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Intellectual Property Rights And Sustainable Development With Special Reference To Conservation Of Bio-Diversity

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ABSTRACT:

Intellectual property rights (IPRs) have never been more economically and politically important and controversial than they are today. This is due to rapid introduction of high standards of protections of Intellectual Property Rights in most of the developing countries under the aegis of the WTO Agreement on Trade related aspects of the Intellectual Property rights (TRIPS Agreement). This issue is frequently mentioned in discussions and debates on such diverse topics as relating to biological resources, biotechnology, traditional knowledge, biopiracy, access and benefit sharing, transfer of technology, agriculture, food security and Public health. So IPRs have a number of socio-economic impacts which require the adoption of a broader perspective, which sees intellectual property protection within the context of sustainable development rather than purely in terms of economic development. The increasing economic importance of biological resources and the question of the ownership of these biological resources have made the allocation of Property Rights, as one of the most contentious issues in the debate concerning biodiversity management at the national and international level. IPRs are often granted to individuals of one country over genetic resources obtained from another country. Whereas the developing countries are host to most of the remaining biodiversity and consequently assert property rights over the actual resources while developed counties are host to most of the research capacity in the field of genetic engineering and are strongly in favour of the extension of monopolistic intellectual property rights to foster the commercial exploitation of biodiversity and related inventions These new developments have led to the emergence of new conflicts concerning the ownership of biodiversity and related knowledge, and have forced states to rethink intellectual property rights regimes in a fundamental way.

Keywords: Intellectual property rights, Sustainable development, Bio-diversity.

INTRODUCTION:

The increasing economic importance of biological resources and the question of the ownership of these biological resources have made the allocation of Property Rights, as one of the most contentious issues in the debate concerning biodiversity management at the national and international level. Indeed, there is a marked asymmetry between the ownership patterns in the developed and developing countries in this field. Whereas the developing countries are host to most of the remaining biodiversity and consequently assert property rights over the actual resources while developed counties are host to most of the research capacity in the field of genetic engineering and are strongly in favour of the extension of monopolistic intellectual property rights to foster the commercial exploitation of biodiversity and related inventions. As a result the international legal frameworks for the management of biological resources in particular the convention on biological diversity have had to increasingly take into account not only the needs of biodiversity conservation but also concern about its potential for economic use and its contribution to the process of sustainable development. Convention on Biodiversity (CBD) is in theory the main treaty dealing with the conservation & management of biodiversity. Its three main goals are the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits derived from the use of genetic recourses. However the area where developing countries have been hit hardest is in the harmonized regime of intellectual property rights demanded by TRIPS Agreement. It is argued that stronger protection of IPRs will further widen the gap between the developed countries (North) and developing countries (South) since north will be better equipped in respect of World's cutting edge technology and will be benefited by the TRIPS Agreement affecting the conservation of biodiversity because it will extend and regulate the commercialization of biological diversity and genetic resources. The Relationship between the CBD and the TRIPS Agreement has been subject of intense political and scientific debate ever since the two agreements come into force in the first half of the 1990 i.e. incompatibilities' of these agreements are held responsible for problem, conflicts and inefficiencies in the implementations of the two agreements. There have been major changes which necessitate a novel approach to the study of intellectual Property Protection and need broader analyses of the changing international legal framework and its impacts on national laws and policy making concerning the management of biological resources and sustainable development. India being a signatory to various agreements has devised its legal framework to manage its biological resources and many aspects of which are still evolving. The way in which India negotiates these international developments, has a direct effect on domestic legislation and on the ground practices.

I. Biodiversity:

Biodiversity or biological diversity includes all the different plants, animals and microorganisms found in the world, the genes they contain and the ecosystems of which they form a part. There are three types of biodiversity - genetic, species and ecosystem. Mother Nature has unevenly distributed biodiversity among the countries. 60 - 70% of

the world's biodiversity is found only in about 12 countries lying partly or entirely in the tropics. These nations are often referred as mega diverse nations. Due to its position in the tropical and subtropical latitudes with their inherent wealth of life, India is one of the richest nations in terms of biological diversity.

The conservation of biodiversity is of utmost importance today as it affects the food chain. The greater the diversity of world's specials greater is the opportunity for the evolution of new varieties. It is of interest to note that almost all the crops and livestock on which we depend for our food security are hybrids - resulting from cross breeding from the wild species. Thus the conservation and preservation of biodiversity along with the biological resources become all the more necessary in the era of LPG where economic development and industrialization are stressed resulting in environmental degradation.

