

Original Research Article**DOI: 10.26479/2020.0602.06**

TRADITIONAL BELIEFS AS CONSERVATION TOOLS: THE GALO'S OF ARUNACHAL PRADESH, EASTERN HIMALAYAS, INDIA

Hiranmaya Sharma

Department of Zoology, D. N. Govt. College, Itanagar, Arunachal Pradesh, India.

ABSTRACT: The Indian state of Arunachal Pradesh consists of the Eastern Himalayan and Indo-Myanmar biodiversity hotspots of the world. The rich biodiversity of the region is characterized by high degree of endemism, flora and fauna. The region is inhabited by various indigenous tribes, which include 26 major and 110 minor tribes. The people depended solely on local resources including agriculture, fishing and hunting. The Galo Tribe is one of the 26 major tribes of Arunachal Pradesh. The Galo's pursue many traditional beliefs which are associated with nature and natural resources. A study of the traditional beliefs amongst the Galo's was done in the villages located nearby Aalo, Arunachal Pradesh, India. The data was taken from villagers by questionnaire method during the session 2012-14. The practices include conservation of big trees and forest as totem, protection of certain animals and plants as tabooed species and also by worshipping them as deity. Killing of Tiger is considered a bad omen and the person found guilty of killing tiger is banned from participating in their traditional festivals like Mopin and made to sleep in the community hall, the *Dere*. Preliminary rituals are done before felling any big tree, seeking permission from Forest God and excuse the community for cutting the tree. It was observed that the traditional beliefs and customs are still prevalent among the Galo's of the study area and they play a very important and practical role in the conservation of nature and natural resources.

Keywords: Galo, traditional beliefs, biodiversity conservation, totem, natural resource.

Article History: Received: March 02, 2020; Revised: April 02, 2020; Accepted: April 23, 2020.

Corresponding Author: Dr. Hiranmaya Sharma* Ph.D.

Department of Zoology, D. N. Govt. College, Itanagar, Arunachal Pradesh, India.

Email address: hiranmayasharmaj@rediffmail.com

1. INTRODUCTION

Biodiversity and nature conservation is one of the foremost tasks at hand for further survival of human race. Biodiversity loss leads to adverse effects on humanity [1]. The rate at which biodiversity and other natural resources are being depleted is posing an eminent threat to the survival of every living being on earth. India is one of the megabiodiverse countries of the world [2], Eastern Himalayas being a biodiversity hotspot. The rich hominoid biodiversity of India comprises of people belonging to 227 ethnic groups and 573 tribal communities derived from six racial stocks in the country [3]. According to certain studies, the tribes inhabiting North East India have been divided into two broad ethnic communities, such as the Khasi and the Jaintia of Meghalaya, who belong to 'Monkhemar' culture of Austroic dialect, and the rest of the tribal groups are basically Mongoloid, belonging to Tibeto-Burman subfamily of Tibeto-Chinese group [4,5]. Arunachal Pradesh is the largest state of the North-eastern region of India, in terms of area. It lies within the Eastern Himalayan biodiversity hotspot [6]. The Eastern Himalayas and the combined region of Indo-Burma, India and Myanmar constitute two biodiversity hotspots of the world among such 34 newly defined regions [7]. Owing to the rich biodiversity, the Eastern Himalayan region is also one of the 200 globally important ecoregions [8]. The rich biodiversity of the region is characterized by high degree of endemism, flora and fauna. The region is inhabited by various indigenous tribes, which include 26 major and 110 minor tribes [9]. The district of West Siang roughly lies between 27°29' N to 29°23' N latitude and 94°02' E to 95°15' E longitude. It covers a total geographical land area of 12006 sq km. situated in the central region of the state with altitudinal variations between 200 to 4900 m above msl. [10]. With its headquarters at Aalo, the district is bounded on the north by China, on the east by Upper Siang and East Siang districts, on the west by Upper Subansiri and Lower Subansiri districts and Asom on the south. The climate is having continental character with average rainfall of 3000 mm, with temperature ranging from 5°C in winter to 38°C in summer at foot hills and plains and it varies from below the freezing point to 25°C in higher altitudes [11]. The tribes inhabiting the district include the Galos, Minyongs, Boris, Bokars, Pailibos, Ramos and Membas. The study has been done on Galos inhabiting in villages in and around Aalo. The indigenous tribal people living in the vicinity of forests depend on wildlife for food, trade, cultural purposes and income [12,13]. The indigenous people, who live in close harmony with nature, and dependent upon the natural resources for their survival, develop a stake in conserving, and in some cases, enhancing biodiversity. The practices for conservation of biodiversity were established over a long period of time through a continuous process of trial and error [14]. The effective methods, by virtue of conscious or sub-conscious observation, passes from generation to generation. Similar instances are seen in the certain Sumatran tribe who believed to have a spiritual 'herdsman' who is the supreme owner of all the wild animals [15]. The indigenous tribes live in close association with nature which includes flora and fauna and have developed their own traditional cultures, religions, customs,

