000m asl) and in the south-eastern arid regions below 200m asl (Redman et al., 2009; BirdLife International, 2018). The species mainly inhabits subtropical/tropical dry woodland forest, savannah, and shrub land and grassland, high altitude grassland, and rocky areas (BirdLife International, 2018). The Hornbill is the epitome of a species that has been in regular contact with many different cultures over a prolonged period of time, and that has all the characteristics that could result in the development of a large number of cultural beliefs and practices (see Coetzee et al., 2014). The birds are large-bodied (on average 95 cm in height, and 4 kg in weight) black hornbills, with white primaries, red (in male birds) or blue (in females) neck, and a long, deep-curved beak. They use both visual and auditory means of communications, but the latter is the main where they utter a loud call, a deep, booming sound "umm-hum-umm" which is delivered from prominent perch, mostly before dawn and after dusk (del Hoyo et al., 2001; Redman et al. 2009). The birds feed on reptiles, including snakes and lizards, and mammals such as hares, and insects (Redman et al., 2009). Hornbills are monogamous, with a male and a female pairs, sometimes along with their young off-springs, usually found together (BirdLife International, 2018).

The species is currently classified under 'vulnerable' threat category of the IUCN Red List of threatened species due to the rapidly declining population as a result of habitat loss and degradation, and intentional hunting for use in various traditional cultural practices (BirdLife International, 2018). In many range states the species has disappeared from areas outside of protected areas, and hunting may also impact the species in some places, though in other areas it could be protected as a totem bird (Kemp and Boesman, 2017). Despite this, the species' biology has not been extensively studied, global population size not has been determined, and no targeted conservation actions are in place for this species (del Hoyo et al., 2001, BirdLife International, 2018). Consequently, three urgent conservation actions have been recommended: (i) researching to better understand the species' biology, (ii) determining the overall global population size and of trends, and (iii) raising awareness of the species to try to reduce the impact of hunting (del Hoyo et al., 2001; Kemp and Boesman, 2017; BirdLife International, 2018).

Many Hornbill species are known to be used for various cultural practices, particularly in Asia and Africa (Setha, 2004; Coetzee et al., 2014; BirdLife international, 2019). For example, species like the Knobbed Hornbill (*Rhyticeros cassidix*) and Sulawesi Hornbill (*Rhabdotorrhinus exarhatus*) in Indonesia (BirdLife international, 2019) and the Southern Ground Hornbill (*Bucorvus leadbeateri*) in

Africa (Coetzee et al., 2014) are reported to play significant roles in people's social and spiritual worlds (Simelane and Knight, 1997) and in the beliefs and practices pertaining to environment, including rain, lightning and drought (Vernon, 1984; Coetzee et al., 2014). The Hornbill is no exception. For example, in some areas of range countries, such as northern Cameroon and Burkina Faso, the Hornbills are known to be hunted for food and killed as they are culturally believed to be bringer of bad luck (Thiollay, 2006). However, studies documenting the cultural uses of the species by societies across most of the species' range and conservation implications of the uses has been virtually absent until recently, particularly in the Horn of Africa including in Ethiopia (BirdLife International, 2018). Two recent publications have demonstrated that the Hornbills have strong associations with Oromoo culture related to proverbs (Asefa, 2021) and folklore (Asefa and Debella, 2021). The present study was therefore aimed to explore the cultural beliefs and practices of Ethiopia's Oromoo society related to the Hornbill.

The Oromoo are the most populous ethno-nation in the Northeast Africa (Jalata, 2001; Boku, 2011). In Ethiopia, they constitute the largest ethnic group, accounting for ~40% of the estimated 110 million total population of the country (Dibaba, 2020). Their administrative region, Oromia National Regional State, covers 359.619 km<sup>2</sup> which is a third of the country's total land mass (Jaleta, 2004; Asefa, 2021). Oromoo people's native language is known as 'Afaan Oromoo' which belongs to the eastern Cushitic language and is the fourth widely spoken languages in Africa next to Arabic, Swahili and Hausa (Bartels, 1983; Boku, 2011). The Oromoo are an oral traditional society which have preserved their history through a traditional institution known as the 'Gadaa System' (Legesse, 2006; UNESCO, 2016). The Gadaa system is a complex system that regulates Oromoo's political, social, economic, and religious life and an indigenous democracy of socialization, education, peace-making, conflict resolution, judicial administration, religious expression, economic organization, and social harmony" (Bartels, 1983; Legesse, 2006). This Indigenous Institution has been practiced since sixteenth century AD and was registered in 2016 on UNESCO's List of Intangible Cultural Heritage of Humanity (Legesse, 2006; UNESCO, 2016). Embedded within the Gadaa system is the traditional religion is known as *Waaqeffannaa*, which is derived from the word *Waaqa* (literally means Almighty God/Creator) and means a belief in one God (*Waaqa*) who has created everything in His power and will (Bartels, 1983; Legesse, 2006; UNESCO, 2016). Although the majority of Oromoo people currently practice Islam or Christian religions, many of these believers are still followers of *Waaqeffannaa* religion (Bartels, 1983).