II. Sustainable Use of Biological Resources:

The Concept of the Sustainable use of living or biological resources first appeared in the 1980 World Conservation Strategy (WCS), which described sustainable use as "analogous to spending the interest whilst keeping the capital". However, it appeared as a generally applicable guiding philosophy rather than a technique that might be applicable for particular living resources. By the 1992 UN Convention on Environment and Development (The Rio Convention), sustainable use had become universally accepted as the basis upon which all living resources should be exploited/ managed. The key legal definition of the concept is found in Art.2 of the Convention on Biological Diversity. Under Article 2 of CBD "Sustainable use" means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

The sustainable use concept has been elaborated in more detail in the CBD. The concept of sustainable use implies a number of essential elements. For example it implies a duty to preserve biodiversity to the extent that the resource has to be maintained in order to ensure that there is no long-term decline. Further given that the resource is biological diversity, it

that it must be managed on a biological basis as opposed to a political one and due to the interdependence of biological systems, management of living resources cannot simply focus on a particular species being used, it must also consider the impact upon other species and the ecosystem as a whole. It may also signify precautionary principle[2].

Thus, the CBD loudly speaks about the conversation and preservation of biological diversity that too in the context of sustainable development. The CBD highlights the need for proper utilization i.e. sustainable use of biological resources[3]. The need for effective management of biological resources arises not only from the sustainable use of biodiversity point of view but also from the development of biotechnology point of view.

III. Modern Biotechnology:

The biotechnology revolution has indeed enhanced the power of man in the 21st century to intervene and utilize the biological resources to his benefit. The biotechnological revolution is gaining momentum all over the world and billions of dollars are invested in this industry now. If needs no gift of prophecy to say that in the coming decades many novel genetically modified organisms will be developed in various fields for medical, agricultural, energy, pharmaceutical, environmental improvement and many other purposes. Modern biotechnology is found to offer the mankind the potential of enormous benefits including healthier and longer life with plenty of water and food. Generally speaking, if biotechnology basically refers to a wide range of techniques that make use of living organisms, then at present we are in the third generation of biotechnology. By first generation biotechnology what is meant to describe is the older and more common techniques like making cheese, the fermentation of wine, the breeding of plants and animals. The first generation biotechnology was a result of natural process discovered by observation rather than systematic application of scientific analysis. The second-generation biotechnology concerned more with techniques involving scientific analysis. Application of microbiology resulted in the discovery of the role played by microorganisms in the fermentation process and the discovery of vaccines. Thus the systematic application of fermentation techniques was developed and used to produce penicillin and other antibiotics during this period[5]. The third generation - modern day biotechnology signifies the shifting of focus from microbiology to molecular biology specifically to genetic engineering[6] that begun in the 1970s.

IV. Definition of Biotechnology:

Since the modern biotechnology covers various disciplines its application extends to many vital fields, its implications cause great concerns and the definition of modern biotechnology though elusive becomes necessary. Basically biotechnology concerns 'techniques' for using the properties of living things to make products or services. Thus the OECD defines biotechnology to be "the application of scientific and engineering principles to processing of materials by biological agents to produce food and services". According to the Convention on Biological Diversity (CBD), biotechnology "means any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use". The Indian 1989 Hazardous Microorganisms Rules define biotechnology as to mean "the application of scientific and engineering principles to the processing of materials by biological agents to produce goods and services". Thus the modern biotechnology involves scientific techniques on living things for commercial exploitation.

V. Bio-patents:

Inventions resulting from modern bio technology can now be patented according to the usual patent law distinction made between product process and use or application invention. Article 27 of TRIPS Agreement inter-alia requires that, subject to certain exclusions, member states to grant patent in all fields of technology provided they are

new, involved and inventive steps and are capable of industrial application. Micro-organism has been included in the subject of patent under Article 27(3) (b).

In India, patent application now can be filed for patenting biotechnological inventions after the landmark decision by the Calcutta High Court in Dimminaco A.G. v. Controller of Patents Designs & Ors case and by the 2004 Amendment made to the Patent Act, 1970. Provision regarding non-patentable inventions under Sec. 3 of Indian Patents Act has been modified to include exclusions permitted by TRIPS Agreement under Article 27. It is of interest to note that here micro-organism is not excluded under Sec 3 (j) of Indian Patents Act thereby permitting grant of patent to micro organisms. Thus the exclusionary provision of Sec. 3 (j) permits grant of patent to micro-organisms.

Bio-patents can become a cause for concern of the developing countries that it could lead to "bio colonialism"[14] and "bio piracy"[15]. It could further affect agriculture sector[16] and biodiversity. Thus the development of modern commercial biotechnology i.e. man's power to exploit biological resources using various scientific techniques highlights the need for the effective management of biological resources for the benefit of the owners of the biological resources i.e. the state and the people themselves.

The Rio Declaration recognizes that:

"Indigenous peoples and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development". The value and benefit of knowledge an traditional practices with regard to the protection and conservation of the environment therefore finds explicit recognition. Traditional Knowledge of indigenous peoples and their communities relevant for conserving biological resources is further mentioned in chapter 15 (Conservation of Biological Diversity). It is also includes essentially identical wording to Article 8(j) to the CBD.

