
BIODIVERSITY, BIOLOGICAL RESOURCES AND PATENT

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ABSTRACT

IP (Intellectual Property) is all about the intelligence and creativity of human beings, the right over these are the rewards for the execution of these ideas. IPRs are exclusively “private rights”, it’s the incentive granted to the holder for its innovation, and provides the holder the ability to exclude others from certain activities, such as using a product or process, for a defined period of time.

“Giving the status of IPRs (particularly patents) to BR&BD (BIOLOGICAL RESOURCES& BIOLOGICAL DIVERSITY) has evolved over last few years and is moderately new trend

It is important to analyze the how and why it is essential to bridge the gaps between the grant of patents to BD and BR thereby creating exclusive monopoly over them and the protection and SD of the BD and BR. As with the commerlisation of the world each and every been step been taken is to exploit economical benefit out of it ,but on the same hand the protection and SD of the BR&BR is an alarming issue , they are vital for the survival and prosperity of humanity.

INTRODUCTION: Biological resources, Bio-Diversity and Patents

IP (Intellectual Property) is all about the intelligence and creativity of human beings, the right over these are the rewards for the execution of these ideas.¹ IPRs are exclusively “private rights”, it’s the incentive granted to the holder for its innovation, and provides the holder the ability to exclude others from certain activities, such as using a product or process, for a defined period of time.²

The regime of IP in the past and present has geared up very speedily, it has a very ontogeny and vivid future, which is going to explore more and more as technology is acting as a catalyst to exploit more out of each and everything available thing under the sun .

“Giving the status of IPRs (particularly patents) to BR&BD (BIOLOGICAL RESOURCES& BIOLOGICAL DIVERSITY) has evolved over last few years and is moderately new trend. Earlier the patent system was confined only to mechanical and non-living inventions. Then it was around mid-1990s when developed countries began to move beyond the original canon of patent law by allowing patents to the living organisms, although there were and still exit numerous conflicts to extent the patentability to this sector, especially between the laws of the developing and the developed countries.”³As any other subject matter it, also pertains some complexities and ambiguities, some of the issues are left unturned or are not stretched to such an extend so to have a concrete solutions.

Before getting into the interface between the Biological Resources, Bio-Diversity and Patents, It is essential to understand what these imply to.

SECTION 2(b), Biodiversity Act DEFINITION defines "BIOLOGICAL DIVERSITY “as

“means the variability among living organisms from all sources and the ecological complexes of which they are part, and includes diversity within species or between species and

¹ Dr N.S Sreenivasulu Intellectual Property Rights Regal Publishers.

² Biodiversity & Intellectual Property Rights: Reviewing Intellectual Property Rights in Light of the Objectives of the Convention on Biological Diversity WWF International & CIEL, Joint Discussion Paper March, 2001 available at <http://www.ciel.org/Publications/tripsmay01.PDF> last seen 9/2/2013

³ Cecilia Oh IPRS AND BIOLOGICAL RESOURCES:IMPLICATIONS FOR DEVELOPING COUNTRIES available at <http://twinside.org.sg/title/iprharare.htm> last seen 8/16 2013

of eco-systems”;

(c) "BIOLOGICAL RESOURCES"

“means plants, animals and micro-organisms or parts thereof, their genetic material and by-products (excluding value added products) with actual or potential use or value, but does not include human genetic material;”

The prime question that strikes at first is that **up to what extent BR&BD be patented**. In order to provide some answers to this question, the following factors should be considered:⁴

- *The recent developments in the 'life sciences' industry and the WTO-TRIPS (Trade-Related Aspects of Intellectual Property Rights Agreement);*
- *The needs of developing countries in encouraging technological, economic and social development, and the role of the IPR system in the promotion of these development objectives; and*

The meaning of patent

Patent is a monopoly right granted to the inventor upon his invention which is a novel product and process his intellectual efforts which are capable to be applied for further industrial process. An invention as a patentable subject- matter must satisfy the following three conditions (–Section 3 Patent Act)

- Novelty(Newness) ,
- Inventive step(Non -obviousness),
- Usefulness (Industrially applied)

Society especially the developing one, normally disfavors such kind of monopolies, to BR&BD because monopolies incline to impose a deadweight loss on society due to inadequately low production and that to through a single window resulting in further monopoly over pricing

⁴ Supra note 1

of goods or services.⁵

Therefore when it comes to granting Patents for accessing and sharing the benefits of biological resources it involves global debates.