The unique aspect that distinguishes *Waaqeffannaa* followers from followers of universal religions is that its principles are essentially drawn from Oromoo-oriented traditions and their indigenous value systems. For instance, Gadaa rules and regulations are the guiding principles of their belief system, just as the Bible and the Quran are for Christians and Muslim value systems, respectively (Beyene, 2018). In Oromoo philosophy associated with *Waaqeffannaa* religion, the *Ayyaana* is said to have acted in the world of human beings including in people's domiciles (clans, rivers, mountains, lakes, cattle and environment). According to Oromoo worldviews in relation to *Waaqeffannaa* religion, *Waaqaa* (the Creator/God) gives *Ayyaana* (divinity) to human beings, as well as to all His creations (e.g., animals, mountains, lakes, etc) (Bartels, 1983; Beyene, 2018). *Ayyaana* is the guardian spirits of God (or God's force) which are believed to be endowed to human beings and other creatures by *Waaqaa* that give characteristic and distinction to individual persons, animals and inanimate objects (Bartels, 1983; Gebissa, 2018). *Ayyaana* are also taken as the intermediaries between *Waaqaa* and human beings and believed to be regarded as the sentinel of the people during calamities, sources of their pleasure, and; their assistant as messengers (Bartels, 1983; Jalata, 2001; Beyene, 2018). Consequently, *Waaqeffannaa* ritual celebrations, such as *Irreechaa*, are conducted at sacred sites like mountains/hills, lakes and Synchronome tree with the belief that such sites host God's *Ayyaana* (Bartels, 1983; Jalata, 2001; Beyene,

2018). These sacred sites are selected based on their uniqueness in characteristics (e.g., height, beauty, cleanness, ever-greenness, etc.) and are thus believed to be blessed, in possessing *Ayyaana*, by *Waaqaa* (Bartels, 1983). It, therefore, appears that it is with the same notion that certain animal species, such as the Hornbill, by virtue of their aposematic colorations and conspicuousness that make them to be considered as blessed by God to host *Ayyaana*, are used in Oromoo cultural beliefs and practices.

In sum, Oromoo society provides a good opportunity to study African cultural beliefs and practices in relations to biodiversity at least for two main reasons. First, Oromoo represent one of the few societies in Africa where the original African traditions are still active and most of their cultural practices intricately are related to their surrounding biodiversity components (Jaleta, 2004; Legesse, 2006). Second, one of the major functions of the Oromoo Gadaa System is governing the management and sustainable use of biodiversity (Teresa and Hunduma, 2018). A recent report by Asefa et al. (2019) provides first-hand practical evidence on the role of the Gadaa system in promoting conservation of endangered species. From an ethno-ornithological perspective, and given the current lack of information on the species' biology, ecology and threats (BirdLife International, 2018), documenting the cultural beliefs and practices of the Oromoo society associated with the Hornbill is thus important as it forms part of the African cultural heritage. Most importantly, knowledge gained through such studies could potentially contribute to effective conservation of the species and preservation of associated Oromoo cultural practices. This study was therefore aimed to address two main questions: What are the cultural beliefs and practices of Oromoo community of Ethiopia associated with the Hornbill? What are the potential consequences of these cultural beliefs and practices for survival of the species?

## 2. Material and Methods

A netnographic approach was deployed as a principal research strategy to explore online the offline life-world of the participants and view phenomena from their perspective in relation to the cultural beliefs and practices of Oromoo society associated with the Hornbill (Kozinets, 2010; Kozinets et al., 2014). This approach is an internet-based primarily qualitative-oriented content analysis technique—although it can also be applicable to quantitative content analysis depending on the method of data analysis used, such as in the present study—based on an interpretivist paradigm, which also serves as the theoretical foundation of this study (Kozinets et al., 2014). The core belief of the interpretive paradigm is that reality is socially constructed through language, consciousness, shared meanings and other artefacts. Thus, this paradigm allows researchers to view the world through the perceptions and experiences of the participants and use those experiences to construct and interpret their understanding and knowledge from gathered data (Corbin and Strauss, 2008).

## 3. Data Collection

Data used for this study were Facebook users (FB users) text comment posts made on 59 Facebook pages in response to a post of photo of a male Hornbill and the following text questions, in '*Afaan Oromoo*', asking the name and proverbs attached to the bird:

“Oromiyaan waan hundumaan badhaatuudha. Maqaan allaattii kanaa maal jedhama? Amala allaattii kanaa osoo hin taane wanta oromoon maqaa esheetiin makmaaku tokko tokko barreessaa!! Allaattii seenaa qabeettii oromoon esheetiin ergaa baayyee dabarfata” (Facebook, 2020a; Figure 1). Its literal translation is: Oromia is endowed with everything. What is the name of this bird? Please, write at least one Oromo proverb [folklore, including proverbs, tales, poems, beliefs and practices, etc] manifested through the bird's name. This is a famous raptor species which Oromos convey enormous messages through it.

This content was originally posted on a popular community/public Facebook ‘Like Page’ known in user name of ‘Dr Jirenya Sena’ (Facebook, 2020a). Manager of the page always post in *Afaan* Oromo, sometimes in combination with in English, likely suggesting that most of followers of the page were Oromo—or at least know *Afaan* Oromo language and Oromo culture—who share similar culture, language and history. As of 27 December 2019, the page had 101,423 Followers/Likes (hereafter referred to as FB users), and the post about the Hornbill had got over 500 comments and was shared by 261 FB users (Facebook, 2020a; Figure, 1). Thus, to have a full understanding of the cultural use of the Hornbill, I also visited 83 of the 261 FB users’ pages who shared the original post and whose privacy setting allowed unrestricted data access. Out of these, 58 FB users’ pages had got one or more comment posts. Consequently, 59 pages (the original post page and 58 shared pages) were used as study web page sites.