The CBD provides in Art. 8(j) a potentially useful opportunity for countries to introduce new measures to recognize and protect Indigenous Knowledge and innovations. CBD envisages that the benefits accruing from commercial use of TK have to be shared with people responsible for creating, refining and using this knowledge. Article 15 of the CBD requires prior informed consent for access to genetic resources, and the sharing of benefits arising from commercial use with the country of origin of the material.

STATEMENT OF THE PROBLEM

The role and impact of IPRs in the management of biodiversity and sustainable development is a subject of great interest and challenging in the international fora. So understanding and appreciating the social, cultural and techno-economic foundations of intellectual property systems, its nature and the rational for its protection is a prerequisite for comprehending its increasing importance and role in formulating national strategies for sustainable development.

SIGINIFANCE OF STUDY

The relationship between intellectual property rights and environmental management is one of the specific issues which call for attention. The development of biotechnology and its capacity to create Genetically Modified Organisms (GMOs) has posed a threat to environment protection. The need for transfer of environmentally sound technology (EST) to developing countries has for a long time been seen as one of the major aspects of the process of sustainable development. The question of access and benefits sharing clearly illustrate the close links between intellectual property protection and sustainable development. At international policy fora, developed countries have been taking the pro-IPRs position whilst developing countries have generally raised concerns about the negative effects of a strict IPRs regime on technology transfer

OBJECTIVES OF THE STUDY

The objectives of this research are to touch some of the significant issues relating to the relationship between the intellectual property rights to biodiversity management and sustainable development. In defining sustainable developmental concerns, the research work includes not only Biodiversity, but also the issues of IPRs in the field of agriculture and relationship with food security. The endeavour is to analyse the linkage between IPRs and other important fields of sustainable developmental law i.e. human right to Health, Biosafety, assess and benefit sharing of the biological resources and transfer of Environmental Sound Technologies. The study focuses on the relevant international legal regimes and its implications on the development of legal regime in India.

The main other objectives of the present research work are as follows:

1. To analyse the relationship and impact of IPRs systems on the conservation and sustainable use of biological diversity and equitable sharing of benefits derived from its use .
2. How to reconcile CBD and TRIPS to promote economic development simultaneously preserving biological and cultural diversity for food and health security;
3. Analysis of impact of international legal framework for the promotion of IPRs on India's legal regime ;
4. Analysis of relevant laws in India;
5. To point to possible options for resolving these problems and what is the way forward for each issue at the national and international level.

RESEARCH METHODOLOGY:

The methodology of the research differs according to the subject. The study is doctrinal in nature. The relevant material is collected from primary and secondary sources. Material and information are collected from various National enactments and international instruments, legal & other sources like published works, law journals, national journals, and websites on relevant topics. An attempt is made to analyse the intellectual property rights in context of biodiversity management and sustainable development by taking consideration of the relevant international laws and legal regime in India on the subject. An attempt is made to provide valuable insight in to the various

dimensions of the complex area of IPRs in the fields of biodiversity, agriculture, traditional knowledge, human rights to food and health and sustainable development in overall.

INTELLECTUAL PROPERTY RIGHTS AND BIODIVERSITY MANAGEMENT

The management of biological resources has been an increasingly contentious subject at the national and international levels. This is linked in large part to the progressive recognition of new economic opportunities arising from the use of biodiversity, primarily the possibilities opened up by genetic engineering. As a result, international legal frameworks for the management of biological resources in particular the Convention on Biological Diversity have had to increasingly take into account not only the needs of biodiversity conservation but also concerns about its potential for economic use and its contribution to the process of economic development. This has important repercussions from a legal perspective because the new products developed by the biotechnology industry can often easily be copied once they have been put on the market. As a result, the biotechnology industry has strongly argued for the introduction of intellectual property rights over genetically modified organisms, seeds and animals. These calls were heeded at the international level in the context of the negotiations for an agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement) as part of the Uruguay Round of trade negotiations. The resulting TRIPS Agreement is an intellectual property rights framework that has directly little to do with environmental management but has significant impacts on the ways in which developing countries such as India can devise legal frameworks to manage their biological resources.

INTERNATIONAL LEGAL FRAMEWORK FOR THE MANAGEMENT OF BIOLOGICAL RESOURCES

Convention on Biodiversity (CBD) 1992 The biodiversity convention is in theory the main treaty dealing with the conservation and management of biodiversity. Its three main goals are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits derived from the use of genetic resources. The convention reaffirms the principle of state sovereignty, which grants states sovereign rights to exploit their resources pursuant to their own environmental policies together with the responsibility to ensure that activities within their own jurisdiction or control do not cause damage to the environment of other states. It provides a number of general obligations for its member states. These include a commitment to develop national strategies, plans or programs for the conservation and sustainable use of biological diversity. Member states must also integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programs and policies. The biodiversity convention also provides a general legal framework regulating access to biological resources and the sharing of benefits arising from their use. It attempts to provide a framework that respects donor countries' sovereign rights over their biological and genetic resources while facilitating access to those resources for users. It therefore requires member states to provide access on "mutually agreed terms" and is subject to the "prior informed consent" of the country of origin of those resources. The biodiversity

