

AN ANALYSIS OF RIGHT TO FOOD IN INDIA UNDER THE REGIME OF PATENTS LAW

PAPER CODE- LAJ/V-1/I-2/05

BY- Mr. DEEVANSHU SHRIVASTVA
ASSISTANT PROFESSOR
SCHOOL OF LAW, JAGRAN LAKECITY UNIVERSITY, BHOPAL
deevanshu.shrivastava@jlu.edu.in

Developing countries are facing a tough battle against time in safeguarding their natural resources under changing global environment. This situation has arisen particularly after establishment of the World Trade Organization w.e.f. 1st January 1995. Of the several World Trade Organisation (WTO) agreements, the agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) is of great significance for most developing countries since its ratification by member countries implies important changes in their respective intellectual property laws. Notably, at the time of signing of the WTO Agreement, intellectual property rights (IPRs) laws in developing countries were nil or relatively under-developed compared

to developed countries whose laws were already mostly in conformity with the TRIPs Agreement¹.

This paper discusses the implications of application of intellectual property rights (IPRs) in the field of food and agriculture. IPRs have been accelerated and in the case of developing countries been brought about by the World Trade Organisation. The WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) requires patents on micro-organisms and *sui generis* legislation for plant varieties. Farmers' rights and indigenous & community knowledge is being impacted negatively by the TRIPs Agreement. This project does not attempt to capture the whole gamut of issues surrounding preservation and promotion of indigenous and community knowledge, protection of farmers rights, *sui generis* legislation. The project merely deals with those aspects of these issues that are impacted by intellectual property rights. If the aim of the project were to address preservation of biodiversity and

¹Correa, Carlos M. "Patents Rights", (eds.) Carlos M. Correa and Abdul Quawi A. Yusuf, *Intellectual Property and International Trade – The TRIPs Agreement*, Kluwer Law International, London, U.K.1998.

indigenous knowledge, the strategies employed would be quite varied and more local in nature. The starting premise of the project is that patenting of genetic resources for food and agriculture reduces poor women and men farmers' access and control over the resources that secure the right to food.

AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS

Prior to the Uruguay Round, intellectual property legislation was a matter of domestic policy. The Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement of the World Trade Organisation (WTO) for the first time makes it mandatory for developing countries to provide for patent protection for micro-organisms, and non-biological and microbiological processes; as well as an effective *sui generis* system to protect plant varieties. The period for patent protection was increased from 7 to 20 years and now covers both the process and product for an innovation. This serves to only strengthens the control of the patent holder and the industry. Article 27.3bis states that members may also exclude from

patentability: plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof.

PATENT PROTECTION OF LIFE FORMS – A RECENT PHENOMENON

Article-27.3(b) is makes an artificial distinction between micro-organisms and micro-biological processes on the one hand, and plants and animals on the other. Historically, patents were used for mechanical and other innovations. Agriculture is a recent addition to the patenting regime. In fact there was opposition to the inclusion of plant varieties in the patenting regime and 'the main opposition to the patenting of plant varieties emerged not from the Ministries of Agriculture in Europe, but from industry'.² The industrial property lawyers

²Action Aid, March 2000. 'Intellectual Property Rights and Agriculture: An Analysis of the Economic Impact of Plant Breeders' Rights'. Dwijen Rangnekar, Research Associate, School of Economics, Kingston University, UK.

(AIPPI) were averse to the possible weakening of the patent system so as to accommodate plant varieties. It was recognized that innovations in plant breeding, i.e. the production of most new varieties, would fail to meet two crucial requirements for the grant of patents – demonstration of an inventive step and the disclosure of the invention so as to enable reproduction of the invention. The US patent law, the recent EC Directive on the legal protection of biotechnological inventions provides for patent protection for biotech plants and animals. The EC Directive states that ‘biological material which is isolated from its natural environment’ could be patented. The mere act of isolation becomes an innovation. This clearly paves the way for greater biopiracy. The EC Directive recognises the unique nature of living organisms, plants and animals in that they multiply biologically, and extends patent protection not only to the ‘new’ biological material, but also to the progeny possessing those same characteristics for fear that the ‘innovator’ might not be able to recoup their profit in one generation (Article 8.2). This is problematic as not only does it blur the divide between what is an innovation and what is a discovery, but it ensures bondage of the farmers to the seed/animal

producer for generations. Dr. Tewolde the African negotiator for the CBD, and the general manager of the Ethiopia Environment Authority states, “distorting the meaning of patenting in order to make it applicable to life only serves to attract rejection of the whole system. Whoever worried about the legitimacy of patenting before the 1990s, before it became known that the USA was allowing the patenting of living thing? But now, opposition is growing all the time, opposition not only to the legitimacy, but also to the legality of patenting.”³