Figure 1. Screenshot picture of a Facebook page post showing photo of the Hornbill and the research questions and number of FB users reactions (likes), comments and shares.

A ‘self-selection’ method was used to choose sample of research participants (FB users who were friends or followers of the 59 FB pages) from among the pages’ followers/likes (Franz et al., 2019). This is a nonprobability sampling procedure in which the sample units (each FB user) choose themselves to take part in research on their own accord based on their willingness, knowledge and/or experience (Kozinets et al., 2014). Data collection was undertaken following both passive observation and engaging netnographic procedures (Kozinets, 2010; Kozinets et al., 2014). Passive observations were carried-out once a day from 19–29 March 2019, and then once a week from 30 March to 25 May 2019. Then after, I was engaged as a participant with the community members by replying (posting questions asking for clarifications) to their comment posts. Data (textual comment posts and ancillary data, including users name and the date/time each comment was posted) from the 59 pages were downloaded on 27 December 2019 (Asefa, 2021). All these were archived data and were publicly available without any restriction (Facebook, 2020b). To download the text comments from each page, all comments were first displayed and selected manually and then copied and pasted into an excel spreadsheet (Franz et al., 2019; Asefa, 2021; Asefa and Debella, 2021). Finally, a numerical ID code was assigned to

each User's text comments to ensure anonymity, and prior to analysis, the whole text posts of each user were translated from 'Afaan Oromoo' language into English.

In line with the standard practices used in qualitative research, data were collected until a point of saturation was reached (Creswell, 2007). This was achieved by examining the date on which each belief and practice category was mentioned for the first time. Accordingly, data had reached saturation point in August 2019, because no new theme or category was emerged then after although 96 new comments were posted then after (i.e., from September 2019 until the data were downloaded on 27 December 2019; see also Asefa, 2021).

Overall, 870 discrete text posts were downloaded from the 59 Facebook pages. Out of these: (i) 819 (94%) of text comment posts contained the correct name of the species in 'Afaan Oromoo', naming as '*Huummoo*', with or without citing cultural values of the bird; (ii) 332 (38%) contained at least one proverb (see Asefa, 2021); (iii) 133 (15%) contained at least one concept related to other folklore genres (e.g., poetries, fable stories and children words/games) (Asefa and Debella, 2021); and (iv) 251 (29%) contained at least one concept related to cultural beliefs and practices. Two similar papers were previously published from the same dataset: one focusing on proverbs, published by Asefa (2021) and the other focusing on oral folklore genres (i.e. fable stories, poems, and children word game), by Asefa and Debella (2021). The present article focused on cultural beliefs and practices based on analysis of the 251 distinct text posts that contained concepts related to cultural belief and practices.

#### 4. Data Analysis

Detailed description of data analysis can also be found in Asefa (2021), and Asefa and Debella (2021). A thematic content analysis method was applied to the text data (FB users' text comments) to identify, code, categorize and determine frequency of occurrence of concepts related to Oromo cultural beliefs and practices related to the Hornbill (Corbin and Strauss, 2008; Neuendorf, 2019). This method was deemed appropriate to simultaneously undertake both qualitative (identify, code and categorize the cultural beliefs and practices) and quantitative (count of frequency of occurrence of each belief/practice categories) analyses. Data analysis was conducted in six steps. First, each user's comments were read and reread several times to better understand the concepts contained within the comments (Corbin and Strauss, 2008). Second, contents of each FB user's text comment were subjected to line-by-line open coding process, during which descriptive codes were assigned to fragments of text on a variety of levels, including words, phrases, clauses, sentences, or paragraphs (Corbin and Strauss, 2008; Coetzee et al., 2014). These codes were mostly taken from participants' own words and concepts. Third, a selective coding procedure was applied to concepts that emerged from the open coding procedure. This involved examining the codes to identify broader patterns of meaning and inductively grouping together of similar concepts into themes and categories of cultural beliefs and practices. Fourth, each theme and category were analyzed in detail and appropriately defined and named. Fifth, each theme and category were studied again in detail and double checked to make sure the original data truly support the emerged themes and categories. Finally, frequency of occurrence of each belief/practice category in the whole dataset was counted and used to quantitatively establish the relative prevalence of the cultural belief and practice categories (Asefa, 2021; Asefa and Debella, 2021).

To establish validity of the study, result of preliminary data analysis was posted on 'Dr Jirenya Sena's' community page on 16 April 2019 for stakeholders check (FB users who generated the data) (Figure 2), and the draft manuscript was sent to three Oromo scholars (see Acknowledgements) in the fields of biology and linguistics. While information obtained from

the stakeholders check had enabled better clarification on the description of some practice categories, no new theme or category was emerged.

