AD EDUXIAN JOURNAL
A Quarterly Multidisciplinary Blind Peer Reviewed & Refereed, Open Acces & Google Scholar Indexed International E- Journal
Vol (1&2), Issue (3), Nov -Jan 2024-25 E-ISSN: 3048-7951

Biopiracy in India: Exploiting Traditional Knowledge Through Patenting for Profit

Sunil Kumar[1], Dr. Shiv Shankr Singh[2]

Abstract

Biopiracy, the unauthorized exploitation of biological resources and traditional knowledge, is a significant concern in India, a country rich in biodiversity and cultural heritage. Traditional knowledge systems like Ayurveda, Siddha, and Unani have been targeted by corporations and researchers who patent these resources for financial gain. This practice undermines the contributions of indigenous communities, raising critical issues around equity and intellectual property rights.Notable cases, such as the patenting of turmeric, neem, and basmati rice, highlight how multinational corporations exploit gaps in global intellectual property frameworks like the TRIPS agreement. These actions deprive local communities of recognition and compensation while threatening India's biodiversity.India has taken measures to combat biopiracy, including the establishment of the Traditional Knowledge Digital Library (TKDL) to prevent wrongful patents and the enactment of the Biological fair Diversity Act, 2002, to protect resources and ensure benefit-sharing. However, enforcement challenges persist due to complex international legal frameworks and limited local awareness. A balanced approach is needed to ensure innovation while safeguarding the rights of traditional knowledge custodians.

Keywords: *Biopiracy, Bioprospecting, Intellectual Property Law, Patent, Biotechnology Industry, Indigenous Knowledge.*

Introduction:

One of the primary topics of discussion at the Convention on Biological Diversity's Nagoya summit was biopiracy.[3] There are several instances of biopiracy drugs, nutritional supplements, and cosmetics that have been sold without permission or with no benefit given

[1]Research Scholar,Department of Law, C. M. P. Degree College, University of Allahabad.
[2]Professor, Department of Law, C. M. P. Degree College, University of Allahabad.

[3] The *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity* is a supplementary agreement to the Convention on Biological Diversity.

back to the local community based on traditional knowledge of the medicinal qualities of plant and animal products. The convention now states that in order to use genetic resources or traditional knowledge for research or commercialization, one must first obtain informed consent from the nation in question as well as the relevant indigenous communities. Additionally, one must agree on terms for sharing non-monetary benefits, such as intellectual property rights, as well as monetary benefits. This article addresses disputes around "biopiracy and bioprospecting" by examining them from the perspectives of remedial justice, the ITPGRFA[4] establishment process, and conventional knowledge attributes. It is difficult to resolve this conflict between the developed and developing worlds. The debate over "biopiracy" and "bioprospecting" is pertinent from a variety of angles, including those pertaining to law, economics, environmental protection, and so forth. The Indian intellectual property regime for plant innovation is introduced in this article, with a focus on legal aspects. It is important to examine the U.S. intellectual property regime for plant innovation as well, as U.S. intellectual property law significantly influences the global biotechnology industry. Additionally, because these international regimes aim to harmonize national law in order to resolve the current problems surrounding biopiracy and bioprospecting, this article also introduces the international legal regimes linked to these terms.

Meaning of Biopiracy and Bioprospecting

"Biopiracy" and "Bioprospecting" represent two facets of a single entity, and two points of view regarding the exploitation of biological resources including PGRs[5] of the developing world by the developed world's multinational biotechnology corporations.

Biopiracy

The word "biopiracy" was first used in public in 1997 by Indian writer and environmentalist Vandana Shiva[6]. It was originally created by Canadian activist Pat Mooney[7]. According to the

[4] The International Treaty on Plant Genetic Resources for Food and Agriculture (also known as ITPGRFA, International Seed Treaty or Plant Treaty, is a comprehensive international agreement in harmony with the Convention on Biological Diversity, which aims at guaranteeing food security through the conservation, exchange and sustainable use of the world's plant genetic resources for food and agriculture (PGRFA), the fair and equitable benefit sharing arising from its use, as well as the recognition of farmers' rights. It was signed in 2001 in Madrid, and entered into force on 29 June 2004.

[5] Plant genetic resources describe the variability within plants that comes from human and natural selection over millennia. Their intrinsic value mainly concerns agricultural crops (crop biodiversity).

International Centre for Technology Assessment, "biopiracy" is the practice of strong corporations taking use of indigenous peoples' folk wisdom without offering anything in return.

"Biopiracy" was defined by IkechiMgbeoji[8] as the unlawful taking and theft of biological diversity and traditional knowledge through the application of intellectual property laws, without giving indigenous people credit or payment for the products that result from their expertise. The focus of "biopiracy" critics has been on stealing and piratical behavior, as well as the development community's lack of benefit-sharing with regard to PGRs.

