

A dark, atmospheric photograph of a forest path leading to a bright light at the end of a tunnel of trees. The path is narrow and appears to be made of dirt or gravel, leading the viewer's eye towards a bright, glowing light source at the far end of the path. The trees are tall and thin, with bare branches, creating a dense canopy overhead. The overall mood is mysterious and ethereal.

INTERNATIONAL
ENVIRONMENTAL LEGAL
RESEARCH JOURNAL

VOLUME 1 AND ISSUE 1 OF 2023

INSTITUTE OF LEGAL EDUCATION



International Environmental Legal Research Journal (Open Access Journal)

Journal's Home Page – <https://ielrj.iledu.in/>

Journal's Editorial Page – <https://ielrj.iledu.in/editorial-board/>

Volume 1 and Issue 1 (Access Full Issue on – <https://ielrj.iledu.in/category/p-volume-1-and-issue-1-of-2023/>)

Publisher

Prasanna S,

Chairman of Institute of Legal Education (Established by I.L.E. Educational Trust)

No. 08, Arul Nagar, Seera Thoppu,

Maudhanda Kurichi, Srirangam,

Tiruchirappalli – 620102

Phone : +91 94896 71437 – info@iledu.in / Chairman@iledu.in



© Institute of Legal Education

Copyright Disclaimer: All rights are reserve with Institute of Legal Education. No part of the material published on this website (Articles or Research Papers including those published in this journal) may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher. For more details refer <https://ielrj.iledu.in/terms-and-condition/>

AN OVERVIEW OF PROTECTION OF THE LIFE FORMS AND PLANT VARIETIES UNDER INTELLECTUAL PROPERTY RIGHTS

AUTHOR - TAMOJIT GHOSH, STUDENT AT SIDHO-KANHO-
BIRSHA UNIVERSITY, PURULIA

Best Citation - TAMOJIT GHOSH, AN OVERVIEW
OF PROTECTION OF THE LIFE FORMS AND PLANT
VARIETIES UNDER INTELLECTUAL PROPERTY RIGHTS,
*INTERNATIONAL ENVIRONMENTAL LEGAL RESEARCH
JOURNAL*, 1 (1) of 2023, Pg. 1, ISBN (P) - 978-81-
960702-1-2.

Abstract

Patents are a form of Intellectual Property Rights (IPR) most often used to seek protection of knowledge related to biological resources. The use of plants as medicinal sources is globally recognized and the (IPR) associated with their use and protection has been disputable issue around the world. As one of the core industries in India, agriculture requires the development of new plant varieties and better quality seeds to accelerate agricultural development. It has been internationally recognised that the contributions of plant breeders should not only be recognised but also a legal mechanism should also be developed to establish and protect their rights. There are various international legal regimes governing intellectual property rights in the protection of life forms and plant varieties and sets forth regulatory options for national governments to protect plant varieties while achieving other public policy objectives relating to plant genetic resources. This paper identifies different sets of policy options for governments based upon the specific constellation of treaty commitments they have undertaken.

Keywords: Commitments, Knowledge, Patents, Rights, Variety.

Introduction

A patent is an exclusive right granted to the inventor or creator of a useful or improved article or a new process of making an article for a specified period. Naturally occurring substances, like DNA, were exempt from such laws. The international forum realized this matter in the 1990's and this came out in the form of Trade Related Aspects of Intellectual Property Rights (TRIPs) agreement in 1994 and its enforcement on 1st January 1995. According to the TRIPs agreement, India has amended its patent law which is governed by the Patent Act, 1970. The case of *Diamond v/s Chakrabarty*¹ in 1980 led to the emergence of patenting inventions on living matters. In India, the position was made clear after the 2002 amendment to the Indian Patents Act. The amended act stated that life forms can be patented provided which they must satisfy the other necessary requirements too. The improvements in the Indian patent regime have resulted in a significant rise in the declaration and enforcements in patents in India.