taboos, folk tales, food and medicines and are dependent on nature for most of their needs [16]. There are instances where various traditional beliefs lead to conservation. Forests are generally believed to be abode of spirits such as dwarfs by most tribes in Ghana [17]. Some earlier studies among the Adis of Arunachal Pradesh also showed that they practiced numerous traditional beliefs which aids in conservation of nature and natural resources [18].

2. MATERIALS AND METHODS

Study area

The study area is Aalo and villages neighbouring Aalo. Aalo is the district headquarters of West Siang district, Arunachal Pradesh. The area was selected because it is the main epicenter of the Galos, which is a diverse tribe spread throughout the state of Arunachal Pradesh. The study area includes 5 villages, located between longitude $94^{\circ}47'43.07''$ and $94^{\circ}50'27.88''$ E, and latitude $28^{\circ}03'46.29''$ and $28^{\circ}10'30.40''$ N. The altitude ranges from 238 to 517 meters above m.s.l. Siang is the main river flowing through the region. Small tributaries of Siang traverse the villages considered in this study. The data were collected through interaction with the villagers during the year 2012-14, with the help of questionnaire method and open ended interviews of semi-restrictive nature, group discussion and site visitation by the authors. They were interviewed independently in their villages in the form of questionnaires, group discussions and personal interviews. Five numbers of villages in West Siang district of Arunachal Pradesh namely Aalo (rural), Tadin, Kombo, Ngomdir and Dego lying between longitude $94^{\circ}47'43.07''$ and $94^{\circ}50'27.88''$ E, and latitude $28^{\circ}03'46.29''$ and $28^{\circ}10'30.40''$ N were selected for study. The altitude ranges from 238 to 517 meters above m.s.l. The villages were selected on the basis of remoteness from urban areas. The surveyed area is also the epicenter of the Galo tribe, known for their established traditional and religious practices.