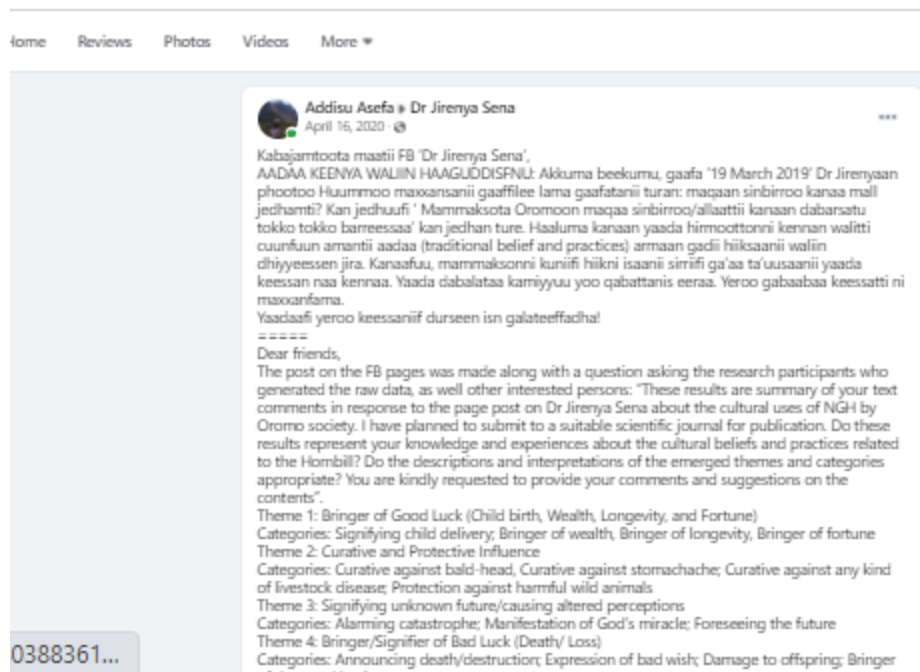


Figure 2. Screenshot picture of a Facebook page post results of analysis of the data for research participants comments.

## 5. Results

Overall, four themes and 14 categories of cultural beliefs and practices were emerged from the qualitative analysis of the data (Tables 1 and 2). Of the total 251 distinct text comments analyzed, 74 (30%) and 16 (6%) of them contained two and three cultural beliefs and practices, respectively. In terms of prevalence, the three most frequently cited beliefs were that the Hornbill are regarded as ‘bringer of wealth (richer) 92 (27%), signaling change in season 77 (23%) and bringer of longevity 63 (18%) (Table 1). The themes and categories and verbatim quotes from the participants that support each theme and category were depicted in Table 2 and were discussed in light of the background information provided in the introduction section and by the FB users on the cultural context of the Oromo society, and the behavior, ecology and biology of the Hornbill. The potential consequences of these cultural beliefs and practices categories for survival of the species were briefly discussed under each theme.

### *Omen of Good Luck (Child Birth/Wealth/Longevity/Fortune)*

The most prominent theme that emerged from the data was that the Hornbill is often perceived as omen of good luck (child birth/wealth/longevity/fortune). More specifically, it is believed that if the birds enter or approach a village or homestead it signifies a pregnant woman is going to deliver safely. In this regard, many FB users stated that “a Hornbill perched in or near a community’s village is a sign of a pregnant woman giving birth to a child safely”. Similarly, seeing Hornbills in crop fields is believed to bring better crop yield during that cropping season.



As such, the respondents' said that "*seeing Hornbills foraging in one's crop field during land preparation for cultivation signifies a year of prosperity [better crop yield]*". Another belief practice is related to Hornbills' intra-specific social life. A pair of male and female Hornbills usually forages far apart from each other. Despite this, they do not allow people to cross in between them. As the birds are always in sensory contact, via visual and acoustic communications, they move towards each other and walk away or take off together when people attempt to pass in between them. The FB users mentioned that crossing between a pair of hornbill brings a good luck, in terms of wealth and life span. They stated that "*if someone crosses between two Hornbills, one will live longer and/or get richer*". Finally, Oromo people believe that observation of Hornbills in the wild signifies good fortune in achieving one's goals. In this case, they said that "*if people come across Hornbills while travelling to somewhere for critical affair early in the morning, the people will back with success*".

The consequences of these beliefs appear to be beneficial as people believe that the bird is a symbol of good luck and thus should be avoided or not be killed. Nonetheless, the practice of attempting to cross in between two birds, as a result of its association with getting richer/longevity, could pose disturbance to the birds' normal vital activities and physiological stresses (Asefa, 2021).

#### *Curative and Protective Influence*

The second most prominent theme that emerged from the data was that Hornbill is perceived as having a curative influence against human diseases, such as curing baldness that happens in men at early age, to strengthen women's kinked hair and to get relief from stomachache, and against any kind of livestock disease. In relation to these curative influences, the respondents stated that "*when a blood of Hornbill is applied onto a young bald-person's head, his hair will be regrown*"; and "*If a women/girl with a kinked hair applies its blood to her hair, she will get the hair reaching her waist within a week time*". Another curative belief is that "*if someone who is suffering from stomachache passes in between two hornbills, he will get relief from the illness*". Beaks of the Hornbill are used for treatment of livestock diseases. As quoted by the FB users "*if an animal suffering from any disease is fumigated with smokes of burnt Hornbill beaks, the animal will recover from its illness*".

