

Biodiversity and Traditional Medicine Conservation

¹Madan Mohan Mahawar, ²Banwari Lal Sharma, ³Hemant Pareek

¹Associate Professor, SCRS Govt. College SawaiMadhopur, Rajasthan, India

²Associate Professor, Govt. DungarCollege Bikaner, Rajasthan, India

³Associate Professor, Commissionerate, College education, Jaipur

ABSTRACT: In India 109 animal species are used for medicinal purposes, of which 76 (70%) are included in IUCN red data list and 36 (33%) animal species are listed in CITES appendix I, II, and III and Raw materials are used in 170 medicinal preparations is always injured to animal life. All these data is very high to harm biodiversity. In the nearby Ranthambhore national park area, Kanjar community girls eat dove-flesh to attained puberty in early age. Now doves are facing a serious problem due to this activity in this area. So it's suggested that this kind of use of traditional knowledge should not be overlooked while framing the strategies of conservation and management of faunistic resources in the investigated areas.

INDEXTERMS- Biodiversity, Traditional Medicine, Collared dove

Date of Submission: 18-11-2020

Date of acceptance: 03-12-2020

I. INTRODUCTION

The world is facing potentially massive loss of wildlife due to over-hunting [Robinson and Bennett, 2000] [Bennett et al., 2002] and overfishing [Boehlert, 1996] [Jennings et al. 2001]. Regrettably, the demand and increased human populations are leading to increased and often unsustainable rates of exploitation of wild sourced ingredients, with some wild species already threatened with extinction [Kang and Phipps, 2003]. The worldwide marketplace for animal parts and their medicinal derivatives is contributing to loss of some animal species and it increased use of medicinal animals has led to over-exploitation of species like rhinos, tigers, musk deer, bears, monkeys and pangolins [Alves et al. 2007]. In spite of international regulations and a number of national laws against poaching and heavy penalties for culprits, the extremely high prices offered for the parts of some species play as strong incentives for illegal trade of animal parts to flourish.

In Brazil, Alves et al. (2007) reported the medicinal uses of 283 animal species, 96% of which are wild caught and 27% of which are on one or more lists of endangered species. Alves et al. (2008) also demonstrate that nearly 165 reptile species are utilized in traditional medicine in the whole world and a few species are used as sources of drugs for contemporary medical science and out of the reptiles recorded, 53% are included on lists of endangered species.

The use of animals in traditional medicine certainly increase pressure on natural resources exploited through traditional methods of collection, mainly due to general acceptance of traditional medicine [Almeida, 2002]. Medically speaking, the one major negative consequence of this trend is that there will be essentially less choice for the future development of medicines [Still J, 2003]. At present, about 40% of all prescribed drugs are substances originally extracted from plants, animals, fungi and microorganisms [Wilson, 1995]. [Alves and Rosa, 2005]. In this context, research opportunities should focus both on the documentation of the traditional uses of animal and plants in traditional medicine and the cultural and ecological aspects associated with such practices [Alves and Rosa, 2005].

It is widely accepted that plants, animals and their by-products used as a source of folks or traditional medicines indicate the presence of a biologically active constituent(s) in them. A significant portion of the currently available non-synthetic and/or semi-synthetic pharmaceuticals in clinical use is comprised of drugs derived from plants, animal, microbial, and mineral products [Farnsworth and Morris, 1976] [Farnsworth and Soejarto, 1985] [Soejarto, 1996]. Although today much is understood about the phytochemistry and phytopharmacology of the many traditional plant remedies, but real bio-scientific evaluations of remedies of animal origin are still quite rare in the literature (Pieroni et al., 2002). However many animals have been methodically tested by pharmaceutical companies as sources of medicines to the current medical science [Kunin and Lawton, 1996].

II. RESEARCH METHODOLOY

We have analyses the data collected by various authors in 15 published research works on traditional medicinal practices in different part of India. Some important points are outcome of this work. In India 109

animal species are used for medicinal purposes, of which 76 (70%) are included in IUCN red data list and 36 (33%) animal species are listed in CITES appendix I, II, and III and Raw materials are used in 170 medicinal preparations is always injured to animal life. All these data is very high to harm biodiversity.