“The era of the 1990s was the period which has witnessed the development of patent in the field of biological and genetic material at the international platform under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). The favoritism group who speaks for patent protection in relation to BR&BD is of the view that this extension is vital as it will facilitate companies and other organizations to secure capital, protect their investments in R&D from competitors, and to secure a return on these investments. On a wider level it has been argued that the internationalization of patent protection has an important role to play in the world trade system through the promotion of increased Foreign Direct Investment (FDI), technology transfer and enhanced trade in goods and services. .”⁶

On the other extreme the rapid annex of patent protection to BR&BD has raised substantive questions regarding safety valve of the associate rights i.e. : “human rights, ethical, social, scientific, economic, environmental rights respectively” and has serious concerns for its protection.⁷

Patent law might seem an unlikely remedy to mass extinction of BR&BD after all, patents are usually associated with new technologies and economic growth, rather than conservation of biodiversity.⁸ *Ever since the GATT negotiations were concluded in Dec1994, NGOs & other activist began trying to assess what space are to be made available to promote positive rights for farmers and local communities engaged in the conservation, development and use of biodiversity*⁹

⁵ DR. ANDREW W. TORRANCE THE JOHN MARSHALL REVIEW OF INTELLECTUAL PROPERTY LAW available at http://heinonline.org.ezproxy.nujs.ac.in/HOL/Print?handle=hein.journals/johnmars9&div=22&collection=journals&set_as_cursor=1&men_tab=srchresults&terms=patent|to|biodiversity|and|patent&type=matchall last visited 8/16/2013

⁶ Paul Oldham Biodiversity and the Patent System: An Introduction to Research Methods available at <http://www.biopirateria.org/documentos/6-PaulOldham.pdf> Last visited 8/18/2013

⁷ ibid

⁸ Supra Note 5

⁹ Vandana Shiva The Need for Sui –Generis Rights .available at <http://www.grains.org/es/articles/arhive/categories/78-seeding-march-1994>

BR &BD not only provide prominent and basic facilities but also inconspicuous amenities, such as which are irreplaceable, they are the basic and inimitable ecosystem services. One of the most prominent amenities biodiversity provides to humanity is genes and bio-chemicals, many of which are useful in human medicine.¹⁰ Biodiversity represents a vast storehouse of natural biochemical's whose economic value is enormous¹¹, possibly this is the exclusive reason that why there is a race in pertaining monopoly around the globe.

It is important to analyze the how and why it is essential to bridge the gaps between the grant of patents to BD and BR thereby creating exclusive monopoly over them and the protection and SD of the BD and BR. As with the commerlisation of the world each and every been step been taken is to exploit economical benefit out of it ,but on the same hand the protection and SD of the BR&BR is an alarming issue , they are vital for the survival and prosperity of humanity.

It is crucial to determine that to what extent the patenting of the BR&BD can be granted, it is also important to comprehend that these BR&BD are never been invented , either some new properties or new BR&BD is been discovered or is breeder . Thus the ambit of patenting the BR&BD cannot be inflated to such an extend as to wholly commercialize or monopolize it, nor can be totally denied as it itself will go against the exploration of the BR&BD.

Thus the formative and the shaping of the patenting of BR&BD have to be done by evaluating various laws framed for both sets of obligation i.e. patenting and conservation and SD of BR&BD.

