



## Animal biodiversity in Fuliiru paremiology

[Biodiversité animale en parémiologie fuliiru]

Butoto Imani wa Rusaati<sup>1,2\*</sup>

<sup>1</sup>*School of Forest Sciences and Landscape Architecture, College of Agriculture and Life Sciences, Kyungpook National University, Daegu 41566, Korea*

<sup>2</sup>*Natural Sciences Research Center (NSRC/Lwiro), DS Bukavu, Democratic Republic of the Congo*

### Abstract

Proverbs are a collection of human and linguistic expressions that contain the traditional wisdom of a tribe. Fuliiru people in the Democratic Republic of Congo use proverbs to express their way of life. These proverbs refer to animals, plants, and other forms of creatures. This study aims to analyze the importance of animal biodiversity in Fuliiru paremiology. A descriptive qualitative method was carried out using data from the book "Recueil des proverbes Fuliiru". The animals were found and classified in class, order, and family. A total of 136 (11.8%) proverbs out of 1150 contained animal names. 36 animals belonging to 6 classes, 20 orders, and 24 families were found. The mammal class was the dominant class followed by the class of insect. Bovidae was the most represented family. The animals with the highest cited rank were dogs, chickens, and cows. This high animal diversity in the Fuliiru proverbs is evidence that animals play an important role in their life.

Keywords: Fuliiru, Proverbs, animals, biodiversity, Traditional knowledge.

### Résumé

Les proverbes sont un ensemble d'expressions humaines et linguistiques qui contiennent la sagesse traditionnelle d'une tribu. Les Fuliiru, en République démocratique du Congo, utilisent des proverbes pour exprimer leur mode de vie. Et ces proverbes font référence aux animaux, plantes et à d'autres formes des créatures. Cette étude vise à analyser l'importance de la biodiversité animale dans la parémiologie Fuliiru. Une méthode qualitative descriptive a été réalisée à partir des données du livre « Recueil des proverbes Fuliiru ». Les animaux ont été retrouvés et classés par classe, ordre et famille. Au total, 136 (11,8 %) proverbes sur 1 150 contenaient des noms d'animaux. 36 animaux appartenant à 6 classes, 20 ordres et 24 familles ont été trouvés. La classe des mammifères était la classe dominante, suivie de la classe des insectes. Les bovidés étaient la famille la plus représentée. Les animaux les plus cités étaient les chiens, les poules et les vaches. Cette grande diversité animale dans les proverbes Fuliiru prouve que les animaux jouent un rôle important dans leur vie.

Mots clés : Fuliiru, Proverbes, animaux, biodiversité, savoir traditionnel.

### Ku bwofi :

Imiganuulo ya'kabira ka bandu ne'ndeto yabo iri mwo'bulenga bwingi ukulengera imigani ye'nvuukira yabo. Ukwo Mufuliiru atuziri mu kihugo kye'Kongo (DRC), kuyijikiini ukulengera imigani (yabo). Lyo migani yabo iri mu deta ku biloziri inyamiishwa, imbuto, abandu ne'bindi biremwa bya kwingi kwingi. Akalimbi ka gano miiga kuli kuyuluuza kandi iri kushakula ukumenya akamaro ke'nyamiishwa mu burambe bwo'Mufuliiru.

Ino ndambo twahika kwo kuli kulyokera ku miiga miija go twagwana mu kitaabo kye'migani ikiri mu buuzibwa : "Recueil de proverbes Fuliiru (Ikuumaniro lye'migani ye' Kifuliiru)". Yumu, mu yiki kitaabo, twagwana kwe'nyamiishwa ziri ndengeke mu mituli ukukulikira imilala yazo ne'ngoomerezi yo'burambe bwazo. Mu kitabu kye'migani 1150, muli imigani 136 (11,8%) ihiiti amaziina ge'nyamiishwa (bikooko ne'bitugwa) ; 36 mu kati kaazo ziri mwe' mitengeko 6, ziri mwe' miharuuro 20 ne'milala 24. Umutengeko gwe'ziri mu yoza gwo'guli mwe'kiso kihamu ku yabo ; gunakulikiirwe no'mutengeko gwe'bizimu. Ingaavu gwo'mulala uguli mbere. Haliko, inyamiishwa iziri mu detwa detwa bweneene tuli tubwa, ingaavu, no'tubalala (kulya kwe'ngoko) natwo tunayije ha nyuma.

Yuku kukoleesa ibitugwa ne'bikooko kiri no'tunyuni mu migani ye'Kifuliiru kubonesiizi akamaro kaabyo mu burambe bwo'Mufuliiru.