Table 1. Frequency and percentage of citation of Oromo beliefs and practices associated with the Northern Ground-Hornbill

Theme	Category	Frequency	Percent
Omen of Good Luck (Child birth, Wealth, Longevity, and Fortune)	Signifying child delivery	9	3
	Bringer of wealth (richer)	92	27
	Bringer of better crop yield	3	1
	Bringer of longevity	63	18
	Bringer of fortune (attainment of plans/goals)	8	2
Curative and Protective Influence	Curative against bald head	4	1
	Curative against stomachache	14	4

	Curative against any kind of livestock disease	5	1
	Protection against snakes	12	4
Bringer/Signifier of Bad Luck (Death/ Loss)	Announcing death/destruction	23	7
	Causing Audial Deformity to family	6	2
	Causing damage/death	23	7
Time indicator	Change in season	77	23
	Working days	2	1

The protective influence is against damage caused by harmful animals, particularly snakes. Snakes, which people consider them as their natural enemies, constitute among the common food items of Hornbill. This knowledge has caused the Oromo people to perceive that at sites where Hornbills foraging are there poisonous Snakes. Consequently, in addition to eradicating and/or maintaining the population size of snakes in the locality, Oromos believe that Hornbills also protect people against poisonous snakes by warning people to avoid or be cautious while walking or sitting at such sites. This fact was reflected in the FB users' statements as *"hornbills are very important to people: by consuming and indicating the presence of snakes in our surroundings, they protect us from being stung by poisonous Snakes"*. An important concept tying the protective function of the Hornbills with Oromo people's respect for the bird was the following tale taken from the respondents: *"... it was said that a Hornbill was seen killing a snake that was going to bite Abba Gadaa (Oromo leader). Consequently, it was enacted in the Gadaa law that a person who killed a Hornbill shall be punished equivalently with a 'human life indemnity' ..."*.

The consequences of these beliefs appear to be both destructive and protective. The demand for the curative influences of the bird's blood for human hair treatment and its beak for livestock disease treatment usually involve the birds to be killed. In contrast, the belief associated with its protective influence against poisonous snakes has a protective consequence for the bird. This was reflected in the words of one of the FB users who stated that *"since Hornbills eradicate and warn people where snakes are, they are respected and not killed"*. Most importantly, the indemnity law associated with the tale that a Hornbill saved Abba Gadaa from being stung by a snake is of a great protective practice for the birds.

#### *Bringer/Signifier of Bad Luck (Death/ Destruction/Loss)*

The third theme was that Hornbill is often perceived as a bringer or signifier of death/destruction/loss. More specifically, having it entered or approached a village or homestead carrying a snake signifies forthcoming disasters, which most often was believed to involve the death of someone known to the individual, or the damage of personal property. In this particular belief, the FB users believed that *"when a Hornbill carrying a snake lands on a person's roof or in his garden, something bad is going to happen"*. The prominence of this belief was revealed from the fact that Oromo people's use of the belief to curse (expressing bad wish to) someone who has harmed them, saying *"May a Hornbill carrying a snake comes to your village!"* Another belief in this theme was that Oromo communities believe that killing the Hornbill brings bad consequences on the killer's children; i.e., *"if you kill a Hornbill, you will give birth to deaf children"*. Finally, as the Hornbill eats poisonous animals, it is believed that its pellets also contain poisonous chemicals which harm people when their feet are exposed to the pellets. They stated that *"if a person steps with bare-feet on pellets of the Hornbill, she/he will get her/his leg swollen, which ultimately could lead to death"*.

The consequences of these beliefs appear to be destructive or beneficial. Specifically, the belief associated with Hornbill's entering one's garden or landing on one's house roof is a warning for that person to get ready or take counteractive actions to avoid the occurrence of the incidence or to minimize its impacts; this was reflected in statements of one of the FB users who said that "*Huummoo manatti dhufte abbaatu hooddata*" (When a Hornbill comes to one's house, she/he should deal with it [the unknown situation]). The implication of this commandment belief is that, for example, the householder should take ill persons, if any present, to health services; or consult *Qaalluu* (spiritual person who predicts what would be going to happen and suggest remedial actions [locally called '*hooda/hooddachuu*']) to cancel the bad incidence probably to be happened. In this regard, Hornbill seems to be seen as helpful animal to alarming people to take actions or get ready to calm down if something bad happens. As such, the Hornbill might be respected and is not killed. Similarly, the belief that killing a Hornbill causes one to give birth to deaf children also has a significant protective consequence. However, the belief that stepping on Hornbill's pellet leads to leg disease or even leading to death may have negative consequences for the bird, especially in the case where people disturb, stone or kill the birds to chase them away with the intention to make their area free from the Hornbill's pellets.

*Time Indicator (Season Changes/timing of the day)*

The final theme that emerged from the data was that the Hornbill is often perceived as a time indicator in relation to seasonal changes and time of the day. Hornbills disappear from some localities during the dry season, but back prior to the onset of the rainy season. Observation and knowledge of this Hornbill's local seasonal movement has inspired the Oromo people to develop the belief that Hornbill is a signer of a change from the dry season to the wet season. The FB users cited that "*when a Hornbill arrives and calls, it signals that the rain is coming soon*". In their second role as a daily time indicator, the call of the bird is used to announce the start and end of a working day, especially during the rainy season, when dense cloud cover often makes it hard to recognize the beginning and ending of the day. The participants *said that "the Hornbill tells us when to wake up or go to bed"*.

The consequences of these beliefs appear to be neutral or even positive as the Hornbill is not physically used in the cultural practices, for example where its call is an indication of the beginning or end of a working day.