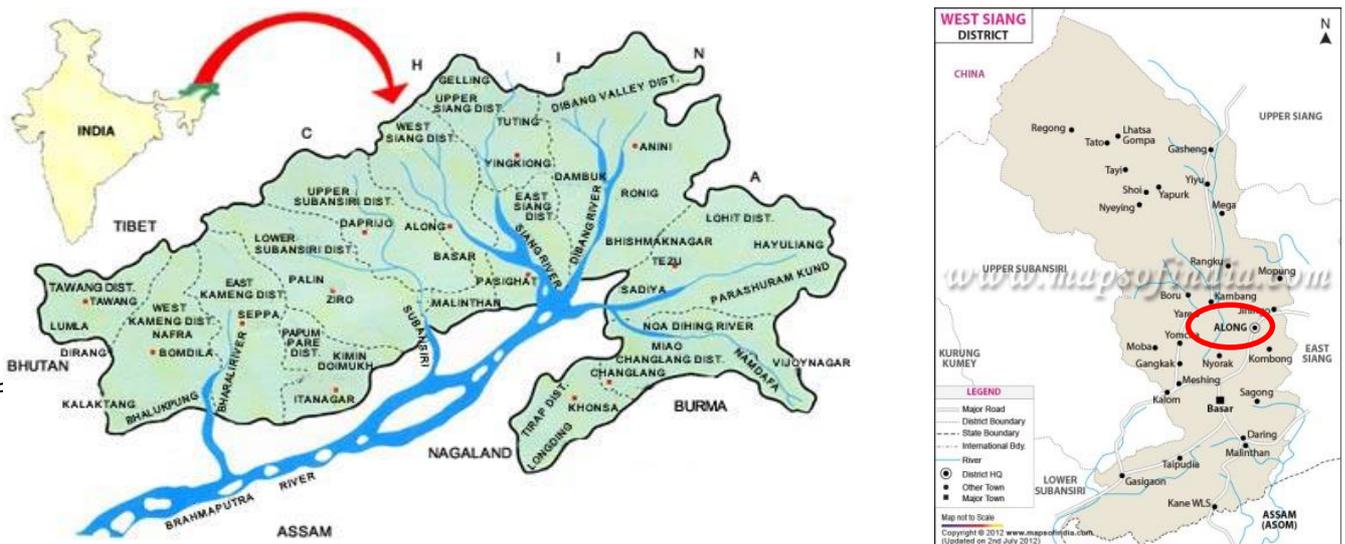


Fig 1: Study Area map (Courtesy: arunachalforests.gov.in)

© 2020 Life Science Informatics Publication All rights reserved

Peer review under responsibility of Life Science Informatics Publications

2020 March – April RJLBPCS 6(2) Page No.75

3. RESULTS AND DISCUSSION

The study area is a small township surrounded by the indigenous population of Galos, continuing many generations of populations in these areas. The Galos are one of the major tribes of Arunachal Pradesh. They live in harmony with nature and derive many of their needs from nature.

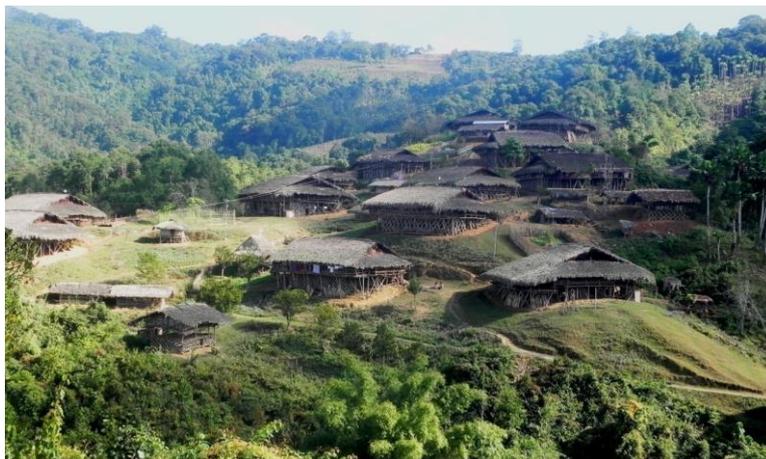


Fig 2. A Traditional Galo Village

Components of Nature as Gods

The Galo tribe has many established traditional and religious practices which are in conformity with



Fig 3. The *Donyi-Polo*, Sun and the Moon God

the nature and natural resources, either directly or indirectly. Various components of nature were given the status of various Gods. The forest is considered the nature God and rituals are done periodically to keep the nature God satisfied. The Sun and Moon are considered the Sun-God and Moon-God respectively and locally called the *Donyi-Polo*.

Flora in traditional beliefs

The flora constitutes a major part of the forest in the vicinity of the villages. The big trees find a special position in the culture of the local people. Ceremonial rituals are compulsory before felling a big tree asking the Forest God for permission to fell the tree. A chicken is culled as offering to nature god.



