TIP 401 Intellectual Property Rights in Agribusiness Management 1+0

Lecture 1 – 3: Globalization and WTO

A. Historical Development of Intellectual Property Right (IPR) Regime

Intellectual property rights (IPR) were a general term of human rights based on the results of their intellectual and creative production. Thus, it is a collection of concepts like copyrights, patents, trademarks, registered (industrial) design, protection of IC layout design, geographical indications, and protection of undisclosed information. As a social system for promoting innovation, the intellectual property system was first established in the Western countries and its course in those countries has gone through three main stages, namely, stage of germination, stable development and internationalization.

i) Germination Stage

Patent law was the first system in the world to build a human intellectual property system. At the early 13th century, the King of Britain had granted a license (a patent) to the inventors. At the 15th century, the Mediterranean countries experienced the advent of technological innovation and therefore, those countries had to establish a new legal system to protect technology. The Republic of Venice city constituted the first world's Patent Law in 1474. The advent of the industrial revolution in the whole Europe led some countries to establish a national patent system. The United States even established the principle of protection of proprietary technology in its Constitution and made patent protection to the height to constitutional level. Copyrights had the same colour with a strong monarchical power. Before the birth of the copyright system, various countries had long-standing system of printing privileges. According to this franchise system, the King can grant a printing right to license the printer rather than the copyright owners.

In 1709, Britain built the first modern copyright law - "the Queen Anne Act." Then, France and Germany established the copyright system. Under the influence of these countries as a pioneer, the copyright system has been gradually accepted by other Governments. Trademark is an Intellectual Property Right (IPR) which is closely related to technology trade and trade in services. Trademarks originated in Spain. The trademark system in the modern sense began in the 19th century. In 1857, France set the first legal system to protect trademarks in world. Subsequently, the trademark system rapidly developed in the rest of the world.

ii) Stage of Stable Development

During the stage of stable development, the framework of the intellectual property (IP) system which included of copyright, patent and trademark rights has been established. Many countries accepted various forms of IPRs in different attitude. All these developments demonstrated that the historical development of the IP system has entered a stage of steady development. By the

end of the 80's of the twentieth century, the new wave of civil legislation began to rise. Many countries tried to develop the Code of Intellectual Property and integrate intellectual property law into the Civil Code. These activities set off a wave of codification of IPRs. France promoted such movement by issuing the first "Intellectual Property Code" which is the collection of all IP system.

iii) Internationalization Stage

Since the late 19th century, along with the high-tech development and the expansion of international trade, intellectual property transactions in the international market have also begun with the formation and development. At the same time, there were a huge contradiction between international demand for IPRs and regional restrictions. In order to resolve this contradiction, some countries have signed the International Convention for the protection of intellectual property, and set up a number of global or regional international organizations. A system of international protection of IPRs has been set up in the world. The "Paris Convention for the Protection of Industrial Property" (which was launched by France, Germany, Belgium, and 10 other countries in 1883) was the first international convention in protecting Industrial Property. The Berne Convention for the Protection of Literary and Artistic Works, usually known as the Berne Convention, is an international agreement governing copyright, which was first accepted in Berne, Switzerland, in 1886. The foundation of International Conventions indicated that the intellectual property system had come to the international stage.

a) Genesis of General Agreement on Tariffs and Trade (GATT)

The General Agreement on Tariffs and Trade (GATT) has its origin in the Anglo-American design for the post second world war reconstruction in 1947. The objective of GATT was to provide a frame work for rule based multi - national trading system, as well as a process within which trade liberalization can result with non-discrimination, reciprocity and transparency. It has set out to correct several aberrations that crept into the International Trade, which were distorting the free flow of goods and services from one country to another. Its purpose was the "substantial reduction of tariffs and other trade barriers and the elimination of preferences, on a reciprocal and mutually advantageous basis." It was negotiated during the United Nations Conference on Trade and Employment and was the outcome of the failure of negotiating governments to create the International Trade Organization (ITO).

At a conference in the Palais des Nations, Geneva, Switzerland, representatives of 23 countries met in 1947 and established two key pillars of the post war world trading system. First, they created a legal framework for commercial policy by finalizing the text of the GATT. Second, they negotiated numerous bilateral agreements to reduce import tariffs, the benefits of which were extended to other GATT parties through the unconditional Most - Favored Nation (MFN)

clause. GATT was signed in October 1947, took effect in 1948, and lasted until 1994; it was replaced by the World Trade Organization in 1995. It was a treaty entered into by 146 countries of 191 member countries of the United Nations, of which 30 are developed, 86 are developing and 30 are least developed nations. India was the founding member of this organization. The mechanism envisaged by GATT to promote trade liberalization is the so called "rounds" system. The process periodically gathers the contracting parties together to agree on a package of trade measures. Table 1 lists the number of such contracting parties (countries) involved in the negotiations under GATT and the value of trade covered.

Table 1 GATT Trade Rounds

Rounds / Places	Start	Dura-tion	Count-ries	Subjects covered	Achievements
I – Havana, Cuba	April 1947	7 months	23	Tariffs	Signing of GATT, 45,000 tariff concessions affecting $10 billion of trade
II - Annecy, France	April 1949	5 months	13	Tariffs	Countries exchanged some 5,000 tariff concessions
III - Torquay, Devon, England	Septem-ber 1950	8 months	38	Tariffs	Countries exchanged some 8,700 tariff concessions, cutting the 1948 tariff levels by 25%
IV - Geneva II	January 1956	5 months	26	Tariffs, admission of Japan	$2.5 billion in tariff reductions
V - (Douglas) Dillon, Geneva	Septem-ber, 1960	11 months	26	Tariffs	Tariff concessions worth $4.9 billion of world trade
VI – Kennedy Round, Geneva, Switzerland	May 1964	37 months	62	Tariffs, Anti-dumping	Tariff concessions worth $40 billion of world trade
VII-Tokyo, Japan	September 1973	74 months	102	Tariffs, non-tariff measures, framework agreements	Tariff reductions worth more than $300 billion dollars achieved
VIII - Punta del Este,	September 1986	87 months	123	Tariffs, non-tariff measures, rules,	The round led to the creation of WTO, and

Uruguay				services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc	extended the range of trade negotiations, leading to major reductions in tariffs (about 40%) and agricultural subsidies, an agreement to allow full access for textiles and clothing from developing countries, and an extension of intellectual property rights.
IX - Doha, Qatar	November 2001	?	159	Tariffs, non-tariff measures, agriculture, labor standards, environment, competition, investment, transparency, patents etc	The round has not yet concluded. Bali Package signed on the 7th December 2013.

Uruguay Round: 1986–94

The Uruguay round aimed at expanding the competence of the GATT to important new areas such as services, capital, intellectual property, textiles, and agriculture. It was also the first set of multilateral trade negotiations in which developing countries had played an active role. Agriculture was exempted from previous agreements as it was given special status in the areas of import quotas and export subsidies. However, by the time of the Uruguay round, many countries considered the exception of agriculture to be sufficiently glaring that they refused to sign a new deal without some movement on agricultural products. These fourteen countries came to be known as the "Cairns Group", and included mostly small and medium sized agricultural exporters such as Australia, Brazil, Canada, Indonesia, and New Zealand. The round was launched in Punta del Este, Uruguay in September 1986, followed by negotiations in Geneva, Brussels, Washington, D.C., and Tokyo, with the 20 agreements finally being signed in Marrakesh, Morocco—the Marrakesh Agreement—in April 1994.

The Uruguay Round has been the most complicated of all GATT rounds held so far with 123 countries having negotiated as 16 negotiated groups. The outcome of this round which was long drawn (1986-94) was the creation of World Trade Organization (WTO). This round brought the following sweeping changes in the regime of world trade and intellectual property:

- **Agreement on Agriculture (AoA):** The AoA continues to be the most substantial trade liberalization agreement in agricultural products in the history of trade negotiations. The goals of the agreement were to improve market access for agricultural products, reduce domestic support of agriculture in the form of price-distorting subsidies and quotas, eliminate over time export subsidies on agricultural products and to harmonize to the extent possible sanitary and phyto-sanitary measures between member countries.
- The Agreement establishing the World Trade Organization (WTO)
- Goods and investment — the Multilateral Agreements on Trade in Goods including the GATT 1994 and the Trade Related Investment Measures (TRIMs)
- Services — the General Agreement on Trade in Services
- Intellectual property — the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS agreement) including Trade in Counterfeit Goods
- Dispute Settlement
- Reviews of governments' trade policies

b) World Intellectual Property Organization (WIPO)

During the process of promoting the IPR into international stage, the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO) cannot be left unrecognized. The predecessor to WIPO was the BIRPI (*Bureaux Internationaux Réunis pour la Protection de la Propriété Intellectuelle*, French acronym for *United International Bureaux for the Protection of Intellectual Property*), which had been established in 1893 to administer the Berne Convention for the Protection of Literary and Artistic Works and the Paris Convention for the Protection of Industrial Property. WIPO was formally created by the Convention Establishing the World Intellectual Property Organization, which entered into force on April 26, 1970. The World Intellectual Property Organization (WIPO) became one of the 17 specialized agencies of the United Nations in 1974. Thus, the WIPO administers and fosters the Paris Convention for the Protection of Industrial Property, the Patent Co-operation Treaty, the Berne and Rome Conventions on copyright and neighbouring rights and the Madrid Agreement on trade mark registration. The Agreement between the United Nations and the World Intellectual Property Organization notes that WIPO is responsible

"for promoting creative intellectual activity and for facilitating the transfer of technology related to industrial property to the developing countries in order to accelerate economic, social and cultural development, subject to the competence and responsibilities of the United Nations and its organs, particularly the United Nations Conference on Trade and Development, the United Nations Development Programme and the United Nations Industrial Development Organization, as well as of the United Nations Educational, Scientific and Cultural Organization and of other agencies within the United Nations system."