SUI GENERIS SYSTEMS

Most developing countries have opted for the *sui generis* (of its own kind) option within TRIPS in the form of plant breeders’ rights (PBRs) as opposed to patents on plant varieties. They are motivated by a belief that the patenting of food and farming crops could lead to a denial of the right to food, and grant decade-long monopolies on ‘inventions’ relating to food and farming crops particularly staples. The TRIPS Agreement does not specify what an effective *sui generis* system is, and it is left to each country to define what laws are appropriate for their individual country

³Martin Khor. Rethinking IPRs and the TRIPS Agreement. 20th March 2001.

situation. However, having opted for PBRs, many developing countries are being pressurised to sign up to the International Union for the Protection of New Varieties of Plants (UPOV) in place of developing their own (*sui generis*) options for protecting ownership of plant varieties. The UPOV system is highly restrictive of farmers' and community rights to innovate, develop, exchange, save and sell seed. It promotes a particular attitude to breeding plant varieties (e.g. that they are distinct, stable and uniform-DUS).

INTERNATIONAL CONVENTION ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The renegotiation of the FAO International Undertaking (IU) on plant genetic resources came to an end on November 3, 2001. The revised text is called the International Convention on Plant Genetic Resources for Food and Agriculture. The legally binding new treaty establishes a communal collection of 35 food and 29 feed crops (called the Multilateral System), assuring member states a "facilitated access" to the 64 crops. The treaty is founded upon open access to plant genetic resources; it is necessarily in tension with any legal system that grants

exclusive rights over those same resources. Specifically, **Article 12.3(d)** says that recipients of communal plant genetic resources shall not claim IPR on those resources or their genetic parts or components "in the form received from the Multilateral System." Victoria Henson-Apollonio, senior research officer for IPR at the CGIAR Central Advisory Service, thinks that "it will be difficult for the Governing Body to clarify the meaning of this article." But unless this happens, "it is impossible to say if the treaty benefits do overcome the risks," comments Bernard Le Buanec, secretary general of ASSINEL, which represents more than 1,000 breeding companies worldwide. Because such details are unclear, some developing countries have refused to include in the Multilateral System their most valuable crops, such as soybean (China), groundnut (Latin America), and tropical forage grasses (Africa).

C.B.D – TRIPS conflict

Right to intellectual property is based on individual private right, whereas, the rights under, Convention on Biological Diversity (CBD) are founded on the basis of traditional pre-existing rights to biodiversity and indigenous and

community knowledge.⁴ The CBD recognises the important contribution of the local communities⁵ especially in developing countries in preserving biodiversity. One of the items being discussed as part of the 27.3b review is the relationship between CBD and TRIPS. The developing countries maintain that there is a conflict between the two agreements, whereas the developed countries see no conflict. The Africa group submission to the TRIPS Council in June 1999, stated explicitly that ‘the review process should seek to harmonize Article 27.3(b) with the provisions of the CBD and the International Undertaking, in

⁴The Indian government in its submission to the TRIPS Council in July 2000 states, ‘The preamble of the TRIPS Agreement recognizes IPRs to be private rights...CBD on the other hand, in its preamble, categorically reaffirms that nation states have sovereign rights over their own biological resources.

⁵Article 8j of the CBD states, Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices

which the conservation and sustainable use of biological diversity, the protection of the rights and knowledge of indigenous and local communities, and the promotion of farmers’ rights, are fully taken into account.’ Though the TRIPS Agreement is accelerating exploitation of genetic resources, it does not require the patent holder to disclose the source of origin, get prior informed consent from the genetic resource/knowledge holders, or ensure that there is an equitable benefit sharing. Prior informed consent and equitable benefit sharing is the cornerstone of the Convention on Biological Diversity. Most governments are signatories of both the CBD as well as TRIPS and have to operationalise the objectives of TRIPS and CBD in the national legislation. The OAU model law is an excellent example of a framework that seeks to address the domestication of these two international obligations. To help resolve the conflict between CBD and TRIPS, the Indian government (July 2000), as well as the Brazilian government (November 2000) in their submission to the TRIPS Council have been demanding ‘a clear mention of the biological source material and the country of origin.’⁶ In this connection,

⁶India suggests that Article 29 of the TRIPS Agreement could include this requirement.

