

# **THE TRIPS AGREEMENT: IMPLICATIONS FOR FARMERS' RIGHTS AND FOOD SECURITY**

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The framework of TRIPS, within which the demand for Intellectual Property Rights (IPRs) on biological materials has arisen, is the emergence of biotechnology as a key economic sector. Armed with patents, this technology is controlled by the multinational corporate sectors which are in a position to facilitate or deny the use of this technology to others. For developing societies like India, this has critical significance for vital sectors like food and health.

The tussle for institutional control over genetic resources is for a simple reason. The developed world has the technological tools needed to convert genes to products. It does not have the raw materials, which are concentrated in the tropical, developing countries. In order to overcome this limitation, a harmonized IPR regime for genetic resources has been introduced into the WTO, with its threats of trade sanctions against countries that do not comply.

## **Trade Related Intellectual Property Rights**

The agreement on Trade Related Intellectual Property Rights (TRIPS) was introduced into the Uruguay GATT Round in 1986. It was the result of intense negotiations and a compromise between different sets of interests. One of the dominant players in setting up TRIPS was the American biotechnology industry. TRIPS provide minimum national standards for levels of protection to the creators of intellectual property in various fields. It covers the following fields:

- copyright and related rights;
- trademarks;
- geographical indications;
- industrial designs;
- patents and plant variety protection or PVP;
- layout-designs (topographics) of integrated circuits;
- protection of undisclosed information; and,
- control of anti-competitive practices in contractual licences

By placing IPRs in the WTO and making them subject to its binding disputes procedure, proponents of a strong IPRs regime have made it possible for non-compliant WTO Members to face trade sanctions in any area if they fail to live up to its rules. This is arguably the main reason why IPRs were put into WTO instead of the existing body promoting IPRs, the World Intellectual Property Organisation (WIPO). The TRIPS Agreement also includes for the first time in any area of international law "rules on domestic enforcement procedures and remedies". Article 27.3.b of TRIPs pertaining to IPRs on life forms was due for a review in 1999 but this did not materialise since the Seattle meeting got derailed. The whole TRIPS Agreement is currently being reviewed and meetings of the TRIPS Council have started.

## **IPRS ON BIOLOGICAL MATERIALS**

The key element of the TRIPS Agreement for agriculture and food security is the requirement for WTO Members to make patents available for any inventions, whether products or processes, in all fields of technology without discrimination. One reason for greater interest in patents is the rapid development of biotechnology, especially in the OECD countries, and its application in agriculture. Apart from Article 27.3(b), two other Articles permit exceptions to the basic rule on patentability:

1. When members want to prevent the commercial exploitation of the invention to protect *ordre public* or morality; this explicitly includes inventions dangerous to human, animal or plant life or health or seriously prejudicial to the environment (Art 27.2).
2. Diagnostic, therapeutic and surgical methods for the treatment of humans or animals (Art 27.3(a)).

Members may also provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties (Art 30).

Patents must also be available and patent rights enjoyable without discrimination as to the place of invention and whether products are imported or locally produced the so-called 'national principle' (Art 27.1). According to Article 28.1(a) of the TRIPS Agreement, patents relating to products confer the right to prevent third parties from "making, using, offering for sale or importing for those purposes the product" without the patentee's consent.

### Implementation requirements

WTO members must ensure their laws meet the minimum standards laid down in the TRIPS Agreement but they can introduce tougher laws if they wish. They do not, however, all have to comply at the same time (Art 65):

- Developed countries had to implement TRIPS within one year of entry into force of the Agreement on 1 January 1995
- Developing countries had an extra four years-i.e. by 1 January 2000.
- Economies in transition (from centrally-planned to market economies) also had an extra four years-i.e. to 1 January 2000.
- Least developed countries have a 10 year transition period but they may apply for extensions to the (Art 66.1)

Newly acceding members of the WTO do not benefit from the transitional arrangements but must comply with the TRIPS obligations immediately they join the organisation.

Four options are consistent with the obligations in Article 27.3(b):

1. To allow patents on everything.
2. To exclude plants, animals and essentially biological processes from patenting but not to exclude plant varieties from patentability.
3. To exclude plants, animals and essentially biological processes from patenting and to introduce a special *sui generis* right for the protection of plant varieties.
4. To exclude plants, animals and essentially biological processes from patenting but not plant varieties and to provide, in addition, for a *sui generis* right ('combination thereof').