The Agreement marked a transition for WIPO from the mandate it inherited in 1967 from BIRPI, to promote the protection of intellectual property, to one that involved the more complex task of promoting technology transfer and economic development. WIPO currently has 187 member states, administers 26 international treaties, and is headquartered in Geneva, Switzerland. At the same time, WIPO was in charge of more than 20 international conventions relating to the protection of intellectual property rights. WIPO has established WIPOnet, a global information network. The project seeks to link over 300 intellectual property offices (IP offices) in all WIPO Member States. In addition to providing a means of securing communication among all connected parties, WIPOnet is the foundation for WIPO's intellectual property services.

c) World Trade Organization (WTO)

The WTO's predecessor, the General Agreement on Tariffs and Trade (GATT), was established after World War II in the wake of other new multilateral institutions dedicated to international economic cooperation – notably the Bretton Woods institutions known as the World Bank and the International Monetary Fund. A comparable international institution for trade, named the International Trade Organization (ITO) was negotiated. The ITO was to be a United Nations specialized agency and would address not only trade barriers but other issues indirectly related to trade, including employment, investment, restrictive business practices, and commodity agreements. But the ITO treaty was not approved by the U.S. and a few other signatories and never went into effect. In the absence of an international organization for trade, the GATT would over the years "transform itself" into a *de facto* international organization.

The World Trade Organization (WTO) was established on the completion of the Uruguay Round (UR) of negotiations of the General Agreement on Tariffs and Trade (GATT). WTO is an organization that intends to supervise and liberalize international trade. The organization officially commenced on 1 January 1995 under the Marrakech Agreement, replacing the GATT. The organization deals with regulation of trade between participating

countries by providing a framework for negotiating and formalizing trade agreements and a dispute resolution process aimed at enforcing participants' adherence to WTO agreements, which are signed by representatives of member governments and ratified by their parliaments. Most of the issues that the WTO focuses on derive from previous trade negotiations, especially from the Uruguay Round (1986–1994).

The organization is attempting to complete negotiations on the Doha Development Round, at the fourth ministerial conference in Doha, Qatar in November 2001 with an explicit focus on making globalization more inclusive and helping the world's poor, particularly by slashing barriers and subsidies in farming. The conflict between free trade on industrial goods and services but retention of protectionism on farm subsidies to domestic agricultural sector (requested by developed countries) and the substantiation of the international liberalization of fair trade on agricultural products (requested by developing countries) remain the major obstacles. These points of contention have hindered any progress to launch new WTO negotiations beyond the Doha Development Round. As a result of this impasse, there has been an increasing number of bilateral Free Trade Agreements (FTA) signed. According to a European Union statement, "The 2008 Ministerial meeting broke down over a disagreement between exporters of agricultural bulk commodities and countries with large numbers of subsistence farmers on the precise terms of a 'special safeguard measure' to protect farmers from surges in imports. As of June 2012, the future of the Doha Round remained uncertain: the work programme lists 21 subjects in which the original deadline of 1 January 2005 was missed, and the round is still incomplete. As of July 2012, there were various negotiation groups in the WTO system for the current agricultural trade negotiation which is in the condition of stalemate. A Trade Facilitation Agreement (TFA) known as the Bali Package was reached by all members on 7 December 2013, the first comprehensive agreement in the organization's history.

Functions: The most important functions of the WTO are:

- to oversee the implementation, administration and operation of the covered agreements; and
- to provide a forum for negotiations and for settling disputes.

Also, it is the WTO's duty to review and propagate the national trade policies, and to ensure the coherence and transparency of trade policies through surveillance in global economic policy-making. WTOs additional functions are listed below:

(i) The WTO shall facilitate the implementation, administration and operation and further the objectives of this Agreement and of the Multilateral Trade Agreements.

(ii) The WTO shall provide the forum for negotiations among its members concerning their multilateral trade relations in matters dealt with under the Agreement.
(iii) The WTO shall administer the Understanding on Rules and Procedures Governing the Settlement of Disputes.
(iv) The WTO shall administer Trade Policy Review Mechanism.
(v) In order to achieve greater coherence in global economic policy making, the WTO shall cooperate with the International Monetary Fund (IMF) and with the International Bank for Reconstruction and Development (IBRD) and its affiliated agencies.

As globalization proceeds in today's society, the necessity of an International Organization to manage the trading systems has been of vital importance. As the trade volume increases, issues such as protectionism, trade barriers, subsidies, violation of intellectual property arise due to the differences in the trading rules of every nation. The World Trade Organization serves as the mediator between the nations when such problems arise. The WTO is also a center of economic research and analysis: regular assessments of the global trade picture in its annual publications and research reports on specific topics are produced by the organization. Finally, the WTO cooperates closely with the two components of the Bretton Woods system, the IMF and the World Bank.

Principles of the Trading System

The WTO establishes a framework for trade policies; it does not specify outcomes. That is, it is concerned with setting the rules of the trade policy games. Five principles are very importance in understanding both the pre-1994 GATT and the WTO:

1) Non-discrimination: It has two major components: the most favoured nation (MFN) rule, and the national treatment policy. Both are embedded in the main WTO rules on goods, services, and intellectual property, but their precise scope and nature differ across these areas. The MFN rule requires that a WTO member must apply the same conditions on all trade with other WTO members, i.e., a WTO member has to grant the most favourable conditions under which it allows trade in a certain product type to all other WTO members. "Grant someone a special favour and you have to do the same for all other WTO members." National treatment means that imported goods should be treated no less favorably than domestically produced goods (at least after the foreign goods have entered the market) and was introduced to tackle non-tariff barriers to trade
(e.g. technical standards, security standards etc. discriminating against imported goods).

2) Reciprocity: It reflects both a desire to limit the scope of free-riding that may arise because of the MFN rule, and a desire to obtain better access to foreign markets. A related point is that for a nation

to negotiate, it is necessary that the gain from doing so be greater than the gain available from unilateral liberalization; reciprocal concessions intend to ensure that such gains will materialize.

3) Binding and enforceable commitments: The tariff commitments made by WTO members in a multilateral trade negotiation and on accession are enumerated in a schedule (list) of concessions. These schedules establish "ceiling bindings": a country can change its bindings, but only after negotiating with its trading partners, which could mean compensating them for loss of trade. If satisfaction is not obtained, the complaining country may invoke the WTO dispute settlement procedures.

4) Transparency: The WTO members are required to publish their trade regulations, to maintain institutions allowing for the review of administrative decisions affecting trade, to respond to requests for information by other members, and to notify changes in trade policies to the WTO. These internal transparency requirements are supplemented and facilitated by periodic country-specific reports (trade policy reviews) through the Trade Policy Review Mechanism (TPRM). The WTO system tries also to improve predictability and stability, discouraging the use of quotas and other measures used to set limits on quantities of imports.

5) Safety valves: In specific circumstances, governments are able to restrict trade. The WTO's agreements permit members to take measures to protect not only the environment but also public health, animal health and plant health. There are three types of provision in this direction:

- articles allowing for the use of trade measures to attain non-economic objectives;
- articles aimed at ensuring "fair competition"; members must not use environmental protection measures as a means of disguising protectionist policies; and
- provisions permitting intervention in trade for economic reasons.

Exceptions to the MFN principle also allow for preferential treatment of developing countries, regional free trade areas and customs unions.

iv) Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS)

The Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) was adopted under the framework of the WTO in 1993. The agreement provides many principles and systems to other country’s legal system for promoting intellectual property system into the integration process. TRIPS agreement achieved the goal to link international trade with people’s intellectual property rights. And the result is that it not only to expand intellectual property protection to the outside of the traditional areas of trade, but also penetrate into the technical trade and service trade, etc. all aspects of international trade, and accelerate the international trade into a new trade pattern.

a) Inclusion of TRIPS in WTO: The precursor to the WTO was the GATT which sought to address issues related to international trade in goods. The operation of the GATT over the years resulted in

lowering of tariffs in general in international trade. As a result, increasingly, other domestic policies of nations came into focus of the trading nations. The developed countries like the United States started facing increasing competition in manufactured exports from Newly Industrializing Countries (NICs) of Asia. For intellectual property issues in general, the negotiators were required to "clarify GATT provisions and elaborate as appropriate new rules and disciplines" in order to reduce distortions and impediments to international trade. As technology became more important in goods and commodities, having higher proportion of invention and design (intellectual creativity) in their value, IPR became important in international trade. As a result, in the Uruguay Round negotiations, the IPRs dominated the discussions.