PATENTING BR&BD FROM THE VIEW OF TRIPS

In *Diamond v. Chakrabarty* a decision that dramatically blow U.S. patent law, Chief Justice Burger determined that a live, human-made microorganism is patentable, stating that ***“anything under the sun that is made by man” is subject matter worthy of patent protection.*** This influenced the world to provide biotechnology and gene sequence patent applications and patent protection.¹²

¹⁰ Supra Note 5

¹¹ Ibid

¹² JONATHAN CARR* AGREEMENTS THAT DIVIDE: TRIPS VS. CBD AND PROPOSALS FOR MANDATORY DISCLOSURE OF SOURCE AND ORIGIN OF GENETIC RESOURCES IN PATENT

TRIPS by providing patent to the BR&BD significantly in a way adding as-“The availability of patent protection is a strong form of legally enforceable monopoly has historically been justified in terms of the provision of incentives for innovation on the grounds that in the absence of incentives innovators will either cease to invent, or that they will choose to keep their inventions secret.”¹³

The TRIPS provides for the PATENT Protection to any invention whether products and processes in all fields of science and technology provided that they are new, involve initiative step, and are capable of the industrial application. It assays to encourage and enhance international trade and economic development by setting standards for the protection and enforcement of IPR.¹⁴

“The TRIPS was always controversial as the “Developing countries” being the storehouse of the BD&BR feared that patenting biotical resources will handle the world’s most valuable assets over to large corporations of the wealthy, industrialized nations and thus they have to forgo their interest as patent will grant monopoly to the developed countries , on the other hand “Developed countries” will definitely gain significantly from patenting these BR&BD and thus wanted that that patent protection should be availed to them as it will be in improvement and expansion of these resources and thus give roll in the global economic development in whole . The conflicts grew significantly as developing countries alleged that in such circumstances their resources will be wrongfully taken thereby multiplication bio-piracy whereas the industrialized and the developed nations argued that patent will add and multiplicity the protection of the BR&BD”.¹⁵

The provisions of Article 27 TRIPS agreement have direct relevance in understanding the process of expansion in relation to BR&BD and the patent system.

“Article 27.3 Defines that which inventions government to determine for entitled for patenting and what to eliminate from the ambit of patenting. Both the products and processes are patentable and have wide range by covering almost the fields of technology within it shell. (i.e.

APPLICATIONS available at http://www.law.fsu.edu/journals/transnational/vol18_1/carr.pdf last visited 9/23/2013

¹³ Supra note 6

¹⁴ Biodiversity and the Law Intellectual Property, Biotechnology and Traditional Knowledge Edited by Charles R. McManis available at http://www.planta.cn/forum/files_planta/biodiversity_and_the_law_107.pdf

¹⁵ Supra Note 12

Article 27.3(b) allows governments to exclude some kinds of inventions from patenting, i.e. plants, animals and “essentially” biological processes (but micro-organisms and non-biological and microbiological processes have to be eligible for patents). However, plant varieties have to be eligible for protection either through patent protection or a system created specifically for the purpose (“sui generis”), or a combination of the two.”¹⁶

Thus, Article 27.3 (b) establishes that limited exceptions are available for patentability in relation to plants and animals, but that protection must be made available for microorganisms, non-biological and microbiological processes. It very apparent that the drafters TRIPS pertains must firmer provisions for enhancing the protection in relation to biological and genetic material within regional and bi-lateral trade agreements.¹⁷

It's apparent that the entire regime of TRIPS is to promote only the degree of the IPRs irrespective of giving any importance to the SD and protection of the BR&BD, they keep at wager every other element and the overall perspective of the TRIPS is enhancing the IPRs. There is very little or no reference of the CBD objectives in the TRIPS agreement, the outcome of this is many developing countries who with strengthening the IPRS owe importance even to the BR&BD urged for the revival of Article 27.3. (b) Which deals with whether plant and animal inventions should be covered by patents, and how to protect new plant varieties, the discussion now has an additional focus.

“At its meeting in September 2002, the Council for TRIPS requested the Secretariat to periodically update its summary notes on issues raised and points made in the Council's work on three items of its agenda: namely the review of the provisions of Article 27.3(b); the relationship between the TRIPS Agreement and the Convention on Biological Diversity (CBD); and the protection of traditional knowledge and folklore. It was requested that this be done not after every meeting, but when significant new material had been presented.”¹⁸

“Paragraph 19 of the 2001 Doha Declaration provided that the TRIPS Council should also look at the relationship between the TRIPS Agreement and the UN Convention on Biological Diversity and at the protection of traditional knowledge and folklore. Most recently discussed

¹⁶ Available at <http://www.wto.org> home > trade topics > trips > article 27.3b > background last seen 8/16/2013

