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BIOPIRACY AND ITS LEGAL REMEDIES: PROTECTING INDIGENOUS KNOWLEDGE AND BIODIVERSITY

~ *Agrima Tiwari*

In recent times, global demand for traditional knowledge and natural remedies in medicine and science has seen a massive surge which is driven by innovation in biotechnology, pharmaceutical research and agriculture, amid this surge lies the practice of Biopiracy which occurs when individuals or companies gain access to indigenous or traditional medicinal uses or treatments of species and patent them for commercial use without official permission, Biopirates do not acknowledge the effort or work of people who have been practicing and testing for centuries to understand and use this traditional knowledge (farmers, communities, traditional healers, etc.), neither are they compensated for the efforts of their knowledge and experience. Biopiracy has become so common place in today's world that many ingredients used as common household ingredients are actually pieces of stolen traditional use and knowledge. Take stevia for example which is used as a low-calorie replacement of sugar in food and drink. This plant was historically used as a natural sweetener by the Guarani peoples of Brazil and Paraguay. Stevia has been used as a popular replacement of sugar in the USA since the 1980s while the Guarani people who are one of south Americas poorest and most endangered indigenous people have received negligible benefits from the global market of this billion dollar product¹ without proper legislative backing unfortunately the control of the stevia market is far from the hands of the Guarani people as multiple corporations apply for a patent, what's more concerning is that 80% of commercial stevia farming is done in China a country that the plant is not even native to. India is no stranger to being a victim of biopiracy either, In 1995 the US patent office granted two Indian scientists working with University of Mississippi Medical Centre a patent on the healing properties of turmeric (*Curcuma longa*

¹ Michael F. Brown, A Compelling Instance of Biopiracy: The Stevia Case, UPRIVER

(*Zingiberaceae*)² The Indian Council for Agricultural Research and Council for Scientific and Industrial Research strongly opposed the grant of this patent and requested its revocation as they claimed that this was an act of biopiracy because turmeric rhizomes had been in use for a long time in Indian households for medicinal purposes, the patent was eventually revoked but this case served as a wakeup call for many countries to guard and regulate the use of their indigenous knowledge and products and how prone the same was to exploitation by commercial industries.

Another such case of biopiracy was witnessed in a patent war over the neem plant, The European Patent office granted a patent to the U.S. Department of Agriculture and Multinational W.R. Grace over the anti-fungal use of neem in neem based bio-pesticides, this caused widespread anger amongst the Indian community in north America, the neem tree is native to the Indian subcontinent and texts and manuscripts as old as 2000 years describe how Indian households have been using neem for its anti-fungal properties in agriculture, medicine and even veterinary practices. Amongst the prominent people who stood up for this issue was G. Nammalvar, he understood the science and the traditional use of the plant and went on to educate many people about the heritage methods which were most effective in traditional ayurvedic medicine. He questioned the EPO over the patent asking how they could grant it to a country who only cultivates the tree through artificially developed seeds³ eventually the patent was revoked but the bigger victory lied in the string of later approved patents in India which were realized due to the neem case and the growing importance of traditional and indigenous knowledge.

International frameworks have been developed to combat the growing practice of biopiracy such as the convention on biological diversity (CBD) which is the international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources" that has been ratified by 196 nations.⁴ The convention affirms the sovereign rights of a nation over their biological resources and establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.⁵ Under the CBD two protocols have been adopted namely the Cartagena Protocol on Biosafety (2000); and the Nagoya Protocol on Access and Benefit

² Biopiracy in India: Scientific Eruption or Traditional Disruption, IAM Media (Nov. 25, 2016)

³ *The Neem Tree Patenting Issue*, Unimarks Legal (Jan. 27, 2023)

⁴ Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79, 31 I.L.M. 818.

⁵ *Convention on Biological Diversity (CBD)*, Ministry of Environment, Forest and Climate Change

Sharing (2010). The Cartagena protocol was created to regulate the movements of LMOs (Living Modified Organisms) from one country to another, common LMOs include genetically modified crops such as corn, tomato and soybean. The main objective of Cartagena protocol is to ensure safe handling and movement of LMOs which have the potential of having adverse impact on biodiversity, human health and environment.⁶ Section 8 of the protocol requires for an Advanced Informed Agreement (AIA) by the importing party before cross border movement of LMOs for introduction into the environment. The details of the importer, the list of centres of origins and centres of genetic diversity where the recipient or parental organisms will proliferate, taxonomic status, intended use of the LMO or products thereof, regulatory status of the LMO and risk assessment report are all mandatorily required details to provide in the AIA⁷. The biosafety clearing-house was also set up by the Cartagena protocol which ensures the safe handling, transport and use of LMOs by making critical biosafety information publicly accessible, a developing country which does not have a consistent regulatory framework can inform the BCH that it will take its decision on import or export of LMOs by conducting a risk assessment of the same⁸. While the Cartagena protocol lays down rules governing the trade of LMOs, The Nagoya protocol focuses on the protection of Traditional Knowledge and its vulnerable nature which makes it prone to exploitation. the protocol mandates that access to such knowledge has to be based on prior informed consent (PIC) and that the use of such knowledge be based on negotiated agreements which include benefit sharing mechanisms, commercialization, publication or conditions for research⁹.