convention provides that donor countries of microorganisms, plants or animals used commercially have the right to obtain a fair share of the benefits derived from such use. Benefit-sharing as conceived under the convention and the related "Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization" can take the form of monetary benefits or non-monetary benefits such as sharing the results of research and development; collaboration, cooperation and contribution in scientific research and development programs, participation in product development; and access to scientific information relevant to the conservation and sustainable use of biological diversity. With regard, to biodiversity related knowledge, the convention acknowledges the relevance of intellectual property rights but requires member states to ensure that intellectual property rights support the convention's objectives. The biodiversity convention recognizes developing countries claims to sovereign rights over their biological resources and contributes to the development of a new approach to biological resource management, which puts an increasing emphasis on the potential economic uses of biological resources.

(i) How is the CBD implemented?

It is up to individual member countries to implement the CBD through their national laws and policies. The CBD is legally binding, but has no in-built mechanism for ensuring that members follow the regulations. CBD implementation is reviewed and discussed at the Conference of Parties (COP) which usually meets every two years. The COP is the governing body of the CBD. It comprises of representatives from member countries, predominantly civil servants from environment related ministers. Discussions usually centre on conservation and sustainable development, including the issue of IPRs. Other relevant official CBD forums that meet periodically are the Working Group on Access and Benefit-Sharing, the Working Group on Article 8j, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the Working Group on Review of Implementation of the Convention. Activists from international civil society networks and organisations are usually well-represented and articulate at CBD forums.

(ii) Weakness of the CBD Weak enforcement: Though the CBD is legally binding, it has little power to ensure that members comply with CBD requirements. National Sovereignty over biological resources: The CBD is based on the notion that member states have sovereign rights over their biological resources; however this means that the rights of local communities over their biological resources depend on their national government and are not spelled out in the CBD. It is an inherent weakness of international law in general, that it tends to be mainly national government centred.

THE RELATIONSHIP BETWEEN TRIPS AND THE CBD:

The relationship between the TRIPS Agreement and the Convention on Biological Diversity has been the subject of growing interest and also contention. Some analysts and representatives of some countries are of the view that there are no conflicts (or at least no serious conflicts) between the two international agreements. Some of them claim that

the IPRs provisions in the CBD are consistent with WTO members' obligations in TRIPS. Several other analysts and diplomats take the view that there are serious and inherent tensions and conflicts between the two agreements. These tensions have been the subject of analyses and several submissions by WTO members (especially in the Committee on Trade and Environment) as well as by member states at the CBD.

(a) INHERENT TENSIONS IN THE IPRs PROVISIONS OF THE CBD : Those who are of the view that there is no conflict, or at least no inherent conflict, between TRIPS and the CBD usually point to the provisions in the CBD that directly deal with IPRs.

IPRs may influence the nature of technologies developed from genetic resources and how those technologies are transferred and used. The development and transfer of appropriate technology is important for the successful realisation of the CBD's objectives.The CBD refers to technologies that are "relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment." It requires Parties to transfer technology to developing countries on "fair and most favourable terms", including on concessional and preferential terms where mutually agreed. The provisions in Article 16 appear to be finely balanced. Article 16.5 states: "Contracting parties, recognising that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives." This clause seems to recognise that IPRs can have a negative effect on implementing the CBD and that contracting parties have to cooperate to ensure that IPRs are supportive of and do not run counter to the CBD's objectives. However, this clause itself has a conditioning term, namely, that the cooperation is subject to national and international law. It is also balanced by Article 16.2. Article 16.2 which states that access to and transfer of technology to developing countries shall be provided and/or facilitated under "fair and most favourable terms, including on concessional and preferential terms where "mutually agreed". In the case of technology subject to patents and other IPRs, "such access and transfer shall be provided on terms which recognise and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below." Article 16.3 states that each contracting party shall take measures with the aim that parties (especially developing countries), that provide genetic resources are provided access to and transfer of technology which makes use of those resources on mutually agreed terms including technology protected by patents and IPRs, in accordance with international law and consistent with paragraphs 4 and 5. Whilst Articles 16.5 and 16.3 place more emphasis on the obligations of developed countries with technology to facilitate the transfer of technology to developing countries (and
indeed, Article 16.5 does recognise the potential negative effects of IPRs on this transfer), these articles are tempered by the need to he consistent with international law, by the terms to the "mutually agreed" to, and especially by the provision in Article 16.2 that

technology access and transfer shall be on terms consistent with "adequate and effective" IPRs protection.