Fig.4. (a) Preparation of a Deity from plant parts. (b) A preserved deity of the yesteryears.

Importance of flora is reflected in the pattern of use of certain plants during festivals and at home.

The major festival of the Galo's is Mopin, which is celebrated with much pomp and gaiety. The Mopin deity (*Pinku-pinte*) is made of plants and plant parts, arranged in a specific manner. The deity is worshipped during the occasion of Mopin, symbolizing nature God. During other festivals and individual ritual practices restricted to single family or person, similar structures were made from the plants, which were considered auspicious. The Burial place for the dead is normally located outside the village, not far, in vicinity of the Forest God.

Fauna in traditional beliefs

Though the indigenous Galo people hunt wild animals for meat and medicines, many animals are considered sacred among the Galos. The animals belong to various groups such as mammals, aves and reptiles. The animals considered sacred were not hunted by the local people under normal circumstances. The tiger is on the top of priority list of sacred animals. Tiger killing is regarded a taboo and the person who kills a tiger is punished by disallowing to stay in his house in the village..

Mammals

The tiger (*Panthera tigris*)

The persons who kill Tiger were banned from celebrating Mopin, the most important festival of the Galos. They are allowed to live in the community hall, locally called the *Dere* for one month. Such hunters cannot live in their own houses till the punishment period is over. Otherwise, ill-omen will befall over the family of the hunter and all his family members will die eventually, as believed by the local people. *Dere* is normally used for holding meetings, and as a place of assembling of the village people during various occasions.



Fig. 5. Local Community Hall, the *Dere*

The other members of the cat family not hunted, unless they pose a risk to the humans and domestic animals. Certain animals, though sacrificed for certain rituals, were also symbolized as parts of Nature God. They find a very important position in the traditional mythology, which has a psychological impact on the people. The animal Mithun (*Bos frontalis*) is considered the son of Sun-God. Cow (*Bos indicus*) is considered the son of moon God. The dog (*Canis familiaris*) is regarded a totem as the traditional mythology states that it is the savior of human being, who bought rice grain in his ear for ancestors of human being, because of which the human beings could survive till now.



Fig 6. Local people preparing for a ritual,

Birds

Avian fauna also finds an important place among the traditional beliefs. The hornbill (*Buceros bicornis*) is also considered sacred, and part of the nature God. Though the local people consumes certain birds, which includes species mostly numerous, certain birds were never killed. Persons killing hornbill were made to follow one year social restrictions, with prevention of participation in Mopin and other social gatherings. Two varieties of *bulbuli* bird are available in the locality. Of the two, the Small *bulbuli* finds an important place in their beliefs. It is considered a taboo and not killed by the local people as killing the bird is believed to cause leprosy. Another bird, the Black backed Forktail (*Enicurus immaculatus*), locally known as *Tako-momo* bird is also considered a taboo and to kill this bird before local auspicious ceremony (*dondai pooja*) is considered a bad omen.



Fig. 7. Black backed Forktail, a sacred bird.

Reptiles

There is no belief associated with any specific snake. But confrontation with snakes is avoided as far as possible. People who got Snake bites were restricted from appearing in any social function for 1 year. As confrontation with snakes may lead to snake bites, which may lead to social ban, they are avoided by the local folk, leading to their conservation.

Thus, the traditional beliefs prevailing amongst the Galos regard many components of nature as sacred, which includes both the living and non-living things, ultimately leading to conservation of nature and biodiversity. The status of Sun and Moon as Gods, existence of spirits in their beliefs, and association of certain components of biodiversity in the form of flora or fauna, gives a sacred position to those plants and animals, thus leading to their conservation. The status of forest and the associated factors in and around the forest as Nature God creates a sense of respect and fear among the people, which leads to restricted exploitation of natural resources, ultimately leading to