The inclusion of TRIPS was the culmination of an intense lobbying effort by the United States, supported by the European Union, Japan and other developed nations. Campaigns of unilateral economic encouragement under the Generalized System of Preferences and Coercion under Section 301 of the Trade Act played an important role in defeating competing policy positions that were favoured by developing countries, most notably Korea and Brazil, but also including Thailand, India and Caribbean Basin states. In turn, the United States' strategy of linking trade policy to intellectual property standards can be traced back to the entrepreneurship of senior management at Pfizer in the early 1980s, who mobilized corporations in the United States and made maximizing intellectual property privileges, the number one priority of trade policy in the United States (Braithwaite and Drahos, 2000, Chapter 7).

As the ratification of TRIPS is a compulsory requirement of WTO membership, any country seeking to obtain easy access to the numerous international markets opened by the WTO must enact the strict intellectual property laws mandated by TRIPS. For this reason, TRIPS is the most important multilateral instrument for the globalization of intellectual property laws. States like Russia and China that were very unlikely to join the Berne Convention have found the prospect of WTO membership a powerful enticement. Furthermore, unlike other agreements on intellectual property, TRIPS has a powerful enforcement mechanism. States can be disciplined through the WTO's dispute settlement mechanism.

b) Intellectual Property Rights (IPR): According to the World Intellectual Property Organization (WIPO), intellectual property refers to creations of the mind, inventions, literary and artistic works, symbols, names, images and designs used in commerce.

Broadly, intellectual property is divided into two categories. The first category covers industrial property, which includes patents, industrial designs and trademarks which have industrial applications. The other refers to copyright laws which are applied to such things as literary, dramatic

and artistic works; rights relating to performing artists, the production of phonograms; and rights of broadcasters in their radio and television programmes. Intellectual property (IP) rights as a term can be collectively used for multiple protection of different aspects of an inventive work as given below:

i) Patents including the protection of new varieties of plants
ii) Copyrights and related rights (i.e., the rights of performers, producers of sound recordings and broadcasting organizations)
iii) Trademarks, including service marks
iv) Registered (industrial) design
v) Layout-designs (topographies) of Integrated Circuits (IC)
vi) Geographical indications including appellations of origin, and
vii) Undisclosed information, including trade secrets and test data

The **Agreement on Trade-Related Aspects of Intellectual Property Rights** sets down minimum standards for many forms of intellectual property regulation as applied to nationals of other WTO Members. The TRIPS agreement introduced intellectual property law into the international trading system for the first time and remains the most comprehensive international agreement on intellectual property to date. TRIPS also specify enforcement procedures, remedies, and dispute resolution procedures. Protection and enforcement of all intellectual property rights shall meet the objectives to contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

In 2001, developing countries concerned that developed countries were insisting on an overly narrow reading of TRIPS, initiated a round of talks that resulted in the Doha Declaration. The Doha declaration is a WTO statement that clarifies the scope of TRIPS, stating for example that TRIPS can and should be interpreted in light of the goal "to promote access to medicines for all". Specifically, TRIPS requires WTO members to provide copyright rights, covering content producers including performers, producers of sound recordings and broadcasting organizations; geographical indications, including appellations of origin; industrial designs; integrated circuit layout - designs; patents; new plant varieties; trademarks; trade dress; and undisclosed or confidential information.

c) The Requirements of TRIPS: TRIPS requires member states to provide strong protection for intellectual property rights. For example, under TRIPS:

- Patents must be granted for "inventions" in all "fields of technology" provided they meet all other patentability requirements (although exceptions for certain public interests are allowed (Article 27.2 and 27.3) and must be enforceable for at least 20 years (Article 33).
- Exceptions to exclusive rights must be limited, provided that a normal exploitation of the work (Article 13) and normal exploitation of the patent (Article 30) is not in conflict.
- Legitimate interests of third parties have to be taken into account by patent rights (Article 30).
- Copyright terms must extend at least 20 years, unless based on the life of the author. (Article 12 and 14).
- Copyright must be granted automatically, and not based upon any "formality," such as registrations, as specified in the Berne Convention. (Article 9).
- Computer programs must be regarded as "literary works" under copyright law and receive the same terms of protection.
- National exceptions to copyright (such as "fair use" in the United States) are constrained by the Berne three-step test.
- No unreasonable prejudice to the legitimate interests of the right holders of computer programs and patents is allowed.
- In each state, intellectual property laws may not offer any benefits to local citizens which are not available to citizens of other TRIPS signatories under the principle of national treatment (with certain limited exceptions, Article 3 and 5). TRIPS also has a most favored nation (MFN) clause.

Many of the TRIPS provisions on copyright were copied from the Berne Convention for the Protection of Literary and Artistic Works and many of its trademark and patent provisions were modeled on the Paris Convention for the Protection of Industrial Property.

d) Links among TRIPS, WTO and WIPO: Intellectual Property Rights (IPRs) at a multilateral level have their genesis in the Paris Convention for the Protection of Industrial Property in 1883 which protected industrial property, i.e., Patents and trademarks and the Berne Convention for the Protection of Literary and Artistic Works in 1886 for copyrights and related rights. World Intellectual Property Organization (WIPO) which began its work in 1967 taking over from the Bureau for the Protection of Intellectual Property that had been working since 1893, is the international agency under the United Nations that administers the work of these conventions. The WIPO administers many other international conventions on IPRs also.

While the IPR Conventions and treaties create the international standards in protection of IPRs which are to be followed by the member countries, substantive trade related disciplines on IPRs

under these international conventions have been adopted by reference into the WTO through the TRIPS Agreement. This means that the Agreement provides rules for trade and investment in ideas and creativity by incorporating standards laid down in certain exact provisions of the major IPR conventions. The WTO provides that "intellectual property" should be protected when trade is involved. Thus, through the TRIPS, the WTO makes it mandatory for all its member countries to follow basic minimum standards of IPR provided for under TRIPS and bring about a degree of harmonization of domestic laws in this field.

e) TRIPS plus Provisions in Free Tree Agreements (FTAs): IPRs are territorial rights and can be acquired in the territory of the country having an IPR law. That is, IPR acquired in one country cannot be enforced in another country. The TRIPS Agreement lays down only certain minimum standards of protection and enforcement of IPRs by its Members through enactment of such national laws and regulations. The TRIPS Agreement, however, allows Members to have higher levels of protection than the minimum standards laid down in it, thus leaving the flexibility to Members to have 'TRIPS plus' laws and regulations. The developed countries are moving toward higher, enhanced standards of IPR protection to evolve TRIPS-plus regime. These higher standards now appear in various Free Trade Agreements (FTA) and the developed countries are negotiating and entering into with their trading partners. Since these provisions go beyond minimum standards established under TRIPS, they may take away the flexibilities (for example the ability to issue compulsory licenses for medicines required in public health emergencies) that exist in the TRIPS Agreement. These countries negotiate rules and commitments in bilateral, sub regional and regional agreements that go beyond the multilateral level in WTO.

By entering into FTAs with the developed countries, developing countries have some advantages in tariff reductions on agricultural, clothing and other products. In return, developed countries seek better market access and investment opportunities for products and services of their interest. In addition, developed countries also seek to raise the minimum levels of protection for IPRs as they have a comparative advantage in technology products and services. At the same time, developing countries find it difficult to put forward the issues of their concern through the FTA negotiations including the harmonization of TRIPS and UN Convention on Biological Diversity (CBD), access to medicines, and protection against the bio-piracy of their biological genetic resources, farmers' rights and associated traditional knowledge, ability of their farmers to continue their subsistence and livelihood related farming practices and getting the same level of protection for their geographical indications as for wines and spirits of developed countries. As a consequence, FTAs create an imbalanced set of rights and obligations in favour of developed countries by ratcheting up the levels of IPR protection.

While it can be argued that there is no bar on developing countries in walking away from unequal agreements, it can also be argued that owing to unequal negotiating strengths, many bilateral agreements do turn out to be unequal. If the immediate need to benefit from reduced tariffs, etc. is high then a developing country can be guided into making concessions in areas of longer term impact such as IPRs.

f) Implementation of TRIPS in Developing Countries

The obligations under TRIPS apply equally to all member states, however developing countries were allowed extra time to implement the applicable changes to their national laws, in two tiers of transition according to their level of development. The transition period for developing countries expired in 2005. The transition period for least developed countries to implement TRIPS was extended to 2013, and until 1 January 2016 for pharmaceutical patents, with the possibility of further extension.

g) Issues under Debate and Challenges relating to TRIPS

1) Effectiveness of the 2003 "waiver" in the 2001 Doha Declaration on TRIPS and Public Health: The waiver in Doha Declaration removes a requirement that generics produced under compulsory license should be mainly for the domestic market. This would hinder their export to countries that cannot make the medicines. The mechanism established in the 2003 waiver for providing affordable medicines to poor countries did work in only one case (where Rwanda obtained medicines from Canada), and that too has not been very successful. WTO members are reviewing this provision.

(ii) The TRIPS Agreement has a built in review of the provisions relating to patenting of life forms: The current provision obliges members not to exclude from their patent regime microorganisms and non - biological and microbiological processes. It also obliges Members to protect plant varieties either through patents or through a *sui generis* system (of its own kind) or a combination thereof. This review has not been concluded even though it started in 1999.

(iii) Another controversy has been over the TRIPS Article 27 requirements for patentability "in all fields of technology", and whether or not this necessitates the granting of software and business method patents.

