CHAPTER 4

IMPACT OF TRIPS, SPS AND TBT ON INDIAN FARMERS

Purposes of this chapter are following:

1. A brief summary is provided of the progress that India is making in adjusting its laws to meet the requirements of TRIPS and the World Trade Organization, e.g. in designs, trademarks, copyright, geographical indications of goods, plant varieties, farmers’ rights, biodiversity, and patents.

2. To critically summaries the debate on Indian response to TRIPs.

4.1 What is Intellectual property Rights

IPRs refer to the legal ownership by a person or business of an invention/discovery attached to particular product or process which protects the owner against unauthorized copying or imitation. There are seven types of IPR viz., Copyright, Trademarks, Geographical Indications, Industrial designs, Patents, Integrated circuits and Trade secrets. All intellectual property rights are covered by legal instruments used to protect authors, inventors, trademarks and names from imitation and copying.

There are two central economic objectives of intellectual property protection. Firstly; to promote investments in knowledge creation and business innovation by establishing exclusive rights to use and sell newly developed technologies, goods, and services. Secondly; to promote widespread dissemination of new knowledge by encouraging (or requiring) rights holders to place their inventions and ideas on the market (Fink and Maskus, 2005).

When there is a lack of intellectual property protection or weak intellectual property rights, firms are not willing to incur costs in research and commercialization activities. In economic terms, weak IPRs create a negative
dynamic externality (Fink and Maskus, 2005), and fail to overcome the problems of uncertainty in R&D and risks in competitive appropriation that are inherent in private markets for information.

4.2. What is TRIPS?

The Trade Related Intellectual Property Rights (TRIPS) agreement, was signed as a part of the WTO agreement. TRIPS constituted Annexure 1C of the Marrakesh Agreement, which established the WTO. TRIPS is intended to maximize the contribution of intellectual property systems to economic growth through accelerating trade and investment. It was one of the most contested agreements during the GATT negotiations. Till 1989, several developing countries had opposed even the inclusion of issues related to TRIPS in the negotiating agenda. It establishes minimum universal standards in all areas of intellectual property with the aim of implementing these standards globally through an enforcement mechanism established in WTO. The Agreement requires universal patent protection for any invention in any field of technology. TRIPS is an international agreement which sets minimum standards for many forms of IP regulation. All WTO member countries are required to adopt in their laws minimum standards of protection for patents, trademarks, copyrights and other intellectual property rights.

The agreement covers five broad issues:

1. How basic principles of the trading system and other international intellectual property agreements should be applied to improve trade?

2. How to give adequate protection to intellectual property rights?

3. How countries should enforce those rights adequately in their own territories?
4. How to settle disputes on intellectual property between members of the WTO?

5. Special transitional arrangements during the period when the new system is being introduce

4.3 What are the contents of TRIPs?

4.3.1 Patent

A patent is a statutory privilege granted by the government to inventors, and to other persons deriving their rights from the inventor, for a fixed period of years, to exclude other persons from manufacturing, using or selling a patented product or from utilizing a patented method or process. At the expiry of the time for which the privilege is granted, the patented invention is available to the general public. Patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. Patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced. Patents are the strongest form of intellectual property protection in the sense that they allow the rights holder to exert the greatest control over the use of patented material by limiting the rights of farmers to sell, or reuse seed they have grown or other breeders to use the seed (or patented intermediate technologies) for further research and breeding purposes.

4.3.2 Copyrights and Related Rights

The TRIPs agreement requires member countries to comply with the substantive provisions of the Berne Convention in respect of copyrights and
related rights. India is a signatory to the Berne Convention and Indian Copyright laws conform to the all WTO requirements.

4.3.3 Trademarks

WTO obligations requires member countries to give equal protection to service marks as to trade marks.

4.3.4 Geographical Indication

As such, GIs are of importance to producers and manufacturers throughout the world, especially those in developing countries who need the means to put products on the market which are easily differentiated and identifiable via their geographic origin.(Anil, 2004). GIs also contribute to the conservation of natural resources and the preservation of native traditions and cultural heritage often reaching back to distant ancestors.

4.3.5 Industrial Designs

Under WTO obligations, member countries must provide for protection to independently created new or original industrial designs. Member countries however have an option to exclude from protection, designs dictated by technical or functional consideration, as against aesthetic consideration, constituting the coverage of industrial designs.

4.4 IPR in India before TRIPs or WTO

The establishment of IPR in India commenced in 1856 with the enactment of an Act of Protection of Inventions, based on the British Patent Law of 1852 when certain privileges were granted to the inventor for new methods of manufacture. Subsequent changes were by way of the Patents and Designs Protection Act 1872 and the Protection Inventions Act introduced in 1883 that was further consolidated as the Invention and Designs Act in 1888. The 1872
Designs Act extended protection to textiles, linen, cotton, calicoes and muslin; this included patterns/prints and modelling, casting, embossment of ornaments or articles of manufacture. The next development was the Indian Patent and Designs Act in 1911 with amendments in 1978 with the rules amended in 1985. After Indian independence in 1947, a new Patents Bill was tabled in Parliament in 1965, which after considerable debate was reintroduced in 1967, resulting in the Patents Act of 1970, which, with its subsidiary legislation came into force on 20 April 1972 as the Indian Patents Act 1970. Legislation to protect trademarks came into force on 6 June 1942 and was based on the principles of English Common Law. The Act of 1940 was further amended to the Indian Trade and Merchandise Marks Act 1958, which came into force on 25 November 1959. A Copyright Act was passed for the first time in India in 1914. The Copyright Act 1957 adopted several principles of the British Copyright Act 1956 to cope with the emerging problems created by technological advances in communication, broadcasting, microfilming, movies, etc. The Copyright Act 1957 was amended in 1983, 1984, 1992 1994 to keep it in tune with the changing needs and technological progress, including the challenges posed by the rapid growth of information technology. (Ganguli, 2003)

4.5 IPR protection in India after TRIPS

In India, The Copyright Act was amended in 1999 to incorporate features making it TRIPS compliant by encompassing neighbouring rights including performer’s rights and protection of rights of broadcasting organizations.

Accordingly, the Trade Marks Act, 1999 was passed providing for equal protection to service marks. Indian Trade Mark laws comply with WTO requirements.
In India, The Trade and Merchandise Marks Act 1958 have been replaced by a TRIPS compliant Trade Marks Act 1999. The subsidiary legislation has been advertised for comments from the public and is yet to be endorsed. In view of this unfinished legislative process, the Act of 1958 is still operative. (Ganguli, 2003).

The Geographical Indications of Goods (Registration and Protection) Act 1999 was introduced in India for the first time. The subsidiary legislation has been advertised but the appellate board as required by the subsidiary legislation has not yet been formed and hence the Act though in force is not yet operative. The significant features include registration of geographical indications of goods in specified classes, prohibition of registration of certain geographical indications, compulsory advertisement of all accepted geographical indications and providing provisions for taking infringement action either by a registered proprietor or an authorized user. Further provisions include those for higher level of protection for notified goods, prohibition of assignment of a geographical indication as a public property, prohibition of registration of geographical indication as Trade Mark, and for appeal against the Registrar_s Decision to the Intellectual Property Appellate Board established under the Trade Marks legislation. Other provisions relate to offences and penalties, detailing the effects of registration and the rights conferred by registration, for reciprocity, powers of the Registrar, maintenance of index, and the protection of homonymous geographical indications. (Ganguli, 2003).

Accordingly, Industrial Design Act, 2000 was enacted to make Indian laws compliant with WTO obligations in this respect.

4.6. TRIPS and Agriculture
Among these different forms of intellectual property rights (IPRs), patent and geographical indication have profound implication to agriculture, and trademarks, copyrights and control of anti-competitive practices have lesser implications.

The application of IPRs in agriculture, as allowed under TRIPS, has long been debated, mainly due to its provisions under Article 27. Article 27.3(b) indicates that the governments can exclude certain kinds of inventions from patenting, i.e., plants, animals, and biological processes. The Article however states that it is mandatory for WTO members to provide patent protection to micro-organisms and non-biological and micro-biological processes on the basis of three patent eligibility criteria (patent, sui-generis or by both). Hence, this is a rather confusing statement which does not provide a precise or an exact method for member countries to follow.

TRIPS has a direct impact on agricultural trade and development, particularly agricultural biotechnology (WIPO, 2009), and its impact on agricultural trade is comparatively more important for developing countries like India as agriculture is still a significant stakeholder in many of these countries’ GDP, especially in Asian countries. In addition, many of the poor in Asia depend on agriculture for their livelihood.