Brazil considers that **Article 27.3(b)** should be amended in order to include the possibility of Members requiring, whenever appropriate, as a condition to patentability: (a) the identification of the source of the genetic material; (b) the related traditional knowledge used to obtain that material; (c) evidence of fair and equitable benefit sharing; and (d) evidence of prior informed consent from the Government or the traditional community for the exploitation of the subject matter of the patent.' Discussions at the International Undertaking have also highlighted the need for equitable benefit sharing for the sources of genetic resources which is predominantly the developing world. The United States rejects these demands stating that they will violate TRIPS by placing additional demands on the patent holder; whereas, the European Commission have made their acceptance of this proposal conditional to the new trade round. The US repeated these demands at the recent negotiations on the IU at the instigation of the industry.

INDIAN PVP LEGISLATION

In September 2000, the Indian Parliament approved a legislation providing for protection of plant varieties and farmers' rights. The legislation known as the

'Protection of Plant Varieties and Farmers' Rights Act, 2001' aims to provide protection for plant varieties, rights to the farmers and breeders and to encourage development of new varieties of plants. The Act has many unique features. It strikes a balance between the rights of farmers and breeders by rewarding the farmers and local communities from the pool of National Gene Fund for their conservation and development efforts and, at the same time, ensuring reward for innovation by granting plant breeders' rights. Public interests will be taken care of through provisions of compulsory licensing, non-registration of varieties which affect public order and morality and are injurious to human, animal, plant life and health. To ensure that modern breeding techniques, which use advanced technologies like biotechnology, are not misused, the Act prohibits registration of any variety which contains genetic use restriction technology (GURT). It is hoped that this legislation will stimulate research and development in agriculture both in public and private sector by providing protection for plant varieties. However, the legislation has scope for further improvements and fine tuning.

First, the act envisages inviting claims for benefit sharing from any person/group of

persons or non-governmental organizations (NGOs) after issuing the certificate of registration. This well-intended provision on benefit sharing should be spelt out clearly and precisely. Depending on the extent of genetic material used, the proportion of benefits the breeder has to share with the public should be specified in the beginning itself. This will help to remove the uncertainty in the minds of private seed companies so that they can precisely earmark their R&D portfolio for the development of new plant varieties.

Second, the Act specifies that the breeder shall disclose to the farmers the expected performance under given conditions of any propagating material of a registered variety. But if the variety or the propagating material does not perform as expected, the farmers would have to approach the Authority and the Authority, after listening to both parties, shall decide about the amount of compensation. It is very complex issue and, as such, blatantly unfair to the farmers. The farmer, under such circumstances, should be given a certain proportion of expected output value per unit of land as compensation. Otherwise, the farmers cannot withstand the legal power of seed companies. This provision needs to be simplified.

Third, the Act opens a separate route for registration of essentially derived varieties (EDVs). The Authority, not the Registrar of Plant Varieties, will consider granting the certificate of registration for EDVs. We feel strongly that, EDVs should also pass for registration through the same channel as other new varieties of plants. Basically, EDVs are transgenic crops which are similar to the initial variety except the act of derivation. Instead of providing them separate channel for these varieties, we should allow for registration of EDVs through the same route. The need is to take effective measures for environmental impact assessment of EDVs before they go to the farmers' fields.

Lastly, this legislation has scope for farmers being dragged into courts by the plant breeders. Here, it would be pertinent to note that many lawsuits against farmers regarding unauthorized use of genetically modified crops are pending before the courts in USA and Europe.

FARMERS PRIVILEGE VS. FARMERS' RIGHTS

The advent of intellectual property laws in developing countries has potential for tremendous negative impact for 1.4 billion women and men farmers worldwide who rely on farm saved seeds. The concept of farmers' rights was introduced in the International Undertaking of the Food and Agriculture Organisation of the United Nations in November 1989.⁷ Farmers' Rights has been reaffirmed in various international forums including the Convention on Biological Diversity and Agenda 21 of the UN Conference on Environment and Development. Farmers' Rights mean rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centers of origin/diversity. These rights are vested in the International Community, as trustee for present and future generations of farmers. Farmers' privilege in terms of farmers being able to reuse protected varieties of seeds for use on the farm has been provided for in plant breeders' legislation. The scope of this privilege varies in different national legislation. Most

⁷FAO Resolution 5/89 on Farmers' Rights

developing country laws providing for a broad exception in line with the existing practice of farmers saving seed for the next harvest. Whereas, the developed countries interpret farmers privilege in a narrow sense in line with the commercial agricultural practice commercial breeders supply seeds to farmers, and farmers paying remuneration to the seed company in case they reuse seeds. UPOV 1991 further restricts the scope for the exception to ensure that the breeders are able to recoup adequate profits.