(iv) Protection of the innovations of indigenous and local farming communities and the continuation of the traditional farming practices including the right to save, exchange seeds, and sell their harvest.

(v) Protection of the rights of indigenous communities and prevent any private monopolistic intellectual property claims over their traditional knowledge.

(vi) Grant of the same level of protection of geographical indications in other products as is granted to wines and spirits.

(vii) Since TRIPS came into force, it is being criticized by many developing countries, academics, and

non-governmental organizations (NGOs). Some of this criticism is against the WTO as a whole, but many advocates of trade liberalization also regard TRIPS as bad policy. TRIPS's wealth concentration effects (moving money from people in developing countries to copyright and patent owners in developed countries) and its imposition of artificial scarcity on the citizens of countries that would otherwise have had weaker intellectual property laws, are common bases for such criticisms.

At the 21st century, IPR system is faced with new challenges. The adverse effects of IPR system appear gradually. In some developing countries, the protection of IPR has enhanced the costs of some medical or necessaries; the price of some product with IPR is so high that it cannot meet the needs of poor people. The viewpoint of doubting on the adoptability of the intellectual property system was usual in the domestic and international. Similarly, since decades the implementation of TRIPS agreement has performed, many developing countries came to re-examine the impact of the national economy brought by the integration of intellectual property protection standards. At the same time, with the rapid development of biotechnology, engineering and new materials technology, society has brought a great number of problems about the intellectual property system to every country. To solve these problems, developed countries have started a new round of amendments to the legislative activities of the IPR system.

Lecture 4 – 5: Different Forms and Types of IPR

Nature of Intellectual Property Rights

IPRs are largely territorial rights except copyright which is global in nature in the sense that it is immediately available in all the members of the Berne Convention. These rights are awarded by the State and are monopoly rights implying that no one can use these rights without the consent of the right holder. It is important to know that these rights have to be renewed from time to time for keeping them in force except in case of copyright and trade secrets.

IPRs have fixed term except trademark and geographical indications, which can have indefinite life provided these are renewed after a stipulated time specified in the law by paying official fees. Trade secrets also have an infinite life and therefore, they do not have to be renewed. IPR can be assigned, gifted, sold and licensed like any other property. Unlike other moveable and immoveable properties, these rights can be simultaneously held in many countries at the same time.

IPR can be held only by legal entities i.e., who have the right to sell and purchase property. In other words, an institution, which is not autonomous, may not be in a position to own an intellectual property. The IP rights are associated with something new or original and therefore, what is known in public domain cannot be protected through the rights mentioned above. Improvements and modifications made over known things can be protected. It would however, be possible to utilize geographical indications for protecting some agriculture and traditional products.

Need for Intellectual Property Rights

New laws and regulations continue to emerge, and the scope of intellectual property's objects has continued to grow. In spite of this, the establishment of IPR system has become an irresistible trend. In today's world, many countries have a more understanding of the social progress and political and economic interests from knowledge. Developed countries take its monopoly of advanced scientific knowledge as a magic weapon for technology leadership. Developing countries take the absorbing and creating knowledge as an important way to catch up with developed countries. It can be expected that the next era is not only to develop and possess substantial social resources, but also to develop and possess knowledge resources. Moreover, with the deepening of global economic integration, the international process of intellectual property system will be further accelerated. Protection of IPRs has not only become the necessary conditions of a country to promote for economic development, but also a pre-requisite as the maintenance of international competitiveness.

With the advent of the new knowledge economy, there is urgency on understanding and managing knowledge based assets such as innovations and know-how. The time for grasping knowledge has become an important parameter for determining the success of an institution,

enterprise, government and industry; the shorter the time better are the chances of success.

IPRs have become important in the face of changing trade environment which is characterized by the following features namely global competition, high innovation risks, short product cycle, need for rapid changes in technology, high investments in research and development (R&D), production and marketing and need for highly skilled human resources. Geographical barriers to trade among nations are collapsing due to globalization, a system of multilateral trade and a new emerging economic order. It is therefore quite obvious that the complexities of global trade would be on the increase as more and more variables are introduced leading to uncertainties.

Many products and technologies are simultaneously marketed and utilized in many countries. With the opening up of trade in goods and services, intellectual property rights (IPR) have become more susceptible to infringement leading to inadequate return to the creators of knowledge. Developers of such products and technologies would like to ensure R&D costs and other costs associated with introduction of new products in the market are recovered and enough profits are generated for the further investment on R&D efforts. One expects that a large number of IP rights would be generated and protected all over the world including India in all areas of science and technology, software and business methods. It is also important to realize that each product is amalgamation of many different areas of science and technologies.

More than any other technological area, drugs and pharmaceuticals need to have IPR protection. As the introduction of a new drug into the market may involve huge cost along with all the associated risks at the developmental stage, no company will like to risk its intellectual property becoming a public property without adequate returns. Creating, obtaining, protecting and managing intellectual property must become a corporate activity in the same manner as the raising of resources and funds. Therefore, the knowledge revolution will also encompass the intellectual property and its management in the overall decision - making process.

Many industries experiencing severe competition at global level would like to share their expertise in order to respond to market demands quickly and keep their products' prices competitive. In order to maintain a continuous stream of new ideas and experimentations, public private partnership in R&D would need to be nurtured to arrive at a win-win situation. Therefore, all publicly funded institutions need to take positive steps to direct research suitably to generate more intellectual property rights, protect and manage them efficiently.

Today, the IPR not only has expanded the traditional content of property rights system, but also made a profound impact on mankind in the 21st century. However, with the development of new technologies and human cognitive ability, as an implement to balance the private rights and public interests, the intellectual property system always encounter challenges and controversies.

i) Patent - Definition

The term 'patent' has been derived from the Latin word "*Litterae Patentes*" which means 'Open Letters' or 'an Open Document' and it was used by medieval European kings to confer rights and privileges. In the modern times, patent enunciates a contract between an inventor and the Government. A patent is an exclusive privilege and monopoly legal right granted by the Government to the inventor for his disclosed invention of an industrial product or process of manufacture which should be new, non-obvious, useful and patentable as per the patentability criteria laid down in the domestic Patents Act.

A patent is an exclusive right granted by a country to the owner of an invention to make, use, manufacture and market the invention, provided the invention satisfies certain conditions stipulated in the law. Exclusive right implies that no one else can make, use, manufacture or market the invention without the consent of the patent holder. This right is available for a limited period of time. In spite of the ownership of the rights, the use or exploitation of the rights by the owner of the patent may not be possible due to other laws relating to health, safety, food, security etc. of the country which has awarded the patent. Further, existing patents in similar area may also come in the way.

A patent in legal terms is a property right and hence, can be gifted, inherited, assigned, sold or licensed. As the right is conferred by the State, it can be revoked by the State under very special circumstances even if the patent has been sold or licensed or manufactured or marketed in the mean time. The patent right is territorial in nature and inventors/their assignees will have to file separate patent applications in countries of their interest, along with necessary fees, for obtaining patents in those countries. A new chemical process or a drug molecule or an electronic circuit or a new surgical instrument or a vaccine is a patentable subject matter provided all the stipulations of the law are satisfied.

Advantages of Patents

i) Patent system encourages an inventor to disclose his invention instead of keeping it secret.

ii) As the patent right is proprietary in nature, it gives protection to the patentee. The patentee or his agent or licensee has the exclusive right to make, use, and sell an invention and thereby he can prevent all others, not just imitators but even independent devisors of the same idea from using the invention for the duration of the patent.

iii) The patentee can get higher returns for working his invention on a commercial scale.

iv) If the patentee could not commercially work on the invention, he can make profit by selling his patent or by granting license to others, permitting the use of his invention.

v) Patent System encourages the inventors to advance the state of technology by awarding them special rights to benefit from their inventions. Thus, it helps for industrial growth by introducing new technologies.

vi) Scientific knowledge contained in the patent specification provides inventive and creative ideas and helps as a "stepping stone" for further R & D in the field.

vii) Patent acts as tradable industrial asset for the enterprise and, thus the strength of patent portfolio of the company is the indication of the good economic health of the company.

viii) After the term of patent is over, or patent is not kept in force, the patented invention is available to the public for free use.

TRIPS Agreement: The TRIPS agreement says that granting protection through patent should have following provisions:

- Patent protection must be available for inventions for at least 20 years.
- Patent protection must be available for both products and processes, in almost all fields of technology.
- Governments can refuse to issue a patent for an invention if its commercial exploitation is prohibited for reasons of public order or morality.
- Governments can also exclude diagnostic, therapeutic and surgical methods, plants and animals (other than microorganisms), and biological processes for the production of plants or animals (other than microbiological processes).
- Plant varieties, however, must be protectable by patents or by a special system (such as the breeder's rights provided in the conventions of UPOV).
- TRIPS Agreement also allows certain exceptions. A patent owner could abuse his rights, for example, by failing to supply the product on the market. To deal with that possibility, the agreement says governments can issue "compulsory licenses", allowing a competitor to produce the product or use the process under license. But this can only be done under certain conditions aimed at safeguarding the legitimate interests of the patent-holder.
- If a patent is issued for a production process, then the rights must extend to the product directly obtained from the process. Under certain conditions alleged infringers may be ordered by a court to prove that they have not used the patented process.
- The TRIPS Agreement does not and should not prevent members from taking measures to protect public health. Member countries underscored countries' ability to use the flexibilities that are built into the TRIPS Agreement. And they agreed to extend

exemptions on pharmaceutical patent protection for least-developed countries until 2016. They assigned further work to the TRIPS Council — to sort out how to provide extra flexibility, so that countries unable to produce pharmaceuticals domestically can import patented drugs made under compulsory licensing.