\*Auteur correspondant: Butoto Imani wa Rusaati, ([irusaati@gmail.com](mailto:irusaati@gmail.com)), Tél. : (+82) 102 889 4327

Reçu le 01/12/2023; Révisé le 02/02/2024 ; Accepté le 08/03/2024

<https://doi.org/10.59228/rcst.024.v3.i1.61>

Copyright: ©2024 Rusaati. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## 1. Introduction

“*Ho tagasiga umwana uhasiga umugani*”  
(Where you don't leave a child, you leave a proverb).

Proverbs are a collection of human and linguistic expressions that contain the traditional wisdom of a tribe when it comes to understanding the world around them (Mansyur & Said, 2020; Tesfaye & Mesfin, 2014). There are among the non-literal language (Uekermann et al., 2008), like idioms, hyperbole, similes, puns, onomatopoeias, and symbolism (Sandra et al., 2014; Sundaray et al., 2018).

Throughout African history, proverbs have condensed prescriptions, laws, and ways of life (Lundula, 1985). And through generations, tribes have relied on proverbs to guide their daily lives (Otto & Tasie, 2019). Among the many functions of proverbs are to impart knowledge and life lessons, give tips and advice, impart moral values, express feelings and attitudes, and encourage others to reach their full potential (Kayad & Mary, 2021). However, rapid environmental changes, economic, political, and cultural transformations, may lead to the extinction of African cultural values and oral richness, including proverbs (Adom et al., 2021; Diaby, 2021). Therefore, keeping proverbs alive is an important part of preserving cultural heritage.

The Fuliiru tribe, with its traditional chiefdom, is one of the tribes among various tribes in the Democratic Republic of Congo (DRC), and an important tribe in the Uvira Territory (South Kivu Province) (Amani et al., 2022) (figure 1), which is their traditional homeland. Daily communication and cultural practices of the Fuliiru people are conducted in the Fuliiru Language, which has some similarities to ancient Hebrew (Levinsohn, 2006). Moreover, the Fuliiru language is a Bantu language belonging to the Niger-Congo class, to the group of Great Lakes Languages, Identified by the letter J (Maho, 2009) and it is spoken by more than 700,000 people.

As part of their relationship with nature and a way of guiding their social life, the Fuliiru people use traditional proverbs, idioms, and songs. Therefore, these paremiological traditions of the

Fuliiru people express the way of life, its beliefs, traditions, and culture.

Human life is greatly impacted by animals (Alves & Souto, 2011; Kim & Song 2013; Terashima, 2003; Zhou, 2023), and the human mind takes advantage of concrete items (e.g. animals and plants) while understanding abstract concepts because they play an unneglectable role in human life (Akiş, 2021). Thus, a wide range of emotions can be communicated by using animal terms in human speech (Madani et al., 2023). Thus, many people have used the names of animals and/or plants in their proverbs as metaphors to describe humans, nature, and other phenomena (Tarmizi, 2019). Various animal species are used in proverbs to portray people's characteristics and behavioral patterns, and their behavior and physical attributes are linked directly or metaphorically (Asefa, 2021; Biyela, 2003; Khan & Hashmi, 2022). Furthermore, numerous Fuliiru proverbs refer to animals, plants, and other forms of creatures. However, with the high rate of biodiversity declining due to habitat destruction, many of these (wild) species mentioned in these proverbs, are unknown by the young generation of Fuliiru people.

There have been numerous studies examining the animal biodiversity in children’s books, in fashion (Hooykaas *et al.*, 2022a; Hooykaas *et al.*, 2022b; Nakagawa & Koda, 2023), in proverbs (Asefa, 2021; Esirkepova *et al.*, 2018; Kayad & Mary, 2021; Kobia, 2016; Thin, 2020). The aim of this study is therefore to analyze the biodiversity of animals in Fuliiru paremiology. It not only provides insights into the cultural links between the tribu and the local fauna, but also preserves traditional knowledge about biodiversity.

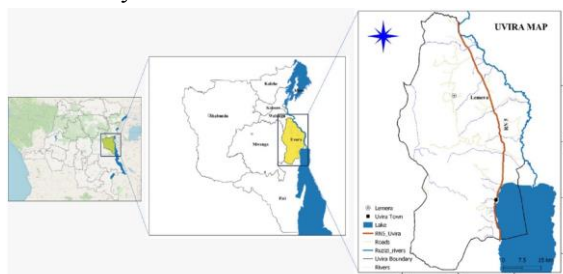


Figure 1. (a) Map of the Democratic Republic of Congo, (b) Sud-Kivu Province, (c) Uvira Territory where Fuliiru people live.