Non-Exclusion of patents:

Patent protection in India brings unique considerations, especially for life sciences industry because of the typical statutory exclusions on certain aspects of innovations. For this, no patent protection is available. Apart from the regular three leg test of novelty, inventive step and industrial applicability, Indian patent laws have specifically listed certain subject matters, which despite passing the three leg test, may not be protected. Some of the relevant subject matters related to life sciences industry that are excluded from patent protection in India are, frivolous inventions and inventions contrary to natural laws²- Section 3(a); inventions that could be against public order or morality or which cause serious prejudice to human, animal or plant life

¹*Diamond v/s Chakrabarty* 447 US 303 (1980)

²Indian Patent Act, 1970

or health or to the environment –section 3(b); discovery of scientific principles and natural phenomenon– Section 3(c); discovery of a new property to a known substance and does not have enhanced efficacy or the mere discovery of any new property or new use of a known substance or mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant - clause 3(d); inventions that are directed to a substance obtained by a mere admixture or a process for producing such substance - clause 3(e); inventions directed to methods of agriculture or horticulture - clause 3(h); inventions that are a process for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic or other treatment of human beings or animals– clause 3(i);inventions that are directed to plants and animals in whole or any part thereof other than micro-organisms or essentially biological processes - clause 3(j); and inventions that are related to aggregation or duplication of the traditional knowledge - clause 3(p).

India also provides a sui generis law to protect inventions/ innovations related with the development of plant varieties, which are commercially exploited by production and sale of seeds or plant material. However, under the Protection of Plant Varieties and Farmers' Rights Act, 2001 which is available only for notified varieties and any plant variety that is not in the notified list cannot be protected. In India significant efforts at different levels have been made to strike a balance regarding legislative requirements and the interest of industry, particularly in Intellectual Property for effectively securing the gains of huge investment of resources in developing the inventions/innovations. The past years has witnessed reasonable improvements in Indian industrial policies and IP practices by adopting different procedural and policy measures, which have created conducive environment for the growth of industry and IP protection. India is undoubtedly advancing rapidly towards a

strongly supported Industrial regime with strong IP environment.

Registerable Plant Varieties in India:

There are four types of plant varieties that can be registered under PPVFR Act, 2001. -

1) New varieties: A New variety is that which is not in public domain in India earlier than one year before the date of filing or outside India, in the case of trees or vines earlier than six years, or in any other case, earlier than four years.

2) Extant variety. An extant variety is that which is notified under Seed Act, 1966 or a variety about which there is common knowledge or a farmers' variety or any other variety which is in public domain.

3) Farmers' variety. A farmers` variety is that which has been traditionally cultivated and evolved by the farmers in their fields or a variety which is a wild relative or land race of a variety about which farmers possess common knowledge.

4) Essentially derived variety (EDV): An "essentially derived variety" is said to be essentially derived from such initial variety when it is predominantly derived from such initial variety, or from a variety that itself is predominantly derived from such initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotype of such initial variety and it is clearly distinguishable from such initial variety. An EDV conforms to such initial variety that results from the genotype or combination of genotype of such initial variety.

Criteria for protecting a plant variety:

There are some criteria for getting protection of the plant variety.

a) The variety must be distinct from existing or commonly known varieties in any country at the time of filing of the application.

b) The variety must be sufficiently uniform in its essential characteristics.

c) The variety must be stable after repeated propagation or in the case of a particular cycle of propagation, at the end of each cycle.

Duration of protection for a registered plant variety:

The duration of protection of a registered plant variety is as follows:

- Trees and vines - 18 years.
- Other crops - 15 years.
- Extant varieties - 15 years from the date of notification of that variety by the Central Government under Seed Act, 1966

Patenting of microorganisms

The TRIPS Agreement obliges the patenting of microorganisms.³The decision of the Supreme Court in the case of *Diamond v M. Chakrabarty*⁴ held that microorganisms produced by genetic engineering are not excluded from patent protection by 35 USC Section 101. The US Supreme Court made it clear from the decision that the question of whether or not an invention embraces living matter is irrelevant to the issue of patentability. The test set down by the court for patentable subject matter in this area is whether the living matter is the result of human intervention. Under TRIPS provisions, microorganisms have to be given a patent protection. The Indian Patent Act has also excluded micro-organism from the list of non-patentable inventions.⁵

The Indian Patent Act of 1970 did not grant patents on life forms and related technologies. These and other substances in the areas of agriculture, horticulture, and curing or enhancing human animal or plant life were not given patent "on the grounds of law, morality, and health". In the case of food, medicine, drugs, and chemicals, only process patents were allowed, since it is believed that the grant of product patents will hamper the discovery of more efficient and economical processes for the manufacture of the same product.