- The agreement describes the minimum rights that a patent owner must enjoy. A patent shall confer on its owner the following exclusive rights:

  (a) where the subject matter of a patent is a product, to prevent third parties not having the owner's consent from the acts of: making, using, offering for sale, selling, or importing for these purposes that product;

  (b) where the subject matter of a patent is a process, to prevent third parties not having the owner's consent from the act of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process; and

  (c) patent owners shall also have the right to assign, or transfer by succession, the patent and to conclude licensing contracts.
- Member countries may 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.
- An applicant for a patent shall disclose the invention in a clear and complete manner for the invention to be carried out by a person skilled in the art and may require the applicant to indicate the best mode for carrying out the invention known to the inventor at the filing date or, where priority is claimed, at the priority date of the application.
- When a Member country allows the subject matter of a patent for other use without the authorization of the right holder, including use by the government or third parties authorized by the government, the following provisions shall be respected:
  - authorization of such use shall be considered on its individual merits;
  - such use may only be permitted if, prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time. This requirement may be waived by a Member in the case of national emergency or other circumstances of extreme urgency or in cases of public non- commercial use. In situations of national emergency or other circumstances of extreme urgency, the right holder shall, nevertheless, be notified as soon as reasonably practicable. In the case of

public non-commercial use, where the government or contractor, without making a patent search, knows or has demonstrable grounds to know that a valid patent is or will be used by or for the government, the right holder shall be informed promptly;

- the scope and duration of such use shall be limited to the purpose for which it was authorized, and in the case of semi-conductor technology shall only be for public non-commercial use or to remedy a practice determined after judicial or administrative process to be anti-competitive; and
- such use shall be non-exclusive.

What is an invention?

An invention may be defined as a proposal for the practical implementation of an idea for the purpose of solving a technical problem. For the purpose of grant of a patent, an invention is defined in the Patents Act, 1970 as:

i) any new and useful art, process, method or manner of manufacture;
ii) a machine, an apparatus or other article; and
iii) a substance produced by manufacture, and includes any new and useful improvement of any of them, and an alleged invention.

The Patent Act, 1970 envisages that 'any invention that has a commercial application and which is not exempted under the Act is eligible for grant of patent. The Second Amendment Bill, 1999 introduced a new definition of invention: “Invention means a new product or process involving an invention step and capable of industrial application”.

What is patentable?

To qualify for a patent, the invention must meet three basic tests. First, it must be novel, meaning that the invention did not previously exist. Second, the invention must be non-obvious, which means that the invention must be a significant improvement to existing technology. Simple changes to previously known devices do not comprise a patentable invention. Finally, the proposed invention must be useful. Legal experts commonly interpret this to mean that no patent will be granted for inventions that can be used for an illegal or immoral purpose.

i) Novelty: An invention is said to be new if, prior to the date of filing or to the priority date accorded to the application from an earlier application for the same invention, it was not already known to the public in any form (written, oral or through use), i.e., it did not form part of the state of the art. Information appearing in magazines, technical journals, books, newspapers, etc. constitutes the state of the art. Oral description of the invention in a seminar/conference can also spoil novelty. Novelty is assessed in a global context. An invention will cease to be novel if it has been disclosed in the public through any type of publications anywhere in the world before filing a patent application

in respect of the invention. Prior use of the invention in the country of interest before the filing date can also destroy the novelty. Novelty is determined through extensive literature and patent searches. It should be realized that patent search is essential and critical for ascertaining novelty as most of the information reported in patent documents does not get published anywhere else.

ii) Inventiveness (Non-obviousness): An invention is said to involve an inventive step (or lack of obviousness) if, in the light of what is already known to the public, it is not obvious to a so-called skilled person, i.e., someone with good knowledge and experience of the field. The prior art should not point towards the invention implying that the practitioner of the subject matter could not have thought about the invention prior to filing of the patent application. Inventiveness cannot be decided on the material contained in unpublished patents. The complexity or the simplicity of an inventive step does not have any bearing on the grant of a patent. In other words, a very simple invention can qualify for a patent, if there is an inventive step between the proposed patent and the prior art at that point of time, then an invention has taken place.

iii) Usefulness: An invention must possess utility for the grant of patent. An invention is capable of industrial application, if it can be made or used in any kind of industry, including agriculture, as distinct from purely intellectual or aesthetic activity.

Effect of Patent

A patentee gets the exclusive monopoly right against any person or legal entity to use, sell or manufacture his patented device, apparatus or process or assign the same to others. Period during which the owner enjoys the benefits is called term of the patent. Registration is a prerequisite for patent protection and the protection granted is territorial in nature, i.e., patent granted in a country will confer the ownership right to the patentee only within that country.

i) A Patentee can enforce his monopoly right against any infringement in the Court of Law for suitable damages or profit of account.
ii) The Government ensures full disclosure of the invention to the public for exchange of exclusive monopoly patent right to the inventor.

What is not patentable?

The following subject matter is not patentable under the Patents Act, 1970:

i) An invention which is frivolous or claims anything obviously contrary to well established natural laws; (No one can obtain a patent on a law of nature or a scientific principle even if he is the first one to discover it. For example, Isaac Newton could not have obtained a patent on the laws of gravity).

ii) An invention the primary or intended use or commercial exploitation of which could be contrary to pubic order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment;

iii) A mere discovery of a scientific principle or the formulation of an abstract theory; [or discovery of any living thing or non-living substances occurring in nature].

iv) The Patent Act has a set of exceptions stated in Section 3 clause (d) by which certain things cannot be protected by the law. A mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant. This provision prevents patenting of minor improvements in chemical and pharmaceutical entities unless the invention results in the enhancement of known efficacy of that substance. This provision sets safeguard for public health purposes and sets a higher threshold which has been interpreted as therapeutic efficacy for the grant of a patent on pharmaceuticals;

v) A substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance;

vi) A mere arrangement or rearrangement or duplication of known devices, each functioning independently of one another in a known way;

vii) A method of agriculture or horticulture;

viii) Any process for the medicinal, surgical, curative, prophylactic [diagnostic or therapeutic] or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products;

ix) In the case of inventions relating to substances prepared or produced by chemical processes (including alloys, optical glass, semiconductors and inter-metallic compounds) or claiming substances intended for use, or capable of being used, as drug, or as food, or as medicine, no patent will be granted in respect of claims for the substances themselves, but claims for the methods or processes of manufacture only will be patentable. The meaning of the word “drug” here includes agro chemicals excluding fertilizer and manure. However, as per the Patents (Amendment) Act, 1999, it is now possible to make an application for patent claiming for a substance itself, intended for use or capable of being used as a Medicine or Drug, excepting the intermediate for the preparation of drug. However, these applications for product claims for medicine or drug will be kept as “Mailbox Applications” and will not be processed until the end of 2004;

x) Plants or animals in whole or any part thereof other than micro organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals;

xi) A mathematical or business method or a computer programme *per se* or algorithms;

xii) A literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television production;

xiii) A mere scheme or rule or method of performing mental act or method of playing game;

xiv) A presentation of information;

xv) Topography of integrated circuits;

xvi) An invention which in effect, is traditional knowledge or which is an aggregation of duplication of known properties of traditionally known component or components; and

xvii) Inventions relating to atomic energy.

Types of patents: The TRIPS Agreement stipulates that countries shall grant patents for inventions in all fields of technology and for both: (i) Products, and (ii) Processes, including those used in manufacturing products. The different types of patents are as follows: (i) Utility patents, (ii) Design patents, and (iii) Plant patents.

i) Utility patents: It can be granted to anyone who invents any new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereof. Utility patent period is of 20 years. "Process" refers to industrial and manufacturing (production) method. "Manufacture" refers to articles manufactured. "Composition of matter" refers to chemical compositions and may include mixtures of ingredients as well as new chemical compounds.

ii) Design patents: They can be granted to anyone who invents a new, original ornamental design for an article of manufacture. A design patent protects the ornamental design (i.e., appearance) of the article. A design patent has duration of 15 years from the date of filing.

iii) Plant patents: They can be granted to anyone who invents or discovers and reproduces a new variety of plant. A plant patent has a term of 20 years from the date of filing.

Lecture 3. Copy right and Geographical Indication(GI)

Copyrights - Definition

Copyright is one of the intellectual property rights designed to encourage creativity and is given by law to safeguard, protect and reward the rights of creators of original literary or dramatic or musical or artistic works in their respective creations and productions. Writers, artists, designers, dramatists, musicians, architects, producers of sound recordings, cinematographers, computer

software developers and so on are encouraged to create original works in different fields like literature, art and music by rewarding them with the exclusive right for a limited period of exploit the work for monetary gain. Cinematographic films including sound track and video films and recordings on discs, tapes, perforated roll or other devices are covered by copyrights. Theoretically, copyright acts as an incentive for people to come out with newer and newer copyrightable works, which add to the knowledge stock of mankind. The creator of a work can prohibit or authorize:

- its **reproduction** in various forms, such as printed publication or sound recording;
- its **public performance**, as in a play or musical work;
- **recordings** of it, for example, in the form of compact discs, cassettes or videotapes;
- its **broadcasting**, by radio, cable or satellite; and
- its **translation** into other languages, or its **adaptation**, such as a novel into a screenplay.