4.6.1 TRIPS and Indian Agriculture

The TRIPs agreement would require substantial changes in the patents regime of our country. The TRIPs agreement aims at a certain minimum standard of IPR protection. Successful implementation of the TRIPs agreement has a number of pre-requisites. The important ones being legal, administrative and institutional reforms, appropriate research investments, and first-rate science and technology capability. Provided the IPR protection is adequate and effective
(world wide), the TRIPs accord can promote innovations, transfer of technology, foreign direct investment, use of genetic resources and environmental protection. The returns from the economic value of protection system far outweigh its costs. However, while legal protection may be a necessary condition for innovative activities and technology transfer, it is by no means a sufficient condition, given the importance of a host of other factors affecting research investment and the transfer and diffusion of technology in DCs and its ability to internalize benefits from the new rules of the game. The nation's capacity to move from technology importer to technology exporter will be the major determinant of its position in international hierarchy. Foresight demands massive investments in science and technology, oriented towards quality and frontier areas.

4.6.1.1 Patent and Indian Agriculture

Due to increased patent awareness and changed circumstances, because of WTO, patent filing by Indians in the country has increased threefold. Figure 4.1.

Source: Annual report, 2007-08, IPO.
From the above graph one can easily find that there has been significant increase in the filing trend in the last five years. The number of applications for 
**patents filed in 2007-2008** was 35,218 compared to **28,940 applications in 2006-2007** representing an increase of about **22 %** in the filing. The number of patents granted has increased significantly in the last five years. Patent filing by foreigners in India has also increased substantially, which reflects increasing interest of foreigners in the Indian economy. The Council of Scientific and Industrial Research (CSIR) alone is filing approximately 500 foreign patents and 400 Indian patent applications every year.

**4.6.1.2 Traditional knowledge and Indian farmers**

In agriculture, traditional knowledge held by a farmer is important in the development and adaptation of plants and crops to different ecological conditions (soils, rainfall, temperature, altitude etc). Traditional knowledge is people’s awareness and understanding of the system and other information, which is passed on from one generation to the next, usually by word of mouth or within a specified group of people. Indigenous knowledge is often used interchangeably with traditional knowledge.

Most of the debate about traditional knowledge at the international level is taking place in the context of IPR. It is through IPR, and particularly patents, that control and ownership over traditional knowledge is being usurped by commercial interests. The IPR system is now being proposed as a system to protect traditional knowledge.

On traditional knowledge, India has a Plant Variety Protection Act that protects farmers’ rights and traditional knowledge.

**4.6.1.3 Geometrical Indication and Indian farmers**

A geographical indication denotes the product's quality and helps to protect it from imitation in both the national and international markets.
Pursuant to the Agreement on Trade-Related Aspects of Intellectual Property Rights provision that a product cannot be protected internationally unless it is protected in its country of origin, it is vital to preserve the rich wealth of traditional arts, crafts and food products that are an inseparable part of Indian culture.

According to Geographical Indications Registry records, since the Geographical Indications of Goods (Registration and Protection) Act 1999 came into force, 97 products have been granted geographical indication protection in categories such as agricultural, natural and manufactured goods, handicrafts, textiles and foodstuffs, and 144 applications are being examined by the registry.

The Uttar Pradesh government is trying to use the granted geographical indication status as a branding and marketing tool to ensure that no one outside Lucknow can produce chikankari. To this end, a Chikan trade fair is being planned in association with the Confederation of Indian Industry of the Export Promotion Council for Handicrafts, which may serve as both a buyer-seller meet and a retail marketing platform.

Pokkali rice, which gets its name from the cultivation system that alternates paddy and prawns, is grown in the wetlands of the Alappuzha, Thrissur and Ernakulam districts of Kerala. The indigenous variety of rice cultivated through this method thrives on salinity and water as it is close to the sea. The geographical indication registration will help to enhance the market value of Pokkali rice and allow farmers to prevent others from using the geographical name POKKALI if the rice does not originate from defined areas. In order to ensure full protection of the Pokkali farmers' community rights, the addresses of all Pokkali paddy-cultivating farmers have been included in the joint application submitted to the registry.
Trade mark and Indian agriculture

While Art (8) and 29(9) of Trade Mark with their broad scope would be able to prevent any Indian citizen from doing what Pepsi has done with Pepsi’s signs, symbols and marks, Pepsi is free to pirate and distort the collective heritage of Indian society because our heritage cannot be narrowed to a registered trade mark. Since Trade Marks are an economic instrument with major cultural and political impact, it is important that a new Trade Mark Bill ensures that it protects our cultural and intellectual heritage, as well as the economic base of survival of millions of small producers especially those in the cottage industry sector.

The traditional farmers and the halwais can best be protected by having very clearly defined limits and boundaries for corporate rights, and having very clear criteria for exclusion in patents as well as in trademarks based on ethical, cultural, ecological, economic and political imperatives.

4.6.2 Protection of Plant Varieties and Farmer’s Rights Act 2001

An Act to provide for the establishment of an effective system for protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new varieties of plants.

WHEREAS it is considered necessary to recognize and protect the rights of the farmers in respect of their contribution made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties;

AND WHEREAS for accelerated agricultural development in the country, it is necessary to protect plant breeders’ rights to stimulate investment for
research and development, both in the public and private sector, for the development of new plant varieties;

AND WHEREAS such protection will facilitate the growth of the seed industry in the country which will ensure the availability of high quality seeds and planting material to the farmers;

AND WHEREAS, to give effect to the aforesaid objectives, it is necessary to undertake measures for the protection of the rights of farmers and plant breeders;

AND WHEREAS India, having ratified the Agreement on Trade Related Aspects of Intellectual Property Rights should inter alia make provision for giving effect to subparagraph (b) of paragraph 3 of article 27 in Part II of the said Agreement relating to protection of plant varieties.

Under the Trade Related Intellectual Property Rights System (TRIPS), developing countries can choose to provide patents or develop a sui generis system to protect innovations in agriculture. They also have a third option of joining the Union International Pour la Protection Des Abstentions Vegetables (UPOV). UPOV has been an obvious choice for many countries between the tough standards of patents and the task of developing a sui generis system as it provides an off-the-shelf solution to developing such legislation. India has chosen to develop a sui generis system. The sui generis system (translating roughly into selfgenerating) means any system a country decides on, provided it grants effective Plant Breeders’ Rights. The Plant Variety Protection and Farmers Rights Act, 2001, is the Indian sui generis legislation.

In fact the Indian legislation succeeds in balancing the rights of Breeders and Farmers and exploits the flexibility granted in TRIPS, in an intelligent manner. There are clauses to protect the rights of researchers and provisions to
protect the public interest. The Indian legislation is the first in the world to grant formal rights to farmers in a way that their self-reliance is not jeopardized.

Indian has taken a major initiative to develop and enact a novel Protection of Plant Varieties and Farmer’s Rights Act 2001 (PPVFR 2001) which not only introduces provisions for the protection of new plant varieties but also builds into the legislation features to protect farmer’s rights, provides an administrative framework for benefit sharing between the beneficiaries, etc. which in combination with the Indian Patents Act/ Trademarks Act/Geographical Indications Act/Biodiversity Act will significantly impact the IPR status in activities related to agriculture and agricultural biotechnology in India. The PPVFR 2001 in many ways may be considered to be a model Act for Developing and the Least Developed Nations.(Ganguli,2003).