¹⁷ Supra Note 6

¹⁸ World trade organization IP/C/W/368/Rev.1 Feb 2008 Council for Trade-Related Aspects of Intellectual Property Rights The RELATIONSHIP BETWEEN THE TRIPS AGREEMENT AND THE CONVENTION ON BIOLOGICAL DIVERSITY available at http://www.wto.org/english/tratop_e/trips_e/ipcw368_e.pdf

are proposals on disclosing the source of biological material and associated traditional knowledge”.¹⁹

Thus there is a need that the TRIPS Agreement should be amended to incorporate certain requirements of the CBD. As in no way neither the patenting of BR&BD nor its conservation and SD can replaced by one and other, neither they can put in any order , they are to be taken simultaneously , none can prevail over the other , both are acutely important and has their own significance .

PROTECTION OF BR&BD AND GRANT OF PATENT – FROM THE PERSPECTIVE OF CBD

Patents together with access and benefit sharing are a critical component of conserving biodiversity.²⁰

Patents are governed under the ambit of the TRIPS and when it comes to the conservation of the resources **CBD comes to the vanguard, with the objectives,** ²¹

- *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.*

Thus it was recognized in its objectives itself that the prime focus of the CBD in conservation of resources. By encouraging its parties to provide access *to and to equitably share the benefits arising from the utilization of genetic resources*, the CBD seeks to set up the means for the conservation of biodiversity.²²

The CBD has such a framework which adds on and encourages in developing number of voluntary codes of conduct and guidelines resulting in entrusting the governments and partners

¹⁹ Ibid

²⁰ Available at www98.griffith.edu.au last seen 8/11/2013

²¹ Article 1 CBD.

²² Supra Note 2

so that they can continue to acquire and exchange material, the basis of their vital research and continue with benefit sharing.²³

The key provisions in the CBD relating to IPRs are in Article 8(j), 15, 16, &17, these have the references to IPR and provides for resolving the ongoing debate.

Article 8(j) - It requires that the parties to-

“Subject to national legislations Respect, preserve maintain knowledge and innovation & practice of indegiounes local community which relates to SD &conservation of resources”.

The provisions this Article provides that there must be equitable sharing of the benefits arising out of the BR&BD, it requires the parties to respect, preserve, and maintain the knowledge which is correlated to conservation and SD of the BR&BD.

ARTICLE 15 ACCESSES TO GENETIC RESOURCES-

When it comes to bridge the gaps of SD and Patenting of BD&BR Article 15 perhaps has the most persuasive value, it focuses on the rights of the States. The provision that the State has sovereign rights over the biological diversity within their territory, with this provision the states can reciprocate according to their state legislation which is framed to suit the requirements of the state.

ARTICLE 16. ACCESS TO AND TRANSFER OF TECHNOLOGY- THE ONLY ARTICLE WHICH HAS DIRECT REFERENCE TO IPRS.

“In Para 1&2 parties undertake to afford access and transfer of technology that are relevant to the SD & conservation of the BR&BD, thus it restricts the patenting of such technology thereby providing free excess to such technology thus creating no rooms for the monopoly of such knowledge which enhances the chances and scope of the BD&BR. Para 16.5 requires the parties to must ensure while granting the patents to BR&BD the objectives of CBD are not disregarded “In a way it make available State Parties undertake to afford and assist access and transfer of technology to other contracting parties under fair and most favorable terms²⁴., in

²³ Supra Note 14

²⁴ Supra note 12

Article 16.2, the need for adequate and effective protection of intellectual property rights.

It is clear from the work of the CBD that the linkages between IPRs and access and benefit sharing are significant. In none of the provision of the CBD it provides total restrain for patenting BR&BD.