## 2. Material and Methods

This study was conducted with descriptive qualitative methods using Fuliiru proverbs. This Fuliiru wisdom was explored using various proverbs and expressions. The data were taken from Mushonio’s (2023) book entitled: “Recueil des proverbs Fuliiru”, published by “Case Culturelle Fuliiru”. In the first step, we selected all the proverbs that contained an animal name and listed them in an Excel file. The second step was the scientific classification of the identified animals. The third step was to analyze the results by ranking the animals scientifically. And the last step was to conduct an online survey among the Fuliiru, to understand the meaning of each type of animal found in the proverbs.

## 3. Results

Among the 1150 proverbs published in the book, 11.8% (136 proverbs) contain one or two animal names. Rather than portraying imagery of animals, all the animals in these Fuliiru proverbs were derived from the local fauna. Through this survey, 36 animals were found. Wild, domestic, and parasite animals were used to reflect human behavior. Vertebrates represented the majority (89 %) of the animals cited. The dominant class was Mammals (36 %), followed by insects (27.7 %), and birds, and

(16.6 %) (figure 2). 86% of the animals could be classified by taxonomic order and family, and in total, 20 orders and 24 families were identified (figure 2). 16 species were identified down to the species level, two were identified only to the genus level, and 18 could only be identified by their English name. Most of the species were either wild animals or domestic animals.

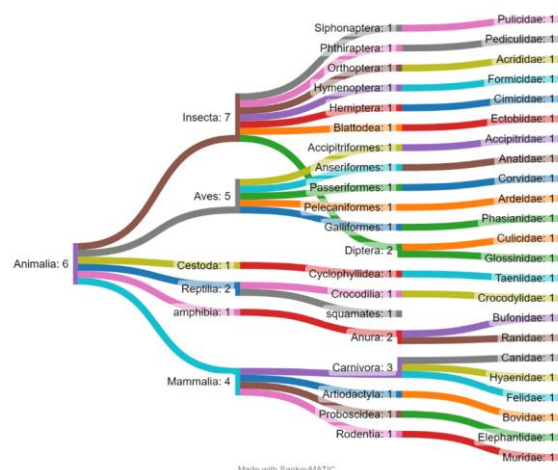


Figure 2. Sankey diagram of the animal cited in the Fuliiru proverbs (only species that could be identified up to the order).

The dominant orders were Artiodactyla and Carnivora with 5 animals each. 14 orders were represented only once. Concerning families, Bovidae was the most represented with 5 species, followed by Canidae, Felidae, and Phasianidae with 2 species each. Other families each had only one species. Almost all genera (n=18) were represented by one species, except *Panthera* represented par two species, i.e., *Panthera leo* (“Ndare”) and *Panthera pardus* (“Ngwi”)

The mammal species that were most cited were Dog, Cow, Leopard, and Jackal. Chicken and partridge were encountered frequently as birds. Considering insects class, Aunts, and flies were some of the species cited (figure 3, table 1). Although all the wild animals cited in the Fuliiru proverbs still exist in the DRC ecosystem, they have become rare in Fuliiru chiefdom.

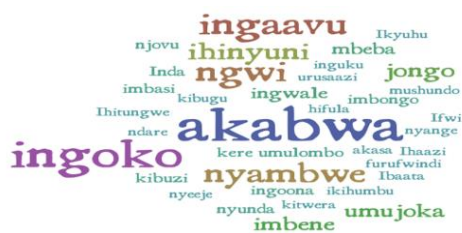


Figure 3. Word cloud for the animal names in Fuliiru

### 3.1. Dog (*"Akabwa"*)

The dog does not have any cultural value in Fuliiru life. It is bred for hunting or protection. Occasionally, the dog is used as a signal to a breeder in the event of an attack on livestock by ferocious animals or thieves. And when it does not hunt again, it's discredited and sometimes killed or sold to someone else.

### 3.2. Chicken (*"Ingoko"*), Duck (*"Ibaata"*), and Crow (*"Namujongo"*)

Chicken is a domestic backyard bird and has economic and dietary interests. It is very rare to find households without a small flock of chickens. Whatever its sex, this bird is a very important animal for the Fuliiru, because it symbolizes high esteem. (1) Chicken takes an important place in the dishes to be offered to a son-in-law on the day of the dowry. (2) When a woman visited her parents, on her return she must have a chicken (often a rooster) for her husband in the village. (3) At the reception of a respectful person, among others the nephew (*"Mwihwa"*) and the son-in-law (*"Mukwi"*), Fuliiru serve dishes made of chicken with its gizzard. The presence of its gizzard on the dish means that the hen was shot in honor of the said visitor. Also, instead of giving vegetables to the son-in-law, it is better to give him an egg from a chicken, because this egg is considered **as** chicken. We should note that some people can never share chicken dishes together. This is the case of father-in-law with his son-in-law.

However, a rooster crowing at 7 p.m. presages misfortune in the family. In this case this rooster must be killed.