The Indian bill tries to balance farmers' centuries' old practice of saving, breeding and selling seeds with breeders' rights. The Indian 'Protection of Plant Varieties and Farmers' Rights Act, 2001, after intense lobbying from civil society groups provides for farmers' right to resell seed, provided that the farmer does not sell it as branded seed of a variety protected under the Act. Dr. Suman Sahai argues that farmers' ability to resell seed is crucial for India, since more than 85 per cent of seeds planted in India are supplied by the farming community.⁸

⁸Suman Sahai. Farmers' Rights and Food Security. Economic and Political Weekly, March 11-17, 2000.

Farmers' privilege is one part of farmers' rights and equating the two will be discourteous and unjust towards millions of small farmers around the world who have maintained, preserved and improved upon agro-biodiversity. Adopting UPOV should not be seen as countries having fulfilled their obligations of providing for farmers' rights. A strong and legally binding International Undertaking will not only ensure free access to the world's important food crops, but also provide for an international agreement recognising and promoting farmers' rights, which then would need to find expression in national law.

TRIPS poke its nose in the International Undertaking negotiations. The flawed text of a new global treaty - the International Undertaking on Plant Genetic Resources for Food and Agriculture, or IU which could ensure future food security by conserving and protecting the genetic resources of the major food crop and forage species has finally been agreed after a 7 year long marathon of negotiations in the Food and Agriculture Organisation of the United Nations, Rome.

In the last century an estimated 90 per cent of varieties of more than 100 crop species available to farmers have been lost, and the increasing rate of patenting and

privatisation is threatening to the global public interest because it:

- removes resources from the public domain
- threatens farmers' livelihoods as their access to crop varieties becomes restricted, and these are replaced by a very small number of commercial seeds
- undermines local and international food security, which is largely based on free use and exchange of seeds
- reduces the agricultural biodiversity which is managed by farmers on the world's behalf

The IU will eventually be legally binding, once ratified by more than 40 countries, and will establish a multilateral system for access to and exchange of the plant genetic resources for food and agriculture which appear on a list of inclusions. The IU also provides a mechanism whereby a share of the wealth generated from any commercial use of these resources is paid back to developing country farmers ('benefit sharing').

INDIGENOUS AND COMMUNITY KNOWLEDGE

The recent interest in indigenous and community knowledge has more to do with the potential profits from indigenous knowledge in the field of medicines, agriculture – now made possible through the intellectual property protection provided by TRIPs, than with harnessing indigenous knowledge for the sustainable development of the communities. Indigenous/traditional knowledge refers to the empirical knowledge of a group of long-time inhabitants of a specific location, and the principles underlying the generation, organisation, meaning and diffusion of that knowledge (IUCN 1997). The importance of indigenous knowledge goes beyond the use of local and indigenous communities. A large majority i.e. 80% of world's population depends on traditional medicines for its primary health needs (WHO,1993). Similarly two thirds of world's population depends on the food, provided through indigenous knowledge of plants, animals and farming systems (Rural Advancement Foundation International, 1994). Moreover, customary farming practices produce over 90percent of food in sub-Saharan Africa (Dakora, 1997).

INTELLECTUAL PROPERTY RIGHTS UNSUITABLE FOR PROTECTION OF INDIGENOUS AND COMMUNITY KNOWLEDGE

Genetic resources and indigenous knowledge are intricately linked in the developing world, with the holders of indigenous and community knowledge also the users and preservers of the genetic resources. Intellectual property rights are unsuitable for living organisms and indigenous knowledge, both of which are non-divisible public goods. The IPRs were developed for manufactured goods, where companies can expect repeat business as fashion change or items wear out. Living organisms can reproduce themselves, and indigenous knowledge can be shared freely and openly and so may not require repeat purchases.