Table 2. Themes and categories related to Oromo cultural beliefs and practices associated with the Northern Ground-Hornbill

Theme	Category	Verbatim samples
Bringer of Good Luck (Child birth, Wealth, Longevity, and Fortune)	Signifying child delivery	“A Hornbill perched in or near a community’s village is a sign of a pregnant woman giving birth to a child safely.”
	Bringer of wealth	“If someone crosses between two hornbills one will get richer.”
	Bringer of better crop yield	“Seeing Hornbills foraging in one’s crop field during land preparation for cultivation signifies a year of prosperity [better crop yield].”
	Bringer of longevity	“If someone crosses between two hornbills, one will live long.”
	Bringer of fortune	“If people travelling to somewhere early in the morning for critical affair come across Hornbills, the people will back with success [accomplishing what you aimed to do].”
Curative and Protective Influence	Curative against bald head	“If Hornbill’s blood is applied onto a young bald-person’s head, his hair will be regrown, and if applied onto a kinked hair of a women/girl, she will get her hair reaching her waist within a week time.”
	Curative against stomachache	“If someone who is suffering from stomachache crosses between two hornbills, he will get relief from the stomachache.”
	Curative against any kind of livestock disease	“If an animal suffering from any disease is fumigated with smokes of burnt Hornbill’s beak, the animal will be cured.”
	Protection against harmful wild animals	“Hornbills are very important to people: by consuming and indicating the presence of snakes in our surroundings, they protect us from being stung by poisonous Snakes”.
Bringer/Signifier of Bad Luck (Death/ Loss)	Announcing death/destruction	“When a Hornbill carrying a snake lands on a person’s roof something bad is going to happen”.
	Deformity to family	“If you kill a Hornbill, you will give birth to deaf children.”
	Causing damage/death	“If a bare-footed person steps with on pellets of the Hornbill, she/he will get her/his leg swollen, which ultimately could lead to death”.
Time indicator	Change in season	“When a Hornbill calls, it signifies start of the rainy season”.
	Working days	“It tells us when to wake up or go to bed.”

## 6. Discussion

This study demonstrated that the Hornbill has a significant cultural importance to the Oromoo society of Ethiopia. These findings provide supplementary information to results published in our previous articles (Asefa, 2021; Asefa and Debella, 2021) and raise two key questions in relation to the observed cultural belief and practices: What are the causal conditions acting as stimulants for the Hornbill's use in Oromoo cultural practices? Is the Hornbill a culturally significant species to Oromoo society in terms of belief and why? Generally, human life-world is full of uncertainties and unpredictable future, but people normally do not have any power to cope with such natural phenomena (Beyene, 2018). In agreement with Coetzee et al. (2014), the causal factors that act as stimuli for the Hornbill's use in cultural practices of Oromoo community is therefore people's attempts to deal with existential uncertainties resulting from natural phenomena (e.g., disease, death, droughts and loss of properties), or from an unpredictable future of such natural phenomena. Similar to the belief and practices in the *Waaqeffannaa* religion, where *Ayyaana* possessed by some people are believed to serve as intermediaries between God and humans, using the Hornbill in these practices could empower the practitioners, by helping them to survive and cope with natural phenomena over which they normally do not have any power. Using the bird endows the users a sense of control over the underlying emotions, such as fear, uncertainty and insecurity (Alves, 2012; Coetzee et al., 2014). Further, as is true of most African communities, the major economic activities of the Oromoo people are livestock husbandry and rain-fed crop cultivation (Dibaba, 2020). Thus, seasonal appearance of the Hornbills brings the people feelings of the change of season and happiness to welcome the rainy season which facilitates their important activities, such as preparing land for planting crops and providing livestock with sufficient fodder and water which yields better productivity (i.e., milk and butter).

Regarding to the question whether the Hornbill is a culturally significant species to Oromoo society, *Waaqeffannaa* religion followers believe that all living and non-living physical objects host *Ayyaana* (*Waaqa's* spirit/force) endowed to them by *Waaqa* (Creator/God) (Beyene, 2018). Some people are endowed with exceptional personal qualities due to the *Ayyaana* given to them by God. Such persons are known as *Abbaa Qaalluu*—a spiritual person (i) who acts as intermediaries between human beings and the God; (ii) knows, for example, what happened in the past or currently going to happen someone; and (iii) is able to predict upcoming events (Legesse, 2006). As a result, *Waaqeffannaa* followers usually gather at *Abbaa qaalluu's* house and sing ritual songs that praise God/Creator (*Waaqa*), express hope/promise, *Kadhannaa*, etc (Beyene, 2018). It seems that a similar principle would explain Oromoo's use of Hornbill in their cultural beliefs and practices. First, the Hornbill has *Ayyaana* endowed to it from God, just like all human being and other bird species (Beyene, 2018; Gebissa, 2018). However, its larger size, aposematic coloration (black-red-white) and behavior might have made it appear distinct and conspicuousness compared to other co-occurring bird species in the Oromia region (Redman et al., 2009; BirdLife International, 2018; Asefa, 2021). This distinctness and conspicuousness appearance, coupled to its regular contact with Oromoo people over a prolonged period of time, in turn, could have motivated Oromoo people to select it as a culturally significant species that is used in direct, indirect, and symbolic ways to deal with these uncertainties (Coetzee et al., 2014; Asefa, 2021; Asefa and Debella, 2021). It is unsurprising that most of Oromoo cultural belief and practices documented in this study in relation to the Hornbill have also been reported for its congeneric species (Southern Ground-hornbill) among communities in the southern and eastern African countries (for detail see Msimanga, 2004, and Coetzee et al., 2014). However, interpretations ascribed to the beliefs and practices associated with the two species are sometimes contrasting (Msimanga 2004; Coetzee et al. 2014). This may suggest that closely related species can have similar cultural values or play complementary roles

across different cultures, but with subtle differences in practices and interpretations of the beliefs, as well as in conservation consequences.