Protection of the Indigenous Communities:

The definition of the term "indigenous people" has evolved in most international treaties and conventions which refer to people living in local communities inherited with traditional lifestyles. The United Nations (UN)⁶ described indigenous peoples as inheritors and practitioners of their unique social, cultural, economic, political characteristics and the ways of connecting to people and the environment. They are not similar from the present dominant societies. The indigenous people around the world share common problems concerning the protection of their rights as similar to that of distinct people. They are recognised by their culture, language, life style, territories, and natural resources over the years. In the present day, they are among the most disadvantaged and vulnerable groups of people whose rights have been violated enormously. Consequently, the international community provides special measures to safeguard and protect their rights and maintain their distinct culture and tradition.

Protection of Life Forms:

The distribution of property rights over biological resources has been an enduring concern in international law. Indeed one of the basic principles of international law since decolonisation has been the permanent

³TRIPS Agreement, Art 27

⁴65 L Ed 2d 144: 447 US 303 (1980)

⁵Indian Patent Act, 1970, S. 3(j)

⁶United Nations Organizations

sovereignty of states over their natural resources. The advancements in this area proved that genetic constitution of living beings can be revised. This resulted in the emergence of genetic engineering as a scientific revolution which promises even the creation of new life. The subject matters of biotechnological inventions are micro-organisms, hybrid plants, genetically engineered animals, Gene therapy, genetically engineered vaccines and new antibody technology, recombinant DNA technology popularly known as genetic engineering, used for developing disease resistant plants, herbicide resistant crops human genes and cell lines. The high commercial potential of genetic researches made this branch of science a focal point of trade and investment. The new biotechnological approach implies that crops. As such are not the raw materials, but rather the starch, protein, fats and oils etc. As such, producers of such commodities, farmers, fishermen and big multinational companies will all be competing with each other for selling their commodities in the international market - a competition between unimaginable unequal.

India being a member of the World Trade Organization was required to provide product patents on microorganism before Jan 1st, 2004, which has already been done vide the patent (Amendment) Act, 2002 as is evidenced by the following amended portion of Section 3 of the Patent Act, 1970 (as amended 2002). Exclusion clause implies inclusion in "invention". Thus any process for the medicinal, surgical, curative, prophylactic ... or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products (in the case of plants) is not excluded from patentability and thus patentable.

The Protection of Plant Varieties and Farmers' Rights Act was passed by the Indian parliament in 2001. After India became a signatory to the Trade Related Aspects of Intellectual Property

Rights Agreement (TRIPs) in 1994, legislation was required to be formulated. Article 27.3 (b) of TRIPs requires the member countries to provide for protection of plant varieties either by a patent or by an effective sui generis system or by any combination thereof in their respective country. The existing Indian Patent Act, 1970 excluded agriculture and horticultural methods of production from patentability. The sui generis system for protection of plant varieties was developed integrating the rights of breeders, farmers and village communities, and taking care of the concerns for equitable Sharing of benefits.

Plant Variety Protection:

A "plant variety" is an essence, a strain of a plant or a crop which is purebred. This "variety" broadly defines as the propagating material of such variety, extant variety, transgenic variety, farmer's variety and essentially derived variety. The definition of the term "variety" in the Indian Act is almost akin to the provisions of the UPOV convention.⁷ Plant variety were originally excluded from patentable subject matter because as "products of nature", they did not meet the requirement of new non-obvious subject matter and for this they could not be described with enough specificity to meet the patent statute.

The Indian Patent Act, 1970 excludes plants and animals in whole from patent protection.⁸ In the case of *Speaking Roses International Inc. v Controller General of Patents*⁹, the Bombay High Court had reversed an order of rejection of a patent by the Controller General of Patents. The UPOV Convention (Article 3)¹⁰ requires the grant of protection for the varieties of all plant genera and species in order to give breeders more encouragement to work with new species with the appropriate legal certainty. The development of new plant varieties is

⁷UPOV, 1991

⁸Indian Patent Act, 1970, S 3(j)

⁹(2007) 109 Bom LR 630

¹⁰UPOV website

protectable in most countries as a species of IPR derived from the International Convention for the Protection of New Varieties of Plants (UPOV).

Countries which are members of the World Trade Organization (WTO)¹¹ are obliged by Article 27.3(b) of the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) to 'provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof'. The TRIPS Agreement does not specify which 'sui generis system' will meet its requirements, but most of the members of the WTO have promulgated domestic legislation based upon the 1991 version of UPOV.