RECONCILING TRIPSS AND CBD

*Humans have increasingly come to dominate the earth's ecosystem., as a direct or indirect consequence of human activities, biodiversity is currently being liquidated*²⁵

On one hand the Developing countries are under fear that patenting BR&BD will result in handling the world's most valuable assets to large corporations of the of the developed and industrialized nations, paradoxical to it United States along with the other developed countries are extremely in favor of patenting life as with this they will benefit greatly as they are well versed in biotechnology. The tension between the two approaches has grown significantly as developing countries assert that due to lack of industrialisation their resources are wrongfully taken by the developed nations resulting in bio-piracy,²⁶

Owing to the two it is quite evident the two stands at two extremes one talking about conservation of the resources and the other giving the regime of IP to the BR&BD. The entire setup of the CBD & TRIPS when taken into consideration fails to resolve the ongoing conflicts , rather it adds on to it , at first instance they both seems to be conflicting to one and other , while TRIPS advocates stronger patent protection, the CBD promotes fair and equitable sharing of biological resources.

The two international frameworks were developed at same by different delegations, with different objectives without consultation to one another. Even now after a considerable period of time, there is little or no systematic analysis of the potential conflicts between the two. It is quite apparent that conflicts between the two will arise as nationals have adopted both of them which have deviating objectives.²⁷

²⁵ Supra Note 5

²⁶ Supra note 12

²⁷ Mitsuo Matsushita Mitsuo Matsushita, Thomas J Schoenbaum ,and Petros C Mavroidis ,The World Trade Organization (2nd edition)Oxford University Press pg 712

“The nature of the relationship between the CBD and IPRs has been considered by the CBD Conference of the Parties (COP) in a number of decisions. In this regards²⁸ the COP called for cooperation with the WTO on IPR-related issues (decision III/15); noted the need for further work to develop a common appreciation of the relationship between intellectual property rights and the relevant provisions of the TRIPS Agreement and CBD (decision III/17); and stressed “the

Need to ensure consistency in implementing the Convention on Biological Diversity and the World Trade Organization agreements, including the Agreement on Trade-Related Aspects of Intellectual Property Rights” (decision IV/15). It has also invited the WTO to take into account relevant provisions of the Convention, their interrelationship with the provisions of the TRIPS Agreement, and to further explore this interrelationship”

But CBD has some ruling as to dispose of the disputes

ARTICLE 22. RELATIONSHIP WITH OTHER INTERNATIONAL CONVENTIONS

Explicitly provides that – the provisions of the conventions shall not “effect the right and the obligations of any contracting party” deriving from any other international agreement except those rights and obligations causes damage or threat damage to the BR&BD.

This is a long debatable issue that whether and to what extend grant of patents be available to BR&BD, the conflicting objective of the two has added on to this.

From the view point of CBD,

The -patent supportive view – *When patent will be provided to these BR&BD this will support the CBD objectives as the corporations will invest more into them and in order to extract more benefits they will multiplicities the productivity of these resources .²⁹*

The anti-patent view – *When monopoly will be granted to these BR&BD , it'll end up in the its destruction, the monopoly they establish will inherently amount to unfair and immoral usage patent will support the “bio-piracy” and the developing countries will be at loss.³⁰*

²⁸ Supra Note 2

²⁹ Dutfield, G (2000) *Intellectual Property Rights, Trade and Biodiversity*. London: Earthscan

³⁰ Ibid

The relationship between the two –

- ☐ Promotion of environmentally sound technology, access to and transfer of such technology;
- ☐ Provision of incentives for conservation and sustainable use of biological Resources;
- ☐ Handling of technology that may adversely affect the environment.

Thus there is a strong and immediate need to establish a link between the two, and thus provide a framework which takes into consideration both the issues and reconcile them as both are significant.

INDIAN PERSPECTIVE OF INTERFACE BETWEEN PATENT AND BR&BD

At the National Level the synthesis of the conservation of BR&BD and granting them status of IPR can be made under three significant legislation –

- ☐ **PPVFR (Protection of Plant Varieties and Farmers Rights Act 2001)**
- ☐ **BDA (Biological Diversity Act 2002)**
- ☐ **Patent Amendment Act 2005.**

PPVFR-

Art 27(3)(b) TRIPS requires all the members to generate a “sui-generis” method for the protection of plants varieties’ Like most of the developing countries India does not provide patent to the plants variety, as monopoly upon them will deprive the farmers from there further reproduction and will lead to loss especially when India is an agricultural based countries .³¹

Granting the status of IPR to plants was per-se denied under the Patent Act 1970, the PPVFR Act 2001 protects rights of the farmers and breeders who generate new varieties’ of the plants.