History of Copyright Law

Initially, copyright law only applied to the copying of books. The concept of copyright arose as an exclusive right of the author to copy the literature produced by him. Actually, it originated not as a shield to protect the author's right but as a sword to prevent unauthorized publication of books that were against the Church and the King during the medieval period in England, which necessitated control. The British Statute of Anne 1709 entitled, "An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, during the Times therein mentioned", was the *first copyright statute* and the subsequent *Act of Anne (8 Anne c.19)* in 1710 was the *first legislation* on copyright, which declared the author's exclusive right of copying and publishing for a limited period in the case of books and imposed criminal penalties for violations. Simultaneously, the birth of the printing press led to a manifold increase in the capacity to copy and made authors also conscious of their rights and the profits that could be made. In 1662, Licensing Act of Charles II recognized the rights of the authors for the first time by controlling printing in a major way. With the development of society, the scope of copyright continued to expand by including things like sculpture, art, engravings etc. within its ambit by various enactments.

In 1911, the Imperial Copyright Act was passed, which consolidated the law relating to copyright through bringing different copyrightable subject matters that were governed by different legislation. The Act declared copyright to be a statutory right, settling the confusion hitherto existed as to whether copyright is common law right or statutory right. Subject matters of copyright continued to expand by including newer subject matters like cinematograph films. Copyright Act of 1956 in England substituted the 1911 Act. Copyright now covers a wide range of works, including maps, dramatic works, paintings, photographs, sound recordings, motion pictures and computer

programs. **Copyright itself does not depend on official procedures. A created work is considered protected by copyright as soon as it exists.** According to the Berne Convention for the Protection of Literary and Artistic Works, literary and artistic works are protected without any formalities in the countries party to that Convention. The World Intellectual Property Organization (WIPO) does not offer any kind of copyright registration system. However, many countries have a national copyright office and some national laws allow for registration of works for the purposes.

Although there are consistencies among nations' copyright laws, each jurisdiction has separate and distinct laws and regulations about copyright. National copyright laws on licensing, transfer and assignment of copyright still vary greatly between countries and copyrighted works are licensed on territorial basis. Some jurisdictions also recognize moral rights of creators, such as the right to be credited for the work. Today, copyright laws have been standardized through international and regional agreements. The main international treaties governing the law of Copyright and Neighbouring rights are: Berne Convention, 1886; Universal Copyright Convention, 1952; Rome convention, 1961; TRIPs Agreement, 1994; WIPO Copyright Treaty, 1996; and WIPO Performance and Phonograms Treaty, 1996.

Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

Important developments on copyright at international level in the 1990s include the 1994 Agreement on Trade-Related Aspects of Intellectual Property Rights, known as TRIPS Agreement. TRIPs was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) and contains a number of provisions on copyright. Compliance with the TRIPS Agreement is required of states wishing to be members of the World Trade Organization (WTO). TRIPS agreement on copyright ensures the following:

- States need to be signatory of the Berne Convention and comply with all its provisions, except for the provision on moral rights (Article 9(1)).
- Copyright protection shall extend to expressions and not to ideas, procedures, and methods of operation or mathematical concepts as such.
- Computer programs will be protected as literary works under the Berne Convention which also outlines how databases should be protected (Article 10).
- States need to provide for rental rights in at least computer programs and films (Article 11). Authors of computer programs and producers of sound recordings must have the right to prohibit the commercial rental of their works to the public. A similar exclusive right applies to films where commercial rental has led to widespread copying, affecting copyright - owners' potential earnings from their films.
- Where copyright term, that is duration of copyright, is calculated other than by reference

to the life of a natural person, States need to give a minimum term of 50 years calculated from either the date of authorized publication or the creation of the work.

- Performers must also have the right to prevent unauthorized recording, reproduction and broadcast of live performances (bootlegging) for no less than 50 years.
- Producers of sound recordings must have the right to prevent the unauthorized reproduction of recordings for a period of 50 years.

Indian Law for the Protection of Copyright

In India also, simultaneous developments took place with the Indian Copyright Act of 1847 based on the 1842 Act in England. The Indian Copyright Act, 1914 was an extension of the Copyright Act, 1911, to India with necessary modifications and then in 1957, a new Copyright Act was passed which was modeled along the English Copyright Act of 1956. The Copyright Act, 1957 today is compliant with the most international conventions and treaties in the field of copyrights. This Act protects the works such as 'original' literary, dramatic, musical and artistic works, and cinematograph films and sound recording from unauthorized uses. The Copyright Act, 1957, as amended in the years 1984, 1994 and 1999, to accommodate the obligations under international treaties, governs the present law relating to copyright.

Copyright is a bundle of exclusive rights granted by statute to the author of the works to exploit or authorize the exploitation of the copyright work, based on international norms like Berne Convention, TRIPs Agreement and WIPO Copyright Treaty (WCT). India is a member of the Berne Convention of 1886 (as modified at Paris in 1971), the Universal Copyright Convention of 1951 and TRIPS. Though India is not a member of the Rome Convention of 1961, the Copyright Act, 1957 is fully compliant with the provisions of this Convention.

The Collection of Laws for Electronic Access (CLEA) database of WIPO can be consulted to search copyright laws of a wide range of countries. Under most national copyright laws, it is permissible to use limited portions of a work, including quotes, for purposes such as news reporting and private personal use. These treaties were negotiated essentially to provide for protection of the rights of copyright holders, performers and producers of phonograms in the Internet and digital era. Although India is not a member of these treaties, the current set of amendments made seeks to bring the Copyright Act law in conformity with these treaties.

Along with the copyright for the author, various neighbouring rights to protect the interests of performers, broadcasters etc. have also developed to safeguard their interests. "Performers rights" was introduced as Section 38 by the 1994 amendment to the Copyright Act in India. Under Performer's rights, protection is given to various types of performers like actors, dancers, musicians, jugglers, acrobats etc. These rights are also available for a period of 25 years and guarantee rights

such as reproduction of sound or visual recording of the performances and its broadcast or other communication to the public etc. Under Section 37 right known as “Broadcasting Reproducing Right” is given to every broadcasting organization in respect of its broadcasts for a period of 25 years.

The Copyright (Amendment) Bill, 1999 seeks to comply with the TRIPs requirements. Under Article 14 of the TRIPs agreement, the term of protection, available to performers, shall last at least until the end of a period of fifty years computed from the end of the calendar year in which the performance takes place. Section 38 of the Indian Copyright Act, 1957, *inter alia*, provided for the performers’ right to subsist for twenty five years from the beginning of the next calendar year following the year in which the performance had taken place. Thus, the amended Act has extended the term of protection of performers’ rights from twenty five to fifty years. A new section has been inserted after Section 40 of the principal Act and provides for power to the Government to extend the provisions of the Copyright act to broadcasts and performances made in other countries, provided these countries extend similar protection to broadcasts and performance made in India. This provision shall benefit Indian broadcasting organizations and performers and allow them to receive reciprocal protection for their rights in other countries, which are signatories to TRIPs. This has ushered in comprehensive changes and brought the copyright law in line with the development in satellite broadcasting, computer software and digital technology. The amended law has made provisions for the first time, to protect performer’s rights as envisaged in the Rome Convention. Several measures have been adopted to strengthen and streamline the enforcement of copyrights. These include the setting up of a Copyright Enforcement Advisory Council, training programs for enforcement officers and setting up special policy cells to deal with cases relating to infringement of copyrights.

Copyright is a set of exclusive rights granted to the author or creator of an original work and implies protection against copying, distributing and adapting of his work by another. The interesting aspect of copyright protection is that the acquisition of copyright is automatic and it does not need any protection under law, i.e., it does not require any formality of registration with any authority. Copyright comes into existence as soon as a work is created. Unlike the case with patents, copyright protects the expressions or fixation and not the ideas, procedures, and methods of operation or mathematical concepts as such. That is, it protects only the tangible expression of an idea and not an idea itself. This has led to many a litigation to settle the idea-expression dichotomy. Registration of a work with the copyright registry in the country provides evidence of the existence of a work on a given date. The registration also creates a *prima facie* evidence about the facts about the work stated in the application for registration. These are of help in settling legal disputes regarding ownership and infringement, even though they are not direct evidence of ownership by themselves.

Copyright owners have the exclusive statutory right to exercise control over copying and other exploitation of the works for a specific period of time, after which the work is said to enter the public domain. Uses which are covered under limitations and exceptions to copyright, such as fair use, do not require permission from the copyright owner. All other uses require permission and copyright owners can license or permanently transfer or assign their exclusive rights to others.

Use of the "©" symbol

When a work is published by authority of the copyright owner, a notice of copyright may be placed on publicly distributed copies. As per the Berne Convention for protection of literary and artistic works, to which India is a signatory, use of copyright notice is optional. It is, however, a good idea to incorporate a copyright notice. Anyone who claims copyrights in a work can use copyright notice to alert the public of the claim. It is not necessary to have a registration to use the designations though it is highly advisable to incorporate a copyright notice like the symbol, Letter "c" in a circle “©” or the word "Copyright" followed by name of copyright owner and year of first publication, e.g., TNAU, 2014.