Duck is a poultry of less importance in Fuliiru's life. Duck is domesticated for food and socio-economic life. However, compared to chicken, it is less domesticated, and its eggs are consumed less. Rarely does a Fuliiru offer it to a respected person. This bird symbolizes laziness, irresponsibility, and dirtiness.

Crow is a wild bird neither loved nor hunted by Fuliiru people. It symbolizes misfortune, curse, ugliness, or bad luck. Unlike other birds (chicken, duck), its meat is not consumed by the Fuliiru.

### 3.3. Cow (*"Ingavu"*)

Animal of great importance to the Fuliiru people: (1) Our grandparents did not know how to trade, so they bought cows as part of their savings. Therefore, it is a sign of wealth and nobility, because

Fuliiru people often tend to estimate their wealth in terms of the number of cows they own. (2) Its meat is widely consumed among the Fuliiru people. It is a source of income, and it is easy for people to make money from selling cows. (3) In the past, dowries consisted of offering cows (maximum 3cows). The bride's family chose what they liked from the groom's family farm. (4) In addition, the cow created friendships and united families. Gifting a cow was enough to show friendship between families and their offspring.

### 3.4. Goat (*"Imbene"*) and Sheep (*"Kibuzi"*)

The goat is a domestic animal widely present in Fuliiru environments and has a cultural value. It is a source of income and offers quality and luxury meat. Its meat is more expensive than that of cows. Goats are raised alongside cowherds and accompany the cows during the dowry ceremony. Also threatened by insecurity and cattle theft, its breeding is also on the verge of extinction. Same case for cows and other animals.

Sheep plays almost the same role as the goat, but its meat is not preferable. Bred for rapid multiplication and increased wealth.

### 3.5. Jackal (*"Nyambwe"*) and Hyena (*"Ikihumbu"*)

Jackal is a wild animal that existed in the Fuliiru region savannahs, however, due to the invasion of his natural area by humans, and intense hunting, this animal disappears near humans. It is an enemy animal of the Fuliiru people. It is feared because it ravages domestic animals. It symbolizes wickedness and unforgiveness.

Like the jackal, the hyena also is the enemy animal of chicken and small cattle breeding to Fuliiru. It has disappeared from Fuliiru villages. It symbolizes weakness and misfortune.

### 3.6. Toad (*"Kere"*), Frog (*"Furufwindi"*) and Snake (*"Umujoka"*)

Toad is hated by Fuliiru. But predicting female birth in pregnant women.

Frog is of no use and not consumed by Fuliiru compared to other tribes or people ([Akinyemi and Ogaga, 2015](#); [Grano, 2020](#); [Ribeiro and Toledo, 2022](#)). And is among the animal that is food taboos for Fuliiru (e.g., crow, rat, etc.).

Snakes are Fuliiru's enemy animal and cannot be protected. However, some types of snakes are consumed by a minority of Fuliiru people. Also, oils

extracted from certain snakes (e.g., Ishato: Python spp) are used as medicines.

### 3.7. Elephant (“Njovu”)

It existed in the Ruzizi plain, and our ancestors hunted it for a long time. Its meat was consumed in our villages and the horns were sold to Europeans, Arabs, and Indians. However, nowadays, this animal has disappeared in the Fuliiru territory. It does not have any traditional symbol in Fuliiru people while in Thailand, it is a sacred animal (Han, 2019).

