



Green Collar Crimes *vis-à-vis* Protection of Traditional Knowledge in India: A Paradoxical Scenario and A Need for Jurisprudential Shift

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<i>Article History</i>	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 16 Dec 2023	<p><i>"A society which does not revere its traditional knowledge is like a tree without roots"-Marcus Garvey</i></p> <p><i>For any society or civilization ethical connection to the environment and acknowledgment of traditional knowledge is something that provides a base for legislations that are expected to help protecting that knowledge over the time. Contrarily, a society which does not possess such a connection, mostly are forced to accept incidents concerning violation of those knowledge. As a matter of fact, contemporary scenarios in India are indicating that we're falling under the latter. On one hand, there seems to be a dearth of enough environ-ethical acquaintance in the society which could acknowledge that knowledge which has been flowing from the past and are still usable for the betterment of human being. On the other hand, there had already been several instances where traditional knowledge available in India was illegally misappropriated by others. Despite having legislative measures, these offences, which are termed as "green collar crimes" have been rampant off late in India, which consequentially proves that legislative or executive measures in tackling these offences are futile unless there is presence of a proper environmental ethical spectrum in the society. In the instant research paper, the researchers shall delve upon understanding the concept of green collar crimes with respect to traditional knowledge and the reason for the failure of legal measures to protect them, along with providing suggestions to alter the scenario.</i></p> <p>Keywords: <i>Traditional Knowledge, Legal Protection, Ethics, Green Collar Crimes</i></p>
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1. Introduction

Prologue

"For in the true nature of things, if we rightly consider, every green tree is far more glorious than if it were made of gold and silver." —**Martin Luther King Jr.**¹

It is true that over the last few decades, issues concerning preservation of environment, global warming, and climate change have gained enough protrusion to be coming at the front of the attention, both in India and globally. For the preservation of habitability of the planet and the survival of the species, majority of the nations have begun to recognise the requirement of the protection of environment and have heralded regimes to bring up actions to this regard. All the spheres of governance i.e., the executive, legislature and the judiciary are nowadays are working towards a mission to make the planet a better place by taking initiatives that helps the environment to get degraded in an unsustainable way. Over the years, several policies have been made, legislations have been enacted, actions have been taken and adjudications arising out of the same have been settled. Nevertheless, there still are no dearth of villainous acts being carried out by individuals as well as corporate bodies throughout the world including in India which incidentally are hampering all the initiatives that are being taken by the political and societal leaderships in their efforts to restore the environmental conditions of the earth.

Of all types of preservation efforts that are being taken care off by the governmental and supra-national agencies in the world off let, "preservation of traditional knowledge" has become an important part. It

has been reckoned by the conservationists of the world that, the preservation as well as transmission of traditional knowledge across generations is a pressing need not only for the protection and perpetuation of the indigenous peoples' cultures and identities but also because it provides for a method for a sustainable livelihood, resilience to human-made and natural disasters, and sustaining culturally appropriate economic development. Therefore, any action committed by any individual or corporate bodies which either destroys such a traditional knowledge or appropriates the same for their own greed without providing for any reasonable and due restitution to the ones who have been preserving such a knowledge are not only condemned but are also categorized as “green collar crimes”.

In the instant research paper, the researchers shall delve upon understanding the concept of these green collar crimes with respect to traditional knowledge and the reason for the failure of legal measures to protect them, along with providing suggestions to alter the scenario in the end.

Conceptual Appraisal of “Traditional Knowledge” and “Green Collar Crimes”

At this juncture of the research, it is pertinent to discuss the conceptual and thematic analysis of the central terms of the instant research paper i.e. traditional knowledge and green collar crimes.

As the name is suggesting, traditional knowledge is nothing but a repository of particular wisdom, philosophies, observations, art, literature or expertise that has been developed and kept as part of a particular community or society comprised mostly of indigenous people. This repository is inherited through several generations within the community. In most of the situations, those knowledge or skills are also based upon the biological diversity of an area where these community has been residing. For many communities, this knowledge is now a part of their cultural identity. In certain circumstances, it also provides for a mean to attain livelihoods of members who depend upon the wealth of this awareness or wisdom.

As this knowledge has been flowing down from generations to generations there were several junctures where newer thoughts, skills and insights have been poured upon the same. In turn the knowledge became all the more relevant for the coming-of-age generations. Hence, both as a theoretical knowledge as well as practical exploration of the same, these knowledge and wisdom need to be preserved and protected from getting misappropriated.