Bioprospecting

"Bioprospecting" is defined by Natalie Stoianoff as the methodical search for novel sources of chemicals, proteins, DNA, microorganisms, and other things with potential economic worth as biotic resources[9].

"Bioprospecting," according to Judith Jones, is the process of looking for and obtaining organisms from their natural habitat in order to extract chemicals and further explore their potential for use in industrial or medicinal settings.[10]

Genes and living things serve as the raw materials for biotechnology and genetic engineering. The first country to implement special ABS regulations was the Philippines. In 1995, the CBD issued an executive order in response to this. "Bioprospecting is the research, collection, and utilization of biological and genetic resources for the purpose of applying the knowledge derived for scientific and commercial purposes," according to the Philippines Executive Order and Implementing Regulations.

---

[6] The Note 1 on p. 53 of Andrew Mushita and Carol B. Thompson's book, Biopiracy and Biodiversity: Global Exchange as Enclosure clearly stated that, "The term was first popularized by Vandana Shiva" (1997). See Andrew Mushita and Carol B, Thompson, *Biopiracy of Biodiversity : Global Exchange as Enclosure* 53 (2007).

[7] Ikechi Mgbeoji, *Global Biopiracy : Patents, Plants and Indigenous Knowledge*, 12 (2006).

[8] Ibid.

[9] Mary Warson, Biodiversity and Bioprospecting in Accessing Biological Resources, complying with the Convention on Biological Diversity 17, 28 (Natalie P. Storranoff ed. 2004), International Union of Pure and Applied Chemistry, Section on Medicinal Chemistry – Preservation and Utilization of natural biodiversity is content of such for economically valuables medicinal Biota (Technoical Refort) http://old.iupac.org/reforts/1996/6812andrums/manila.html.

[10] Judith S. Jones, Regulating Access to Biological and Genetic Resources in Australia. A case study of Bioprospecting in Queensland in Accessing Biological Resources: Complying with the Convention on Biological Diversity 115, (Natalie P. Stoinoff (ed.) 2004).

Which factors cause "Biopiracy"

In order to comprehend "biopiracy," one must first look at it from a historical angle. For instance, Vandana Shiva contended that because "biopiracy" emerged after Christopher Columbus's time, it is the second coming of Columbus[11]. Since the British "Industrial Revolution" till the present, developing and less developed Asian nations, such as South America, have provided PGRs to western countries. Second, David Conforto said that unjust bilateral patent issues and international "agreement" are the reason why non-Western countries are able to access Western countries through "biopiracy[12]." like TRIPS, etc. In this way, through international agreements, the patent laws of the western countries—particularly the U.S. patent system—have proliferated throughout the world. Multinational biotechnology companies therefore have a solid legal basis on which to engage in biopiracy.

The Perspective of "Biopiracy" in the Developed World

According to the developed world's perspective, the best way to develop PGRs is to permit multinational corporations, especially those in the United States, to claim ownership of PGRs and develop them for commercial use without first gaining consent from the developing world or paying royalties. The main defenses of this viewpoint are that PGRs are the shared heritage of all people and that PGR flows and exchanges constitute trade that is covered by the definition of globalization. The US administration believed that the CBD did not provide sufficient intellectual property protection, therefore despite the fact that it is an international framework pertaining to the fair use of PGRs and the regulation of "biopiracy," the US did not sign it. Certain clauses of the CBD, such as the confessional terms for sharing intellectual property rights, relate to compensation for biological resources but are not related to the goal of protecting biological diversity.[13] The latter view was based on the view

[11] Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge*, South End Press Cambridge, MA, pp. 9-10(1997)

[12] David Contorto, Traditional and Modern-Day Biopiracy: Redefining the Biopiracy Debate, 1991, Envtl. L. and Litig. 357, 358 (2004).

[13] Karen Anne Goldman, Compensation for use of Biological Resources under the Convention on Biological Diversity: Compatibility of Conservation Measures and Competitiveness of the Biotechnology Industry, 25 Law and Polij. Int'l Brus. 695, 706 (1993-1994).

point of biotechnology industry representatives that the CBD should focus only on direct conservation biological diversity issues. Although U.S. signed the CBD in 1993 but congress did not ratify it using the same reasoning as did the Brush administration. The contention of multinational biotechnology corporations pertaining to biopiracy is that the developing world wants to make money from something to which it did not contribute and seeks a greatest share of benefit. The developing world values its raw genetic resources and arts that multinational corporations do the same. Furthermore, it is difficult for corporations to pay more to the developing world for raw materials as use natural product research would become uncompetitive and corporations would not pay large access fees for raw materials.