4.7 Problems facing by Indian farmers due to TRIPS

For instance, during the Green Revolution (GR) period in India, many hybrid and high yielding varieties were introduced—particularly in rice and wheat. These were the types of seed variety that can be replanted each year, which made GR very successful. Furthermore, these seeds were then not protected by any intellectual property rights (IPR) measures. It was only after the Uruguay Round of talks in 1994 that IPR was extended to agriculture, mostly due to the insistence of developed countries, although some form of protection already existed in a number of developed countries. While the objective of providing protection is to promote innovation activities in agriculture, such IPR protection could limit the diffusion of technology by making agriculture more market-dependent and create more inequities in income and distribution partly as a result of size disparities.(Lalitha,2004)
Further, the terminator technology, which helps in the creation of sterile seeds from GM plants to prevent farmers from re-using the seed for future crops, perpetuates a system that allows the technology itself to do the self-policing, rather than using laws and legal barriers for prevention of misappropriation of the technology. The genetic seed sterilization patents maximise seed industry profits by destroying the rights of farmers to save their seeds and breed their own crops. The policy decisions benefit the bio-tech industry and compound the problems of the farmers and consumers by the transfer of the costs and burdens of the new technology onto them. Thus, corporate greed has vacuumed away public interest concerns of the world as a whole. (Lalitha, 2006 et.all). the following are the main problems occurring due to TRIPs on Indian agriculture-

With its focus on commercial crops, bulk procurement and retail chains, such corporatisation can only weaken the small farmer even more. Already in Punjab, corporate interests such as Monsanto, Reliance and others are making a beeline for agri-retail trade. With gradual withdrawal of the Government from procurement, more and more of retail trade for agriculture is going pass into these hands. The presence of Wal Mart on the US side also makes clear the interest that the US has in opening India’s internal and external trade in agriculture to US companies.

The first Green Revolution grew from an international public research system that began in the 1940s and built up a chain of research centres worldwide. These centres collaborated through the Consultative Group on International Agricultural Research (CGIAR), a consortium of donors including foundations, national governments, United Nations institutions, etc. These centres operated in a world without Intellectual Property Rights and distributed seeds and new varieties all over the world. The striking improvements of yields
in a number of crops, particularly wheat, rice and maize came out of this open institutional structure of science and research.

The other major shift that has taken place in agriculture is that before the 80’s, the only protection available for plants were plant breeder’s rights. However, since then the US has followed an aggressive policy of patenting micro-organisms, life forms, seeds, genes and even gene sequences. This is the route that other countries are also following, particularly after the WTO/TRIPS agreement of 1994. TRIPS forces IPR protection for micro-organisms and allows countries to introduce life form patenting. A recent survey published in Nature, found that about three-quarters of plant DNA patents today are in the hands of private firms, with nearly half held by 14 multinational companies; virtually no such patents existed before 1985.

4.8 Seed Industry after TRIPS.

Since the beginning of farming, farmers have sown seeds, harvested crops, saved part of the harvest for seeds, exchanged seeds with neighbours. Every ritual in India involves seeds, the very symbol of life’s renewal.

In 2004 two laws have been proposed – a seed Act and a Patent Ordinance which could forever destroy the biodiversity of our seeds and crops, and rob farmers of all freedoms, establishing a seed dictatorship.

Eighty per cent of all seed in India is still saved by farmers. Farmers indigenous varieties are the basis of our ecological and food security. Coastal farmers have evolved salt resistant varieties. Bihar and Bengal farmers have evolved flood resistant varieties, farmers of Rajasthan and the semi-arid Deccan have evolved drought resistant varieties, Himalayan farmers have evolved frost resistant varieties. Pulses, millets, oilseeds, rices, wheats, vegetables provide the diverse basis of our health and nutrition security. This is the sector being
targeted by the Seed Act. These seeds are indigenous farmers varieties of diverse crops – thousands of rices, hundreds of wheats, oilseeds such as linseed, sesame, groundnut, coconut, pulses including gahat, narrangi, rajma, urad, moong, masur, tur, vegetables and fruits. The Seed Act is designed to “enclose” the free economy of farmers seed varieties. Once farmers seed supply is destroyed through compulsory registration by making it illegal to plant unlicensed varieties, farmers are pushed into dependency on corporate monopoly of patented seed. The Seed Act is therefore the handmaiden of the Patent Amendment Acts which have introduced patents on seed.

New IPR laws are creating monopolies over seeds and plant genetic resources. Seed saving and seed exchange, basic freedoms of farmers, are being redefined. There are many examples of how Seed Acts in various countries and the introduction of IPRs prevent farmers from engaging in their own seed production. Josef Albrecht, an organic farmer in Germany, was not satisfied with the commercially available seed. He worked and developed his own ecological varieties of wheat. Ten other organic farmers from neighbouring villages took his wheat seeds. Albrecht was fined by his government because he traded in uncertified seed. He has challenged the penalty and the Seed Act because he feels restricted in freely exercising his occupation as an organic farmer by this law.

The entire country is being taken for a ride with the introduction of the Seed Act 2004 on grounds that the Act is needed to guarantee seed quality. However, the Seed Act 1966 already performs the function of seed testing and seed certification. Twenty labs have been declared as seed testing labs under the 1966 Act in different States. Nine seed corporations have been identified as certification agencies.
Under pressure from World Bank the Seed Policy of 1988 started to dismantle our robust public sector seed supply system, which accounted for 20% of the seeds farmers grow. Eighty per cent of the seed prior to globalisation is the farmers’ own varieties, which have been saved, exchanged and reproduced freely and have guaranteed our food security.

The Seed Act 2004 has one and only one objective of stopping farmers from seed saving, seed exchange and seed reproduction.

In the objective the 2004 Act clearly states that it is aimed at replacing farmers saved seeds with seeds from private seed industries.

The repeated reference to ‘barter’ in the Seed Act will prevent farmer’s exchange, a necessary aspect of maintaining high quality seed supply at the community level.

Further the compulsory registration of seed combined with the power of seed inspectors to enter and search premises (which now mean farmers’ huts and fields), the power to break open any container and any door is tantamount to creating a ‘Seed Police’ to terrorize farmers who are conserving biodiversity and practicing a sovereign self-reliant agriculture. The fine for seed exchange and barter of unregistered seed (thousands of farmers varieties has a fine of up to Rs. 25000). While criminalizing farmers who consume biodiversity and traditional varieties, the Seed Act fails to do one thing it should have done, which is to regulate and hold liable private seed industry for seed failure and genetic contamination from GMO’s. For Example the failure of maize seeds in Bihar last year cost more than 1000 crores to Bihar farmers and the constant failure of Bt. cotton annually is costing more than a billion dollars to Indian farmers.
In the new Seed Act farmers can only claim compensation under the Consumer Protection Act. This option is in any way available to the farmers presently and the brutal power of the Central Authority, which acts to prevent farmers from growing own seeds, provides no safety and remedy to our farmers from untested and hazardous seeds MNCs are selling in the Indian market.

The Seed Act has also undermined the role of the State governments. The Central Seed Committee in 1966 Act has representatives nominated by the government of each State. Now only 5 State will be represented in the Central Seed Committee and even these will be nominated not by the State governments but by the Centre.

The 2004 Seed Act has nothing positive to offer to farmers of India but offer a promise of a monopoly to private seed industries, which has already pushed thousands of our farmers to suicide through dependency and debt caused by unreliable, high dependency and non-renewable seeds.

The 1966 Act has served the country well and should continue to provide the framework for seed testing and seed certification.

Farmer varieties and indigenous agro-biodiversity is already been registered by Local Biodiversity Committee through Community Biodiversity Registers (CBRs). We do not need a Centralized Seed Authority with police power which uses compulsory registration to prevent farmers from growing, saving and exchanging their own seeds.

It is the MNC seed industry that need regulation and not the small farmers of our country without whose seed freedom the country will have no food sovereignty and food security.

4.8.1 Product Patent on Seeds
Methods of agriculture and plants were excluded from patentability in the Indian Patent Act 1970 to ensure that the seed, the first link in the food chain, was held as a common property resource in the public domain. In this manner, it guaranteed farmers the inalienable right to save, exchange and improve upon the seed was not violated.

But recently, two amendments have been made in the 1970 Patent Act. The 2nd Amendment makes changes in the definition of what is NOT an invention. This has opened the flood gates for the patenting of genetically engineered seeds.

According to Section 3(j) of the Indian Patent Act, the following is not an invention:

Any process for the medical, surgical, creative, prophylactic or other treatment of human beings or any process for a similar treatment of animals or plants or render them free of disease or to increase their economic value or that of their products.

In the 2nd Amendment however, the mention of “plants” have been deleted from this section. This deletion implies that a method or process modification of a plant can now be counted as an invention and therefore can be patented. Thus the method of producing Bt. cotton by introducing genes of a bacterium thurengerisis in cotton to produce toxins to kill the bollworm can now be covered by the exclusive rights associated with patents. In other words, Monsanto can now have Bt. cotton patents in India.

The Second Amendment has also added a new section (3j). This section allows for the production or propagation of genetically engineered plants to count as an invention. Its status as an invention thus deems it. But this section excludes as inventions “plants and animals including seeds, varieties and species
and essentially biological processes for production or propagation of plants and animals”. Since plants produced through the use of new biotechnologies are not technically considered “essentially biological,” section 3j has found another way to create room for Monsanto. This loophole, couched in the guise of scientific advancement, thus allows patents on GMOs and hence opens the flood gate for patenting transgenic plants.