UNESCO paper presented in the UNCTAD experts meeting in Geneva 2000 that, "IPRs are designed to protect individuals whose specific inventions require safeguarding in view of their perceived market value. Can such arrangement accommodate traditional knowledge, which is collectively owned, whose invention extends across several generations, and whose intent is to provide ecological understanding and social

meaning and not commercial profitability?

In short, existing IPR arrangements are culturally inappropriate for protecting traditional knowledge systems". The International Labour Organisation also took the side of indigenous communities over private intellectual property rights.⁹ Similarly Indigenous peoples also reject the protection of traditional knowledge under IPRs.

Indigenous people made following recommendations to UNCTAD:

- The current Intellectual Property Rights system is inappropriate for the recognition and protection of traditional knowledge systems because of the inherent conflicts between these two systems including:
 - Indigenous Peoples rights are holistic and collective by nature.
 - IPR is founded on private, economic rights whereas; Indigenous Peoples systems are values based which include both rights to use and obligations to respect the natural world.
- IPR is protected within legal systems of the world. Traditional knowledge (TK)
- systems are largely unrecognised and unprotected within legal systems.
- Indigenous people have a fundamental right to participate in decision making processes that affect their wellbeing and this has been accepted by a number of UN agencies including CBD, Ramsar, FCC and UNDP.
- Priority must be given to the strengthening of existing customary laws and value systems of indigenous peoples in the protection of traditional knowledge.
- Patenting on life forms should be banned because it attacks the values and livelihoods of indigenous and traditional peoples.

⁹With regard to the protection of traditional knowledge through customary law and practice, article 8 of the Convention No. 169 provides that indigenous and tribal peoples shall have the right to retain their customs and institutions.

THE PROJECT PRESENTS THREE POSSIBLE OPTIONS FOR PROTECTING INDIGENOUS AND COMMUNITY KNOWLEDGE

1) The improvements needed to the way information is allocated within the IPR regimes of industrialised countries. This involves looking at how the current regime can be made more stringent regarding the allocation of information.

2) Creating a more equitable basis for the attaching of economic value to the information. This involves a sharing of the benefits derived from TK with the communities whose knowledge was made use of.

3) Allocating information and placing an economic value on it other than through IPRs. This involves looking at the alternatives to IPRs for protecting TK.

PATENTS ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE (GRFA) MAY THREATEN FARMERS' LIVELIHOOD AND FOOD SECURITY:

Patents would reduce access to seeds and genetic resources to farmers and breeders. It could also make seeds more expensive for the small farmers due to royalty payments and increased commercialisation. Once the seed is

planted companies can insist that farmers purchase new seed every year, and penalize them for saving seeds. This compromises farmers' right to save, grow, and sell (patented) seed. *Monsanto in the United States has taken the aid of Pinkerton detective agency to find farmers who have been illegally saving seed. More recently in a bizarre case, a Canadian Farmer Percy Schmeiser whose field was contaminated by genetically engineered canola has been asked to pay Monsanto around \$10,000 for licensing fees and up to \$75,000 in profits from his 1998 crop.*¹⁰ *If these laws and practices are transposed to developing countries it will be a disaster for the poorest farmers in developing countries who rely on farm saved seed and enter the market to purchase seeds once in five years.*

Patents on GRFA do not recognise community rights: Patents on genetic resources often do not fully recognise the rights of local communities to their traditional knowledge. Creating private property rights over the intellectual rights of many previous generations of farmers (which they have shared as common property for the common good) raises serious questions in respect to 'prior art', and can also viewed as a form of intellectual property theft - so called 'bio-

¹⁰www.rafi.org

piracy'. *The patent on the anti-fungal properties of neem, the healing properties of turmeric, and the aromatic qualities of basmati rice illustrate the problem with the patent law that allow for patents on traditional knowledge and genetic resources for food and agriculture. More recently, Pfizer acquired patent rights on P57, the appetite suppressing ingredient in the Hoodia Cactus plant from South Africa to produce anti-obesity drugs, without acknowledging or compensating the Kung Bushmen who are the holders and preservers of the knowledge for centuries.*

Plant breeders' rights and biodiversity:

Farmers indigenous variety of seeds not only ensures the biodiversity protection but also the livelihood security of poor farmers. Genetic diversity in agriculture enables poor farmers to select varieties of plants and animal breeds that are best adapted to changing environmental, economic and social pressures. The DUS criterion of UPOV provides incentives for a particular (industrial) kind of agriculture which is detrimental to biodiversity protection and livelihood security. The narrowness of the genetic base is responsible for greater risk of crop failure as occurred in the wheat stem rust of 1954 or the southern corn blight of 1970 in the

