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A mini review on Bio-piracy with special reference to NE India

Priyam Nath[1]* and Adity Deka[1]

[1]*Department of Zoology, Gauhati University, India*

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***Corresponding author**: Priyam Nath, Department of Zoology, Gauhati University, India

Abstract

The study is a short review on the instances of bio-piracy of various bio-resources in the states of North-Eastern India specifically in the state of Nagaland, Assam and Sikkim. The main aim of this short study is to provide a view on how the diverse biodiversity of North-East India are facing issues related to bio-piracy and which are in need of appropriate legal legislations to deal with these issues in the immediate future. There is a strong need for developing law pertaining to bio-piracy and as such efficient enforcing agencies are the need of the hour to control these illicit acts of bio-piracy.

Introduction

Bio-piracy is defined as the gaining of exclusive monopoly rights over the biological material of one country by individuals, institutions or companies of other countries which ultimately leads to the denial of the rights of the country of origin [1]. 'Bio-piracy' term is generally used when multinational corporations or companies profit from the medicinal and agricultural uses of plants known to indigenous or native societies and fail to compensate those communities [2]. A number of cases of bio-piracy have been reported from India, in which the traditional knowledge are reported to being exploited in plant varieties such as Haldi (Turmeric), Basmati, Neem etc. [3].

Discussion

Bio-piracy in NE India

The North-Eastern region consist of almost 52 % of total Eastern Himalaya (total 524,190sq km) [4]. It consists of seven states, viz. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura along with Sikkim. The North-Eastern Indian region is considered as a geographic doorway for most of India's flora and fauna which harbours an extraordinary biodiversity. It has been reported that about 1350 species of medicinal plants, 665 species of edible plants and 899 plant species of various uses are obtained from North-Eastern India (Sandeep *et al.*, 2010). Some of the unique endemic species of the region to be mentioned in this regard are *Coptis teeta* (mishmi teeta) of Mishmi Hills of Arunachal Pradesh, *Napenthes khasiana* of Khasi Hills (Meghalaya), *Vanda coerulea* of Meghalaya, Manipur and *Renanthera imschootiana* of Manipur. These diverse flora and fauna of this region have now been faced with the problem of bio-piracy where people from other countries tend to visit these places and exploit its various bio-resources and are reported to smuggle the same. A few of such instances are reported below to show the significance of the said threat.

Bio-piracy in Nagaland

Rare medicinal herbs, orchids and other endangered species are reported to being smuggled out of the state as stated by various NGOs' of this region. Many plants are being taken away by pharmaceutical companies through middlemen who engage locals to collect naturally grown species for paltry sums (stated by Thomas Rengma, Media Secretary of Peoples Group, Nagaland). He stated that *Panax ginseng* and *Pseudo ginseng* which have high demand in international markets have almost been completely wiped from the wilds of Nagaland. *Taxus baccata* and *Cephallu taxus*, found in the wilds of Nagaland and Arunachal Pradesh are used in Western countries for making medicines to cure cancer. These plants are being smuggled out to neighboring Myanmar in truckloads from Kohima and Phek districts, Rengma. He further added that the latest medicinal plant to fall prey to bio-piracy was *Paris cordifolia*, a poisonous herb used for manufacturing high value drugs. Rengma said that local Myanmar drugs companies have now engaged middlemen to collect cordifolia from Kohima and Phek districts after it was completely wiped out from the hills of Manipur [5].

Bio-piracy in Assam

The State of Environment Report, Assam 2004 has recorded 22 plants which are in the list of bio-resources affected by bio-piracy. As stated in the report, many of the plant species are being

collected every year from the region although no data is available on the quantity of collection. On a general basis, plants are being collected by forest- dwellers and some of them are semi-processed and handed over to the agents of companies situated outside the region. The stem and barks of *Actinodaphne angustifloia* found in the region, are collected for medicinal use, while the infected wood of *A. malacensis* is used for manufacturing essential oil. The stem and roots of *Aristolichia cathcartii* and *Asparagus recemosus* are collected for medicinal uses. The stem and barks of *Beilschmiedia brandissi* are being widely used as a bonding agent for agarbatti. The entire plant of *Coptis teeta* has medicinal attributes. The seeds of *Euryale ferox* are used for medicinal purposes as well as for food. While the fruits of *Illicium grifithii* are used as spice and condiments, the flowers and seeds of *Mesua ferrea* have their use as medicinal and aromatic oil. The roots of *Pothos scandes* are used for medicinal purposes (The Hindustan Times, 2006).

Bio-piracy in Sikkim

The Tourism Department of Sikkim issued a notice alerting the state against two bio-pirates from foreign countries. The persons involved in bio-piracy were from the United Kingdom and Hawaii. It was reported that these persons entered Sikkim as a tourist and took away some flowers from protected areas without permission and were found to be selling those species of flowers on an online platform (The Hindustan Times, 2021). It was further stated that many tourists visit the state to collect rare and endemic plants for some research without the approval of the Government of India. In states like Sikkim, tourism is one of the main causes behind increase in bio-piracy [6]. People enter the state as a tourist, do their research, collect samples and return to their place. Limbu, 2018 further mentioned an incident in which a tourist from America visited West Sikkim and took with him a rare seed of "*Dalle khorsani*" while returning and later, he went to his home, planted the same in his place, and posted a picture in social media captioned as "American Dalle". The reason behind such acts of bio-piracy is lack of awareness among the people using the resources. It has been seen mostly that the people share their knowledge unknowingly or in good faith to researchers, who in turn misuse the same [7-10].

Conclusion

Biodiversity is posing serious threats like depletion, disappearance of various species, deforestation, and desertification in the regions of North-Eastern India and new amongst them is the issue of bio-piracy. The main aim of this study is to highlight the issue of bio-piracy of various bio-resources in the chief three states of North-Eastern India. Bio-piracy is indeed a controversy concerning legal ownership of bio-resources and the knowledge associated with the uses of bio-resources. As such there emerges a need for effective legislation for the regulation of bio-piracy in India. On one hand, there is a need for developing law on a scientific basis, and on the other hand, efficient enforcing agencies are the need of the hour to control these illicit acts of bio-piracy.

References

1. De LC, Pathak P, Rao AN, Rajeev PK (2019) Biodiversity, Conservation and Bio-piracy of Genetic Resources in India. Commercial orchids.
2. Andrews D (2012) Traditional Agriculture, Biopiracy and Indigenous Rights. 2nd World Sustainability Forum, pp.1-30.
3. Bhattacharya S (2014) Bioprospecting, biopiracy and food security in India: The emerging sides of neoliberalism. International Letters of Social and Humanistic Sciences Online 23: pp 49-56.
4. Ministry of Environment and forests (2010) National consultations on BT brinjals: A primer on concerns, issues, and prospects. Centre for environment education, India (Retrieved on 13-07- 2018).
5. Piracy, a major threat to N.E. Biodiversity, The Hindustan Times,
6. Limbu N (2018) Protection of Traditional Knowledge from Biopiracy: A Study with Special Reference to Sikkim.
7. Bio-piracy alert against two foreigners issued by Sikkim Tourism Department.
8. (2008) Biopiracy rampant in Nagaland, The Hindustan Times.
9. Palni LMS, Rawal RS, Sekar KC (2011) Climate summit for a living Himalayas - Bhutan contribution towards developing a roadmap for biodiversity and climate change. Indian Part of East Himalaya. pdf Accessed 31st Oct 2015.
10. State of Environment Assam (2004) Published by ENVIS Centre Assam, Assam Science Technology & Environment Council.

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