What is most concerning is how the language of section 3j is a verbatim translation into India law of Article 27.3 (b) of TRIPS Agreement. Article 27.3 (b) of TRIPS states:

Parties may 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, parties shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. This provision shall be reviewed four years after the entry into force of the Agreement establishing the W.T.O.

As Monsanto had a hand in drafting the TRIPS agreement, it is not surprising that the Monsanto Amendments have also made their way into India’s patent laws.

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However, Article 27.3(b) is under review. The Government should have insisted on the completion of the review, a commitment of the Doha Round, instead of changing India’s Patent Law. As a result of sustained public pressure,
after the agreement came into force in 1995, many Third World countries made recommendations for changes in Article 27.3 (b) to prevent biopiracy. India, in its discussion paper submitted to the TRIPS Council stated:

“Patenting of life forms may have at least two dimensions. Firstly, there is the ethical question of the extent of private ownership that could be extended to life forms. The second dimension relates to the use of IPRs' concept as understood in the industrialized world and its appropriateness in the face of the larger dimension of rights on knowledge, their ownership, use, transfer and dissemination”.

Informal system, e.g. the shrutis and in the Indian tradition and grandmother's portions all over the world get scant recognition. To create systems that fail to address this issue can have severe adverse consequences on mankind, some say even leading to extinction.

To prevent competitors from selling seeds and to prevent farmers from saving seeds, Monsanto has now turned to the patent laws to get monopoly rights. The Monsanto Amendments of India's patent laws are a logical consequence of the clearance for the commercial planting of GMOs in Indian agriculture, as we saw earlier with the March 26th decision of the Indian government to allow Bt. cotton.

Patents on seeds are a necessary aspect of the corporate deployment of GM seeds and crops. When combined with the ecological risks of genetically engineered seeds like Bt. cotton, seed patents create a context of total control over the seed sector, and hence over our food and agricultural security.
Looking with closer analysis, there are three ways that the 2nd Amendment and 3rd Amendment of the Indian Patent laws have jeopardized our seed and food security, and hence our national security.

Firstly, it allows patents on seeds and plants through sections 3(i) and 3(j), as we saw above. Patents are monopolies and exclusive rights which prevent farmers from saving seeds; and seed companies from producing seeds. Patents on seeds transform seed saving into an “intellectual property crime”.

Secondly, genetic pollution is inevitable. Monsanto will use the patents and pollution to claim ownership of crops on farmers’ fields where the Bt. gene has reached it through wind or pollinators. This has been established as precedence in the case of a Canadian farmer, Percy Schmeiser, whose canola field was contaminated by Monsanto’s “Round up Ready Canola,” but instead of Monsanto paying Percy on the basis of the pollute principle, Monsanto demanded $200,000 fine for “theft” of Monsanto’s “intellectual property”. Thousands of U.S. farmers also have been sued. Will Indian farmers be blamed for theft when Monsanto’s GM cotton contaminates their crops? Or will the government wake up and enforce strict monitoring and liability?

In countries, where plant patents are not allowed, patenting genes is available as an opening for patenting properties and characteristics of the plant, and hence having exclusive rights to those properties and characteristics. This is how Monsanto was able to establish monopolies on seeds through patents on genes in Canada, even though Canada does not allow patents on life forms.

Patent protection implies the exclusion of farmers’ right over the resources having these genes and characteristics. This will undermine the very foundations of agriculture. For example, a patent has been granted in the U.S. to a biotechnology company, Sungene, for a sunflower variety with very high oleic
acid content. The claim was for the characteristic (i.e., high oleic acid) and not just for the genes producing the characteristic. Sungene has notified others involved in sunflower breeding that the development of any variety high in oleic acid will be considered an infringement of its patent.

It is often stated that IPRs will not stop traditional farmers from using native seeds. However, the Seed Act 2004 is designed to do just that. Further when it is recognised that IPRs are an essential part of a package of agribusiness controlled agriculture in which farmers no longer grow native seeds but seeds supplied by the TNC seed industry, IPRs become a means of monopoly that wipe out farmers rights to save and exchange seed. This leads to TNC totalitarianism in agriculture. TNCs will decide what is grown by farmers, what they use as inputs, and when they sell their produce, to whom and at what price. they will also decide what is eaten by consumers, at what price, with what content and how much information is made available to them about the nature of food commodities.

IPRs are a significant instrument for the establishment of this TNC totalitarianism. The protection of the rights of citizens as producers and consumers needs the forging of new concepts and categories, new instruments and mechanism to counter and limit the monopoly power of TNCs in agriculture. Community rights are an important balancing concept for protecting the public interest in the context of IPR protection for corporations. In the field of food and agriculture, farmers’ rights are the countervailing force to breeders rights and patents on seed and plant material. Farmers’ rights in the context of monopoly control of the food system become relevant not just for farming communities, but also consumers. They are necessary not just for the survival of the people but also for the survival of the country. Without sovereign rights of
farming communities to their seed and plant genetic resources, there can be no sovereignty of the country.

4.9 Case Study : Basmati Rice

Protection of Basmati, which presently, is entitled to only a general level of protection under Art.22 of TRIPS. In the age of global markets and the resulting development of international intellectual property rights, conflicts arise between industrialized nations seeking to develop new products from plants, and developing nations seeking to capitalize on their indigenous flora. One example is the conflict over basmati rice. Long identified as originating in the Indian subcontinent, basmati rice is prized for its distinctive aroma, flavor, and long, slender, fluffy grains. The connection between India and basmati seemed threatened when the United States ("U.S.") patented Texmati, described as an American basmati rice. The Indian government seeks to have the U.S. revoke the patent as part of its plan to protect its rice industry. This article explores this situation with an eye towards understanding what rights the patent provides Texmati and how it affects, if at all, India's rice industry.

Basmati Rice -- Anything Else Is Just Rice

Basmati rice, unlike usual types of rice, is aromatic and has an extra long grain. The aroma is described as nut-like or reminiscent of popcorn. Basmati rice is usually consumed only on special occasions. Basmati rice is indigenous to India and Pakistan. In India alone, at least 400 varieties exist. Basmati rice comprises four per cent of India's export earnings. India earns US$800 million annually from basmati rice exports. Ten percent of these basmati exports are consumed in the U.S.
In world markets Indian basmati rice is the most expensive rice available. In Europe the best U.S. rice fetches a price of US$500 per metric ton. Indian basmati goes for US$1200 per metric ton. The European Union gives Indian basmati rice a duty discount of US$300 per metric ton. Soon the European Union may cease giving Indian basmati rice a duty discount. In this event, perhaps European consumers will choose quality U.S. rice from companies like Uncle Ben's over Indian basmati rice.

**RiceTec and Basmati Patent**

RiceTec, an international corporation, produces "Texmati" rice which RiceTec calls an "American basmati." Texmati is a hybrid of aromatic rice and regular long grain rice, sold by RiceTec since 1977. As the name suggests, this variety of rice grows in Texas.

The USPTO granted patent No. 5,663,484 to RiceTec for its variety of basmati. The patent also protected the American basmati plant and RiceTec's method of breeding the plant.

Specifically, one aspect of the invention relates to novel rice lines whose plants are semi-dwarf in stature, substantially insensitive to poor sunlight conditions, and high yielding. The patent claims that the plant produces rice grains having characteristics similar or superior to those of good quality basmati rice. Another patent claim relates to a "starch index" of a rice grain that predicts the grain's cooking properties. The patent also describes a method based on the starch index for identifying grains that can be cooked to the firmness of traditional basmati rice, and to use this method to select desirable segregants in rice breeding. Although RiceTec has not filed for an Indian patent on its basmati,
the company has successfully patented three different methods of milling rice. RiceTec also filed an application under the UPOV 1995 Plant Varieties Protection Act for its basmati lines.