Most developing countries including India have chosen option 3.

*The sui generis system (option 3)*

A *sui generis* (of its own kind) system of protection is a special system adapted to a particular subject matter, as opposed to protection provided by one of the main systems of intellectual property protection, e.g. the patent or copyright system. It means countries can make their own rules to protect new plant varieties with some form of IPR provided that such protection is effective. The Agreement does not define the elements of an effective system.

One possible *sui generis* system likely to be recognized as effective is the UPOV system of Plant Breeders' Rights (PBRs). This was initially developed in Europe and has now been adopted by the industrialised countries. The UPOV system has undergone several changes after its formulation in 1961. Amendments in 1972, 1978 and finally 1991 which is now ratified, have resulted in almost no concessions for farmers and breeders. The 1991 amendment brings UPOV in line with patents. UPOV as the definition of 'effective' *sui generis* is being opposed by developing countries. India has submitted to the TRIPS Council that the definition of 'effective' must be left to nations and should not be determined internationally. Asian countries are not anxious to join UPOV since it does not serve their interests. This is borne out by the fact that only Japan, China and South Korea are so far members.

**ARTICLE 27.3. (b)**

Article 27.3(b) of TRIPs is perhaps the most controversial clause of the entire WTO agreement. It requires members to provide for the patenting of microorganisms and genetically engineered organisms ("non-biological and microbiological processes"). It allows them to exclude from patentability, plants and animals "and essentially biological processes for the production of plants and animals", though members must provide either patents or an "effective *sui generis* system" for plant varieties.

WTO members are now in the process of defining their positions regarding the future of these provisions. There are indications that a few members like the US, would like the *sui generis* option to be eliminated altogether, while others, which include most developing countries, are preparing national legislation to implement it.

It also needs to be recognized that there are potential conflicts between the TRIPs patenting regime and the Convention on Biological Diversity, as well as the recently concluded International Treaty on Plant Genetic Resources at the United Nations Food and Agriculture Organisation (FAO). These conflicts are widely seen as more political than legal in nature and the US government has made early implementation of TRIPs and even "TRIPs-plus" provisions a top priority of its foreign policy. These matters are likely to emerge as matters of dispute under the WTO's dispute settlement system in the coming years.

The implications for small farmers and rural communities in developing countries of adopting UPOV to comply with TRIPs Article 27.3(b) are likely to be considerable. UPOV 1991 conditions will significantly diminish the farming community's capacity to be self sufficient in seed and self-reliant as agricultural producers. UPOV had been established to promote the interests of commercial plant breeders in the North rather than the farming communities, and was part of the industrial agriculture system.

UPOV's uniformity requirement will contribute to genetic erosion and the cost of maintaining UPOV certification is beyond the means of most farmer-breeders. Although peasant farmers have also cultivated plant varieties expressing desirable traits over time, their varieties rarely meet the UPOV requirements of "D-U-S", that is, that they be "distinct" from other varieties, produce genetically "uniform" progeny, and remain genetically "stable" over generations. After the 1991 UPOV amendment, a new quality "novelty"- has been added to the minimal characteristics required of plant varieties, in order to bring them in line with patent requirements.

These conditions for a plant Breeders Right certificate under UPOV go contrary to the goal of enhancing genetic diversity. Furthermore, the kind of protection granted by post 1991 UPOV's Plant Breeders Rights is an exclusive monopoly right. This contrasts sharply with the broader goals of collective remuneration and benefit-sharing expressed in the Convention on Biological Diversity and the FAO Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture.