International IPR Agreements Regulating Plant Varieties and Plant Breeders' Rights:

The two major treaty systems that regulate different international IPR agreements that protect plant varieties and plant breeders' rights are as discussed as follows. The UPOV treaties adopt a sui generis system of protection especially tailored to the needs of plant breeders. The TRIPS Agreement requires WTO Members to protect new plant varieties using patent rights, a sui generis system or some combination thereof. Because TRIPS provides states with this flexibility and because the treaty has an uncertain relationship to the previously adopted UPOV conventions, national governments face a wide array of options in choosing the intellectual property regime applicable to plant varieties. Although the UPOV Acts have provided IPR protection for plant varieties for more than forty years, their significance has recently been overshadowed by a different intellectual property treaty, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS or the TRIPS Agreement). Adopted in 1994 as a treaty administered by the WTO, TRIPS is the first and only IPR treaty that seeks to establish universal, minimum standards of protection across the major fields of intellectual property, including

patents, copyrights, trademarks, industrial designs, integrated circuits and trade secrets. Although the TRIPS Agreement devotes only minimal attention to plant breeders' rights or plant variety protection and does not even mention the UPOV Acts, its adoption has done more to encourage the legal protection of plant varieties than any other international agreement. Under the TRIPS Agreement, all developing countries other than those categorized as least developed countries ("LDCs") had to provide intellectual property rights protection for plant varieties by January 1, 2000. LDCs have until January 1, 2005, to meet the same obligation. The requirement in TRIPS article 27.3(b) that its signatories must provide protection for plant varieties "either by patents or by an effective sui generis system or by any combination thereof"; and a formal review of article 27.3(b) which was scheduled to be held in 1999.

TRIPS are not a free-standing agreement concerned solely with IPRs. Rather, TRIPS is linked to a larger family of trade-related agreements concerning subjects such as trade in goods and services, agriculture, textiles and health-related restrictions on imports. All of these agreements were adopted within the WTO during the Uruguay Round of trade negotiations held between 1988 and 1994. As such, TRIPS was part of a global "package deal." Industrialized nations secured a commitment from developing nations to provide minimum standards of effective legal protection to intellectual property products, and in exchange developing nations received a commitment from industrialized countries to open their domestic markets to goods and other products manufactured in the developing world. In addition to its widespread adherence, the influence of the TRIPS Agreement can be traced to its unique provisions relating to the enforcement of IPRs within national laws, the review of those national laws by the TRIPS Council and the mechanism for settlement of

¹¹WTO website

disputes between states leading to rulings backed up by the threat of trade sanctions.

International IPR Agreements Affecting the Protection of Plant Varieties: The WTO Doha Round and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA):

On 14 November 2001, trade ministers from the WTO's 142 Members meeting held in Doha, Qatar agreed upon the text of several official declarations to serve as the framework for a new round of trade negotiations. These declarations do not expressly address the issue of plant variety protection. They do, however, suggest that the WTO will conduct an expansive review of the relationship between IPRs in plants and competing policy objectives as it considers whether and in what ways to revise the current text of the TRIPs Agreement.

International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA):

Traditionally, plant genetic resources were freely exchanged on the reasoning that they constituted the common heritage of mankind. As a result of this, right over plant genetic resources could not be exploited by private entities. These principles were embodied in the international undertaking adopted by the FAO Conference in 1983.¹² The negotiations for revision of the undertaking culminated in the ITPGRFA are a landmark international agreement designed to deal with the rapid loss of agricultural biodiversity. India has also ratified ITPGRFA. The treaty reflects the objectives of the Biodiversity Convention and emphasizes the conservation of biodiversity, their focus on patent or plant breeders' rights, it delineates a regime for property with the treaty. This treaty ensures the sustainable use of plant genetic resources by requiring the contracting parties to develop and maintain appropriate policy and legal measures that promote the

sustainable use of plant genetic resources for food and agriculture.¹³

Indian initiative for the Protection of Plant Varieties and Farmers Right Act (PPVFRA):

The concept of farmers' right is basically contradictory to the principles of IP. This had origin in the FAO International Undertaking on Plant Genetic Resources.¹⁴ IPR are intended to provide incentive for a limited period as a reward for the innovation. Farmers' right is a retrospective reward of unlimited duration for the conservation of plant genetic resources. India is the first country which has included farmer's right in its protection of plant varieties. The Act provides that a farmer who has bred new variety is entitled for registration and protection as a breeder of a new variety.¹⁵ The concept of farmers' right is more elaborated in the Act by allowing the farmer to use, save, sow, re-sow, exchange, share, and sell his farm produce including seeds of a variety protected under this Act.