Copyright Law and Patent Law

Copyright law and patent law provide different types of protection. Copyright protects only to expressions, such as novels, poems, films, musical compositions, paintings etc. whereas a patent is an exclusive right granted for an invention, which is a product or a process. Copyright protection is formality-free in countries party to the Berne Convention for the Protection of Literary and Artistic Works, which means that protection does not depend on compliance with any formalities such as registration or deposit of copies. A patent is granted after completing an examination procedure by a government agency.

Is computer software protected by copyright?

In the 1970s and 1980s, there were extensive discussions on whether the patent system, the copyright system, or a *sui generis* system, should provide protection for computer software. These discussions resulted in the generally accepted principle that computer programs should be protected by copyright, whereas apparatus using computer software or software-related inventions should be protected by patent. In India, computer software is patentable, if embedded with hardware. Previously, the Intellectual Property Rights (IPR) protections with regard to software are limited to copyrights. According to the Section 14 of the Copyright Act, the computer program is considered to be literary work and protected as such.

Geographical Indications (GIs)

The term "Geographical Indications(GI)" in relation to goods means an indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, distinctiveness, reputation or other characteristics of such goods is essentially attributable to its geographical origin and in case where such goods are manufactured goods, one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be.

Most geographical indications relate to agricultural products as those derived from them, more specifically as in the case of wines and spirits. For example, "Tuscany" for olive oil produced in a specific area of Italy (protected, for example, in Italy by Law No. 169 of February 5, 1992), or "Roquefort" for cheese produced in France (protected, for example, in the European Union under Regulation (EC) No. 2081/92, and in the United States under US Certification Registration Mark No. 571.798), or Champagne wine for a sparkling wine produced from grapes grown in the Champagne region of France and Scotch whisky. During the December 1998 TRIPS Council meeting, the following geographical indications were noted as protected in the respective territories of the countries:

- China: Chinese silk
- United States: Idaho potatoes, Washington State apples, Vidalia onions and Florida oranges.
- Bulgaria: Bulgarian yoghurt, Traminer from Khan Kroum (wine) and Merlou from Sakar (wine)
- Canada: Canadian" Rye Whisky and Canadian Whisky.
- Czech Republic: Pilsen and Budweis (beers), various wines, liqueurs, Saaz hops, Auscha hops, Jablonec jewellery, Bohemia crystal and Vamberk lace.
- European Communities: Venetian glass; Champagne, Sherry, Porto, Chianti, Samos, Rheinhessen, Moselle Luxembourgeoise, Mittleburgenland (all wines); Cognac, Brandy de Jerez, Grappa di Barolo, Berliner Kümmel, Genièvre Flandres Artois, Scotch Whisky, Irish Whiskey, Tsikoudia (from Crete) (all spirits); and a range of other products, such as Newcastle brown ale, Scottish beef, Orkney beef, Orkney lamb, Jersey Royal potatoes, Cornish Clotted Cream, Cabrales, Tequila, and Roquefort cheese.
- Hungary: Eger (wine) and Szatrademarkar (plum).
- Liechtenstein: Malbuner (meat products) and Balzer (Hi-tech products).

- Slovak Republic: Korytnická minerálna voda (mineral water), Karpatská perla (wine), Modranská majolica (hand-painted pottery) and Piešťanské bahno (healing mud).
- India: Darjeeling tea is among the 28 Indian products registered with the Geographical Indications (GI) Registry (Darjeeling tea has been registered twice in the GI Registry). The other products registered are: Pochampally Ikat (Andhra Pradesh); Chanderi saree (Guna, Madhya Pradesh); Kotpad Handloom fabric (Koraput, Orissa); Kota Doria (Kota, Rajasthan); Kancheepuram silk saree (Tamil Nadu); Bhavani Jamakkalam (Erode, Tamil Nadu); Mysore Agarbathi (Mysore, Karnataka); Aranmula Kannadi (Kerala); Salem fabric (Tamil Nadu); Solapur terry towel (Maharashtra); Mysore silk (Karnataka); Kullu shawl (Himachal Pradesh); Madurai Sungudi saree (Tamil Nadu); Kangra tea (Himachal Pradesh); Coorg Orange (Karnataka); Mysore betel leaf (Karnataka); Nanjangud banana (Karnataka); Mysore sandal wood oil (Karnataka); Mysore sandal soap (Karnataka); Bidriware (Karnataka); Channapatna toys and dolls (Karnataka); Coimbatore wet grinder (Tamil Nadu); Mysore rose wood inlay (Karnataka); Kasuti embroidery (Karnataka); Mysore traditional paintings (Karnataka) and Orissa Ikat (Orissa).

Advantages of Registering a Geographical Indication

- While registration of a Geographical Indication is not compulsory, it offers better legal protection for action for infringement.
- The registered proprietor and authorized users can exercise an exclusive right to use the Geographical Indication in relation to goods in respect of which it is registered and they can prevent unauthorized use of a Registered Geographical Indication by others.
- It provides legal protection to Indian Geographical Indications which in turn boost exports and promotes economic prosperity of producers of goods produced in a geographical territory.

Geographical Indications Protected on the International Level

A number of treaties administered by the World Intellectual Property Organization (WIPO) provide for the protection of GIs, most notably the Paris Convention for the Protection of Industrial Property of 1883 and the Lisbon Agreement for the Protection of Appellations of Origin and Their International Registration. Under Articles 1(2) and 10 of the Paris Convention for the Protection of Industrial Property, GIs are covered as an element of IPRs. In addition, Articles 22 to 24 of the Agreement on Trade-Related Aspects of

Intellectual Property Rights (TRIPS) deal with the international protection of GIs within the framework of the World Trade Organization.

Member countries must provide legal means so that "interested parties" can stop the use of such geographical indications for products that do not originate from the used place name or do not have the usual characteristics associated with that place name. Protection of such marks prevents third parties from passing off their products as those originating in the given region. India has requested for additional protection, as given to wines and spirits, be extended to other products as well under Article 24 of TRIPS. This was addressed in the Doha Declaration too but due to subsequent confusion among member countries on other issues, this could not be sorted out as proposed during the Cancun summit.

TRIPS Agreement on Geographical Indications

- Wine and spirits makers are particularly concerned about the use of place-names to identify products, and the TRIPS Agreement contains special provisions for these products. But the issue is also important for other types of goods.
- Using the place name when the product was made elsewhere or when it does not have the usual characteristics can mislead consumers, and it can lead to unfair competition. The TRIPS Agreement says countries have to prevent this misuse of place names.
- For wines and spirits, the agreement provides higher levels of protection, i.e., even where there is no danger of the public being misled.
- Some exceptions are allowed, for example, if the name is already protected as a trademark or if it has become a generic term. For example, "cheddar" now refers to a particular type of cheese not necessarily made in Cheddar, in the UK. But any country wanting to make an exception for these reasons must be willing to negotiate with the country which wants to protect the geographical indication in question.

One of the most important conditions that most governments have required before registering a name as a GI is that the name must not already be in widespread use as the generic name for a similar product. Of course, what is considered a very specific term for a well-known local specialty in one country may constitute a generic term or genericized trademark for that type of product. For example, Parmigiano cheese in Italy is generically known as Parmesan cheese in Australia and the United States.

Indian Law for the Protection of Geographical Indications

WTO Members and their nationals are increasingly recognizing that GIs are valuable as marketing tools in the global economy. The TRIPS Agreement is the, first multilateral agreement dealing with GIs. GIs are protected in accordance with national laws and under a wide range of

concepts, such as laws against unfair competition, consumer protection laws, laws for the protection of certification marks or special laws for the protection of geographical indications. India, as a member of the World Trade Organization (WTO), enacted the **Geographical Indications of Goods (Registration and Protection) Act, 1999** which has come into force with effect from 15th September 2003. The Act is administered by the Controller General of Patents, Designs and Trade Marks who is the Registrar of Geographical Indications. The Geographical Indications Registry is located at Chennai in July 2001.

Unless a geographical indication is protected in the country of its origin, there is no obligation under the TRIPs Agreement for other countries to extend reciprocal protection. Nevertheless, it is difficult to get similar protection in other countries, even if the GIs are accorded protection within a country. This could be achieved through bilateral agreements. So, if India and the EU decide to include GIs in the trade and investment agreement that they are currently negotiating, they would be according protection to their GIs in each other's markets.

According to the Act, the term 'geographical indication', means an indication which identifies goods such as agricultural or manufactured goods as originating, or manufactured in a country, or a region, whose characteristics are essentially attributable to the geographical area. The features of the GI Act, 1999 include: Registration of GI in specified classes, Prohibition of registration of certain GI, compulsory advertisement of all accepted GI, provision of infringement, higher level of protection, GI prohibited for registration as Trade Mark, appeal provision, penalties and protection of homonymous GI. The Act provides for activities of processing in case of manufactured goods.