**Table 1.** Enumeration of animals cited in Fuliiru proverbs

Family	Scientific names	English name	Fuliiru names	Count
Accipitridae		eagle	Nyunda	2
Acrididae		cricket	Ihaazi	1
Anatidae	<i>Cairina moschata domestica</i> (Donkin, 1989)	canard	Ibaata	1
Ardeidae	<i>Bubulcus ibis</i> (Linnaeus, 1758)	Cattle Egret	Nyange	1
Bovidae	<i>Bos taurus</i> Linnaeus, 1758	Cow	Ingaavu (ifizi, kanyana)	12
Bovidae	<i>Capra hircus</i> Linnaeus, 1758	goat	Imbene (kibebe)	5
Bovidae		antelope	Imboago	2
Bovidae	<i>Ovis aries</i> Linnaeus, 1758	sheep	kibuzi (ikihaazi)	2
Bovidae		gazelle	Akasa	1
Bufoanidae		toad	Kere	2
Calliphoridae	<i>Cordylobia anthropophaga</i> Blanchard & Béranger-Féraud	cayor worm	Kitwera	1
Canidae	<i>Canis familiaris</i> Linnaeus, 1758	Dog	Akabwa (mukala, utubwa)	21
Canidae	<i>Lupulella adusta</i> (Sundevall, 1847)	jackal	Nyambwe (bulindima)	10
Cimicidae		bug	Ikyulu	1
Corvidae	<i>Corvus albus</i> Statius Muller, 1776	crow	Jongo (hungwe)	6
Crocodylidae	<i>Crocodylus niloticus</i> Laurenti, 1768	crocodile	Ingoona	2
Culicidae		mosquito	Hifula	1
Ectobiidae		Cockroach	Nyeje	2
Elephantidae	<i>Loxodonta africana</i> (Blumenbach, 1797)	elephant	Njovu	2
Felidae	<i>Panthera pardus</i> (Linnaeus, 1758)	Leopard	Ngwi	11
Felidae	<i>Panthera leo</i> (Linnaeus, 1758)	lion	Ndare	1
Formicidae		Ants	Imbasi (bunyegere)	2
Glossinidae	<i>Glossina</i> sp.	fly	Urusaazi (Kibugu)	2
Hyaenidae	<i>Crocota crocuta</i> (Erxleben, 1777)	hyaena	ikihumbu	1
Muridae		rat	Imbeba	3
Pediculidae		head lice	Inda	2
Phasianidae	<i>Gallus domesticus</i> (Linnaeus, 1758)	chicken	Ingoko (imbazi, utuhazi, izigabika, izigagoolo)	17
Phasianidae	<i>Coturnix coturnix</i> (Linnaeus, 1758)	partridge	Ingwale	3
Pulicidae		flea	Inguku	1
Ranidae		frog	Furufwindi	1
Taeniidae	<i>Taenia</i> sp.	tenia	Umulombo	2
NA		bird	Ihinyuni (akabalala, akanyunyi, ihisono, ihitungwe)	9
NA		leeches	Mushundo	1
NA		fish	Ifwi	1
NA		snake	Umujoka (njoka)	5



**Figure 4.** Examples of species cited in Fuliiru proverbs. (a) Ngwi (*Panthera pardus*), (b) ndare (*Panthera leo*), (c) ikihumbu (*Crocota crocuta*), (d) akabwa (*Canis familiaris*), (e) nyambwe (*Lupulella adusta*), (f) nyange (*Bubulcus ibis*), (g) njovu (*Loxodonta africana*), (h) Ingaavu (*Bos taurus*), (i) Imbene (*Capra hircus*), (j) kibuzi (*Ovis aries*), (k) Jongo (*Corvus albus*), (l) Ingoko (*Gallus domesticus*), (m) ingwale (*Coturnix coturnix*) (n) Ibaata (*Cairina moschata*), (o) Ingoona (*Crocodylus niloticus*).

**Sources:** a, b, c, f, g, h, l, j, k, l, m, n, and o:

<https://animalia.bio/fr/>; d and e:

<https://en.wikipedia.org/wiki/>

### 3.8. Leopard (“Ngwi”)

Wild animals bred by the kings (“Baami”) and whose skin is a physical expression of power. It is used for kings’ investiture event. Although ferocious, the Leopard is considered as a guard animal of the Fuliiru royal court. It is the totem animal of the Fuliiru and represents the power and strength. Also, it represents a traditional chief who just died. However, like lions, jackals, and other wild animals, Humans have destroyed not only its natural habitat but also overexploited it. Its meat is not consumed by Fuliiru.

### 3.9. Lion (“Ndare”)

A ferocious animal that Fuliiru fears a lot and is not too often seen. It represents power, leadership, and domination. But, as Jackal and other wild animals, the lion also tends to disappear in Fuliiru country.

## 4. Discussion

This study is one of the first to provide an in-depth analysis of proverb for understanding biodiversity in the local context of Democratic Republic of Congo. It was shown that the Fuliiru used animals from the environment in their proverbs, songs, and sayings. These results show that the Fuliiru and their environment have close connection and that these animals play an essential role in their social life. This knowledge is valuable and can be an important source of information to improve problem solving and decision-making. Unlike Fuliiru proverbs, in which all animals are real, other cultures often use imaginary creatures (e.g., dragons, etc.) to describe their social lives (Chačtrjan, 2014; Thin, 2020).

The recorded results showed that dogs, chickens, and cows were the most frequently cited animals in the proverbs. The study corroborated other studies that found dogs, chickens, and cattle to be among the most frequently used animals in proverbs (Kobia, 2016; Matta, 2021; Yuldashev, 2020).

Despite the fact that the dog is one of the most frequently quoted animals in the Fuliiru proverbs or in many proverbs around the world, in many cultures, it is still one of the animal that has no real value other than a pet (Smith & Litchfield, 2009). Compared to some other cultures in DR Congo, Africa, or in Asian countries, where dog is a favorite food (Li et al., 2017; Eze et al., 2015), Fuliiru can

never eat dog.