In late 1997, an American company RiceTec Inc, was granted a patent by the US patent office to call the aromatic rice grown outside India 'Basmati'. RiceTec Inc, had been trying to enter the international Basmati market with brands like 'Kasmati' and 'Texmati' described as Basmati-type rice with minimal success. However, with the Basmati patent rights, RiceTec will now be able to not only call its aromatic rice Basmati within the US, but also label it Basmati for its exports. This has grave repercussions for India and Pakistan because not only will India lose out on the 45,000 tonne US import market, which forms 10 percent of the total Basmati exports, but also its position in crucial markets like the European Union, the United Kingdom, Middle East and West Asia. In addition, the patent on Basmati is believed to be a violation of the fundamental fact that the long grain aromatic rice grown only in Punjab, Haryana, and Uttar Pradesh is called Basmati. According to sources from the Indian Newspaper, Economic Times, "Patenting Basmati in the US is like snatching away our history and culture."

Basmati rice means the "queen of fragrance or the perfumed one." This type of rice has been grown in the foothills of the Himalayas for thousands of years. Its perfumy, nut-like flavor and aroma can be attributed to the fact that the grain is aged to decrease its moisture content. Basmati, a long-grained rice with a fine
texture is the costliest rice in the world and has been favored by emperors and praised by poets for hundreds of years. According to the Agricultural and Processed Food Products Export Development Authority (APEDA), India is the second largest producer of rice after China, and grows over a tenth of the world's wheat. In 1993, Basmati rice attracted the highest premium because it is a very-long grained rice, with an aroma of its own which enhances the flavors its mixed with.

In fact, Basmati rice has been one of the fastest growing export items from India in recent years. In the year to March 1997, India exported more than half a million tonnes of Basmati to the Gulf, Saudi Arabia, Europe and the United States, a small part of its total rice exports, but high in value. More substantively, Indian farmers export $250 million in Basmati every year and U.S. is a target market. (4) RiceTec Inc. had attempted to sell its long-grain rice in Europe under such brand names as 'Texmati' and 'Kasmati' but not as Basmati. However, if the patent is not revoked, RiceTec Inc., can now sell its rice under the brand name Basmati which will definitely cut into India's and Pakistan's global market share, especially as the rice grown in the US could be sold cheaper than the Indian and Pakistani varieties.

Similar to the exclusivity of Champagne and Scotch is that of Basmati rice. This very special long grain, aromatic rice is specifically associated with India and Pakistan. This is their geographically protected name which no one else can use. The focus of India’s basmati challenge will have to centre around America’s violation of India and Pakistan’s geographically Indicated rights by using the name Basmati. That is the central issue of the Basmati patent, not whether the patent awarded by the American Patent Office is valid or not, which of course it
is not. Rice Tech’s plea that Basmati is a generic name, not a special name like Champagne, is a silly, contrived argument. (Suman)

The time has come to take some hard decisions with respect to the WTO and the defence of Indian interests in this forum which was touted as a multi-lateral one. This supposed multilaterism implied that member nations would abide by the same regulations. In the single most contentious issue in GATT and WTO, that of Intellectual Property Rights (IPRs) there has been an effort to harmonise an IPR regime for the world. Patent regimes for drugs and agro-chemicals, a sui generis system for plant varieties and Geographical Indication are all parts of the same TRIPs section. It is under TRIPs that the Americans have taken India to court for violating the conditions for drug patents while they think nothing of themselves violating with impunity, the conditions for Geographically Indicated protection. India should take the US to the Dispute Settlement court of the WTO for violating its geographically indicated rights over Basmati. In addition to this, India should formulate a long term strategy to protect its bioresources. It should mobilise the biodiversity owning countries of the world to demand that the two international treaties dealing with the use of biological resources be linked to one another. The Biodiversity Convention cannot have a particular framework for the use of bioresources and the WTO quite another, almost opposing one. (Suman)

Patent granted to a US company on a variant of Basmati rice by US Patent Office was revoked on India’s complaint a few years back. The special variety of Basmati rice is known for its fragrance. It is grown in the foot hills of the Himalayan Mountains. The US Company identified the molecules which give fragrance to the rice. Thus basmati rice was grown in the US in green houses. The particular seed developed by biotechnology was patented in the US. The Indian
government took up the matter with the US Patent office and managed to revoke the patenting of a geographical indication. The US Government too supported India on the basmati rice issue. It was found that India could not get help from WTO on the issue of violation of geographical indications legislation in the issue of patenting of a geographical indication name. The reason for this was that India does not have its own legislation of registration of geographical indications; hence WTO is of no help. Critics say that having a law on geographical indications cuts both ways. Thus the Indian companies have used geographical indications of other countries for a long time. The Scotch Whisky case is an example. Hundred of distilleries manufacture the item in their distilleries. Once the legislation is in place, the distilleries are bound to lose business.

**The Government of India's response to the Basmati Rice Patent**

In an official release, the government of India reacted immediately after learning of the Basmati patent issued to RiceTec Inc., stating that it would approach the US patent office and urge them to re-examine the patent to a United States firm to grow and sell rice under the Basmati brand name in order to protect India's interests, particularly those of growers and exporters. Furthermore, a high level inter-ministerial group comprising of representatives of the ministries and departments of commerce, industry, external affairs, Council for scientific and industrial research (CSIR), Agriculture, Bio-technology, All India Rice Exporters Association (AIREA), APEDA, and Indian Council of Agricultural Research (ICAR) were mobilized to begin an in-depth examination of the case. The contents and implications of the patent are currently being analyzed in consultation with patent attorneys and agricultural scientists. The government of India is particularly concerned about the patenting of Basmati because of an earlier case where the US granted a patent to two Indian-born scientists on the
use of Turmeric as a wound healing agent. This case worked in favor of India because the patent was subsequently revoked after scientists of (CSIR) successfully challenged the patenting on the ground that the healing properties of Turmeric had been 'common knowledge' in India for centuries. There is a clause in US patent laws that will accept any information already available in published or written form anywhere in the world as 'common knowledge'. As a result, India was able to furnish published evidence to support their case that the healing characteristics of Turmeric is not a new invention and as such cannot be patented.

In the presence of widespread uprising among farmers and exporters, the nation of India as a whole feel confident of being able to successfully challenge the Basmati patent by RiceTec Inc. According to the Economic Times of India, the law firm of Sagar and Suri who won the Turmeric patent case and presently representing the government against RiceTec Inc. in existing cases, said; "RiceTec has got a patent for three things: growing rice plants with certain characteristics identical to Basmati, the grain produced by such plants, and the method of selecting the rice plant based on a starch index (SI) test devised by RiceTec Inc." The lawyers plan to challenge this patent on the basis that the above mentioned plant varieties and grains already exist and thus cannot be patented. In addition, they encountered some information from the US National Agricultural Statistics Service in its latest Rice Year book 1997, released in January 1998, which states that almost 75 percent of US rice imports are the Jasmine rice from Thailand and most of the remainder are from India and Pakistan,"varieties that cannot be grown in the US" This piece of information is rather interesting and can be used as a weapon against the RiceTec Basmati patent.
4.10 Biotechnology and Indian Agriculture

Agriculture in developing countries is predominantly rural based with a vast majority of poor people dependent on it. Hence, any new technology that would result in improving the crop yield or reducing the cost will be highly useful. Particularly, biotechnology innovations have several useful applications in agriculture and are useful for developing countries like India. TRIPS has a direct impact on agricultural trade and development, particularly agricultural biotechnology (WIPO, 2009), and its impact on agricultural trade is comparatively more important for India as agriculture is still a significant stakeholder in India’s GDP. In addition, many of the poor in India depend on agriculture for their livelihood.

Private investment in biotechnology research is far ahead of the public investment in developed countries ($5 billion), although public investment in biotechnology ($125 million) with the purpose of benefiting the farmers and consumers is increasing in developing nations (Qaim, 2001). If the future of Indian agriculture lies in biotechnology, as the Indian Government believes, then allowing US MNCs (like Monsanto and Walmart) to dominate Indian agricultural research would be the worst outcome for Indian farmers. Such huge investment has resulted in the demand for strengthening the IPRs in agriculture (Lalitha, 2004).

One of the concerns in providing patent protection to biotechnology-based research is that it could lead to patenting of research tools or the grant of broad patents that could potentially block further useful research.
With the establishment of National Biotechnology Board (NBTB) in 1982, a move was made to develop biotechnology in India. One of NBTB’s tasks was to coordinate the biotechnology research done by various agencies like the Department of Science and Technology, Department of Atomic Energy, Council of Scientific Research, Indian council of Agricultural Research, Indian Council of Medical Research and various universities. NBTB’s role was to improve research initiatives on BT, develop infrastructure and skills required for R&D in BT and other strategies like bio-safety, regulation, intellectual property rights, etc.