conservation. There are examples of such patterns related to conservation in Delta State, Nigeria, where the Iroko, Mahogany trees, python and Obi spirit inhabiting water body were not to be disturbed by the local people [19]. Disturbing them may lead to befalling of certain troubles upon the villagers. Among Asian hunting societies in China and Indonesia, hunting is a significant social activity and wild animals are powerful as subjects of myths, symbols and omens [20]. Giving emphasis on certain species is indicative of their specific roles in the ecosystem. During the ancient times, when these places were not connected by roads, the local tribal communities used to be self-dependent, and therefore, hunting wild animals for food is inevitable. In spite of hunting for food, a mechanism developed in due course of time which gave special status to certain animals and plants, whose exploitation may lead to certain undesirable changes in the ecosystem. The tiger, which is at the apex of ecological pyramid [21], plays a significant role in the sustenance of the ecosystem. Modern ecological studies also indicate the significance of the top carnivores in maintaining the balance of the ecosystem. Such findings encourage re-introduction of top carnivores for a sustainable ecosystem [22]. The Tangams of Arunachal Pradesh also consider killing of tiger as taboo and follows strict customary rituals to be followed after killing a tiger. Such practices aids in conservation of tiger and other big cats [23]. Stringent punishment for killing tiger and taboos related to animal helps in conservation of the animal and thus maintain the ecological balance. This practice of giving a special status to the tiger by the indigenous villagers has proven effective in various modern conservation strategies. Nowadays, there are examples wherein certain species are considered flagship species, which played an important role in various conservation strategies. Among the mega fauna, the tiger (*Panthera tigris*), rhinoceros (*Rhinoceros unicornis*), and giant panda (*Ailuropoda melanoleuca*) in Asia, [24] are considered flagship species. If the population of one such species is kept viable through safeguards and judicious interventions, then it is thought that populations of many sympatric species will maintain positive growth rates [25]. The case of tiger in the traditional Galo beliefs seems to reflect the same, though it was practiced since much older times. Other studies also indicate that Idu-mishimi tribe of Arunachal Pradesh places tiger and hoolock gibbon on the top list of animals which must not be hunted, as beliefs say that it may lead to destruction of the hunter's family. Such beliefs plays a very significant role in the conservation of such animals and maintenance of ecosystem stability [26]. Hornbill, another important fauna on the sacred list, is also conserved through their beliefs, as killing of a hornbill leads to complete devastation of the family. The female resides with the newborns in the hollow crevices of trees whereas the male feeds the whole family [27]. Killing of the male leads to starvation of the whole family to death. The ancestors of the local tribal people seem to observe this fact and incorporated such beliefs for conservation of the bird. Mithun and cows, though slaughtered for meat, are associated with Sun God and Moon God. As a result, the indiscriminate killing is restricted and propagation for further survival is ensured. It is observed that anti-poaching programmes often fail

without the support of rural dwellers, as many of them may poach wildlife for survival or profit. Zambia's rhino conservation programme failed and the elephant population decreased from 1,61,000 to a mere 20,000 in one decade [28]. Owing to the rich biodiversity of Arunachal Pradesh the trafficking of many wildlife products is taking place in large numbers which demand conservation effort of these species. Earlier 81 studies have also indicated trafficking of these species from [29]. Sustainable hunting, a new concept, is believed to be a major conservation tool in the 21st century. It conserves wildlife populations and biodiversity in general, whereas hunting bans can speed up extinction [30]. Certain other studies of Akan beliefs in the Ghanaian environment also indicate degradation of the ecological environment as an aggression of modernity and decline in the use of indigenous traditional beliefs [31]. Thus, it is evident from the above that the local tribal people have contributed to conservation of biodiversity and maintaining balance in the ecosystem since the very beginning of civilization in the area. It is observed that the traditional beliefs are very efficient conservation tools which, if followed properly, do not need any modern strategies for conservation.