India enacted the biological diversity act in 2002 to meet the obligations of CBD, traditional knowledge related to the uses of biological resources is protected under this act. For access to any genetic material and the traditional knowledge related to it the state biodiversity board must provide their informed agreement.¹⁰ Further protection of TK from exploitation is guaranteed by the patents act of 1970 which gives the patent office power to deny the grant of any patents for innovations which are based on traditional knowledge or if the same has been acquired from a group of people who claim to be the guardians of traditional knowledge.¹¹ The increasing threat of biopiracy of Indian TK led the council of scientific and industrial research

⁶ Dr. Manoj Kumar Sharma, *Biopiracy*, e-PG Pathshala, Rajiv Gandhi Nat'l Univ. of L., Punjab, 5-9

⁷ Id. At 5.

⁸ Id. At 8.

⁹ Thomas Greiber et al., *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-sharing*, IUCN Evtl. Pol'y & L. Paper No. 83, at xviii, 372 (2012)

¹⁰ Shahnaz Kaushar, *Bio-Piracy in India: A Practice of Patenting Traditional Knowledge for Profit*, 1 IPR J. of Maharashtra Nat'l L. Univ., Nagpur 54 (2023)

¹¹ Id. At 59.

(CSIR) to create the Traditional knowledge digital library which is a digital repository containing details of TK from many industries such as agriculture, medicine and even handicrafts and textiles. The GI tag or geographical indication tag is another way TK can be protected, GI tag gives a product a distinctive quality and reputation which cannot be replicated and is unique to a certain region.¹²

The recent recognition of the importance of traditional knowledge and the threat biopiracy poses to it has helped in the development of legal frameworks and has encouraged public discussions around the ethical issues with biopiracy but unfortunately international legal frameworks remain unenforceable in many cases due to the sheer power imbalance between the biopirates and the indigenous population, traditional knowledge often comes from countries that lack proper legislation to protect their natural resources, they often share this information informally with biopirates, having no idea that they intend to commercialise the resources and patent it. efforts to protect resources through patents can prove to be difficult as IPR legislation is tricky to navigate, it has the potential to offer the community's knowledge protection from exploitation but the lack of acknowledgement and respect for the intergenerational nature of traditional knowledge makes it difficult to obtain a patent for the same¹³.

If traditional knowledge and natural resources can be shared on ethical grounds with equitable collaboration and benefit sharing agreements in place, bioprospecting can replace biopiracy- A collaborative approach which respects indigenous rights can help create many biological innovations for the world. Bioprospecting is the only solution to preserve the knowledge indigenous communities have been developing for generations.

Research partnerships should be encouraged in between indigenous communities and researchers which can ensure the correct use of biological resources along with the application of generational knowledge, Legal literacy should be built among communities, even if they do not intend to divulge any knowledge to others, their customary laws, traditions and collective rights over their resources should be respected and integrated into their nations framework and most important of all, nations should foster inter-agency collaboration to regulate patent rights,

¹² Id. At 59.

¹³ Chakraborty, Sagnik, and Pratyayee Saha. 2024. "Navigating Bio-Piracy and Bio-Prospecting: Evaluating Ethical, Legal, and Environmental Impacts on Indigenous Communities and the Efficacy of International Legal Frameworks". Asian Journal of Advances in Research 7 (1):570-78.
<https://jasianresearch.com/index.php/AJOAIR/article/view/484>

collaboration, research, welfare of the indigenous and appreciation for their specialized knowledge and talent.

Biopiracy poses a huge risk to bio diverse nations and their communities whose generational knowledge has been essential to their welfare and growth, biopiracy not only undermines the cultural and economic values of traditional practices it also reflects the inherent inequalities in the world of science, research and Intellectual property rights.

Ultimately, combating biopiracy is not just a legal or environmental issue- it's a matter of justice, recognition and respect for indigenous communities around the world who have developed and passed down invaluable information through generations.

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