### **The Indian sui generis legislation: Plant Variety Protection and Farmers' Rights Act.**

#### **FARMERS RIGHTS**

The Indian law recognizes the farmer not just as a cultivator but also as a conservor of the agricultural gene pool and a breeder who has bred several successful varieties. The Act makes provisions for such farmers varieties to be registered, with the help of NGOs so that they are protected against being scavenged by formal sector breeders. The rights of rural communities are acknowledged as well. The rights of the farmer are defined so:

*The farmer ..... "shall be deemed to be entitled to save use, sow, resow, exchange, share or sell his farm produce including seed of a variety protected under this Act in the same manner as he was entitled before the coming into force of this Act.;*

*Provided that the farmer shall not be entitled to sell branded seed of a variety protected under this Act.*

*Explanation: - for the purpose of clause (iii) branded seed means any seed put in a package or any other container and labeled in a manner indicating that such seed is of a variety protected under this Act."*

This formulation allows the farmer to sell seed in the way he has always done, with the restriction that this seed can not be branded with the Breeder's registered name. In this way, both Farmers and Breeders rights are protected. The Breeder is rewarded for his innovation by having control of the commercial market place but without being able to threaten the farmers' ability to independently engage in his livelihood, and supporting the livelihood of other farmers.

#### **Importance of Farmer's Right to Sell Seed**

The implications of the farmer losing the right to sell seed are grave . These could include  
Loss of income for the farmer  
Loss of control over seed production  
Loss of self-reliance in agriculture

Dependence of the farming community on multinational seed companies for seed an ever-present threat that MNCs can withhold release of seed to apply pressure.

At the national level this could mean a compromise with national security since food security is in the forefront of national security. A nation that does not produce its own seed and its own food can not be a secure nation.

However the pivotal importance of the farmer having the right to sell seed has to be seen in the context of seed production in India. In India, the farming community is the largest seed producer, providing about 85% of the country's annual requirement of over 60 lakh tons. If the farmer were to be denied the right to sell, it would result in a substantial loss of income for him. But far more importantly, such a step would displace the farming community as the country's major seed provider. Their only replacement if this happens will be the large Life Science corporations since budget cuts have seriously weakened the capacity and output of the other player, the public research institutions.

It is important to understand the political economy of seed production and seed sale in India and in the world, to understand why it was absolutely crucial for the farmer to retain the right to sell. In India, the farming community is the largest producer of seed, supplying the bulk of India's seed requirement. The Agro-Chemical giants turned Life -Science Corporations have emerged as the largest seed producers in the industrialised nations. In Europe and the US, as also in Canada, Australia, New Zealand , Japan and to a lesser extent, Korea and some Latin American countries, seed production is now in the hands of the large corporations. Control over the seed sector was established by the simple expediency of buying up all the smaller seed companies. In India, such a strategy can not work because there are simply no seed companies of any significance or size that can be bought and that would transfer their market share to the MNC that bought it.

In India, a strategy to control seed production would have to rest on knocking the farmers out of the market by some other means. Since they are not organised in a company that can be purchased, this can only be done, by legally taking away their right to sell seed. If the farmer can be stopped by law from selling seed (and by implication, producing seed), the market automatically becomes available to the next alternative, the MNC. This is precisely why the Farmers Right clause in the Indian PVP legislation has been the subject of such a tussle between the seed industry and pro-farmer groups like Gene Campaign.

Weak Farmers Rights will allow seed corporations to dominate the seed market. Strong Farmers Rights keeps the farming community alive and well as viable competitors and an effective deterrent to a take over of the seed market by the corporate sector. Control over seed production is central to self-reliance in food. The need for this self-reliance can not be over-emphasised. Food security is in the forefront of national security. A nation that does not produce its own seed and its own food can not be a secure nation.

### **OTHER KINDS OF FARMERS' RIGHTS**

Apart from the right to sell (unbranded) seed of protected varieties as before, the rights of farmers and local communities are protected in other ways too. There are provisions for acknowledging the role of rural communities as contributors of landraces and farmer varieties in the breeding of new plant varieties. Breeders wanting to use farmers varieties for creating Essentially Derived Varieties (EDVs) can not do so without the express permission of the farmers involved in the conservation of such varieties.

Essentially Derived Varieties (EDV) are those varieties that are more or less (essentially) the same as the parent variety except for limited, specific changes. Varieties are considered essentially derived when they are developed in such a way that they retain virtually the whole genetic structure of the earlier variety. Most genetically modified (GM) varieties are EDVs. For example Bt cotton is a cotton variety, identical to its parent except for the single difference of containing a bacterial gene from the *Bacillus thuringensis*. So also Bt corn.