The chicken meat is more important compared to other meat when it comes to honoring a person. Instead of giving goat meat to a respectful person, we offer him chicken meat whatever its size. And the one who receives it feels much more respected and honored than the one who receives the goat meat. This corroborates with [Kobia \(2016\)](#) who found that chicken was among the most highly valued birds in Swahili people ([Kobia, 2016](#)). Goat and beef are the most consumed meat in Fuliiru tribe. According to [Teixeira et al., \(2020\)](#) goats and sheep are among the most consumed meat in the world after pork, poultry and beef meat ([Mazinani & Rude, 2020](#)). Goat meat is rich in protein, vitamins and minerals, and contains little fat ([Ivanovic et al., 2016](#)). While Fuliiru used cows for only meat and wealth, other people in Asia worshiped them ([Lodrick, 2005](#)). And, in Mongolia goat is considered a god ([Boyazoglu et al., 2005](#)).

In context of globalization and rapid urbanization, there is an irreversible loss of traditional knowledge ([Fischer et al., 2022](#); [Takam et al., 2022](#)), and young generations are the most at risk of losing this knowledge, especially those living in urban area and believe less in tradition ([Brosi et al., 2007](#)). Consequently, the practice of giving cows as dowries slowly disappears. However, the money given as a dowry is equivalent to the number of cows agreed.

## 5. Conclusion

This study aimed to shed light on animal diversity in the Fuliiru proverbs. The results show that the Fuliiru have a close connection to animals in their daily lives. Almost all vertebrates that live in the Fuliiru territory are represented in their proverbs. Among these animals, some are culturally important while others are taboo.

This study focused only on the animals. Future studies should investigate plant diversity in the Fuliiru proverbs to understand the relationship between Fuliiru and plants.

## Acknowledgments

We thank Mushonio Banyimwire wa Rusati for providing a great book of Fuliiru proverbs that is rich with information regarding the traditional life of the Fuliiru people. We are grateful to “Case Culturelle Fuliiru (Indaro ye’nvuukira ye’Kifuliiru (CACF-

INKI))” which provided invaluable support relating to Fuliiru culture knowledge. A special gratitude to all the guardians of Fuliiru Culture. Thank you also to the interviewers who agreed to complete our surveys.

## References

- Adom, D., Chukwuere, J., Foday, P., Thulla, Y. (2021). African Proverbs for Cultural Education : A Step towards Digital Archiving Journal of History Culture and Art Journal of History Culture and Art Research, 10(4), 44–59. <https://doi.org/10.7596/taksad.v10i4.3118>
- Akinyemi, A.F., Ogaga, R.D. (2015). Frog Consumption Pattern in Ibadan, Nigeria. Journal for Studies in Management and Planning, Volume 01(03), 522-531. <http://internationaljournalofresearch.org/index.php/JSMaP>
- Akiş, N.Y. (2021). Plant-themed metaphors in Turkish proverbs: a cognitive approach. Master thesis, Hacettepe University.
- Alves, R.R.N., Souto, W.M.S. (2011). Ethnzoology in Brazil: Current status and perspectives. Journal of Ethnobiology and Ethnomedicine, 7:22. <https://doi.org/10.1186/1746-4269-7-22>
- Amani, R.K., Riera, B., Imani, G., Batumike, R., Zafra-Calvo, N., Cuni-Sanchez, A. (2022). Climate Change Perceptions and Adaptations among Smallholder Farmers in the Mountains of Eastern Democratic Republic of Congo. Land, 11(5). <https://doi.org/10.3390/land11050628>
- Asefa, A. (2021). Exploration of human-bird relationships: Oromo proverbs associated with the Northern Ground-hornbill in Ethiopia. Social Sciences & Humanities Open, 4(1), 100162. <https://doi.org/10.1016/j.ssaho.2021.100162>
- Biyela, N.G. (2003). Selected Animal-and Bird-Proverbs As Reflectors of Indigenous Knowledge Systems and Social Mores: a Study From Zulu Language and Culture. Doctoral thesis, University of Natal Pietermaritzburg, South Africa.
- Boyazoglu, J., Hatziminaoglou, I., Morand-Fehr, P. (2005). The role of the goat in society: Past, present and perspectives for the future. Small Ruminant Research, 60: 13-23.