Green Collar Crimes on the other hand, are those offences which are primarily committed against the environment and nature, however, in a broader perspective are also done against the whole humanity. Green Collar Crimes are very much a part of part of the global organized criminal activities and are as a matter of fact, the fourth-largest category of organized crime that are being committed worldwide. Green collar crimes also vary widely in their interpretation as there cannot be any single term which can uniformly define them. According to the United Nations Crime and Justice Research Centre, “all illegal actions that are considered to be environmental crimes, are part of green collar crimes”².

On that note, it could be appraised here that, violation of traditional knowledge and misappropriate them for greed is also a green collar crime as the same goes against thoughtful and rightful use of knowledge arising out of biodiversity of a territory.

Major Instances of Misappropriation of Traditional Knowledge in India

While there are several instances where traditional knowledge has been misappropriated illegally and without giving due recognition and consideration, following are the ones which are more significant than others in terms of implications.

The Case relating to Neem: A controversy that could be tagged as India’s “first” and raised doubts about an allegedly “strict” patent system was the granting of a patent to a company named W.R Grace. In the United States and the European Union, the company was awarded a patent for a formulation that kept the active ingredient in the neem plant in the safe storage of azadirachtin; it decided to use azadirachtin for its pesticide properties. Traditional medicine systems, such as Ayurveda and Unani, identify antiviral and antibacterial properties of the neem tree, also known in Sanskrit as the “curer of all ailments,” and prescribe the same for the treatment of skin diseases and as a natural pesticide.

In the patent application, the applicant admitted how the pesticide uses of neem were known and pointed out that it is difficult to store azadirachtin for a longer period. The granted US patent covered a particular invention under which the applicant was only given the exclusive right to use azadirachtin in the unique storage solution mentioned in the patent. The patent grant was followed by an outcry and questioned by

re-examination and post-grant opposition proceedings before the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO).

Although the United States Patent and Trademark Office did not succeed, the EPO ruled in favor of the opposition stating the issued patent, lacking novelty and innovative move.

The Turmeric Case: Similar to the instance of “neem,” a patent was issued for “use of turmeric in wound healing” and a process was claimed for healing wounds in a patient by administering a “powerful volume” of turmeric. The inventors of this patent were Suman K. Das and Hari Har P. Cohly and had later granted the patent to Mississippi University.

A request for re-examination against the granted patent was filed along with nearly two dozen references which resulted in early success. The defense of the inventors was shown to be poor in the face of modern commentaries on classic Ayurveda texts, excerpts from the Compendium of Indian Medicinal Plants and historical texts from the library of Hamdard University in the nineteenth century, resulting in the revocation of the patent by the United States Patent and Trademark Office in August 1997, which was lacking in innovation.

The Case Concerning Basmati: The Basmati Case that created much havoc was a patent granted by the United States Patent and Trademark Office for “Basmati rice lines and grains” to an American company named RiceTec. Basmati rice, in India and Pakistan, is a traditionally grown aromatic variety of rice. In addition to that under the patent law i.e., under trademarks and geographical indications, the grant of this patent raised a multitude of intellectual property issues.

RiceTec had been awarded a patent for the invention of hybrid rice lines incorporating desirable Basmati rice grain traits with desirable plant traits. It was due to the inferior quality of Basmati rice grown in the US compared to the good quality of Basmati rice grown in northern India and Pakistan and would help to grow better Basmati rice crops in the western hemisphere, particularly in the United States of America. A request for re-examination was filed with statements from two scientists, along with several Basmati rice publications and the Indian rice research — one of which made the USPTO realize that RiceTec’s core claims were not evident. That resulted in RiceTec not challenging the decision of the USPTO and reducing to three of its twenty claims.

All these instances provided herein are just a part of green collar crimes against traditional knowledge that too only in Indian perspective. The initial couple of instances mentioned herein are called “bio-piracy.” Many native communities have used natural ingredients such as spices and herbs for their medicinal properties, such as the ones mentioned herein. These practices are now being used by large industries without giving due credit to those who developed them. For example, communities practicing unani or Ayurveda are concerned that the pharmaceutical and beauty industries are exploiting their knowledge (which they’ve gathered over centuries) to make huge profits.

The same is a proof of the fact that, despite all the efforts taken by international communities with respect to traditional knowledge, their importance, rights of the communities preserving them, legal initiatives taken at the municipal levels there still are lacuna present in the whole scenario, and to top of it, these lacunae are being blatantly misused by researchers, corporate entities and other stakeholders.

Legal Initiatives Taken for the Protection of Traditional Knowledge Globally and in India

The initial effort that was taken to protect traditional knowledge under the intellectual property regime was a joint initiative taken by *WIPO* and the *United Nations Educational, Scientific and Cultural Organization* in the year 1978 which led to the Protection of Folklore’s Expressions from Illicit Exploitation and Other Prejudicial Actions in 1982.