Any person, governmental or non- governmental agency is entitled to register a community's claim and have it duly recorded at a notified centre. This intervention enables the registration of farmer varieties as sources of germplasm, even if the people themselves can not do this themselves due to illiteracy or lack of awareness. If the claim on behalf of the community is found to be genuine, a procedure is initiated for benefit sharing so that a share of profits made from the new variety goes on behalf of communities, into a National Gene Fund.

### **Disclosure**

Other details supportive of the rights of farmers are the explicit and detailed disclosure requirements in the passport data, which has to be submitted at the time of applying for a Breeders certificate. Passport data refers to the data about the parentage of the new variety. In this case it includes details like name and location of any farmers varieties used. If any concealment is detected in the passport data, the Breeders certificate stands to be cancelled.

### **GURT (terminator) forbidden**

There is a clause prohibiting breeders from using sterile seed technologies. Breeders will have to submit an affidavit that their variety does not contain a Gene Use Restricting Technology (GURT) or terminator technology.

### **Exemption from fees**

Further protecting farmers from the new set of provisions being put in place, the Act stipulates that if farmers wish to examine documents and papers or receive copies of rules and decisions made by the various authorities, they will be exempt from paying any fees. Such fees would be payable by all other people wanting to examine documents and receive copies of decisions from the National Authority, the Registrar, the Tribunal and various other committees.

### **Protection against innocent infringement**

The law has also attempted to address a concern voiced by several quarters, that when the new system of Plant Breeders Rights is imposed for the first time, there may be cases of unknowing infringement of Breeders Rights. Section 43 specifies that the farmer can not be prosecuted for infringement of rights specified in the Act if he can prove in court that he was unaware of the existence of such a right.

So if the farmer uses the registered name of the breeder informally, while selling seed, he is protected if it can be shown that he did not know that there was a new law in place which places some restrictions on his traditional rights, including the right to sell seeds.

### **Benefit Sharing**

The use of farmer varieties to breed new varieties will have to be paid for. Revenue generated in this way is to flow into a National Gene Fund..

### **Protection against bad seed**

In providing a liability clause in the section on Farmers Rights, the farmer in principle is protected against the supply of spurious and/ or bad quality seed.

An important element of this *sui generis* law is that contrary to the exclusive IPR awarded to the individuals or corporations, it offers a special type of IPR protection and benefit sharing system. This is for the benefit of communities which have either collectively created and incrementally improved an innovation or provided prior art underlying a new innovation, either process or product. This community could be indigenous rural or tribal communities or farmers' communities. In the case of community ownership no right of custodianship can be established or claimed by anyone in the community. This community rights assumes special significance in countries like India where agriculture has been practiced for thousands of years and the farmers have been predominantly responsible for conserving and enriching the bio-resources which constitutes the mainstay for national agriculture and food security.

### **Biodiversity and Farmers' Rights**

Another dimension to the IPR issue is the differences among countries in their national wealth on biodiversity, particularly the agro-biodiversity. Many countries of the South, including India are hotspots of biodiversity. This has largely influenced the history and system of agriculture in these countries, particularly the historic role of farmers in protecting, preserving and improving crop plants. It should not be forgotten that before the entry of organized and institutionalized scientific plant breeding, it was the farmer breeders who were responsible for creating the huge wealth of genetic variability in all crop plants and their wild relatives. They selected several varieties to address specific goals, different growing situations, and resistance to several pests and diseases.

In recognition of this fact, the FAO concluded that an international undertaking on farmers' rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those at the centers of origin or diversity. These rights are vested with the international community, as the trustees for the present and future generations of farmers, for the purpose of ensuring full benefits to the farmers and supporting continuation of their contributions. One of the undertakings relevant to the present context is "to assist the farmers and farming communities in all regions of the world, but especially in the areas of origin/diversity of plant genetic resources, to participate fully in the benefits derived at present and in future, from the improved use of plant genetic resources through plant breeding and other scientific methods.

UPOV as 'effective' *sui generis* system

UPOV is the acronym for the French name *Union Internationale Pour la Protection des Obtentions Vegetales* translated to English as Convention for the Protection of New Varieties of Plants. The UPOV first founded in 1961 with six European countries, subsequently revised its Act during 1972, 1978 and 1991. The object of the UPOV is to protect the rights of breeders of new plant varieties by an IPR called Plant Breeders' Rights (PBR).