4. CONCLUSION

It was observed that there are a lot of traditional beliefs prevailing in the Galo community which plays a very important role in biodiversity and nature conservation. The religious beliefs in the form of totem, taboos and social punishments are self sufficient in the sustainable use of bioresources in the villages, where the indigenous people follow the traditional beliefs up to a large extent. Thus, nature related traditional beliefs among the Galo's seem to be efficient conservation tools, several of which finds similarities with modern conservation strategies. Encouragement and propagation of such beliefs may play a very important role in the biodiversity conservation and sustainable management of the ecosystem of this part of Eastern Himalayas, India.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

HUMAN AND ANIMAL RIGHTS

No Animals/Humans were used for studies that are base of this research.

CONSENT FOR PUBLICATION

Not applicable.

AVAILABILITY OF DATA AND MATERIALS

The authors confirm that the data supporting the findings of this research are available within the article.

FUNDING

None.

ACKNOWLEDGEMENT

Author is grateful to the local tribal people belonging to Galo tribe of the study area for their

generous help in providing the information in this research. Author is thankful to Prof. H. N. Sarma, Coordinator, Center with Potential for Excellence in Biodiversity, Rajiv Gandhi University for his kind help during this research. The author is also thankful to Mr. Dugjum Lollen, a teacher and local resident of the study area for his help during the study.

CONFLICT OF INTEREST

The Author has no conflict of interest.

REFERENCES

1. Cardinale BJ, Duffy JE, Gonzalez A, Hooper DU, Perrings C, Venail P, Narwani A, Mace GM, Tilman D, Wardle DA, Kinzig AP, Daily GC, Loreau M, Grace JB, Larigauderie A, Srivastava DS & Naeem S. Biodiversity loss and its impact on humanity. *Nature*. 2012; 486: 59-67.
2. Venkataraman K, Latha SS. Intellectual Property Rights, Traditional Knowledge and Biodiversity of India. *Journal of Intellectual Property Rights*. 2008; 13(4): 326-335.
3. Pushpagandhan P. Ethnobiology in India. A status report, Ministry of Environment and Forest, GOI, New Delhi. 1994.
4. Ramakrishnan, P.S. Tropical forests, exploitation, conservation and management. *Impact of Science on Society*. 1992; 42(166):149-162.
5. Dutta, B. K., Dutta, P. K. Potential of ethnobotanical studies in North East India: an overview. *Indian Journal of Traditional Knowledge*. 2005; 4(1): pp.7-14.
6. Myers N, Mittermeier RA, Mittermeier CA, Dafonseca GAB and Kent J. Biodiversity hotspots for conservation priorities. *Nature*. 2000; 403: 853–858.
7. Phoenix, G.K., Hicks, W.K., Cinderby, S., Kuylenstierna, J.C.I., Stock, W.D., Dentener, F.J., Giller, K.E., Austin, A.T., Lefroy, R.D.B., Gimeno, B.S., Ashmore, M.R., Ineson, P. Atmospheric Nitrogen Deposition in World Biodiversity Hotspots: The Need for a Greater Global Perspective in Assessing N Deposition Impacts. *Global Change Biology*. 2006; 12 (3): 470-476.
8. Olson D.M. and Dinerstein E. The global 200: A representation approach to conserving the earth's most biologically valuable ecoregions. *Conservation Biology*. 1998; 12: 502–515.
9. Chaudhry P, Dollo M, Bagra K, Yakang B. Traditional biodiversity conservation and natural resource management system of some tribes of Arunachal Pradesh, India. *Interdisciplinary Environmental Review*. 2011; 12(4): 338 – 348.
10. Kato D, and Gopi G V. Ethnozoology of Galo tribe with special reference to edible insects in Arunachal Pradesh. *Indian Journal of Traditional Knowledge*. 2009; 8(1): 81-83.
11. Singh TP, Singh SK, Roy PS, Rao BSP. Vegetation mapping and characterization in west Siang District of Arunachal Pradesh, India-a satellite remote sensing-based approach. *Current science*. 2002; 83(10): 1221-1230.