Whilst the aims of providing developing countries with access to technology on favourable and concessional terms are stated, the provisions on the need for consistency with IPRs

protection and with international law (which presumably also includes the TRIPS Agreement) offset the obligations on technology transfer and also render the aims of technology transfer on favourable terms) difficult to operationalise. The negotiating history of the CBD explains the tensions within the various clauses in Article 16. As explained by one of the key negotiators, B.E. Tewolde of Ethiopia: "It is a complex Article because it resulted from the conflicting interests of the North, which wanted to hang on to its advantages in biotechnology, particularly genetic engineering, and the biodiversity-rich South, which wanted technology transfer in exchange. The North insisted that technology transfer should be linked to the Northern form of IPRs in order to protect the interests of their private sectors, particularly their transnational corporations. Conversely, the South wanted to make sure that IPRs do not damage the prospects for the conservation and sustainable use of its biodiversity, and insisted on the inclusion of Paragraph 5. This upset the USA so much that it became one of the reasons why it never ratified the Convention". Insofar as the TRIPS Agreement (which came into force subsequent to the CBD) represents the main "international law" regulating the effective protection of IPRs, there is thus a conflict between TRIPS and the CBD obligations on technology transfer and on cooperation to ensure IPRs do not counter CBD objectives. Putting aside the issue of legal consistency, there is an inherent tension in spirit between the aspirations of a majority of CBD parties that recognise the potential adverse effect of a strict IPRs regime and that are demanding effective technology transfer and access, and the insistence of developed countries that the rights of IPRs holders be fully respected, irrespective of the effects on the CBD. This tension is also evident in the insistence of some countries that have maintained the position in the WTO that there is no conflict between TRIPS and the CBD. The relationship between IPRs and technology transfer under the CBD is multifaceted. IPRs (and the market incentives that accompany them) should be evaluated for their effect on the nature of technology developed from genetic resources, and on the transfer of these technologies. IPRs will also need to be evaluated to ensure that they do not "run counter" to the objectives of the CBD. As noted by the CBD Secretariat, "Due to the rapid development of technologies, particularly biotechnology, further consideration of the impacts of intellectual property rights on the achievement of the objectives of the Convention, including in facilitating access to and transfer of technology is urgently needed." (b) Other Tensions between TRIPS and the CBD Besides the tensions inherent within Article 16 of the CBD, there are several other areas of conflicts between critical aspects of TRIPS and the CBD.

These are examined below: Differences in Rationale, Origins and Overall Framework: There is a difference in the overall framework or objectives between TRIPS and the CBD. TRIPS is an international agreement drawn up with the encouragement and active

support of large corporations to promote their technological dominance and gain additional margins of profit through obtaining private monopolies. Policy makers have to decide on the balance between the rights of and benefits to IPRs holders, rival producers, and consumers. The IPRs model contained in TRIPS is tilted heavily in favour of the rights and benefits of IPRs holders. Because WTO members are obliged to fulfill TRIPS obligations, TRIPS has facilitated the extension of its particular model of IPRs to the wide membership of the WTO. WTO member countries now have to implement changes in national IPRs-related laws to reflect the TRIPS model, which promotes private monopoly rights that are expected to largely benefit transnational companies. TRIPS is basically a commercial treaty with commercial objectives that largely benefit strong private firms. The principles of environmental protection or human development are not central to TRIPS and are in fact marginalised by it, although there are references to or exemptions made on behalf of the environment, human and animal health and public order. On the other hand, the establishment of the CBD was prompted mainly by the growing

Conservation and Sustainable use of Biological Diversity : An overarching objective of the CBD is encouraging the conservation and sustainable use of the components of biological diversity. This objective encompasses many of the issues raised above, and requires consideration of additional, often indirect, impacts of IPRs on the conservation and sustainable use of biodiversity. Among its many obligations relating to conservation and sustainable use, the CBD requires Parties to integrate considerations relating to conservation and sustainable use into national decision-making. It requires its Parties to adopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity. Further, Parties are encouraged to integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. Parties are responsible for identifying processes and categories of activities that have or are likely to have significant adverse impacts on biological diversity and monitoring their effects. The granting of IPRs could, arguably, be such a category of activity. The CBD also includes a number of obligations relating to the conservation of in situ biological diversity. For example, it requires Parties to "control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts" (Article 8(g)).

OPTIONS TO REDRESS THE SITUATION

There have been calls made by many parties, including several NGOs and governments, to "reconcile" the tensions or conflicts between TRIPS and the CBD. The issue of making the two agreements consistent with each other has also been discussed at the WTO especially in the Committee on Trade and Environment and at the TRIPS Council and at the CBD. The following discusses some of the broad options for such "reconciliation". (a) Maintaining the Status Quo The first broad option is to take the approach that there are no real conflicts between TRIPS and the CBD, that in any case the two agreements should be left as they able to coexist, and that if any problems arise, they can be dealt with in an ad-hoc manner on a case-by-case basis. This approach could lake the view that TRIPS is a