In the ongoing TRIPS review process, a number of influential bodies, including the WTO itself, are pushing for a narrowing of the *sui generis* option to one legislative model provided by the Union for the Protection of Plant Varieties or UPOV. This is unfair and uncalled for.

UPOV is not mentioned in the TRIPS Agreement when other relevant IPR treaties are. Independent legal and economic experts have reiterated that UPOV can not be enforced as the only 'effective' sui generis system for TRIPS. And that there is ample scope for flexibility and national discretion in interpreting the sui generis option. Developing countries must ensure that there is no strengthening of the TRIPS Agreement now.

UPOV is clearly against the interests of developing country agriculture and against the interests of the farming community. It is anti-farmer and pro-corporate, and tailored to the industrialised agriculture of the developed countries where farmers are supported with huge subsidies.

1. UPOV tends to take positions and policies favoring the multinational seed companies.
2. From 1961 to 1991, the UPOV Act has consistently and systematically marginalized or nullified the exemptions granted to farmers. UPOV neither accepts farmers rights nor sees the reason for benefit sharing with the farming community for using the plant varieties bred and conserved by them.
3. According to a senior UPOV official, *"The subject of farmers' rights is mainly the business of the FAO and its Undertaking on Plant Genetic Resources. The expression 'farmers' rights' appears also in Agenda 21, but not in the Convention on Biological Diversity. It is up to the institutions that are concerned with farmers' rights to explain what farmers' rights mean and what rights should be given to what farmers. It is not UPOV's business"*.
4. In the UPOV system, IPR protection is available to the varieties bred by scientific breeders, institutions or corporates but not to farmers or community of farmers like the Indian law provides.

### **Why Gene Campaign opposes UPOV**

The UPOV model is not in India's interest for several reasons.

- i. There are no Farmers Rights in the UPOV system, only Breeders Rights.
- ii. UPOV conditions are for industrial, not agricultural economies where only 2 to 5% of the population practices agriculture and there are no small and marginal farmers.
- iii. UPOV laws are for countries where subsidy to agriculture is very high and farmers get paid for leaving their fields fallow.
- iv. In Europe agriculture is a purely commercial activity. For the majority of farmers in Asia however, it is a livelihood.
- v. In UPOV countries agricultural research is conducted by seed companies with private capital, so they maximise profits by market monopolies. In India and other developing nations, agricultural research is done in public institutions with the taxpayer's money and it belongs to the people.
- vi. The UPOV system is very expensive. The cost of a Breeders Right certificate could range from a few thousand to a few hundred thousand rupees. This will exclude small companies, farmers co-operatives and farmer-breeders from participating.
- vii. If developing countries join UPOV, they shall be forced to accept the patenting of Plant Varieties which is not in their interest. After the 1991 amendment, both patents and Breeders Rights are used in UPOV.

## **CoFaB AS DEVELOPING COUNTRY ALTERNATIVE TO UPOV**

Gene Campaign and Centre for Environment and Development (CEAD) have drafted an alternative treaty to UPOV to provide a forum for developing countries to implement their Farmers and Breeders Rights. This treaty called the **Convention of Farmers and Breeders, CoFaB** for short, has an agenda appropriate for developing countries. It reflects their strengths and their vulnerabilities. It seeks to secure their interests in agriculture and fulfil the food and nutritional security goals of their people.

**CoFaB** seeks to fulfil the following goals:

- \* Maintain genetic diversity in the field
- \* Provide for breeders of new varieties to have protection for their varieties in the market, without prejudice to public interest.
- \* Acknowledge the enormous contribution of farmers to the identification, maintenance and refinement of germplasm
- \* Acknowledge the role of farmers as creators of land races and traditional varieties which form the foundation of agriculture and modern plant breeding,
- \* Emphasise that the countries of the tropics are germplasm owning countries and the primary source of agricultural varieties
- \* Develop a system wherein farmers and breeders have recognition and rights accruing from their respective contribution to the creation of new varieties

*The salient features of COFAB are as follows*

1. *Farmers rights* : Each contracting state will recognise the rights of farmers by arranging for the collection of a Farmers Rights fee from the breeders of new varieties. The Farmers Rights fee will be levied for the privilege of using land races or traditional varieties either directly or through the use of other varieties that have used land races and traditional varieties, in their breeding program.