Convention on Biological Diversity.

The Convention on Biological Diversity (CBD) of 1992 was adopted at Rio-de-Janeiro on 5th June, 1992 under the auspices of the UN Conference on Environment and Development for conservation of biological diversity at international level. This conference has accepted the principle that the states have the sovereign rights to exploit their own resources.¹⁶ The declaration also recognised the role of indigenous people and their communities in the environmental development and management. The declaration requires that the states should recognize and duly support their identity, culture and interest. Biological resources are the raw materials for various needs of human beings. Exploitation of natural genetic resources will alter the ecosystem and has also led to

¹³ITPGRFA, Art 6.2

¹⁴25th Session of the FAO Conference-Rome 1989, Resolution 5/89

¹⁵PPVFR Act, S 39(1)

¹⁶Rio Declaration on Environment and Development 1992, Principle 2

¹²FAO Resolution No. 8/83

concerns for conserving these natural resources. Exploitation of many powerful countries into the biodiversity has affected developing nations like India in extinction of many medicinal herbs that are effective for treatment of many diseases. The indigenous community which are conserved the biodiversity is not granted any benefits, while the biodiversity conserved by the community is being exploited by the developed countries to reap the benefits of commercialization. Compensation to the indigenous communities can act as an incentive to the community to conserve the genetic resources.

The Biological Diversity Act, 2002¹⁷

The Biological Diversity Act, 2002 is the "sui generis" legislation of Convention on Biological Diversity (CBD). The law relating to benefit sharing in cases of utilization of genetic resources is further classified by the Biological Diversity Act, 2002. The Act ensures that there is no piracy of the biodiversity of the country. India is one of the 12 mega-biodiversity centres in the world. It has a wide diversity of ecological habitats like forests, grasslands, wetlands, coastal and marine ecosystems. Like many other developing countries, India is at a crossroads with regard to the development of a new legal regime concerning the management of its vast biological resources and related knowledge. There are general links between biodiversity conservation and agro-biodiversity conservation specifically mentioned in the Plant Variety Act.

There are also general links between farmer's knowledge and the more general question of traditional knowledge concerning plant genetic resources. More specifically, the specific nature of the Biodiversity Act makes it an Act which is intrinsically linked to the Plant Variety Act. In pursuance of this, the Indian Parliament enacted the Biological Diversity Act 2002 in order to implement and give effect to the CBD.

The patenting of Neem and Turmeric by foreign firms initiated a public unrest not only in India, but also abroad, thus compelling the government to enact legislation to protect and regulate access to genetic resources and traditional knowledge.

The Biological Diversity Act prescribed an institutional framework in order to implement the three CBD objectives of conservation, sustainable use, and equitable sharing of benefits arising out of the use of biological resources and related knowledge. It institutes a National Biodiversity Authority and State Biodiversity Authorities as nodal bodies to oversee the conservation, use and sharing of the benefits from the use of biological resources.

Protection of Traditional Knowledge in India:

In India, there is no codified definition on traditional knowledge. Traditional Knowledge means knowledge that is tradition. It is a community right. It defines cultural heritage, which is very much associated to customs. The essentials of custom and Traditional Knowledge are same. Floating boat in Dal Lake, basket carry by women of Darjeeling behind to take tea leaves all comes under Traditional Knowledge.

Besides, several NGOs, civil society organizations and governmental institutions are working towards documentation of traditional knowledge at the local level. The question that one seeks to answer in the chapter, are, if domestic efforts are sufficient in an age of trade liberalization and whether there is a need to first provide for a legally binding mechanism at the international level.

Traditional Medicinal Knowledge:

Traditional medicinal knowledge in India prevails at two levels—the classical and folk system. Indian Systems of Medicine (ISM) having a central place in the official Indian healthcare system are derived from traditional knowledge based on codified systems such as

¹⁷India kanoon

Ayurveda, Siddha and Unani medicines is referred to as the classical system of medicine. These are characterized by institutionally trained practitioners, a body of texts originating since ancient times, and highly developed theories to support the practices. These traditional medicine systems encompass knowledge of life, health and diseases of all living forms, not only human but also of plants and animals.