Since then, with the adoption of the *Convention on Biological Diversity* in 1992, the issue concerning protection of traditional knowledge has gained significant global attention. The same has in turn, broadened the scope and mandate of the protection of this knowledge through broader goals. Substantive attempts have been made aiming to protect traditional knowledge by several supra-governmental bodies concerning intellectual property rights, environment and even human rights over traditional knowledge for indigenous and local communities, namely the *World Trade Organization* including the *Trips Council*, the *World Intellectual Property Organization*, the *Food and Agriculture Organization*, the *United Nations Conference* and *World Health Organization*.

Through all these initiatives, discussions in the international forums, the international communities have found certain common features based upon which municipal initiatives could be taken to protect this knowledge by respective countries which are as follows:

Firstly, the pastness of the tradition based on which a knowledge is being claimed to be protected. The contents of each tradition have originated some considerable time in the past, or are believed by its participants to have.

Secondly, the presence of an authority. Although this knowledge is derived from a real or believed-to-be real past, however, a traditional practice, doctrine or belief has not stayed there, as it were. Its traditionality lies in its present authority and importance for the traditional participants' lives, thoughts or activities.

Lastly, it is not just the past made present that is tradition. The same must have been passed down over centuries, intentionally or otherwise; not simply retrieved from a history discontinuous with the present, or believed to have been passed down. A necessary consequence of that third element is the social nature of traditions. Habits, also traditions, can only be born, live and die in one individual's behavior.

Based upon the features mentioned above, several jurisdictions in the world has enacted specific legislations with the aim of protection of biodiversity including traditional knowledge.

The parliament of India also has come up with the **Biological Diversity Act, 2002** with the major aim of the preservation of existing biological diversity in India, and providing a proper mechanism for equitable benefit-sharing method for the boons arising out of the application of traditional biological resources and knowledge. Of all the salient features of the Act, the following could be considered as the most pertinent ones with respect to traditional knowledge and its protection:

- Protecting the knowledge of local communities regarding biodiversity;
- Secure sharing of benefits with local people as conservers of biological resources and holders of knowledge and information relating to the use of biological resources

Importance of both lies upon the fact that, through them, a domestic legal regime had heralded in India whereby proper recognition has been granted to traditional knowledge and at the same time, it tried to ensure that, monetary benefits of the knowledge be shared by the preservers of the same and are not misappropriated by third party individuals or corporations in entirety.

At the same time, several executive authorities have been formed by virtue of the Act such as **National Biodiversity Authority, State Biodiversity Boards, Biodiversity Management Committees** etc. including and most importantly the **Traditional Knowledge Digital Library (TKDL)**. It has been hoped that, by categorically archiving traditional knowledge it would be easier to both preserve and protect them from being misused.

Recent amendment made to the Act *vide* the **Biological Diversity (Amendment) Bill, 2021** has been claimed to be pro-active in such protection as well as for the generation of wealth through that knowledge. However, at the same time, there are opinions which differs from the ones pushed forward by the legislators in India whereby, it has been claimed that the amendment might dilute the proposition concerning protection of traditional knowledge and communities preserving them.

Following are the relevant portions of the amendments made:

Boosting Indian Medicine System: It seeks to give a fillip to “Indian system of medicine”, and facilitate fast-tracking of research, patent application process, transfer of research results while utilising the biological resources available in India. More specifically, it seeks to empower local communities to be able to utilise resources, particularly of medicinal value, such as seeds. The Bill looks to encourage farmers to **increase cultivation of medicinal plants**.

Allowing Foreign Investments: It also allows for **foreign investment in research into biodiversity**. However, this investment will necessarily have to be made through Indian companies involved in biodiversity research. For foreign entities approval from the **National Biodiversity Authority** is necessary.

Exempting AYUSH Practitioners: The Bill seeks to exempt registered **AYUSH medical practitioners** and people accessing codified traditional knowledge, among others, from giving prior intimation to State biodiversity boards for accessing biological resources for certain purposes.

While all these changes seem to be providing an extra edge to the efforts taken by the executive bodies in India for the protection of biodiversity and traditional knowledge from being illegally misappropriated, there are certain concerns that needs special attention too.

a. Trade over Conservation: Concerns were raised that the bill prioritised [intellectual property](#) and commercial trade at the expense of the act's key aim of conserving biological resources.

b. Threat of Bio-piracy: The exemptions to **AYUSH Practitioners** from giving prior intimation to State biodiversity boards would pave the way for “**bio piracy**”.

Bio piracy is the practice of exploiting naturally occurring genetic or biochemical material in commerce.

c. Marginalising Biodiversity Management Committees (BMCs): The proposed amendments allow for state biodiversity boards to represent BMCs to determine terms of benefit sharing.