In Certain multinational firms gather freely available genetic resources from the industrialized world, and there are alternative methods for developing new products than utilizing genetic resources. Millions of dollars and many years of research and development are needed to turn genetic resources into goods. Furthermore, businesses argue that their operations promote economic growth and that they are not obligated to preserve genetic resources in order to right historical wrongs. Furthermore, patents or plant variety protection also known as plant breeder's rights do not limit access to genetic resources or the creation of new plant varieties for the developing world. Instead, they force businesses to recover their costs associated with developing new products derived from genetic resources.

Famous Case pertaining to Biopiracy: Bad Patent:

Patent-Related Biopiracy Cases

The granting of a patent for a product or derivative derived from biological resources and/or traditional knowledge is most frequently linked to cases of biopiracy.

Basmati Rice

In reaction to a US patent, the debate around basmati rice surfaced in the late 1990s. In particular, on September 2, 1997, the Texas-based company RiceTec Inc. received a patent on "Basmati rice lines and grains" from the US Patent and Trademark Office (USPTO)[14]. Twenty claims on the protected subject matter which included the innovative basmati types

[14] Patent number 5, 663, 484

the researchers claimed to have developed were initially included in the patent. NGOs and Indian farmers were deeply alarmed and incensed by this. Indian non-governmental organizations launched a campaign against the patent shortly after it was granted, which also attracted backing from the Indian government and attention from around the world. With assistance from the government, the Agricultural and Processed Food Products Export Development Authority in India submitted a request for reexamination. RiceTec then consented to rescind a few of its allegations. Nonetheless, certain claims were upheld for particular unique rice strains. The concerned NGOs and activists have praised this as a major win against biopiracy[15].

There is still some worry, though, regarding the statements that were not recanted. According to an examination of the patent document's description, Claims 8, 9, and 11 make reference to crossed rice lines (varieties) in order to create plant varieties that share some traits with basmati rice grains. Novel plant types are protected under US patent law; plant patents are not permitted in the majority of other nations. This is especially frustrating for campaigners from South Asia, as it seems that the original material used to cross the varieties came from there. The following is stated in the patent description for the breeding of the rice lines RT1117 and BAS-867:

"Twenty-two basmati lines from the USDA [United States Department of Agriculture] World Germplasm Collection, Beltsville, d. and thirteen semi-dwarf, long-grain lines were selected for the initial crosses … The basmati seeds from the USDA were identified as having come from Pakistan".[16]

Therefore, based on the majority, if not all, of the stated claims, the patent should not have been awarded, even under the national novelty requirements of the United States.

Hawaiian Taro

A group of researchers from the University of Hawaii created three novel hybridized taro cultivars in the 1990s that were resistant to fungal leaf blight, a significant pest that affects

[15] Ghosh, S., 'Globalization, Patents, and Traditional Knowledge', *Columbia Journal of Asian Law*, vol 17, no 1, pp. 73–120, 2003-04.

[16] USPTO Patent Number 5,663,484

the plant in Hawaii. The new variety was created by crossing taro from the island of Palau, which is known to be resistant to the leaf blight, with a type of Hawaiian taro known as Maui Lehua through traditional crossbreeding. University of Hawaii researcher Eduardo Trujillo was granted plant patents for three newly hybridization species in 2002.[17] The taro plants were named 'Pa'lehua', 'Pauakea' and 'Pa'akala' under plant patent numbers PP12,361, PP12,342 and PP12,772 respectively. The patent claims for each plant are quite similar; the claim for Pa'lehua is as follows:

> *"A new and distinct variety of taro plant … that is characterized by resistance to taro leaf blight caused by* Phytophthoracolocasiae, *tolerance to root rot caused by* Phythium spp*., vigorous growth, large mother corm size, and purple corm of very good poi and eating qualities".*[18]

Finally, in recognition of its cultural significance to indigenous Hawai'ians, the University of Hawai'i abandoned its taro patents, filing 'Terminal Disclaimers' with the USPTO in June 2006, and ending this biopiracy episode.

Yellow Enola Beans

Larry Proctor, the president of POD-NERS, a US seed company, was awarded US patent number 5,894,079 in 1999 for a "invention" pertaining to "a new field bean variety." The patent claims include all other plants with the same physiological and morphological traits, plants grown from the seed, breeding techniques, and a certain type of yellow-colored bean seed (Phaseolus vulgaris).

CamuCamu Patents

The Peruvian government has sent a paper outlining its probe into several possible biopiracy cases[19] to the WTO TRIPS Council[20]. This particular paper focuses on a plant called camucamu (Myrciariadubia), which has been discovered in multiple foreign patents by Peruvian officials.

---

[17] Schlais, G.K. (2007) 'The Patenting of Sacred Biological Resources, The Taro Patent Controversy in Hawai'i: A Soft Law Proposal', *University of Hawaii Law Review*, vol 29, no 2, pp581–618

[18] US Patent PP12,361, Granted 2002. www.uspto.gov

[19] This document can be downloaded from the WTO website at: www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm,.