- <https://doi.org/10.1016/j.smallrumres.2005.06.003>
- Brosi, B.J., Balick, M.J., Wolkow, R., Lee, R., Kostka, M., Raynor, W., Gallen, R., Raynor, A., Raynor, P., Lee, L.D. (2007). Cultural erosion and biodiversity: Canoe-making knowledge in Pohnpei, Micronesia. *Conservation Biology*, 21(3), 875–879. <https://doi.org/10.1111/j.1523-1739.2007.00654.x>
- Chačatřjan, A. (2014). Zodiac Animals In Korean Proverbs. *Ediçāo*, 7.
- Diaby, M.L. (2021). Le Proverbe et la Préservation des valeurs Socio-Culturelles. *Journal Of Philology And Intercultural Communication*, 5(2), 146–155. <http://www.ilcs.journal.mta.ro>
- Esirkepova, K.K., Kanapina, S.G., Bekbossynova, A.K. (2018). Symbolizing value of names of animals and numbers in the Kazakh Proverbs and Sayings. *ВЕСТИНИК КТПИИ*, 2(50), 22–25.
- Fischer, M., Maxwell, K., Nuunoq, P.H., Greeno, D., Jingwas, N., Graham, B.J., Hugu, S., Mustonen, T., Murtomäki, E., Mustonen, K. (2022). Empowering her guardians to nurture our Ocean’s future. *Reviews in Fish Biology and Fisheries*, 32(1), 271–296. <https://doi.org/10.1007/s11160-021-09679-3>
- Grano, M. (2020). The Asian market of frogs as food for humans during COVID-19. Risk and consequences for public health. *Medicine Papers*, 6(4), 77–87.
- Han, J. (2019). The Study of Thai Elephant Culture Based on the “Elephant Metaphors” in Thai Idioms. *Comparative Literature: East and West*, 3(2), 148–162. <https://doi.org/10.1080/25723618.2019.1701306>
- Hooykaas, M.J.D., Aalders, A.K., Schilthuizen, M., Smeets, I. (2022a). Animals in Fashion: Portrayal of Animal Biodiversity on Children’s Clothing. *Society and Animals*, 13(7), 1–26. <https://doi.org/10.1163/15685306-bja10109>
- Hooykaas, M.J.D., Holierhoek, M.G., Westerveld, J.S., Schilthuizen, M., Smeets, I. (2022b). Animal biodiversity and specificity in children’s picture books. *Public Understanding of Science*, 31(5), 671–688. <https://doi.org/10.2298/bah1602111i>
- Ivanovic, S., Pavlovic, I., Pisinov, B. (2016). The quality of goat meat and it’s impact on human health. *Biotechnology in Animal Husbandry*, 32(2), 111–122. <https://doi.org/10.2298/bah1602111i>
- Kayad, F.G., Mary, S. (2021). Bidayah Proverbs with Animal and Plant Elements: A Reflection of Culture and Philosophy. *Human Behavior, Development and Society*, 22(3), 65–73.
- Khan, A., Hashmi, F. (2022). Mare Wearing a Scarlet Bridle: A Feminist Critique of Gender Based Animal Imagery in Punjabi Proverbs. *Pakistan Journal of Humanities and Social Sciences*, 10(1), 260–276. <https://doi.org/10.52131/pjhss.2022.1001.0194>
- Kim, H., Song, M.J. (2013). Ethnozoological study of medicinal animals on Jeju Island, Korea. *Journal of Ethnopharmacology*, 146(1), 75–82. <https://doi.org/10.1016/j.jep.2012.11.011>
- Kobia, J.M. (2016). A Conceptual Metaphorical Analysis of Swahili Proverbs with Reference to Chicken Metaphor. *International Journal of Education and Research*, 4(2), 217–228. [www.ijern.com](http://www.ijern.com)
- Levinsohn, S.H. (2006). Towards a Typology of Story Development Marking (Repeatedly Naming the Subject: The Hebrew Equivalent of Greek Δέ). *Journal of Translation*, 2(2), 31–42. <https://doi.org/10.54395/jot-d486r>
- Li, P.J., Sun, J., Yu, D. (2017). Dog “Meat” Consumption in China: A Survey of the Controversial Eating Habit in Two Cities. *Society and Animals*, 25(6), 513–532. <https://doi.org/10.1163/15685306-12341471>
- Lodrick, D.O. (2005). Symbol and sustenance: Cattle in South Asian culture. *Dialectical Anthropology*, 29(1), 61–84. <https://doi.org/10.1007/s10624-005-5809-8>
- Lundula, S. (1985). La notion d’autorité chez les tetela à travers quelques proverbes. *Annales Aequatoria*, 6, 147–163.
- Madani, Z., Abusalim, N., Rayyan, M. (2023). Gender representation in animal-related proverbs: Algerian vs . Jordanian Arabic. *Frontiers in Sociology*, 8(June), 1–15. <https://doi.org/10.3389/fsoc.2023.1145200>
- Maho, J.F. (2009). The online version of the New Updated Guthrie List, a referential classification of the Bantu languages. In *NUGL Online*. <http://goto.glocalnet.net/mahopapers/nuglonline.pdf>