Under the Biological Diversity Act, 2002, national and state biodiversity boards are required to consult the BMCs (**constituted by every local body**) while taking any decision relating to the use of biological resources.

d. Side-lining Local Communities: The bill also exempts cultivated medicinal plants from the purview of the Act. However, it is practically impossible to **detect which plants are cultivated and which are from the wild**.

This provision could allow large companies to **evade the requirement for prior approval or share the benefit** with local communities under the access and benefit-sharing provisions of the Act.

In the end it could be said that, while it is important that, major investments are made in the sector concerning traditional knowledge in India and the same sees monetary benefits which in turn shall change the lives of the communities which are the custodians of these knowledge for a long time, nevertheless, an over exposure of the same could also antagonize the situation as well.

Application of Enviro-Ethical Jurisprudence in Protection of

Traditional Knowledge

While it has already been established that, neither the existing legal system nor the amending provisions are foolproof to counter green collar crimes committed against traditional knowledge, it would be important to note that, initiation to adopt environ-ethical jurisprudence could however be helpful to counter the same.

For any society or civilization ethical connection to the environment and acknowledgment of traditional knowledge is something that provides a base for legislations that are expected to help protecting that knowledge over the time. Contrarily, a society which does not possess such a connection, mostly are forced to accept incidents concerning violation of those knowledge. As a matter of fact, contemporary scenarios in India are indicating that we're falling under the latter. On one hand, there seems to be a dearth of enough environ-ethical acquaintance in the society which could acknowledge that knowledge which has been flowing from the past and are still usable for the betterment of human being. On the other hand, there had already been several instances where traditional knowledge available in India was illegally misappropriated by others. Despite having legislative measures, these offences, which are termed as “green collar crimes” have been rampant off late in India, which consequentially proves that legislative or executive measures in tackling these offences are futile unless there is presence of a proper environmental ethical spectrum in the society.

Epilogue

Given the live nature of traditional knowledge systems, it becomes difficult to define them. Without these definitions, it becomes difficult to provide protection to traditional knowledge systems, even if most countries agree that such protection is important. While designing such protection systems, it's essential to strike a balance between the interest and livelihoods of the knowledge-holding communities and the overall good of the public. With the Traditional Knowledge Digital Library, India has gone a step ahead and shown the world that with policy changes, protective mechanisms can be put in place to prevent exploitation of traditional knowledge. However, without having an earnest ethical connection between the common people with the cause of such a protection, there would be high chances that, these legal exercises end up in sheer futility.

References:

1. CBD, 2011. Incentive measures for the conservation and sustainable use of biological diversity: Case studies and lessons learned. CBD Technical Series No.56.
2. Dobhal, R., Kumar, A. and Rawat S., 2011. Conservation and management of bio-resources In Uttarakhand, India In. Y. Gokhale and A.K. Negi (eds.), Community based bio-diversity conservation in the Himalaya, The Energy and Resource Institute (TERI), New Delhi
3. Gaston, K.J., 2000. Global patterns in biodiversity. *Nature*, 405 (6783): 220–227. DOI: 10.1038/35012228. PMID 10821282

4. Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Biodiversity Synthesis. World Resources Institute, Washington, DC
5. Mutia, T.M., 2009. Biodiversity conservation. Short Course IV on Exploration for Geothermal Resources, organized by UNU-GTP, KenGen and GDC, at Lake Naivasha, Kenya.
6. Singh, J.S., Singh, S.P. and Gupta, S.R., 2006. Biodiversity In: Ecology, Environment and Resource Conservation. Anamaya Publishers, New Delhi
7. Patten, D. Motivations, Opportunities, and Controls of Environmental Crime: An Empirical Test of Kramer and Michalowski's Integrated Theoretical Model of State-corporate crime. *Crime Law Soc Change* 72, 195–210 (2019).
8. Jaiswal, P.S., Common Law and Other Statutory Remedies, Environmental Law, Pioneer Publications, New Delhi, pp. 19-35
9. Sadasivan Nair, G., Environmental Offences--Crimes against Humanity and the Environment, Cochin University Law Review, School of Legal Studies, Cochin University, Volume 11, p. 65

Index of Abbreviations:

AYUSH: Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy

BD: Biodiversity

BMC: Biodiversity Management Committees

CBD: Convention on Bio-diversity

EPO: European Patent Office

FAO: Food and Agriculture Organization

IPR: Intellectual Property Rights

NBA: National Biodiversity Authority

TRIPS: Trade Related Aspects of Intellectual Properties

TK: Traditional Knowledge

TKDL: Traditional Knowledge Digital Library

USPTO: United States Patent and Trademark Office

WHO: World Health Organization

WIPO: World Intellectual Property Organization

WTO: World Trade Organization