III. RESULT AND DISCUSSION

The therapeutic indications of animals and plants and domestic or cultivated species also overlapped in many cases and this aspect opens a perspective of, where suitable, replacing the utilization of threatened species with others in traditional medicine recipes [Alves et al. (2007)]. Such replacement of products is of interest from a conservationist perspective, in the context of reducing the pressure on overexploited populations, or legally protected species with the replacement of ingredients in remedies should be through with caution, because as pointed by Sodeinde and Soewu [1999], substitutes might not always be feasible because recipes using different species might not have the same efficacy, nor may it's be advisable without a in-depth examination into the sustainability of utilizing substitute species to make sure the viability of any such exploitation. Additionally, consumers sometimes prefer wild versions. Precaution should also be taken when suggesting the replacement of animal products with plants to ensure the survival of the medicinal animal species [Alves and Rosa, 2007].

Due to industrialization, allopathic medicine has displaced indigenous medical systems in many areas, in the process leaving many without any health care. Traditional medicinal knowledge is rapidly disappearing in both urban and rural areas due to cultural change and declining access. In some cases this loss may actually confer net health benefits; but modern society will never know what effective medicinal treatments are being lost [Daily and Ehrlich, 1996]. In Latin America, for instance, despite the various individual efforts of the governments to preserve the biodiversity for future generations, old knowledge, especially that of derived from traditional medicine such as indigenous knowledge, is also disappearing [Calixto, 2005]. Transformation of local ecosystems wrought through human economic activities has been exercising severe constraints on the supply of particular types of plant and animal species used for medicinal purposes. As forests are degraded into savanna, savanna to scrublands and bushes, and scrublands to desert characteristics in any parts of the Third world, certain species of plants are disappearing altogether such a situation poses problems for the future practice of indigenous medicine [Kerharo, 1975]. This affects not only on providing traditional medical services particularly in urban areas, but also the forms of herbal medicine prepared. For example, freshly prepared herbal medicines are replaced by different allopathic medicine, because they will be stored for extended periods without losing their potency or getting spoiled [Anyinam, 1987].

Despite the importance of TM for public health in many parts of the world, like the current spasm of plant and animal species extinction, as remarked by [Anyinam, 1985], the practitioners of traditional medicine appear to be at a high risk of extinction. Knowledge of the utilization of plants is disappearing faster than the plants themselves.

Many protected animal species like peacock (*Pavocristatus Linnaeus, 1758*), sambhar (*Cervus unicolor, Kerr, 1792*)), Spiny-tailed lizard (*Uromastyxhardwickii, Gray, 1827*), and collared dove (*Streptopeliadecaocto, Frivaldszky, 1838*) are mentioned as important medicinal resources in India Mahawar and Jaroli, 2006]. In the nearby Ranthambhore national park area, Kanjar community girls eat dove-flesh to attained puberty in early age [Mahawar and Jaroli, 2006]. Now doves are facing a serious problem due to this activity in this area. So it's suggested that this kind of use of traditional knowledge should not be overlooked while framing the strategies of conservation and management of faunistic resources in the investigated areas.

Another aspect of this study, which needs to be mentioned, is that the findings regarding the use of animals for medicines are purely based on the traditional beliefs and practices of local communities. Thus there is a need to identify any myths associated use by scientific laboratory test, if the remedial measures, for which these animals are used, are not proved scientifically, the common man should be made aware of this by special education programs. Inadequate knowledge and myths associated with the therapeutics like children are made to wear beer's claw around their neck as it is supposed to protect them from evil forces, similarly animals like sheep and goat are sacrifice to cause healing as this act is believe to please local gods [Mahawar and Jaroli, 2006]. Such acts have cause harm to animal life. These activities can also control by special education programs, which will be significantly help in the conservation of biodiversity.

REFERENCES

- [1]. Almeida, C. F. C. B. R. and Albuquerque, U. P. (2002): Uso de plantas e animais medicinais no estado de Pernambuco (Nordeste do Brasil): Um estudo de caso. *Interciencia*, 27(6):276-284.
- [2]. Alves, R. R. N. and Rosa, I. L. (2005): Why study the use of animal products in traditional medicines? *Journal of Ethnobiology and Ethnomedicine*, 1(5). [<http://dx.doi.org/10.1186/1746-4269-1-5>]
- [3]. Alves, R. R. N., Rosa, I. L. and Santana, G. G. (2007): The role of animal-derived remedies as complementary medicine in Brazil. *BioScience*, 57(11):949-955. [<http://www.ingentaconnect.com/content/aibs/bio/2007/00000057/00000011/art00007>]
- [4]. Alves, R. R. N.; Vieira, W. L. S. and Santana, G. G. (2008): Reptiles used in traditional folk medicine: conservation implications. *Biodiversity and Conservation*. [<http://www.Springerlink.com/content/j3558j2n828x35w3>]