Farmers Rights will be granted to farming communities and where applicable, to individual farmers. Revenue collected from Farmers Rights fees will flow into a National Gene Fund (NGF) the use of which will be decided by a multi-stakeholder body set up for the purpose. .

The Rights granted to the farming community under Farmers Rights entitles them to charge a fee from breeders every time a land race or traditional variety is used for the purpose of breeding or improving a new variety.

Rights granted to the farmer and farming community under Farmers Rights are granted for an unlimited period.

2. *Breeders rights*: Each member state will recognise the right of the breeder of a new variety by the grant of a special title called the Plant Breeders Right.

The Plant Breeders Right granted to the breeder of a new plant variety is that prior authorisation shall be required for the production, for purposes of commercial and branded marketing of the reproductive or vegetative propagating material, as such, of the new variety, and for the offering for sale or marketing of such material. Vegetative propagating material shall be deemed to include whole plants.

The breeder's right shall extend to ornamental plants or parts of these normally marketed for purposes other than propagation when they are used commercially as propagating material in the production of ornamental plants or cut flowers.

Authorisation by the breeder shall not be required either for the utilisation of the new variety as an initial source of variation for the purpose of creating other new varieties or for the marketing of such varieties. Such authorisation shall be required, however, when the repeated use of the new variety is necessary for the commercial production of another variety. At the time of application for a Plant Breeders Rights, the breeder of the new variety must declare the name and source of all varieties used in the breeding of the new variety. Where a land race or farmer variety has been used, this must be specially mentioned.

In order to promote a more sustainable kind of agriculture and without any prejudice to the quality and reliability of the new variety, CoFaB enjoins breeders of new varieties to try to base the new variety on a broader rather than a narrower genetic base, in order to maintain greater genetic variability in the field. Further, a variety for which rights are claimed must have been entered in field trials for at least two cropping seasons and evaluated by an independent institutional arrangement. The breeder at the time of getting rights will have to provide the genealogy of the variety along with DNA finger printing and other molecular, morphological and physiological characteristics. The right conferred on the breeder of a new plant variety shall be granted for a limited period, depending on the variety.

In the event of a variety becoming susceptible to pest attack, the normal period of protection may be curtailed to prevent the spread of disease. In order to monitor this, periodic evaluations will be undertaken. The breeder or his successor shall forfeit his right when he is no longer in a position to provide the competent authority with reproductive or propagating material capable of producing the new variety with its morphological and physiological characteristics as defined when the right was granted. The breeder will also forfeit his right if the "Productivity Potential" as claimed in the application is no longer valid.

To give primacy to the goals of food security, it has been provided in CoFaB that the right of the breeder will be forfeited if he is not able to meet the demand of farmers, leading to scarcity of planting material, increased market price and monopolies. If the breeder fails to disclose information about the new variety or does not provide the competent authority with the reproductive or propagating material, his right will be declared null and void.

*UNDP and CoFaB.* The UNDP Human Development Report (HDR) 1999 has commended Gene Campaign's Convention of Farmers and Breeders (CoFaB) as a "strong and coordinated international proposal." in place of UPOV. "It offers developing countries an alternative to following European legislation by focusing legislation on needs to protect farmers' rights to save and reuse seed and to fulfil the food and nutritional security goals of their people."

## **THE TRIPS - CBD LINKAGE**

The Convention on Biological Diversity (CBD) and the WTO/ TRIPs are essentially two treaties in conflict with one another. Developing countries must push to give primacy to CBD in all matters relating to bioresources. Some countries including India have taken the position in the TRIPs Council that CBD and TRIPs provisions must be linked.

The CBD which is a pro-developing country or pro- community treaty, supports above all, the protection of biodiversity and the rights of those local communities that have nurtured that biodiversity over generations. It also supports the viewpoint and interests of developing countries. The WTO/ TRIPs on the other hand represents the interest of the corporate sector, the most visible face of which is the "Life Sciences "industry. Rather than the conservation of biodiversity, TRIPs seeks to facilitate corporate control over biodiversity which in the era of biotechnology is one of the most sought after raw materials in the world.