clear, legally-binding agreement with its Own standing, and that the IPRs provisions in the CBD clarify that whatever measures are stated therein have to be consistent with international law (including TRIPS); and therefore whatever actions are taken under the CBD have to be consistent with TRIPS. In effect, such an approach would be asking the CBD to conform to TRIPS, and (in the perspective of this approach) this conformity would resolve any tensions between the agreements. Such an approach would however be taking a narrow view of the area of interaction between the two agreements. As the above analysis shows, there are serious differences between TRIPS and the CBD in terms of paradigm, objectives and treatment of several issues, including national sovereignty over biological resources and related knowledge, the principle and implementation of benefit-sharing, prior informed consent, and recognition of the contribution of traditional knowledge and modern technology, of individuals and communities, and of rights to be conferred in relation to these. These differences are such that following one approach would lead to a very different outcome from following the other approach. Thus, if and when a national authority tries to take both approaches simultaneously (in an effort to fulfil the two sets of obligations), a confusing and unsatisfactory situation is likely to arise. It is also likely that since the TRIPS Agreement is simpler to put into effect and has more enforcement strength at international level, maintaining the status quo between the two agreements would lead to TRIPS having practical precedence over the CBD in terms of the effects. Already there is a fast growing incidence of bio-piracy, which is undermining the principles and effects of the CBD.

(b) Encouraging Countries to Use Their Options under TRIPS and the CBD in favour of Sustainable Development The second approach to reconcile the differences between TRIPS and the CBD would basically leave it to each country to interpret the agreements in ways that are most appropriate to it and maximising the creative use of provisions of each agreement to

suit the country's chosen policies. Thus, a country that wishes to conserve biodiversity and related knowledge and to protect and promote community rights, farmers' rights and traditional knowledge. as well as to assert national sovereignty and the state's rights to share benefits, could draft laws that attempt to meet these objectives whilst also remaining consistent with the obligations of TRIPS and the CBD.

Under this approach, WTO members could draft their patent laws in ways that fully take into account, the flexibility enabled by the following clauses in TRIPS: Article 8, which states that "Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development..." "This is an important provision for including in national legislation measures in furtherance of public health and other public interests. This provision also, arguably, allows for measures protective of the innovative capacity, knowledge systems and traditional lifestyles of indigenous peoples and local communities especially if it enhances the protection of biodiversity and the sustainable use of its components.

Also under this approach, countries that have ratified the CBD can fulfil their obligations to protect traditional knowledge and community rights through the enactment of national legislation that covers the following areas or elements: Recognition of traditional knowledge; Local community rights in relation to resources and knowledge; Access and benefit-sharing in relation to biodiversity resources and knowledge relating to their use, in which the rights of the state of the country of origin, the farmers, indigenous peoples and local communities are fully taken into account. A major drawback of this approach is that developing countries in general have limited capacity (in terms of policy-making, legal and administrative expertise) to analyse the international agreements and to formulate national policies and draft legislation with the sophistication required. Thus, they may not be able to make full use of the flexibilities in TRIPS and the CBD. Therefore, capacity building in this area would be required. Also, for this approach to work, developed countries would have to allow the developing countries to make use of the flexibilities in the agreements and not unduly put pressure on them when they do so. (c) Reforms to TRIPS and the CBD to Make Them Consistent with Sustainable Development Objectives A third approach would be for the international community to opt in favour of giving priority to sustainable-development goals, and amend both TRIPS and the CBD to make them more consistent with these goals.

Under this approach, the spirit, objectives and main paradigm of the CBD would be the main basis of the harmonisation process, which can be operationalised using the principles of sustainable development i.e. the protection and promotion of concerns for biodiversity and the environment, traditional knowledge, and the rights of indigenous and local communities and of the public interest. This would require a review of TRIPS and the CBD, and suitable amendments to the relevant provisions. For example, in a review of TRIPS (which is provided for in Articles 27.3(b) and 71) amendments can be made in Article 27.3(b) to bring the scope of exclusion of biological materials and processes in line with environmental and ethical considerations as well as the need for preventing biopiracy and an interpretation can be made that the sui generis option for plant varieties can include the protection of traditional knowledge and local community rights, in line with the CBD. As proposed by some developing countries at the WTO, Article 29 can be amended to require that applications for patents covering biological resources or knowledge on their use should be accompanied by information on the country of origin and the prior informed consent of the state and relevant local communities of that country. This would enable TRIPS to complement the access and benefit-sharing component of the CBD, in order to make it operational. Amendments can also be made to TRIPS to strengthen the obligations of developed countries to ensure the transfer of technology to developing countries or to operalionalise the implementation of technology transfer. Consideration can also be given to revising TRIPS to allow for the exclusion or relaxation of standards of IPRs relating to environmentally sound technologies and technologies that relate to the use of biodiversity. This would bring TRIPS more in line with the spirit of the CBD, including the Article 16 provisions, such as

those dealing with technology transfer on concessional and preferential terms and with the need to ensure that IPRs are supportive of and do not run counter to CBI) objectives. In a review of the CBD, Article 16 could be amended to remove the tensions therein, so that the important objectives and principles of access to and transfer of technology to developing countries are not so constrained, as in the present CBD, by the references to the need to be consistent with adequate and effective protection of IPRs and international law. The obligations on technology transfer can also be strengthened and the implementation made more operational. It should also be recognised that the present provisions in the CBD on access to genetic resources now place the onus of implementation on national policies and legislation. However, measures by national authorities are insufficient to enable effective implementation of access and benefit-sharing arrangements.