- [5]. Alves, R.R., Rosa, I.M. Biodiversity, traditional medicine and public health: where do they meet?. *J Ethnobiology Ethnomedicine* 3, 14 (2007). <https://doi.org/10.1186/1746-4269-3-14>
- [6]. Anyinam, C. (1985): Ecology and ethnomedicine: Exploring links between current environmental crisis and indigenous medical practices. *Soc. Sci. Med.*, 40(3):321-329. [[http://dx.doi.org/10.1016/0277-9536\(94\)E0098-D](http://dx.doi.org/10.1016/0277-9536(94)E0098-D)]
- [7]. Anyinam, C. (1987): Persistence with change: A rural-urban study of ethno-medical practices in contemporary Ghana. PhD thesis. Queen's University, Kingston, Ontario.
- [8]. Bennett, E. L.; Milner-Gulland, E. J.; Bakarr, M.; Eves, H. E.; Robinson, J. G. and Wilkie, D. S. (2002): Hunting the world's wildlife to extinction. *Oryx*, 36: 328-329. [<http://dx.doi.org/doi:10.1017/S0030605302000637>]
- [9]. Boehlert, G. W. (1996): Biodiversity and the sustainability of marine fisheries. *Oceanography*, 9: 28-35.
- [10]. Calixto, J. B. (2005): Twenty-five years of research on medicinal plants in Latin America. *Journal of Ethnopharmacology*, 100: 131-134. [<http://dx.doi.org/10.1016/j.jep.2005.06.004>]
- [11]. Daily, G. C. and Ehrlich, P. R. (1996): Global change and human susceptibility to diseases. *Annu Rev Energy Environ*, 21: 125-144. [http://www.stanford.edu/group/CCB/Pubs/paulpdfs/1996_dailyehrlch_globalchangedisease1.pdf]
- [12]. Jennings, S.; Kaiser, M. J. and Reynolds, J. D. (2001): *Marine Fisheries Ecology*. Oxford :Blackwell Science.
- [13]. Kang, S. and Phipps, M. (2003): A question of attitude: South Korea's traditional medicine practitioners and wildlife conservation. Hong Kong: TRAFFIC, East Asia.
- [14]. Kerharo, J. (1975): Traditional pharmacopoeias and environment. *African Environment*, 1:30
- [15]. Mahawar, M. M. and Jaroli, D. P. (2006): Animals and their products utilized as medicines by the inhabitants surrounding the Ranthambhore National Park, India. *J. Ethnobiology and ethnomedicine*, 2 (46). [<http://www.ethnobiomed.com/content/2/1/46>]
- [16]. Robinson, J. G, and Bennett, E. L. (2000): Carrying capacity limits to sustainable hunting in tropical forests. In *Hunting for Sustainability in Tropical Forests*. Edited by Robinson J G and Bennett E L. New York: Columbia University Press; 13-30.
- [17]. Sodeinde, O. A. and Soewu, D. A, (1999): Pilot study of the traditional medicine trade in Nigeria. *Traffic Bulletin*, 18(1): 35-40. [http://www.traffic.org/bulletin/archive/bulletin_vol18_no1.pdf]
- [18]. Still, J. (2003): Use of animal products in traditional Chinese medicine: environmental impact and health hazards. *Complementary Therapies in Medicine*, 11 (2): 118-122. [doi: 10.1016/S0965-2299(03)00055-4.]
- [19]. Farnsworth, N. R. and Morris, R. W. (1976): Higher plants: the sleeping giant for drug development. *Am. J. Pharm.*, 148: 46-52.
- [20]. Farnsworth, N. R. and Soejarto, D. D. (1985): Potential consequence of plant extinction in the United States on the current and future availability of prescription drugs. *Econ. Bot.*, 39 (3): 31-40.
- [21]. Soejarto, D. D. (1996): Biodiversity prospecting and benefit-sharing: perspectives from the field. *J. Ethnopharmacology*, 51: 1-15. [doi:10.1016/0378-8741(95)01345-8]
- [22]. Pieroni, A.; Grazzini, A. and Giusti, M. E. (2002): Animal remedies in the folk medical practices of the upper part of the Lucca and Pistoia Provinces, Central Italy. *Proceeding of the 4th European colloquium of Ethnopharmacology*, Paris, France: 371-375.
- [23]. Kunin, W. E. and Lawton, J. H. (1996): Does biodiversity matter? Evaluating the case for conserving species. In *Biodiversity: a biology of numbers and differences*. Edited by Gaston K J, Oxford: Blackwell Science: 283-308.