There exists an estimated 10-30 million manuscripts in Sanskrit alone, many of them relating to medicine. In addition, innumerable manuscripts exist with individuals and families of vaidyas or traditional healers. Thus not all traditional knowledge is in the public domain. Central Government of India have its own Ministry on Medicine known as Ministry of AYUSH. AYUSH is an acronym for Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy and are the six Indian systems of medicine prevalent and practiced in India. Use of Black pepper, neem, honey. Wearing of stems in hand, eating sheep meat is all comes under the traditional knowledge.

Traditional knowledge of Agro - biodiversity

India like other developing countries is notable for agriculture as the major or only source of income for majority of its population, and for its wealth of genetic diversity present in the form of large number of farmer selected varieties. 'With more than 60% of the population employed in agriculture, seed supply in India fundamentally relies on decentralized local systems of seed production¹⁸. These systems operate on the basis of the free diffusion of the best seed available within the community, with local farmers ensuring that the local community is supplied with planting material'

The traditional ethics and cultural lore followed by these farming communities over long years value a public rather their exclusive ownership

on propagating material of all plants. Exchange of seed was and is essential to crop improvement, and the farmers selected the best seeds in the region with which to plant their field the next season. 'As one of the 12 mega diverse regions of the world, India has over 45,000 wild species of plants and 77,000 wild species of animals recorded' These together constitute 6.5% of the world's wildlife.¹⁹ The range of domesticated biodiversity in the country is also impressive. At least 166 species of crops and 320 species of wild relatives of crops are known to have originated in India. The diversity of crops within each of these species is very high²⁰. In case of rice, 50,000-60,000 are reported to have been grown in India in the recent past. Indian varieties and parental lines have been used in many countries.

Patents Related to Basmati Rice

In 1997 United States rice breeding firm Rice Tec Inc. was awarded a patent relating to plants and seeds, seeking a monopoly over various rice lines including some having characteristics similar to basmati lines. This happened at a time when the world over, Basmati was a term used to refer to a variety of rice from the Punjab provinces of India. Thus, Rice Tec Company's 1997 patent claim for Basmati rice described it as "an instant invention of a novel rice line" even though all Rice Tec did was to use Indian basmati rice to derive a Basmati strain.

It was only after severe protests in India, led by various NGOs, and as a result of worldwide citizen campaign against Rice Tec Basmati patents, on August 14 2001, the USPTO struck down large sections of the Basmati patent. India has had a much longer experience with patents systems than some European countries because of its colonial past history. The Patent Act of 1970 brought some significant changes. It excluded patentability of life forms and

¹⁸Web copy of AR (Eng)_7.pdf (agricoop.nic.in)

¹⁹Main Details (cbd.int)

²⁰ <http://www.cropwildrelatives.org/>

specifically the patenting of methods of agriculture and horticulture (Section 3, Patents Act, 1970) The Act specifically mentioned that the general principles governing the use of patents were that patents are granted to encourage inventions and to secure that the inventions are worked in India on a commercial scale and they are not granted merely to enable patentees to enjoy a monopoly for the importation of the patented Act 1970.

The Act was different from the western model as it sought to control monopoly on one hand and provide for the health and food needs of India on the other. In the 1990s the national policy developments in the field of patents were influenced by international developments such as the adoption of TRIPS Agreement. Subsequently, the Patent Amendment Act 2002 also provided for changes in lieu of protection of traditional knowledge. A new section 3(j) in the Act rejects patentability of seeds and plant varieties. In response to growing international debate on traditional knowledge in CBD and lack of any recognition of IPR protection for it in TRIPS, the Patent Amendment Act 2002 has sought to address the problem of bio piracy and protection of TK, though partially. Firstly, section 3(p) says that 'an invention which in effect is traditional knowledge or which is an aggregate or duplication of known properties of traditionally known component or components' - are not inventions for grant of patents. Patent applicants also have an obligation to disclose the source and geographical origin of the biological material used, with complete specification (Section 10 (4) (D)).