³¹ Supra note 1 Pg 61

The objectives of the PPVFR are as following –

- ☐ To protect the new plants variety ,
- ☐ To protect and benefit the farmers as cultivators and conservation of plant variety which may be used in the development of more and more new plant varieties
- ☐ To encourage the growth of the new plant seeds thereby inviting FDI in the field of the agricultural.³²

The PPVFR act is an adaptation of the Art 27.3(b) in accordance to it, the protection to the plant varieties and protection of the breeder's right is executed in accordance to it. It protects any plants variety which is novel, stable, uniform and distinctive.³³

The registration extends the right to the breeders and thus no unauthorized access to the plants varieties is been made and this right in general extends for 15yrs and for 18 yrs in cases of vines and trees .

THE CONCEPT OF COMPULSORY LICENSING-

To bridge the gap “between fair and equitable benefit sharing to the society and granting the status of IPR to the BR&BD thereby creating a monopoly is must for the a developing country like India . This is been fulfilled through the provisions of “COMPULSORY Licensing”.³⁴

Accordingly it provides that-“*Any interested person after the expiration of the period of 3 years may make an application, alleging that –*

- ☐ *The registered seed/variety is not easily offered to the public at reasonable prices ,*
- ☐ *Reasonable requirement of the public for seed / variety is not been satisfied.*

Thus the authority after consulting the Central Government may order the breeder to grant the lenience to the applicant.”

³² Ibid pg 63

³³ Ibid pg 241

³⁴ See Section 47 , THE PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS ACT, 2001

On the very same hand while granting the Compulsory Licensing the other provisions venture to secure the other allied rights of the breeder;³⁵ which may even extend to the revocation of the license.³⁶

PATENT AMENDMENT ACT 2005 -

Until 1970 the Indian Patent laws neither provided patent for products nor to agriculture and other life forms. The TRIPS turned the entire regime of the subject matter of patents by amending and widening the exclusivity of the patent subject matters in Indian perspective too as henceforth ever since 2005 Indian has extended the of the subject matter of the patentable subject matter..³⁷

The list of the patentability is been updated and amended so that the provisions of the Patent Act must comply with that of the provisions of the TRIPS, but has not extended so that to cover everything under the ambit of patentability, the Act enumerates the non- patentable subject matter one such is “*plants and animals whole or in parts and essential biological processes for the production of plants and animals*”³⁸

The 2005 amendment, patents are available for the inventions including inventions in the field of agriculture and even for non-natural genetically engineered life provided that they are novel.³⁹

Though extension in compliance with the TRIPS provisions has been made in the Indian Patent laws BR&BD as it provides for two grounds for the revocation of the patents -

- ☐ *When the use of the biological material in the invention is not disclosed or improperly disclosed.*
- ☐ *The invention so claimed has its links or some similarities with any local or ingenious communities within India.*

³⁵ See Section 51 , PPVFR Act .2001

³⁶ See Section 52, PPVFR Act 2001.

³⁷ Supra note 1 pg 240

³⁸ Dr N,S Sreenivasullu ,Dr C.B Raju Biotechnology and patent laws Manupatra 2008 First edition pg 71

³⁹ Supra note 38 pg 241

These two new grounds of the revocation of patents help in aiding to reconcile the monopoly and protection of the BR &BD.

BDA Act-

In no way the Indian laws are framed in such a way to grant the regime of IPR in such a way to diminish the conservation and SD of the BR& BD. The fortification of the conservation of BR & BD is always the greater concern , Thus the laws are constructed in such a way that they are the means to the both ends , thereby extracting the benefits out of it in such a way that they in no way cause any destruction to the BR &BD and adding in SD .

This act as a derivation of the CBD has similar objectives of protection of the BR&BD , learning from past as the cases of neem , turmeric , basmati where Indian BR were infringed, the BDA 2002‘restricts access to BR&BD within its territory or to foreign agency without the prior permission of the authority”

An authority is established ⁴⁰to govern the issue relating to protection of the BR&BD, no total restriction is imposed to provide patent to these BR&BD but the provision of authoritative control is set so that no patenting system trespasses the protection and conservation of the BR&BD.⁴¹

The act also aims at “equitable benefit sharing”⁴²for the uses of the BR , by-products and the knowledge relating to it .To provide more legitimacy to it the act further provides ,that the authority for determining the benefit sharing shall grant of joint ownership , transfer of technology in the concerned areas .⁴³

This Act keep a tight check and scrutiny so that no Indian BR&BD is been transferred without the authority, and it provides that no person shall make an application for the IPR without the consent of the authority this will result in preventing bio-piracy.