US. *The Irish potato famine in the 1840s is a classic example of genetic vulnerability.*

Patents on GRFA accelerate corporate control of the seed sector:

Patents promote the consolidation of global seed and agri-chemical businesses, concentrating power over seeds and seed choices in a very few hands. Poor farmers are already vulnerable players in the marketplace – to be operating in an inefficient market biased against them, increases vulnerability. *Developing countries are the source of 90 per cent of the world's biological resources, and developed countries and their transnational corporations hold 97 per cent of all patents worldwide. TNC's are paying premium prices to acquire local companies in developing countries in anticipation of monopoly rents once the IPRs are fully enforced.*¹¹ In the context of large multinational corporations buying up local seed companies, the question of choices really becomes limited. *For example, 60 percent of the corn market in Brazil is controlled by Monsanto*¹². **Patents granting monopolies:** The economic

¹¹ Reference: Action Aid's research in Brazil and India

¹²Wilkinson, John and Pierina German Catelli. The Internationalization of Brazil's Seed Industry. Action Aid Brazil, 2000.

benefits and costs of patenting are not clear-cut. Patents can have anti-competitive effects by securing and strengthening the position of market leaders and limiting the entry of new competitors.¹³ *Action Aid's research in a related field, plant breeders rights¹⁴ suggests that creation of monopolies is not necessarily linked to inventive activity, so the trade off society makes in granting 20year monopolies, between free exchange of ideas and future gains from invention, maybe a false one.*

The conflict of Patents on GRFA with human rights: The UN Sub-Commission for the Protection and Promotion of Human Rights passed a resolution stating that the TRIPs Agreement could infringe on poor peoples' right, specially their access to seeds and pharmaceuticals. The Human Development Report of the UN has also consistently pointed out the contradiction between human rights and TRIPS.

KEY RECOMMENDATIONS

- Patents on life - Developed country governments should respond to the concerns of developing countries, to clarify' \

that plants and animals as well as micro-organisms and all other living organisms and their parts cannot be patented, and that natural processes that produce plants, animals and other living organisms should also not be patentable';¹⁵ and Respect the right of developing countries not to grant patents on genetic resources for food and agriculture to ensure free and fair access and benefit sharing, in line with the IU and CBD.

- Sui generis system – Developing countries should not be pressurised into adopting UPOV 1991 as the effective sui generis system. They should be supported and encourage to develop their own national laws that effectively protect community and farmers rights.
- CBD-TRIPS - Developed country governments should clarify that the WTO TRIPs Agreement must be consistent with (a) provisions in the Convention on Biological

¹³World Bank. World Development Report, Knowledge for Development, pg 34-35.1998/99.

¹⁴Dwijen Rangnekar. Action Aid, March 2000.

¹⁵WTO. Preparations for the 1999 Ministerial Conference. The TRIPS Agreement – Communication from Kenya on behalf of the African Group. WT/GC/W/302, 6 August 1999.

Diversity to conserve and sustainably use natural resources, ensure prior informed consent and benefit sharing & Make disclosure of genetic resources as well as prior informed consent from the holders of genetic material and traditional knowledge mandatory for any IP and access laws.

- Farmers' rights – Ensure adoption of a strong International Undertaking on Plant Genetic Resources including the international recognition of Farmers' Rights.
- Indigenous and community knowledge – Ensure recognition and strengthening of the traditional knowledge, innovations, practices and technologies of indigenous people and farming and other communities in appropriate, local, national and international forum, outside the WTO.

Recent Controversies over Patents and GM Crops

- **Yellow bean patent**

On April 13, 1999, Mr. Larry Proctor, proprietor of Pod-ners L.L.C. won a US patent No.5894,079 for developing a bean named 'Enola' with "a particular color

yellow". This patent has been challenged by the International Centre for Tropical Agriculture (CIAT) – which has the largest (28182) collection of beans in the centre' gene bank. The CIAT – first agriculture research center in developing world to challenge US patent on a crop - claims that at least 260 lines maintained by it are yellow and six are "very similar" to the Enola. RAFI has termed it a 'textbook case of biopiracy'. Meanwhile, Larry Proctor has filed a law suit (30 Nov.2001) against 16 small bean seed companies and farmers in Colorado claiming that they are violating the patent by illegally growing and selling and selling his yellow "Enola" bean.