Results of the present study highlight that some of the traditional beliefs and practices related to the Hornbill appear to having positive (protective) conservation impacts, as the uses do not involve or lead to killing of the birds, or do prevent killing. Such beliefs include seeing the bird entering a village or homestead that believed to signify safe delivery of a pregnant woman; observation of the bird in the wild that believed to signify a good fortune; protection of people from poisonous snakes; and signifying seasonal change (Tables 1 and 2). Even in the case of the beliefs under the theme ‘a bringer of bad luck’, such as “If you kill a Hornbill, you will give birth to deaf children”, the practice have protective consequences as it discourages people not to kill the birds. Similar beliefs and practices that play protective role have also been reported for certain hornbill species across many cultures, including in Indonesia (BirdLife international, 2019) and in the southern Africa region (Coetzee et al., 2014). However, some other practices, such as the making use for traditional medicines, seem to possibly have destructive consequences, as they involve killing or leading to disturbance of the birds. Furthermore, the belief associated with stepping on Hornbill’s pellets which is believed to cause damage/death of the individual could lead people to have or develop negative attitudes towards the birds, by motivating people to chase or kill the birds to avoid its pellets from their surroundings. Finally, the practices that people attempting to cross between two Hornbills for the beliefs to get rich, relief from stomachache and/or longevity cause disturbance to the birds, potentially affecting their normal vital activities (e.g., foraging, court-shipping, resting, and nesting behavioral activities). Although the magnitude of these presumably destructive practices and their actual and potential impacts on the bird is unclear yet and requires further studies, people’s avoidance of killing the Hornbills, as reflected in the FB users opinions that the Hornbill had rescued the *Abbaa Gadaa* from being bitten by a snake, can serve conservationists as a motto to minimize the destructive practices and their effects. Specifically, the stated applicability of ‘human life indemnity law’ of the *Gadaa* system on people who are found guilty of killing a Hornbill is key important concept in regulating destructive use of the species. In this regard, a recent report by Asefa et al. (2019) has demonstrated the effectiveness of *Gadaa* laws enacted to conserve (through avoidance of illegal hunting/killing) an endemic mammal, the Swayne’s Senkelle Hartebeest, in Oromia. This action has resulted to population increase from 200 individuals in 1993 to 800 individuals at present (Asefa et al., 2019).

In conclusion, in light of the current threatened status of the Hornbill and lack of knowledge about use of the species in cultural practices, this study has provided valuable information needed to implement effective strategies that would aid in reinforcement of the cultural practices with potentially protective influences, and in direct implementation of targeted intervention strategies on the practices presumed to have destructive consequences. Most importantly, the potential to apply the ‘human life indemnity law’ of the *Gadaa* system should be assessed to capitalize on and promote conservation of the species. Similar studies among societies across the species range would also be important to have comprehensive understanding of the uses and implement community-specific targeted interventions.

## Acknowledgments

I am thankful to manager of ‘Dr Jirenya Sena’ Facebook Like page for posting this interesting topic, without which this study would not have been incepted and conducted. All Facebook users who shared their experience/knowledge on the page post are duly acknowledged. I would like to thank Habite Jebessa and Sena Gashe for their critical comments on the draft manuscript.