In 1986, the Department of Biotechnology (DBT) replaced NBTB. Under this move, infrastructure and research facilities were created; besides the facilities for maintenance of cell lines, acquisition of research biological at a central point and distribution was created.

In the agricultural sector, it covers plant growth regulators, veterinary vaccines, plant cells and tissue culture. In the food industry, dairy and fish products, yeast and food additives, starch products, glucose and fructose syrups are covered by the biotechnology patents. However, what is significant is that biotech patents are marked by a shift towards newer areas employing gene manipulation techniques.

An interface organisation called Biotech Consortium of India was established to serve as a link between research organisations and industry located either in India or abroad.

One of the recent developments in plant biotechnology is in the area of genetically modified organisms (GMOs).

Although plant biotechnology is considered to provide solution to the growing food insecurity among developing countries like India, lack of
appropriate and concrete answers to the concerns rose relating to the environment have induced the developing countries to tread cautiously in the area of transgenic crops. One reason for the slow spread of transgenic crops in developing countries is that governments in many developing countries are withholding approval for the release of GM crops due to their insufficient technical, financial and infrastructure capacities to assess GM crops for biological safety. (Lalitha, 2004)

Research in this area is nevertheless expanding. For instance, there are about 50 public research institutions in India, which are engaged in modern biotechnology tools for agriculture. At least 10 of these are engaged in plant genetic engineering with rice, chickpea, oilseeds, cotton and number of horticultural products.

Let us take the current biotechnology advances in creating new varieties of plants. The major thrust of creating new varieties is to introduce new traits by transferring genetic material from other species. This is why such varieties are called transgenic (more commonly genetically modified organisms or GMOs). The two main processes for transferring genetic material across species is to use a soil bacteria, Agrobacterium tumefaciens as a vector for transferring genetic material or to use the gene gun. Agrobacterium is a soil bacteria that introduces some of its own genetic material in the infected plant causing tumours or gall in the plant. Agricultural scientists have modified the bacteria and can use it as a carrier for other genes to incorporate novel traits of other species. The gene gun sprays the genetic material and thus can be used to insert genes from one species to another.

Both the above procedures are covered by a variety of patents. Cornell University holds the patents on the gene gun which in turn it has licensed it to
Du Pont, Monsanto and a few companies hold the patents on the use of Agrobacterium and thus make it difficult for any transgenic variety to be developed without infringing their patents. Although much of the basic research that led to Agrobacterium-mediated transformation was done in public institutions, the private sector now holds many of the key patent positions, either through internal research and development, or from public institutions in the form of licenses.

A simple case of trying to use genetically modified organisms for public good is that of the much-touted golden rice, which incorporated beta-carotene as a source of Vitamin A. It is subject to at least 40 patents and only after a major international effort could its use in public domain be permitted. The current patent landscape effectively seals the potential of using it for the small and medium farmers in developing countries. They simply cannot pay the cost of intellectual property that is being claimed by the agribusiness companies such as Monsanto.

4.11 SPS and agriculture

A discussion on the effects of WTO agreements on Indian agriculture will be incomplete without giving any emphasis on SPS (Deodhar, 2001). In fact, article 14 of the AOA clearly states: Members agree to give effect to the Agreement on the Application of Sanitary and Phytosanitary Measures. Finally, even if tariff barriers, domestic support and export subsidies are reduced/abolished in the developed countries, the real challenge for the Indian dairy sector would be from SPS.

Some incidents in the following years caused a concern among the nations of the developed world, regarding the health of its residents. The sudden outburst of diseases like mad cow, plague etc. in certain parts of world, and
accidents like the Bhopal gas tragedy in India, created an impression that the food imports coming from these countries may be infected by certain disease-causing agents. All these resulted in signing of the SPS Agreement by the member countries (Kajli).

At the Mid-term review of the Uruguay Round, in December 1988, the priority areas of SPS were recognized as:

- International harmonization on the basis of the standards developed by the international organizations.
- Development of an effective notification process for national regulations.
- Setting up of a system for the bilateral resolution of disputes.
- Improvement of the dispute settlement process.
- Provision of the necessary input of scientific expertise and judgment, relying on relevant international organizations.

Attention is also drawn to the fact that many of the developing countries may not have the institutional capacity to meet the set standards. Another issue of conflict arises due to the multiplicity of standards, and the fact that different countries may impose different standards. This would require generating information and awareness about these issues so that both the suppliers and the buyers can comply with these.

In the case of agricultural output, apart from the productivity and quality considerations at the production level, there are some necessary precautions that need to be taken when the product is stored and transported. Absence of such cautious measures would have adverse effects on the quality of the product, resulting in increased wastages and decreasing the market value. Further, this holds true for both raw and processed food products. Thus it is in the self interest of the producers as well as the exporters to ensure that certain hygienic and other
safety conditions are met. With an increase in the levels of health-safety awareness among the citizens of both developing and developed countries, this practice becomes imperative for the suppliers of these products. (Kajli). Recognizing the importance of the issue, each country has specified certain norms of processing, packaging and testing, and certain standards of quality that must be maintained. At the international level, WTO has specified some Sanitary and Phyto-Sanitary measures that need to be followed for international trade of food products. The SPS Agreement under the WTO seeks to lay down the minimum sanitary and phytosanitary standards that the member countries must achieve. This is to ensure the safety of life and health of humans, animals and plants. (Kajli) With an increase in the levels of health-safety awareness among the citizens of both developing and developed countries, this practice becomes imperative for the suppliers of these products. Recognizing the importance of the issue, each country has specified certain norms of processing, packaging and testing, and certain standards of quality that must be maintained. At the international level, WTO has specified some Sanitary and Phyto-Sanitary measures that need to be followed for international trade of food products. The SPS Agreement under the WTO seeks to lay down the minimum sanitary and phytosanitary standards that the member countries must achieve. (Kajli)

The agreement on SPS allows members to adopt and enforce measures necessary to protect human, animal or plant life or health, subject to the requirement that these measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between members where the same conditions prevail or a disguised restriction on international trade. Moreover, article 3.2 states that sanitary and phytosanitary measures which confirm to international standards and guidelines shall be deemed to be necessary to protect human, animal or plant life or health. Article 9 of the SPS
agreement provides for technical assistance to developing countries to build their infrastructure for food processing. May be, India can take advantage of this provision. Adoption of the quality system will not only ensure exports of value-added agricultural products, but will improve our domestic food quality as well. Article 9 of the SPS agreement provides for technical assistance to developing countries to build their infrastructure for food processing. May be, India can take advantage of this provision.

WTO Agreement on Sanitary and Phytosanitary Measures (SPS), while recognizing the desirability of maintaining quality standards clearly mentions that these should not be used as trade barriers. Developing countries, however, fear that when pressure on developed countries will force them to decrease their market access tariff barriers, they will resort to more and more use of quality standards as non tariff barriers. In any event developing countries should make serious efforts to comply with these standards. These include Food quality standards as prepared by FAO/WHO Codex Alimentarius Commission, Animal health standards by International Office of Epizootics and Plant health standards by the FAO’s Secretariat of the International Plant Protection Convention. This requires creation of awareness amongst the farmers, exporters, middle men and government departments.

Some of the apprehensions of the developed world regarding the quality of food exports from the developing countries are not entirely ill founded. The fact remains that the supply chain is indeed longer in the case of latter countries. This makes supervision of hygiene and other safety measures difficult. It implies that food may get adulterated or infected by pathogens at any level of the supply chain. Further, many of the units engaged in this sector are small and unorganized. Thus it is more likely that they lack the Alfatoxins are naturally occurring toxins that are metabolic byproducts of fungi, Aspergillus flavus, and
Aspergillus parasiticus, which grow on many food crops under favorable conditions. It may have adverse impact on animal and human health with acute toxicological effects on such as liver damage and cancer (kajli).

An important assumption in the neoclassical thinking is that there is complete information in the markets and elimination of tariffs and subsidies will lead to free trade among nations. However, markets are not characterized by complete information needed for a smooth and distortion-free trade. This aspect is extremely important in the global trade in food products. Traditional economics textbooks cite food and agricultural markets/products as examples of perfectly competitive markets with homogeneous products; however, nothing can be farther from the truth. Individual food products are not homogeneous across countries; different countries and firms adopt different performance standards and safety and quality norms; and, moreover, buyers cannot ascertain quality of food products merely by physical inspection. (Neera).