12. Robinson, J.G. and Redford, K.H. Neotropical Wildlife Use and Conservation. University of Chicago Press, Chicago, USA, 1991.
13. Fa, J.E., Juste, J., Delval, J.P. and Castroviejo, J. Impact of market hunting on mammal species in Equatorial Guinea. *Conservation Biology*. 1995; 9: 1107–1115.
14. Gadgil M, Berkes F & Folke C. Indigenous knowledge for biodiversity Conservation. *AMBIO*. 1993; 22: 2-3.
15. Bakels, S. J. Farming the forest edge; perceptions of wildlife among the Kerinci people of Sumatra. In: *Wildlife in Asia: cultural perspectives* (ed J Knight) Routledge Curzon, London; 2004.
16. Saini DC, Kulshreshtha K, Kumar S, Gond DK and Mishra GK. "Conserving Biodiversity Based on Cultural and Religious Values." National Conference on Forest Biodiversity: Earth's Living Treasure; 2011.
17. Abbiw DK. *Useful Plants in Ghana*. Intermediate Publications. The Royal Botanical Garden, Kew; 1990.
18. Sharma H, Lonchung K. Hunting and associated beliefs of indigenous Adi people of Arunachal Pradesh aid in sustainable resource management. *Contemporary Research in India*. 2018; 8(1): 116-123.
19. Rim-Rukeh A, Ierhievwie G, Agbozu IE. Traditional beliefs and conservation of natural resources: Evidences from selected communities in Delta State, Nigeria. *International Journal of Biodiversity and Conservation*. 2013; 5(7): 426-432.
20. Donovan, D.G. Cultural underpinnings of the wildlife trade in southeast Asia. In *wildlife in Asia: cultural perspectives* (ed J Knight),. Routledge Curzon, London; 2004. p. 88-111.
21. Soule ME, Estes JA, Miller B, Honnold D L. Strongly interacting species: Conservation policy, management, and ethics. *BioScience*. 2005; 55: 168–176.
22. Johnsingh AJT, Goyal SP, Qureshi Q. Preparations for the reintroduction of Asiatic lion *Panthera leo persica* into Kuno Wildlife Sanctuary, Madhya Pradesh, India. *Oryx*. 2007; 41(01): 93-96.
23. Sharma H, Lonchung K. Traditional beliefs of the Tangams, a vanishing tribe of Eastern Himalayas, aids in biodiversity Conservation. *Contemporary Research in India*. 2018; 8(4): 7-12.
24. Thapa K. Flagship Species Approach: Are we heading on the right track? *Conservation Science*. 2013; 1: 47-52.
25. Caro T. *Conservation by Proxy: Indicator, Umbrella, Keystone, Flagship, and Other Surrogate Species*. Island Press, Washington DC; 2010.
26. Sharma H. Role of Indigenous Beliefs and Wild Life Trafficking In Biodiversity Loss in Eastern Himalayan Biodiversity Hotspot of Arunachal Pradesh. In: *Wild Life Trafficking and Concern To Biodiversity of North East India*. Dhing College, Nagaon; 2017. p. 67-85.

27. Santhoshkumar E and Balasubraminan P (2010). Breeding behavior and nest tree use by Indian Grey Hornbill *Ocyrceros birostris* in the Eastern Ghats, India. FORKTAIL. 2010; 26: 82–85.
28. Kelso B J. Hunting for conservation, Africa Report 38.4 : 68; 1993.
29. Haridasan, K. and Bhuyan, L. R. Ethnobotanical observations on bioresource management in Northeast India. J. Traditional and Folk Practices. 2016; 02, 03, 04(1): 18-32.
30. Baldus R D. 2008. The conference on "Hunting and Sportshooting in the 21st Century" organized by the "World Forum on the Future of Sport Shooting Activities" (WFSA). Nürnberg, Germany; 2008.
31. Adu-Gyamfi Y. Indigenous beliefs and practices in ecosystem conservation: response of the church. Scriptura. 2011; 107: 145-155.