- Mansyur, F.A., Said, R. (2020). A Cognitive Semantics Analysis of Wolio Proverbs Related to the Human Body. *Advances in Social Science, Education and Humanities Research*, 436, 259–262. <https://doi.org/10.2991/assehr.k.200529.053>
- Matta, H. (2021). Animals in egyptian proverbs. *Proverbium*, 38, 177–202.
- Mazinani, M., Rude, B. (2020). Population, world production and quality of sheep and goat products. *American Journal of Animal and Veterinary Sciences*, 15(4), 291–299. <https://doi.org/10.3844/ajavsp.2020.291.299>
- Mushonio, B.R. (2023). Recueil de Proverbes Fuliiru. Case culturelle Fuliiru. Uvira, Democratic Republic of Congo.
- Nakagawa, J., Koda, N. (2023). Animal Depictions in Baby Picture Books: Focusing on Food, Clothing, and Shelter. *International journal of literature and arts*, 11(3), 119–126. <https://doi.org/10.11648/j.ijla.20231103.14>
- Otto, O.A. Tasié, O.H. (2019). Proverbs and Idioms as Sources of Knowledge Generation in Ogba and Ikwerre Traditions of the Niger Delta. In *African Indigenous Knowledge Systems: Problems and Perspectives* (pp. 157–173).
- Ribeiro, L.P., Toledo, L.F. (2022). An overview of the Brazilian frog farming. *Aquaculture*, 548(P2), 737623. <https://doi.org/10.1016/j.aquaculture.2021.737623>
- Sandra, C., Dina, S., João, M., Alexandre, D.M., Guerreiro, M. (2014). Non-literal language deficits in mild cognitive impairment. *Psychogeriatrics*, 14, 222–228.
- Smith, B.P., Litchfield, C.A. (2009). A review of the relationship between indigenous australians, dingoes (*canis dingo*) and domestic dogs (*canis familiaris*). *Anthrozoos*, 22(2), 111–128. <https://doi.org/10.2752/175303709X434149>
- Sundaray, S., Marinis, T., Bose, A. (2018). Comprehending Non-literal language: Effects of aging and bilingualism. *Frontiers in Psychology*, 9, 1–15. <https://doi.org/10.3389/fpsyg.2018.02230>
- Takam, X.T., Kalaba, F.K., Nyirenda, V.R. (2022). Mining and socio-ecological systems: A systematic review of Sub-Saharan Africa. *Resources Policy*, 78, 102947. <https://doi.org/10.1016/j.resourpol.2022.102947>
- Tarmizi, A.R. (2019). Cultural Values in Traditional Proverbs of Pakpak. *The Second Annual International Conference on Language and Literature*, 2019, 81–93. <https://doi.org/10.18502/kss.v3i19.4832>
- Teixeira, A., Silva, S., Guedes, C., Rodrigues, S. (2020). Sheep and Goat Meat Processed Products Quality: A Review. *Foods*, 9(7), 1–21. <https://doi.org/10.3390/foods9070960>
- Terashima, H. (2003). Names, Use and Attributes of Plants and Animals Among the Ituri Forest Foragers: a Comparative Ethnobotanical and Ethnozoological Study. *African Study Monographs, Suppl.* 28: 7–24.
- Tesfaye, D., Mesfin, W. (2014). The socio-cultural functions of Kafa proverbs. *African Journal of History and Culture*, 6(6), 94–99. <https://doi.org/10.5897/ajhc2014.0198>
- Thin, P.Y. (2020). A Comparative Study of Animals that Describe the Characteristics of Human through Thai and Myanmar Proverbs. *Yangon University of Foreign Languages Research Journal*, 11(1), 194–206.
- Uekermann, J., Thoma, P., Daum, I. (2008). Proverb interpretation changes in aging. *Brain and Cognition*, 67(1), 51–57. <https://doi.org/10.1016/j.bandc.2007.11.003>
- Eze, U.U., Anene, B.M., Chukwu, C.C., Ogunkoya, A.B., George, S.O., Eze, J.I., Animoke, P.C., Nwosuh, C.I. (2015). Risk of typical rabies in dog meat-eating human population, in Enugu, Nigeria. *International Journal of Public Health and Epidemiology*, 4(1), 2326–7291.
- Yuldashev, A.A. (2020). Animal Metaphor Proverbs in Uzbek and Malay Cross-Culture. *Science and Education" Scientific Journal*, 1(2), 180–185.
- Zhou, Q. (2023). Analysis of Cultural Connotation Differences of Animal and Plant Words between Chinese and English from the Perspective of Cross-cultural Communication. *Studies in Linguistics and Literature*, 7(2), p21. <https://doi.org/10.22158/sll.v7n2p21>