In the Convention on Biological Diversity two provisions are notable from the TRIPs point of view, namely ; (i ) acknowledgement that biodiversity resources are the sovereign property of the country of origin, and (ii) acknowledgement of the need to equitably share benefits with indigenous communities for their contribution to conservation and their knowledge of sustainable uses of biodiversity. These provisions run completely contrary to TRIPs and point towards the most significant defect in the prevailing regime of Intellectual Property Rights (IPR).

In the use and transfer of biological material, the CBD makes it mandatory to disclose the source and method of obtaining the foundation material. All biodiversity resources are to be obtained only on the basis of prior informed consent (PIC) of the country of origin and after executing a Material Transfer Agreement (MTA). All this would involve confrontation with the procedures mentioned under the GATT / WTO regime. Also, the CBD's advocacy for preferential location of research and development activities and the transfer of technology on concessional terms to the countries of origin will come into conflict with the implementation of TRIPs.

TRIPs does not allow for the full exercise of national sovereignty over biodiversity (because it obliges countries to enact intellectual property rights on plant varieties). TRIPs does not allow countries to seek a share of benefits obtained from patented biodiversity (there is no provision requiring patentees to disclose the country of origin of any biological materials, therefore no claims can effectively be made from the countries of origin). TRIPs does not require patentees to fulfil access obligations towards genetic resources (it therefore condones and facilitates biopiracy).

TRIPs overrules (and legally compromises the development of) CBD Art 8(j) because patent claims can be worded to embrace and expand on indigenous knowledge without recognition of or compensation for it. *Turmeric, Neem, and Basmati* as also *Phyllanthus amara* and the diabetes formula based on *Karela, Jamun & Gurmar*, are well known cases of this but there are many others.

### **Geographical Indication.**

The protection based on Geographical Indication is to be found in Section 3 of TRIPs. Article 22 as also 23 and 24 deal with the protection of goods that are geographically indicated. So far the protection is offered only to wines and spirits. The efforts of India and developing countries to have the protection extended to other (agricultural) produce like Basmati rice and Darjeeling tea, have been opposed by the developed countries. So far they have managed to keep such agricultural products of interest to us, out of TRIPs protection.

*The economic importance of 'Geographical Appellation'.*

An American company Rice Tech has received a patent on Basmati rice. This is an infringement of India's (and Pakistan's) geographically indicated rights. A special product like Basmati rice not only has a huge market in the UK, Europe, USA and West Asia; it also commands premium prices there. The current export of Basmati rice from India is to the tune of Rs. 1800 crores (Rs.1.8 billion). Pakistan exports somewhat more than that. The revenue from all the Basmati rice sold in the world market goes either to India or to Pakistan. That is the strong economic incentive to have a geographically protected name and not allow others to use it. As Rice Tech has attempted to do with Basmati.

There are other sought after products like Darjeeling tea , Alphonso mango and Shahi litchi. Apart from these agricultural products, there are herbal drugs and nutraceuticals which are attracting increasing attention..and patents. India has now enacted legislation on Geographical Appellations that will claim protection for certain products that are clearly associated with the region. Its position in the WTO is to seek the expansion of scope for protecting products under the clause of Geographical Indication.

### **Patents on Micro Organisms**

There was never any choice offered on this. The GATT negotiation ended with all member states accepting that they would provide patent protection for micro-organisms.

Patents on microorganisms like bacteria, algae, fungus and virus will have far reaching consequences for developing societies. Self -reliant, sustainable agriculture will be adversely affected if our ability to develop *biofertilisers* and *biopesticides*, both based on micro organisms, will be hindered by foreign patents.

Bacterial strains like those which act on soil phosphates can make a tremendous difference to our agriculture. These bacteria break down inert soil phosphates to a form that plants can use as nutrients. Such bacterial use could potentially slash our phosphate fertilizer imports dramatically. We need to keep our avenues of research open.

Similarly strains of nitrogen fixing bacteria could significantly improve nitrogen uptake of plants and improve the protein content of our foods. This can be of immense significance in enhancing the quality of nutrition for poorer sections of society. The role of micro organisms in other areas like pharmaceuticals, bio-mining, energy etc. is well known. Self reliance in these sectors will also be affected by patents.