- **Basmati patent**

In September 1997, the US Patent and Trademark Office (USPTO) granted a patent (US Patent No. 5663484) to a Texas-based company RiceTec Inc. for "Basmati Rice Lines and Grains". The original patent was based on 20 claims of novelty and inventiveness. This could have proved a major hindrance to basmati exports from India to USA. After a prolonged 4-year battle by Indian government and NGOs, the USPTO finally allowed only five claims (Claims 8,9,11,12,13) to the company. The title of

the patent has also been changed from “Basmati Rice Lines and Grains” to Rice Lines Bas867, RT1117, TR1121). Though it is claimed that India has got the patent revoked successfully, but still the company can use the term ‘basmati’ for selling its rice. This is because the US Federal Trade Commission considers the term ‘basmati’ as generic and, therefore, anybody can use it.

- **Monsanto sued farmers for re-sowing GM seed**

Monsanto company is suing dozens of American and Canadian farmers for infringement of its patent on genetically modified (GM) crops. Investigators hired by the company keeps an eye on the farmers and collect evidence of the illegal planting of the Monsanto’s GM crops of cotton, Maize, rapeseed and soyabean. Farmers who used Monsanto’s crops to produce seed for planting have been fined thousands of dollars for patent infringement and some face bankruptcy. The company also advertises a toll-free-telephone number for people to inform on farmers who use unlicensed seed.

Some cases of violation of GM crop patents are not straightforward. Recently, a federal court in Saskatchewan (Canada)

ordered a Canadian farmer to pay the Monsanto Co., thousands of dollars (\$85,000), because the company’s genetically engineered canola plants were found growing on his fields. It happened because the pollens from modified plants from nearby fields were blown into his crops. The chances of such cross-pollination under developing country agriculture are even more where we have a majority of small and marginal holdings scattered all over the landscape of the country. How would we deal with such cases of innocent infringement and what the farmer can furnish as a proof of his innocence?

- **Illegal acquiring of Thailand’s ‘Jasmine’ Rice**

A Florida-based researcher Dr. Chris Deren is working to develop a US version of Thailand’s famed ‘*jasmine*’ rice. He maintains that he legally obtained the seeds of original strain of jasmine rice (KDM105) from IRRI through the US Department of Agriculture. But IRRI maintains that it shared a sample of KDM105 with Dr. Neil Rutger of the USDA’s Dale Bumpers Rice Research Centre in Arkansas, USA and Dr. Rutger, on his own initiative, passed on this sample to Dr. Deren in Florida. The

Thailand's government has now responded by hiring US lawyers to initiate a law suit in a US court to pre-empt any move to patent new rice varieties developed from jasmine rice (KDM105). The jasmine and basmati cases have inflamed and impassioned people across Asia.

- **Mexico's GM Maize contamination**

Mexico is the center of maize genetic diversity. The Mexican Ministry of Environment confirmed last year that farmers' maize variety in the states of Oaxaca and Puebla (Mexico) has polluted with DNA from GM maize. This has stirred an unseemly debate within scientific community, civil society organizations and indigenous farmers. The outcome of this case is still awaited.

CONCLUSION

Developing countries are facing a tough battle against time in safeguarding their natural resources under changed global environment. IPR laws in developing countries were relatively under-developed compared to developed countries whose laws were already mostly in conformity with the TRIPs Agreement. Consequently, developing countries face lot of problems in adjusting to the ground realities. This

study focuses on the institutional response of developing countries particularly to comply with the TRIPS Article 27.3(b) which has wider implications for plant variety protection and food security. The case of plant variety legislation in India is unique because in the relevant legislations provides for farmers' rights and plant breeders rights, simultaneously.

Therefore, active participation by developing countries is essential to ensure the legitimacy of standard setting and its appropriateness and relevance to their economies which are at different levels of development. The achievement of Doha Declaration, in part, reflected the fact that developing countries were able to present carefully developed, specific proposal that could be accommodated in WTO rulemaking. One clear implication of this is that developing countries need the capacity to participate much more effectively in international IP negotiations on a regular basis than an exceptional basis.

While making collective efforts for protecting their biodiversity, the developing countries should put in place efficient institutional mechanism to regulate plant breeding activities, seed distribution network, proper input use policies and other regulatory framework.