For food products, the international standards, guidelines and recommendations refer to the guidelines suggested by the Codex Alimentations Commission (CAC). CAC is a commission established by World Health Organization (WHO) and Food and Agricultural Organization (FAO). Although the CAC guidelines have no backing of any international law, the WTO endorsement of these standards through SPS and TBT agreements has made these standards de facto mandatory. An important CAC guideline for food processing companies is to follow a food quality management system called Hazard Analysis and Critical Control Points (HACCP). India needs to strengthen this system for ensuring good quality exports (imports) on the pattern of EU and US. If India does not comply with the SPS articles, it may face non-tariff-barriers to trade.

4.11.1 SPS and Indian Agriculture
A large domestic demand ensured that there was a ready market and thus an incentive for the producers to employ efficient means of production resulting in a larger quantity and better quality of output. As a result the processing industry has a growth rate of around 15 percent per annum. Agricultural growth though has been much less. (kajli) Yet there remains a large untapped potential of growth which if exploited can help us emerge as the largest producer of major food items. Even though the food producing and processing sector has shown some growth during the past few years, there exists a plethora of problems that need to be addressed before it embarks on a high growth path. On the domestic front, better technology in all spheres of production and processing can result in greater efficiency. Better transportation and storage facilities are also required to mitigate the losses arising from spoilage and wastage of food. Some estimates suggest that currently around 20 percent of all foods produced in India are wasted. Further, easy credit availability is necessary, absence of which creates a bottleneck in addressing other issues.

On the international scene, focus has shifted to two themes. Firstly, the country would be better off if it exports processed food items, instead of primary output. India is the second largest producer of fruits and vegetables in the world, but only about 2 percent of it is processed. Similarly, even though we are the largest producer of milk, only about 15 percent of it is processed by the organized sector. On an average, value addition to the raw produce in India is only 7 percent. This is much less as compared to 23 percent in China, 45 percent in Philippines, and 88 percent in United Kingdom. Secondly, there is a need to prevent the import of sub-standard products from other countries. There have been incidents in past when developed countries exported low quality food products to India, which were considered unfit even for their domestic market.
Now with a greater awareness and better bargaining power, India can hope to prevent its domestic markets being used as dumping grounds by the developed countries.

As mentioned earlier, one big challenge before the country is to encourage the exports of processed food products.

These increased detentions and bans on Indian products by developed countries indicate that there is a need to upgrade system of compliance with the specified sanitary and phytosanitary norms. Though most of the exporting firms in India are following Codex standards, yet they have to face losses due to detained or rejected shipments. One major cause of this is the lack of availability of correct and timely information. There have been incidents where producers didn’t have the time to comply with some standard, which was announced suddenly. For example, a consignment of ‘egg powder’ from India was rejected in EU. The reason given for this rejection by authorities in the destination country was the non-compliance with rule of ‘Minimum Required Performance limit (MRPL)’. The ground reality was that the rule had been announced just before the date of the consignment reaching the importing country. No concession was made for the fact that the producer of the good in question did not have time margin so that the newly announced rule could be complied with.

The legal framework for enforcing a hygienic and healthy availability of food exists in India for a very long time. Besides this, maximum limits of preservatives, additives and contaminants have also been specified for various products. Ministry of Food Processing Industries, Ministry of Agriculture and some other agencies are responsible for implementing these legislations. In fact this multiplicity of regulating agencies is one of the problems of implementation. The producers are not sure which institute to approach for guidelines, and which
institute has the authority to conduct inspection. A repetition of the process by more than one agency would result in waste of time and resources. The following table gives the various legislations enacted, and the institutions responsible for their implementation.

Table 4.1.

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<th>Legislation and Institutional Setup</th>
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<tr>
<td><strong>Ministry of Agriculture</strong></td>
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<td>• Insecticide Act</td>
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<td>• Milk and Milk Product Control Order</td>
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<td>• Meat Food Product Order 1973</td>
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<td><strong>Ministry of Rural Development: Directorate of Marketing and Inspection (DMI)</strong></td>
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<td>• Agriculture Produce (Grading and Marking Act)</td>
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<td><strong>Ministry of Health and Family Welfare</strong></td>
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<td>• Prevention of Food Adulteration Act 1954</td>
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<td><strong>Ministry of Food Processing Industries</strong></td>
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<td>• Fruit and Vegetables Product (Control) Order – FPO 1955</td>
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<td><strong>Ministry of Commerce</strong></td>
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<tr>
<td>• Export (Quality Control and Inspection) Act 1963</td>
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<td><strong>Ministry of Civil Supplies, Consumer Affairs and Public Distribution</strong></td>
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<td>• Standards of Weights and Measures Act</td>
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<td>• Standards of Weights and Measures (Enforcement) Act</td>
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<td>• Solvent Extracted Oils, De-oiled Meal and Edible Flour Control Order 1967</td>
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<td>• Vegetables Product Control Order 1976</td>
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<td>• Bureau of Indian Standards Act 1986</td>
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<td><strong>Ministry of Environment and Forests</strong></td>
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<td>• Aquaculture Authority Notification 1997 and 2002</td>
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<td>• Coastal Regulation Zone – Notification 2002</td>
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Source: Presented by Rajesh Mehta and J George in a workshop on International Food Safety Regulations and Processed Food Exports.

In addition to the above-mentioned institutes, there are others concentrating their efforts towards formulation and implementation of SPS
standards. A few of these have been discussed below along with the activities they carry out.

**Bureau of Indian Standards (BIS):** This is a premier organization for setting standards. So far it has set more than 17,000 standards, out of which 150 are mandatory, while others are voluntary. The procedure adopted by BIS is same as everywhere in the world. A suggestion coming from a consumer or an organization is considered by a committee for its viability, before formulation of a final draft. All BIS standards are voluntary, unless specified otherwise by the government.

**Food and Agriculture Department (FAD):** It deals with the standardization in the field of food and agriculture, including processed food, agricultural inputs, agricultural machinery and livestock husbandry. FAD undertakes the following activities:

- Review of an existing standard.
- Finalization of a standard when the procedure is completed.
- Recognizing of the area where a new standard needs to be set up, as no old standard exists.

**Ministry of Food Processing Industry (MFP):** As the name suggests, this ministry formulates the procedures and standards for the food processing industries. Thus rules are put together regarding the following thrust areas:

- Material to be used for the machine and equipment that touch the food.
- Quality of water used for production and for other purposes like washing and cleaning.
- Requirements of in-house laboratories.
• Assessment of the quality by food technologists.
• Standards pertaining to chemical content, physical characteristics, contaminant levels, and additive levels allowed in food.

**Codex Alimentarius:** This is an international organization that brings together all the interested parties, scientists, technical experts, governments, consumers and industry representatives. The standards set by codex are becoming increasingly acceptable world over, and thus are used as a benchmark by the domestic organizations. They even play a vital role in trade negotiations and settling of disputes.

**Export Inspection Council (EIC):** This is an apex agency that facilitates exports of SPS compliant commodities. It also gives advice to the government regarding measures to be taken for enforcement of quality control an inspection. Further, it also makes arrangement for pre-shipment inspection of commodities to ensure compliance of all specified standards. EIC provides three kinds of inspection and certification:

• Consignment-wise inspection.
• In-process quality control.
• Food safety management system based certification.

Efforts of these organizations clearly don’t suffice to address all issues concerning the food producing industry in India. The importance of role played by these agencies in enabling the producers to meet the health-safety standards, cant be undermined. Yet there is a need to take some measures at administrative and diplomatic level. The role of the Central Government assumes importance at this point. Such a requirement arises when some of the countries impose trade barriers under the disguise of technical barriers (SPS Measures). Under these
conditions government raises the issue at WTO, Dispute Settlement Bodies or at other international tribunals. The box below gives the main points of the complaints made by Indian Government in WTO regarding the issues of Harmonization and Transparency in the SPS Agreement. In India’s view, the international standards formulation procedures followed by different international organizations should have uniformity. The International Organization for Standardization (ISO) and the Codex Alimentarius Commission (Codex) are following different standards formulation procedures. For standards that are developed with a possible view of adopting them on a mandatory basis, a narrower definition could be adopted. Such a narrower definition could provide that for the purpose of the SPS Agreement, a standard, guideline or recommendation shall be considered mandatory only if an agreed minimum number of countries from different regions have participated in its formulation, and that it has been adopted by consensus.