[20] Peru, IP/C/W/458, 7 November 2005

They brought to light instances in which biological resources, in the case of camucamu, were transferred abroad as commodities (like fruit or juice), but ultimately ended up being studied for their genetic resources and maybe copyrighted.

KwaoKrua

For almost a century, the plant Pueraria mirifica, also known as kwaokrua, has been widely recognized in Thailand for its rejuvenating and beauty properties. The herb's therapeutic use is thought to have been recorded for the first time in Thai scriptures compiled in 1931 by LuangAnusarn-Sunthorn, a practitioner of herbal medicine. More recently, researchers have determined that the presence of phyto-oestrogens and phyto-androgens, or female and male hormones generated by plants, is associated to the effects of kwaokrua. According to scientific claims, the extracts can help with male sexual performance and erection (red kwaokrua or Butea superba), firm the skin, and enlarge and firm breasts (white kwaokrua). Following then, other patent applications for "inventions" utilizing kwaokrua extracts have been made both domestically and in the US.

The Neem Tree

An example of the opposing viewpoints is provided by the Indian Neem tree. The seeds of the Indian neem tree contain azadirachtin, a potent insecticide that is safe for people to use.[21]Even so, in 1992, the Neem Tree was still being used for centuries in India. The Florida-based agricultural chemical business W.R. Grace and Co. (Grace) holds patents for both the stabilized azadirachtin and its stabilizing technique.

Although Grace's commercialization of indigenous biocultural knowledge was seen as a success story for the food industry, the traditional Indian people were not paid for their "key insights or essential materials." Grace exploited the modified plants to create Neemix, a pesticide used on food crops. IPR systems acknowledge the advancement of traditional knowledge as well as traditional knowledge itself since they view traditional knowledge as a shared legacy that is accessible to all. Because Grace had effectively stolen and abused the Indian people's customary practice, there was no recourse accessible to them. Although this technique circumvents the CBD's recognition of India's sovereign rights over its natural

[21] David Huntes et al., *International Environmental Law and Policy* 1043 (3rd ed 2007).

resources, it is permitted under TRIPS. The current state of national and international intellectual property regulations gave rise to this case and the accompanying points of view. One was granted a patent in 2005.[22]

Turmeric

In 1995, the University of Mississippi Medical Center in the United States received another bogus patent that took advantage of the Indian plant turmeric and the associated traditional art. According to the patent applicant, the technique would involve giving turmeric to a patient who has a wound in order to promote healing of the wound. The Council of Scientific and Industrial Research of India (CSIR) successfully challenged the patent in mid-1996, robbing it due to the lack of originality criteria.

CONCLUSION

Biopiracy is seen by many farmers, indigenous communities, groups who uphold traditional customs, and vast populations in developing nations as a reflection of the long-standing abuses, disdain, and neglect committed by colonial powers and the industrialized "West." Researchers, scientists, and businesses are portrayed as "biopirates" who plundered natural and biological resources from the ecosystems of developing nations for financial gain, without providing compensation to the host nation. Biopiracy may have significant effects on local producers as well as research in underdeveloped nations and isolated areas. In terms of its cultural effects, it also represents a longer history of colonial abuse, albeit one that takes a different form.

The biopiracy cases highlight an epistemic inconsistency in which scientists claim credit for discoveries and conventional knowledge while simultaneously dismissing it as unworthy of acknowledgement. The argument put up by proponents of biopiracy is that industrialized countries' monopoly rights are replacing the hosts' ability to manage the resources, and that the resources and related traditional knowledge belong to indigenous cultures. The idea that TRIPs have"a built-in bias against traditional knowledge and rights of indigenous

[22] Know Instances of Patenting on the UFS of Medicinal Plants in India , PIB Ministry of Environment and Forests May 62010. http://pib.nicin/release/relenae.asp?relid=61511.

communities" is the foundation of this neo-imperialist viewpoint. TRIPs "encourages firms/private parties to claim patents on either genetic material per se, or traditional knowledge uses of genetic material without any obvious intellectual contributions which leads to misappropriation of traditional knowledge," according to proponents of biopiracy. As a result, industrialized nations ought to be morally obligated to guarantee that indigenous people and source countries equally benefit from the commercialization of genetic resources and the application of traditional knowledge. India has taken action against biopiracy by making it a criminal offense. Violation of the Act's provisions pertaining to the unapproved use of biological resources and biopiracy has been elevated to a crime for which there is no bail[23]. According to the Act, there might be a five-year sentence and a fine of up to 10 lakh rupees, or even more if the harm done is greater than ten lakh rupees. The Biological Diversity Act of 2002 is a creative piece of legislation that protects local communities' economic interests while also taking appropriate steps to preserve biodiversity.

[23] Section 58 of The Biological Diversity Act 2002.