## References

- Asefa, A. (2021). Exploration of human-bird relationships: Oromo proverbs associated with the Northern Ground-hornbill in Ethiopia. *Social Sciences & Humanities Open* 4 (2021) 100162. <https://doi.org/10.1016/j.ssaho.2021.100162>.
- Asefa, A. and Debella, H.J. (2021). Oromo Folklore Manifested through Features of the Northern Ground-Hornbill in Ethiopia. *Ethiopian Journal of the Social Sciences and Humanities (EJOSSAH)* 17(2):1–24. doi: <https://dx.doi.org/10.1314/ejossah.v17i2.1>.
- Alves, R. (2012). Relationships between fauna and people and the role of Ethnobiology in animal conservation. *Ethnobiology and Conservation* 1:1–69.
- Asefa, A., Mengesha, G. and Almaw, R. (2019). Indigenous institutions and wildlife conservation: The case of the Oromo Gada System protecting Swayne's Hartebeest in Ethiopia. *Conservation Science and Practice* 2019:e113. DOI: 10.1111/csp2.113.
- Bartels, L. (1983). Oromo Religion: Myths and Rites of the western Oromo of Ethiopia, An attempt to understand. Dietrich Reimer Verlag, Berlin, Germany.
- Beyene, E. (2018). *Waaqeffanna* folksongs and poetic verse among Tuulamaa Oromo. *The Journal of Oromo Studies* 25(1 & 2): 151–196.
- BirdLife International. (2018). *Bucorvus abyssinicus*. IUCN red list of threatened species 2018 [web page]. Available at: <http://www.e.T22682632A132204438>. Accessed on November 11, 2019.
- BirdLife International. (2019). Using education to build a grassroots hornbill conservation movement [web page]. Available at: <https://www.birdLife.org/asia/news/>. Accessed on August 08, 2019.
- Boku, D.D. (2011). Oromo Wisdom in Black Civilization. Finfinnee, Ethiopia: Finfinnee Printing and Publishing S.C.
- Coetzee, H., Nell, W. and van Rensburg, L. (2014). An Exploration of Cultural Beliefs and Practices across the Southern Ground-Hornbill's Range in Africa. *Journal of Ethnobiology and Ethnomedicine* 2014;10:28. Doi: 10.1186/1746-4269-10-28.
- Corbin, J. and Strauss, A. (2008). Basics of Qualitative Research. Los Angeles, USA: Sage Publications.
- Creswell, J.W. (2007). Qualitative Inquiry and Research Design. Thousand Oaks: Sage Publications.
- del Hoyo, J., Elliott, A. and Sargatal, J. (2001). Handbook of the Birds of the World, vol. 6: Mousebirds to Hornbills. Barcelona, Spain: Lynx Edicions.
- Dibaba, A. T. (2020). Oromo Orature: An Eco-poetic Approach, Theory and Practice (Oromia/Ethiopia, Northeast Africa). *Humanities* (9)28. DOI:10.3390/h9020028
- Facebook. (2019a). Dr-Jirenya-Sena [web page]. Available at: <https://www.facebook.com/Dr-Jirenya-Sena-1121714954657794>. Accessed on December 27, 2019.
- Facebook. (2019b). Public Data Use Terms and Policies [web page]. Available at: (<https://www.facebook.com/policies/>). Accessed on December 27, 2019.
- Fernandes-Ferreira, H., Mendonça, S.V., Albano, C., Ferreira, F.S. and Alves, R. (2012). Hunting, Use and Conservation of Birds in Northeast Brazil. *Biodiversity and Conservation* 21: 221–244.
- Franz, D. Marsh, H.E., Chen, J.I. and Teo, A.R. (2019). Using Facebook for qualitative research: a brief primer. *Journal of Medicine and Internet Research* 21(8), e13544. <https://doi.org/10.2196/13544>.
- Gaoue, O.G., Coe, M.A., Bond, M., Hart, G., Seyler, B.C. and McMillen, H. (2017). Theories and Major Hypotheses in Ethnobotany. *Economic Botany* 71:269–287.
- Gebissa, E. (2018). Indigenizing Universal Principals: Oromo Perspectives on Human Rights. *The Journal of Oromo Studies* 25(1 & 2):1–24.
- Jalata, A. (2001). Fighting against the Injustice of the State and Globalization: Comparing the African American and Oromo Movements. New York, USA: Palgrave MacMillan.

- Jaleta, T. (2004). A Contextual Study of Guji-Oromo Proverbs: Functions in Focus. MA Thesis, Addis Ababa, Ethiopia: Addis Ababa University.
- Kemp, A.C. and Boesman, P. (2017). Northern Ground-hornbill (*Bucorvus abyssinicus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. and de Juana, E. (eds.), Handbook of the Birds of the World Alive, pp 488–489. Barcelona: Lynx Edicions. .
- Kozinets, R.V. (2010). Netnography. Thousand Oaks, USA: The Sage publications.
- Kozinets, R.V., Dolbec, P. and Earley, A. (2014). Netnographic analysis: Understanding culture through social media data. In: Katie Metzler (ed.), The SAGE Handbook of Qualitative Data Analysis, pp. 262–276. Thousand Oaks: The Sage Publications.
- Legesse, L. (2006). Oromo Democracy: An Indigenous African Political System. Lawrenceville, NJ: The Red Sea Press.
- Msimanga, A. (2004). Breeding biology of Southern Ground Hornbill *Bucorvus leadbeateri* in Zimbabwe. *Bird Conservation International* 14(Special Issue):63–69.
- Muiruri, M.N. and Maundu, P. (2010). Birds, people and conservation, In: Tidemann, S. and Gosler, A. (eds.), Ethno-Ornithology: Birds, Indigenous People, Cultures and Society, pp. 279–289. Washington: Earthscan.
- Neuendorf, K. A. (2019). Content Analysis and Thematic Analysis,. In: Brough, P. (ed.), Research Methods for Applied Psychologists: Design, Analysis and Reporting, pp. 211–223. New York: Routledge.
- Redman, N., T. Stevenson, and J. Fanshawe. (2009). Birds of the Horn of Africa: Ethiopia, Eritrea, Djibouti, Somalia and Socotora, 2nd edition. London: Christopher Helm.
- Setha, T.A.N. (2004). The status and conservation of hornbills in Cambodia. *Bird Conservation International*, 14(Supplement S1):S5–S11.
- Simelane, T.S. and Knight, M.G. (1997). Traditional beliefs and conservation. *Custos* 1997:8–9.
- Teresa, G.C. and Hunduma, D.R. (2018). Oromo oral literature for environmental conservation: A study of selected folksongs in east and west Hararghe Zones. *Humanities* 7(94).  
<https://doi.org/10.3390/h7040094>.
- Thiollay, J. (2006). Large Bird Declines with Increasing Human Pressure in Savanna Woodlands (Burkina Faso). *Biodiversity and Conservation* 15:2085. DOI: 10.1007/s10531-004-6684-3–2108.
- UNESCO. (2016). Gada System: An Indigenous Democratic Sociopolitical System of the Oromo [web page]. Available at: <https://www.unesco.org/archives/multimedia/document-4375>. Accessed on October 9, 2019.
- Vernon, C. (1984). Ground hornbills and the drought. *Bee-eater* 35:32.