For example, in its national legislation, the state of a country of origin may require as part of its access contract that the collector cannot patent the product or knowledge (or that such a patent can be applied for only under certain conditions or benefit sharing arrangement) but that state would require the cooperation of patent authorities or biodiversity authorities of other states to be able to monitor or effectively implement that contract. An international protocol could be established to set guidelines and standards for access and for fair and equitable sharing of benefits, as well as to foster international cooperation to facilitate implementation of the access and benefit-sharing arrangements. Finally, as the provisions under both instruments that would apply in the event of a conflict between them are not clear it seems that the mutual supportiveness and cooperative approach which has been called for seems the best solution.

At the international law level, the distribution of property rights over biological resources has been a long-standing concern. The question of the ownership of biological material has become a matter of specific concern due to economic opportunities which this provides. The influence of the TRIPS agreement over recent legislative activity is a fact that assumes more significance because its impacts go beyond the strict field of intellectual property. This is visible insofar as some of the changes imposed by TRIPS directly impact on the management of biological resources. Importantly, this has largely been a one-way route. Overemphasis on private property-rights regimes in the management of biological resources favour exploitation modes which focus mainly on the commercial potential of the resources, and neglect their use to satisfy basic subsistence needs. As a result the international legal frameworks for the management of biological resources in particular the convention on biological diversity have had to increasingly take into account not only the needs of biodiversity conservation but also concern about its potential for economic use and its contribution to the process of sustainable development. The nature of the current property rights regime that on the surface puts power in the hands of state by reaffirming sovereign rights over biological resources but in effect removes more power from their control by insisting on the increasing scope of private property rights must be addressed concurrently at the national and international levels Recent developments in India are interesting because India is one of the few

countries with significant biological resources, the potential to develop an own biotechnology industry and strong local knowledge bases concerning the use of its biological resources. The Patents Act 81 specifically sought to accept patents as a useful tool to reward inventiveness while recognizing that the system had to be carefully bounded to avoid undesirable social outcomes.

The Biological diversity Act clearly reflects the trends of the international level. It seeks at the same time to promote sovereign and private appropriation of biological resources and related knowledge. But most significant element is probably is the fact that the question of the relationship between the patent system and sustainable biodiversity management has been addressed neither in the Biodiversity Act nor in the Patents Amendment Act. The interactions between intellectual property rights regimes and biodiversity management remain an evolving and unsettled issue at the international level. This notwithstanding India must put in place legal frameworks for the management of biodiversity that make a coherent whole. While the existing national regime is insufficiently concerned with the overall coherence of the system put in place, it can be hoped that these shortcomings will be addressed at the level of implementation.

CONCLUSION:

The obligation to conserve the world's biodiversity - Common concern of Mankind, arises from the environmental point of view. But what makes special about biological resources management is the development of modern biotechnology. It is generally believed that the modern biotechnology holds the key for the future in the areas of eradication of poverty, health, agriculture and environmental protection. The genuine fear of developing countries regarding bio-colonialism and bio-piracy resulting from bio-patents has indeed heightened the need for proper management of biological/genetic resources. The involvement of Traditional Knowledge in the management of biological resources and the need to protect Traditional Knowledge against commercial exploitation has indeed emphasized the need for the effective management of biological resources.

Involvement of Traditional Knowledge in the management of biological resources has greatly strengthened the view that all the state holders i.e. the local people who own the biological resources must take part in the decision making that affect them. The CBD provides for a conceptual frame work regarding this. The TRIPS Agreement which is recent to CBD has provisions that may possibly water down the CBA principles. Learning from the experience the Indian Biological Diversity Act provides for the conservation of biological resources, protection of Traditional Knowledge and equitable sharing.