India could have tried to get out of the patent on micro organisms by invoking the clauses of ordre public and offence to prevailing norms of morality. Unfortunately it did not. . Patents on microorganisms have been introduced in the draft Patent Amendment Act which is awaiting approval by Parliament.

Gene Campaign has made some recommendations to the Indian government to reduce the negative impact of microorganism patents. Primarily, the strategy is to keep the definition of microorganisms conservative and not agree to the inclusion of unconventional categories like genes and cells in the Indian legislation. The detailed recommendations are as follows.

#### *1. Microorganisms for the purpose of this ( Indian) Act include:*

Bacteria  
Virus  
Viroid

Protozoa  
Algae  
Lichen  
Actinomyces  
Fungii except edible fungii

*2. Microorganisms do not include:*

Variant forms  
DNA  
plasmids  
prions  
hybridomas  
cells  
cell lines

*3. Naturally occurring microorganisms are not patentable.*

*4. Patentable microorganisms* are those which have been produced by adequate human intervention and fulfil the criterion of novelty, non-obviousness and industrial utility. Mere discovery and isolation will not be considered sufficient human intervention.

5. Patents will not be granted on materials obtained from national and international collections and depositories.

6. When material is taken from a country, Article 15 of the Convention on Biological Diversity will have to be respected. No patents will be granted without *prior informed consent and material transfer agreements*.

7. When a patent is granted, the patent holder will be obliged to *share the economic benefits* with the communities of the country from where the material was obtained.

8. In view of the critical nature of the subject matter, the patented micro organism will remain free for scientific research and experimentation.

9. Patents will not be granted on a broad basis ( overarching patents with a very wide scope ).

*Patents will be granted for the organism only with respect to that particular function / property that constitutes the invention. The organism will remain free for others to create other inventions.*

10. A Compulsory licensing provision will be made available to safeguard Food, Health, Defence & Environmental security.

### **The impact of other IPR on Farmers' Rights and Food Security**

In addition to the forms of IPR described above, patents on genes and cells could lead to the increasing privatisation of public goods and further marginalisation of the farming communities of the world.

Patents on machines, tools and instruments of agriculture or software enriching agriculture could exclude the small farmers, forcing them to remain mere consumers of technologies over which they have no control and say.

Copyrights and trade secrets have been used to protect the identity of parent lines for making hybrids and for the nature of gene constructs used in transgenic research. Trademarks are already used to protect the much acclaimed and equally disputed Golden Rice and the tomato variety that would not rot, produced by Calgene called Flavr Savr. And then we have the ultimate instrument of control, far exceeding systems of Intellectual Property protection, the Terminator technology that will produce sterile seeds unless the company lets you have the magical key for making the seeds fertile. The terminator, if implemented would be the ultimate weapon in the arsenal of MNCs, to subjugate the farmer.

### **The case of Golden Rice**

The vitamin A rich rice variety popularly called Golden Rice, is a good example to demonstrate how the new products emerging from genetic engineering are so tied up in patents that they are to all intents and purposes, almost inaccessible to the farmer of developing countries. Although in this case, Astra-Zeneca (now Syngenta) stepped in to pay royalties on the roughly 70 patents involved in the making of Golden Rice, to allow its use for humanitarian purposes, it remains to be seen how such cases are dealt with in the future. Here are the details of the Proprietary Property, or proprietary science, used in Golden Rice.

#### *Technical Property*

At least fifteen TP components went into the three different genetic constructs used in Golden Rice.

#### *Intellectual Property*

Depending on the country where the current form of GoldenRice™ would be used upto 44 patents could come into play. In the USA and most countries of the European Union, around 40 patents apply. In the 10 top rice producing countries, many fewer patents apply, namely: China (11), India (5), Indonesia (6), Bangladesh (0), Vietnam (9), Thailand (0), Myanmar (0), Japan (21), the Philippines (1) and Brazil (10). Similarly, in the top ten rice importing countries, relatively few patents apply: Iran (0), Brazil (10), Nigeria (0), the Philippines (1), Iraq (0), Saudi Arabia (0), Malaysia (0), South Africa (5), Japan (21) and Cote d'Ivoire (10).