CONCLUSION

The patenting of the BR&BD can in no way totally denied, on the same hand the annex cannot

⁴⁰ See section 8 BDA 2002.

⁴¹ See section 4 BDA 2002

⁴² See Section 21 BDA 2002.

⁴³ See section 21(2)

be dragged to such an extent that their conservation, and SD and protection are totally neglected.

Today the world is dazzling with novel technology which aids in developing more and more and extracting more and more benefits out of each and every thing available to mankind. The protection of their novel and innovative concept is must as to protect the interest of the inventor and reward them which will be a motivation to multiplicative such innovation, thus in a way the TRIPS enhances more and more creation of knowledge

At international platform the TRIPS and CBD tries to answer the dwelling question regarding two different topics, there is a need to reconcile the two in such a way that there are no ambiguities and conflicts. The TRIPS creates knowledge whereas CBD conserves it.

These international agreements which appear to divide as much as they unite, much be reproduced in a balanced format. Or the WTO which takes into consideration every international trade and commercial transaction must come with some concrete remedy to gel up these. Patents and biodiversity at first instance might seem to be diverse to one and other.

Thus it can be said that there is a need to harmonise the two perspectives, as patenting the BD&BR has both pro and cons and also their protection and conservation is important to have SD.

Through there are links between the TRIPS and CBD but there are not directly addressed, there is a need that a link must be established between the two and the two must be reconciled. Also there is a need to make or amend the existing system in such a way that it meets the need and ends of both the developing and the developed nations.

As the developing nations are the storehouse of these BR&BD but with accruing the patent over them they can give role to their economy, but as technology is way to extract and not these developing nations but the developed nations are equipped in it.

This entire system creates a vicious circle as the developing states rich in BR&BD are poor in technology, whereas the developed nations though poor BR&BD are very well equipped in technology, this further results in more complicated problems of bio-piracy, and thus this leads into more knotty issue of the conflicts of views of the developing and the developed nations.

Even though Article 27 (3) TRIPS is been considered for review and Article 8(j), 15, 16, 17 of the CBD has links to IPRs .But then there is a need to coagulate in more apt manner as to fulfill the existing needs , a remove the ambiguities so to bring an halt to the ongoing debate .

When it comes to **Indian perspective** there are not that vague, and ambiguous, rather they strike a balance through various legislators in such a way that the commercial interest is given a roll through by protecting the IPRs and widening the sphere of the patenting and SD and conservation of the BR&BD is also fulfilled .Further learning from the past suffering the legislations specially the BDA ensures that bio-prospecting does not extent to bio-piracy.

- The **BDA** incorporates the aims and objectives of the CBD in a balanced way without excluding the BR&BD from the regime of IPRs. It is a balanced format which seeks transparency and authorities powers before granting the status of patent to any BR&BD. It enumerates the guidelines to be followed before claiming for patent, these guidelines are such which grant protection to the BR&BD.
- The **Patent Act (2005 Amendment Act)** also strikes a balance between conservation of resources and granting them the status of patent.

Being a statue for the IP law it ensures that no such patent is granted to extinguish the BD&BR.

- **The PPVFR Act** specifically deals with the protection of the new plant varieties; it's a Sui –generis method for according the protection of the new verities of the plants and the rights of the breeders. This fulfill two fold objectives, firstly it entitle rewards to the breeders for registering the new plants variety with is under the ambit of IPRs, secondly – it helps in saving exchanging and preserving the BR&BD.

When used wisely and prudently the patenting system can be valuable and vital for the conservation of the BR&BD, thereby fulfilling the dual perspectives of both patenting and conservation of them.

The degree of patenting should be handled with utmost care and cautions and dealt in such a manner that it strikes a balance in economical and sustainable development.

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