SUGGESTIONS

The existing intellectual property rights system needs to be reconfigure in view of the fact that it is not any more (if it ever was) an independent branch of the law that can be addressed on its own. This must be done at two levels. Firstly, at a substantive level, it is

imperative that 8 intellectual property rights frameworks fully reflect the fact that intellectual property rights
have impacts on the broader process of sustainable development as well as on the realisation of individual human rights. Secondly, with regard to the development of international legal frameworks in this field, intellectual property rights frameworks must learn from the sustainable development discourse and integrate a differential treatment dimension. In certain fields like health and food in particular, it is imperative to allow developing countries not to implement the same minimum standards that developed countries adopt. In the case of property rights systems over biological resources, solving conflicts between the various instruments is probably the most important issue while the legal regime is still being developed. Overall, any instrument setting up property rights over biological resources should be read in the context of the principles of sustainability and equity. Apart from environmental sustainability, property rights systems in this area should be capable of providing rewards to all actors engaged in biodiversity management. Suggestions at the International Level o Insisting on permanent observer status in the Council for TRIPS;

- Developing strong guidelines for access and benefit sharing;
- Providing additional comments on the role of intellectual property in access and benefit sharing; o Supporting the conclusion of a binding International Undertaking (IU);
- Revising the requirements for patent applications to help prevent misappropriation of knowledge regarding genetic resources and to ensure consistency with access and benefit sharing regimes pursuant to the CBD;
- Completing a substantive review of Article 27.3(b), and using the review to harmonise the TRIPS Agreement with the CBD and the International Undertaking; o Expanding the exceptions to patentability under Article 27.3(b);
- Undertaking a "sustainability review" under Article 71.1 of the TRIPS Agreement;
- Resisting attempts to reduce flexibility in defining sui generis systems.

Suggestions at the National Levels o Defining core intellectual property concepts carefully in national legislation;

- Countries should apply an interpretation of prior art that includes public domain knowledge in any part of the world whether published or not; o Governments should consider applying broad interpretations of the morality and ordre public exceptions allowed by TRIPS;
- Governments need to consider the extent and breadth of patent claims that their laws will permit. Claiming excessive monopoly protection should not be allowed in law or in the practice of examining patents;
- Governments should improve public access to patent databases by such means as publishing patent texts on the Internet;
- Governments should conduct studies to explore the potential of non-patent IPRs such as geographical indications, petty patents and trademarks for protecting

traditional knowledge, and make the results of these studies widely available to local communities.

- Any sui generis systems for protecting traditional knowledge should be developed in close collaboration with indigenous peoples and local communities through a broad-based consultative process that reflects a country's cultural diversity;
- Assisting in the articulation Human Rights principles as they relate to IPRs;
- To push the precautionary principle at all international levels for environmental protection; o International agencies will have to make an effort to bridge the gap between the developed world and the third world. Suggestions regarding Biological Diversity Act, 2002
- The IPRs provisions in Biological Diversity Act must also be seen in the light of the growing pro-IPRs trend of the Government of India, more visible in other IPR-related laws and policies such as the PVPFR act Act, 2001 which introduces plant breeder's rights and Amendments in the Patent Act, 1970 towards compliancy of TRIPS' standards;
- Provide full rights and powers to Panchayat Raj institutions to manage their natural and agricultural surrounds.

Suggestions regarding Patent Act, 1970 o In order to be patentable over Section 3(d) of the amended Patent Act, 1970, subject matter of an invention should not be a mere discovery, it should not be new form of a known substance and it should results in substantial increase in efficacy over the relevant prior art;

- There is a need to document all the traditional processes as well as products, with a view to reduce the number of controversies over claims for patent rights.

Suggestions regarding the Geographical Indications of Goods (Registration and Protection) Act, 1999

- The protection under GI Act should extend to traditional processes and technologies;
- Need to provide more extensive protection to other goods or products. Suggestions regarding the Plant Variety Protection and Farmers' Rights Act, 2001
- The use of farmer varieties to breed new varieties will have to be paid for. Revenue will flow into a National Gene Fund. Despite its good intentions of protecting the interests of the farming community, the formulation of this section [46 (2) d] is likely to create problems in implementation because the drafting is poor;
- In providing a liability clause in the section on Farmers' Rights, the farmer in principle is protected against the supply of spurious and/or poor quality seed leading to crop failures.

Suggestions regarding Seed Bill, 2004 - The Seed Bill should be harmonized with the Protection of Plant Variety and Farmers Rights Act (PVPFR), 2001 and the Biodiversity Act, 2002;

- Nothing in the Seed Bill shall dilute the rights and protections granted to farmers under the PVPFR Act; Towards a Balanced IPRs Regime

- Strengthening institutional mechanisms for protection of IPRs – Regulatory, legal and administrative through assigning a high priority towards completion of required legislative provisions to harmonise IPRs regime with international laws;
- Reinforcing and harmonising parallel laws supporting IPRs regulation to bolster their application and enforcement. For instance, the Seeds Bill needs to be fortified for effective implementation of PVPFR Act, 2001;
- Enhancing IPRs literacy by disseminating IPRs related information to all relevant stakeholders especially to the farmers. Suggestions regarding Sustainable Development
- Striking an appropriate balance between rewarding innovation, creativity and investments on one hand, and access to knowledge and transfer of technology on the other;
- Using flexibilities with economic and social goals in mind;
- Protecting the public interest in sectors of vital importance such as health, food security, education and the sustainability of genetic resources.

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