Traditional Cultural Expressions:

Traditional Cultural Expressions (TCEs) are described as the creative expressions in which traditional culture and knowledge are embodied or expressed and sometimes called as expressions of folklore. These are the area which may be covered under the heading collective rights and which apparently does not fit into the traditional understanding of

intellectual property rights. TCEs reflect a community's cultural and social background and consist of characteristic elements of a community's heritage. They are often made by authors who are unknown or unidentified, or by communities or individuals recognized as having the right, responsibility or permission to create them in accordance with the customary law and practices of that community. It is relevant to mention that most of the societies have denied protection to TCEs on the ground that these do not pass the criteria of IP but have allowed patent and copyright protection for the creations based on TCEs undermining the tremendous contribution of the generations in developing the expression. For examples a folk dance in which customary costumes and masks are used and are intrinsically linked to the performance. These expressions may include music, stories, handicrafts, musical instruments, words, names, performances, textile, carpet designs, etc. The most significant aspect of these expressions is that these have strong social, cultural, spiritual, economic, scientific, intellectual and educational value; these also represent the heritage of a community. Another significant aspect of TCEs is its dynamism in the sense that these are not static. These expressions pass from one generation to another, either orally or by imitation. These expressions are often primarily created for spiritual and religious purposes and constantly evolving, developing and being recreated within a community. Chau Dance Mask of Purulia comes under Geographical Identification (GI) as it is specifically of that area but the dance form is under TCE.

India and TRIPS:

India follows most of the provisions of TRIPS. Some provisions that do not follow are-

- i) According to TRIPS, patent of plant varieties are must, but in India this is not followed as if plant varieties are given patented then food security will fall in huge problem. So "sui

generis" legislation had been made for such.

- ii) TRIPS actually made by European Union and Japan, which are the superpowers, so this is quite biased to the developing and least developed countries.

Conclusion

The paper explains in particular the different forms of legal protection required by international IPR agreements, including the system of plant breeders' rights in the 1978 and 1991 UPOV Acts, the choice between patent and sui generis protection created by article 27.3(b) of the TRIPs Agreement and the impact of so-called "TRIPs plus" bilateral and regional treaties. It analyses the alternatives available to a state depending upon the different IPR treaties it has ratified. Each of these treaties grants national governments a different level of discretion to choose how to protect plant varieties as a form of intellectual property. Once a government has consulted this study to determine the degree of discretion it enjoys as a result of its treaty ratifications, it can then review those portions of the study that identify the mechanisms that it may adopt, consistent with its international obligations, to balance the protection of IPRs against other societal objectives. Governments interested in retaining discretion would be advised to monitor and participate in these negotiations, with a view to harmonizing their international obligations, thereby avoiding the necessity of turning to international tribunals to settle their disputes.

Bibliography:

1. Official website of Protection of Plant Varieties and Farmers' Rights Authority, Ministry of Agriculture and Farmers Welfare (plantauthority.gov.in)
2. The Biological Diversity Act, 2002, No.18 of 2003
3. Article 65(4) of TRIPS
4. WIPO Magazine
5. PPVFA, Supra note 5 at Section 15(3)(a)
6. Emergence of plant variety protection in India | Managing Intellectual Property (managingip.com)
7. Intellectual Property Rights: Bioprospecting, Bio piracy and Protection of Traditional Knowledge - An Indian Perspective | Intech Open
8. International Union for the Protection of New Varieties of Plants (UPOV)
9. Annual Report 2020-21- Dept. of Agriculture, Cooperation and Farmers Welfare
10. *Protection of Traditional Knowledge in Indian Patent act by Dinesh Dayma, Gujarat National Law University, Gandhinagar.*
11. Protection of Traditional Expressions and Cultural Knowledge in India (europa.eu)
12. Protection-of-traditional-cultural-expressions-folklore-international-and-national-perspectives.pdf (dehradunlawreview.com)
13. Indian Patent Act, 1970- Bare Act, Universal Publication
14. Home | Food and Agriculture Organization of the United Nations (fao.org)
15. *Diamond v/s Chakrabarty* 447 US 303 (1980)
16. 65 L Ed 2d 144: 447 US 303 (1980)
17. 25th Session of the FAO Conference- Rome 1989, Resolution 5/89
18. *PPVFR Act, 2001*
19. *ITPGRFA conference*
20. Rio Declaration on Environment and Development 1992
21. UPOV website
22. (2007) 109 Bom LR 630
23. WTO website
24. TRIPS Agreement
25. Indian Kanoon
26. Ministry of Ayush, Govt. of India
27. <http://www.cropwildrelatives.org/>