Ideologically it may be difficult to challenge the need of such an agreement between different nations that aims at providing us with a healthier world. Maintenance of hygienic and safe living conditions is one of the basic rights of human race. Coming together of the different segments of world to formulate this agreement is itself an acceptance of this right. Yet this historically landmark movement, from the time of its inception, has become a cause of conflict between the different factions. The conflicts arise due to the shortcomings present in the implementation process. Often there is clash of interests between the different groups involved, which results in a set of unacceptable actions and the corresponding reactions. Thus the solution to the problem boils down to improving the execution of the concept, and not the principle itself. The first step in this direction would be the formulation of international standards that are
based on scientific and empirical evidence, and are acceptable to a majority of the members. While formulating the standards care should be taken to ensure that the conditions prevalent in both developed as well the developing countries are given their due importance. This would mean bringing into practice the principle of ‘Harmonization’ and ‘Transparency’, conceptualized in the agreement. Further, this would require concrete efforts from all parties concerned. From the perspective of the developed countries, they may have to adopt a more sympathetic approach to the whole issue. Simply imposing less stringent standards would not suffice. It is equally important to give equal weights to the voices being raised from the developing countries. Another issue to be addressed by the developed countries is regarding the availability of timely and complete information. This would surely lessen some unnecessary hassles for the exporting countries. Further, imposition of trade barriers under the disguise of SPS Agreement is something that should be condemned in all circumstances. This would surely impede the growth of ‘fair and free’ trade in world. The developing countries on the other hand will have to take some extensive and elaborate steps towards building their capacity to comply with these standards. It would imply building an efficient domestic system that not only complies with standards set by other countries, but would also include developing the standards vital to the local conditions. This would surely be conducive to the overall growth of their domestic economies as well. It may be safely concluded that countries world over, irrespective of their level of development have something to gain from the imposition of these standards.

In November 2003, the GOI notified the Plant Quarantine (Regulation of Import into India) Order, 2003, which established new import procedures and quarantine requirements for agricultural products. This, and some amendments
to the Prevention of Food Adulteration (PFA) Rules implemented in recent years, had significant negative ramifications on U.S. agricultural exports to India. Furthermore, livestock importation regulations are framed on the basis of an outdated Livestock Importation Act of 1898. In January 2009, a new, single window food safety authority was established. The Food Safety and Standards Authority (FSSA), while not fully operational, aims to consolidate and harmonize India’s wide-ranging food safety laws under a single umbrella regulatory agency. The FSSA is an independent regulatory entity within the Ministry of Health.

SPS agreements have the potential to help facilitate exports from developing countries by increasing transparency, promoting harmonization and preventing the imposition of trade barriers that cannot be justified scientifically. But SPS measures and animal welfare issues and other non-tariff barriers are proving to be major barriers to trade. Developing countries consider that insufficient attention is given to their needs in setting up SPS standards and insufficient time is allowed for compliance. The foregoing discussion of the important articles of SPS and TBT makes it fairly obvious that India will have to improve its quality norms by quantum leaps. However, at the same time, one must realize that since the SPS and TBT
guidelines are decided by the member countries in the CAC meetings, India must have a strategy for negotiating and arriving at just and fair food standards for its strategically important food products. Hence, the policy prescriptions for India are two-fold – one, for the domestic reforms and the other, for strategic renegotiation of SPS and TBT clauses. It is only after adopting such foolproof strategy that India’s vast potential of agri-exports can be converted into a reality. An in-depth and detailed research is needed for identifying appropriate domestic reforms and strategies for renegotiations at industry level.

The increase in world food trade and the advent of the SPS Agreement under the WTO have led to increasing recognition and adoption of food safety measures. Our ability to compete in world markets depends on our compliance with the increasingly stringent food safety standards, especially in view of the breakout of diseases such as Avian Influenza and Bird Flu.

4.1.2 TPT and Agriculture

The Agreement on Technical Barriers to Trade (TBT) - sometimes referred to as the Standards Code - aims to reduce impediments to trade resulting from differences between national regulations and standards. As far as international consensus-based standards are concerned, the Agreement invites the signatory governments to ensure that the standardizing bodies in their countries accept and comply with a "Code of good practice for the preparation, adoption and application of standards", embodied in Annex 3 to the Agreement and which is known as the WTO Code of Good Practice.

Similarly, the agreement on TBT sets standards for labelling and packaging of agricultural products as recommended by CAC. Unless India keeps itself abreast of the emerging guidelines of CAC, it may face non-tariff-barriers in future. In this regard, WTO does encourage developing countries to take active
part in the CAC activities to decide on various SPS and TBT related standards. Among developing countries, India has been active in its participation. This practice needs to be pursued on a continued basis to protect interests of Indian agriculture, without jeopardising the spirit of achieving uniform international standards (Deodhar).

Health-related trade restrictions are addressed by both the SPS agreement and the agreement on TBT. There are however differences in the scope of the two agreements. The TBT agreement covers all technical requirements, voluntary standards and procedures to ensure that these are met (called conformity assessment procedures), except when these are SPS measures as defined by the SPS agreement. TBT measures could cover any subject, from car safety to energy-saving devices, to the shape of food packages. To give some examples pertaining to human health, TBT measures could include pharmaceutical restrictions or the labelling of cigarettes. Most measures related to human disease control are under the TBT Agreement, unless they concern food safety or diseases which are carried by plants or animals (such as rabies). In terms of food labelling requirements dealing with nutrition claims, quality and packaging, regulations are not considered to be SPS measures and hence are normally subject to the TBT Agreement. However labelling requirements dealing with food safety are considered to be SPS measures.

TRIPS has become one of the most controversial agreements of the WTO. This is because of its wide and far-reaching mandate and its complex socioeconomic implications. It is argued that the changes made to the Indian Patents Act in response to TRIPS will compromise the food sector and the rights of small farmers by conferring strong rights on upstream agents who produce proprietary agricultural inputs using biotechnology. Not only are these agents
able to exert monopoly price control over agricultural inputs for 20 years, they also have the right to determine the conditions under which farmers and researchers use patented processes and products (Plahe, Jagit Kaur, 2009).

**India’s commitment to TBT of WTO**

The Government of India, Ministry of Commerce has designated BIS as the enquiry point under the Agreement on Technical Barriers to Trade of the World Trade Organization (WTO). According to the Agreement, the Enquiry Point issues notifications on proposed technical regulations and certification systems in India to WTO, Geneva. Parties in other member countries wishing to make comments on the above notifications can obtain copies of the text from the Enquiry Point. IS is engaged in formulation of Indian Standards for the following sectors:

- Basic & Production Engineering
- Chemicals
- Civil Engineering
- Electronics and Information Technology
- Electrotechnical
- Food and Agriculture
- Mechanical Engineering
- Management and Systems
- Medical Equipment and Hospital Planning
- Metallurgical Engineering
- Petroleum Coal and Related Products
- Transport Engineering
- Textile
- Water Resources
4.13 Summery

Undeniably developed countries have had the upper hand in negotiations due to their economic power in contrast to the developing countries; competency, resources and candid greed to bargain with in the market and at the negotiating table are totally skewed in favour of the First World countries. To use the trade agreements to displace the canon of international law, which recognises the world’s bioresources as a common heritage of mankind and to impose inequitably the western hegemony of property rights jurisprudence as the universal law is a harsh assault on the developing and LDCs to either “adhere or perish”! Hence, India should not have adopted the UPOV-compatible plant variety protection legislation, especially as these legislative initiatives, a priori, amount to TRIPs-plus, creating higher standards than required. (Lalitha, 2006 et.al)

However, it remains to be seen, despite the constitution of the National Commission of Farmers, if the Government of India would be able to effect a paradigm shift from “GE Revolution to Ever-Green Revolution” with “water harvesting, soil health improvement, dissemination of new technologies, infrastructure development and application of science and biotechnology” and farmers welfare as the pivotal points triggering the new model. India’s agriculture, the backbone of the economy, has to be robust for the nation as a whole to survive and prosper.

It is not possible to pick the countries that will lose or gain from TRIPS from the above indices. Their use lies in illustrating how wide national differences are in practically every aspect of technological and industrial performance.
Indian government should study the of China movement against US MNCs like Monsanto as China has taken a different route in ensuring that their agriculture does not succumb to the seed MNCs such as Monsanto. They have bought some crucial patents from smaller companies in Japan and other countries and have developed their own GM products. Bt Cotton and Bt rice in China are from their public sector scientific institutions and operating on the same principles that green revolution did.

REFERENCES