Difference between a Geographical Indication and a Trademark

Geographical indications serve the same functions as trademarks, because like trademarks they are: (a) source-identifiers; (ii) guarantees of quality, (iii) and valuable business interests. However, the differences between GI and Trademark could be explained as follows:

A trademark is a sign used by an enterprise to distinguish its goods and services from those of other enterprises. It gives its owner the right to exclude others from using the trademark. A geographical indication tells consumers that a product is produced in a certain place and has certain special characteristics that are due to that place of production. It may be used by all producers who make their products in the place designated by a GI and whose products share typical qualities. Whereas Trademark identifies the products with the manufacturer, the GIs identify products with the place of production or origin. Another important difference is that the GIs are the community rights whereas the trademark is individual right. As regards the use, the Trademark can be assigned as well as licensed, but a Geographical indication is a public property belonging to the producers of

the concerned goods. GI shall not be subject matter of assignment, transmission, licensing, pledging, mortgaging or such other agreement. However, when an authorized user dies, his right devolves on his successor in title.

"Generic" Geographical Indication

If a geographical term is used as the designation of a kind of product, rather than an indication of the place of origin of that product, this term does no longer function as a geographical indication. Where that has occurred in a certain country over a substantial period of time, that country may recognize that consumers have come to understand a geographical term that once stood for the origin of the product - for example, "Dijon Mustard," a style of mustard originally from the French town of Dijon - to denote now a certain kind of mustard, regardless of its place of production.

Trademark

In order to widen the horizon of industrial activity, trademarks protection is given for an industrial product by the Government so that the public can identify as to from whom the product is emanating. A **trademark** or **trade mark** (popularly known as brand name in layman's language) is a distinctive visual symbol used by a specific person or an enterprise or legal entity or an undertaking on goods or services or other articles of commerce to distinguish them from other similar goods or services originating from a different undertaking. The right to proprietorship of a trade mark may be acquired by either registration under the Act or by use in relation to particular goods or service.

- A trademark indicates the following: an abbreviation, element, hologram, phrase, logo, symbol, design, image, name (including personal or surname of the applicant or predecessor in business or the signature of the person) or a combination of these elements;
- An invented word or any arbitrary dictionary word or words, not being directly descriptive of the character or quality of the goods or services;
- Letters or numerals or any combination thereof;
- Devices, including fancy devices or symbols;
- Monograms;
- Combination of colors or even a single color in combination with a word or device; and
- Sound marks when represented in conventional notation or described in words by being graphically represented.

There is also a range of non-conventional trademarks comprising marks such as those based on drawings, three - dimensional signs such as shape and packaging of goods, audible signs such as music or vocal sounds, fragrances, or colours used as distinguishing features.

Advantages of Trade Mark

i) Owner of trademark has the **exclusive right** to use the trademark to identify the goods or services produced or provided by him, or to authorize another to use it in return for payment.
ii) In a larger sense, trademarks promote enterprises worldwide by rewarding the owners of trademarks with recognition and financial profit.
iii) Trademark enables people with skill and enterprise to produce and market goods and services in the fairest possible conditions, thereby facilitating international trade.
iv) Trademark protection prohibits the efforts of unfair competitors, such as counterfeiters, to use similar distinctive signs to market inferior or different products or services.
v) It guarantees the identity of the physical origin of goods and services.
vi) The system of trademark registration and protection helps consumers to identify the nature and quality of a product or service by its unique trademark. The brand itself is the seal of authenticity.
vii) It creates an image for the goods or services and stimulates the customer further purchase.
viii) It serves as a badge of loyalty and affiliation. It may enable consumer to make a life style or fashion statement.

Thus, the trademark helps to identify the product and its origin, guarantees its unchanged quality and advertises the product. It also confers on the proprietor a kind of monopoly right over the use of the mark, essential to protect it and the goodwill attached to it, and prevents the use of fraudulent marks on merchandise.

Types of Trade Marks

The following are the different types of trademarks:

i) Generic Trade Marks: Words, symbols or devices that are not so distinctly distinguishing the goods from others are at the weakest ends, as they are common terms used to identify the goods themselves. These are termed as generic terms and are not protectable as trademarks.

ii) Descriptive Trade Marks: Descriptive trademarks clearly denote or inform the specific purpose, functions, physical characteristic and end use of the product.

iii) Suggestive Trade Marks: Suggestive trademarks do not at a glance describe the goods for which the mark is used; yet they rather require some imagination or perception to arrive at a conclusion about the nature of the goods. These are inherently distinctive and protectable.

The other types of trademarks include arbitrary marks and fanciful marks which are inherently distinctive. In addition to trademarks, several **other categories of marks** exist.

i) Collective Marks are owned by an **association** whose members (not being a partnership within the meaning of the Indian Partnership Act, 1932) use them to identify themselves with a level of quality and other requirements set by the association. Examples of such associations would be those representing accountants, engineers, or architects.

ii) Certification Marks are given for compliance with defined standards, but are not confined to any membership. They may be granted to anyone who can certify that the products involved **meet certain established standards.** These marks are capable of distinguishing the goods or services which are certified by the proprietor of the mark in respect of origin, material, mode of manufacture of goods or performance of services, quality, accuracy or other characteristics from goods or services not so certified and registrable as such under Chapter IX in respect of those goods or services in the name as proprietor of the certification trade mark, of that person. The internationally accepted "ISO: 9000" quality standards are an example of such widely-recognized certifications.

iii) Service Marks: Service means service of any description which is made available by potential users and includes the provision of services in connection with business of any industrial or commercial matters such as banking, communication, education, financing, insurance, chit funds, real estate, transport, storage, material treatment, processing, supply of electrical or other energy, boarding, lodging, entertainment, amusement, construction, repair, conveying of news or information and advertising.

A trademark is designated by the following symbols:

- ™ - for an unregistered trademark, that is, a mark used to promote or brand goods
- SM - for an unregistered service mark, that is, a mark used to promote or brand services
- ® - for a registered trademark.

TRIPS Agreement on Trademarks

The agreement defines what types of signs must be eligible for protection as trademarks, and what are the minimum rights to be conferred on their owners. It says that service marks must be protected in the same way as trademarks used for goods. Any sign, or any combination of signs, particular words including personal names, letters, numerals, figurative elements and combinations of colours, capable of distinguishing the goods or services of one undertaking from those of other undertakings, shall be eligible for registration as trademarks. Where signs are not inherently capable of distinguishing the relevant goods or services, Members may make registrability depending on distinctiveness acquired through use. Members may require, as a condition of registration, that signs be visually perceptible.

- Members may make registrability depending on use. However, actual use of a trademark shall not be a condition for filing an application for registration. An application shall not

be refused solely on the ground that intended use has not taken place before the expiry of a period of three years from the date of application.

- Members shall publish each trademark either before it is registered or promptly after it is registered and shall afford a reasonable opportunity for petitions to cancel the registration or for the registration of a trademark to be opposed.
- The owner of a registered trademark shall have the exclusive right to prevent all third parties not having the owner's consent from using in the course of trade identical or similar signs for goods or services which are identical or similar to those in respect of which the trademark is registered where such use would result in a likelihood of confusion. In case of the use of an identical sign for identical goods or services, a likelihood of confusion shall be presumed. The rights described above shall not prejudice any existing prior rights, nor shall they affect the possibility of Members making rights available on the basis of use.
- Initial registration and each renewal of registration, of a trademark shall be for a term of no less than seven years. The registration of a trademark shall be renewable indefinitely.
- Members may determine conditions on the licensing and assignment of trademarks, it being understood that the compulsory licensing of trademarks shall not be permitted and that the owner of a registered trademark shall have the right to assign the trademark with or without the transfer of the business to which the trademark belongs.

Indian Law for the Protection of Trademarks

In view of developments in trading and commercial practices, increasing globalization of trade and industry, the need to encourage investment flows and transfer of technology and the need to simplify and harmonize trademark registration / management systems, it became necessary to bring out legislation on the subject. Accordingly, a comprehensive review of the Trade and Merchandise Marks Act, 1958 led to a Bill to repeal and replace the 1958 Act has since been passed by Parliament and notified in the Gazette on 30.12.1999. **The Trademarks Act, 1999 brought into force with effect from September 15, 2003.** The Act, 1999 was enacted to amend and consolidate the law relating to trademarks, to provide for registration and better protection of trademarks for goods and services and for the prevention of the use of fraudulent marks. This act not only makes trademarks law compliant with TRIPS, but also harmonizes it with international systems and practices. Enactment of the Trademarks Act 1999 is a big step forward from the Trade and Merchandise Marks Act 1958 and the Trademark Act 1940.

According to the Trademarks Act, 1999, 'trademark' means (i) a mark capable of being represented graphically and which is capable of distinguishing the goods or services of one person from those of others and may include shape of goods, their packing and combination of colours; (ii)

a device, brand, heading, label, ticket, name, signature, word, letter, numeral, or any combination thereof. However, the definition of mark under the Act can be other than those mentioned in the definition also. For e.g., there could be a smell mark; and (iii) a mark used or proposed to be used in relation to goods or services for the purpose of indicating or so as to indicate a connection in the course of trade between the goods or services, as the case may be, and some person having the right, either as proprietor or by way of permitted user, to use the mark whether with or without any indication of the identity of that person, and includes a certification trademark or collective mark. In addition to this, such mark should represent the goods or services of one person (includes legal persons like company) and be capable of distinguishing the goods it represents from that of other persons.

Legal requirements to register a trademark under the Indian Trade Marks Act, 1999 are:

- The selected mark should be represented graphically (that is, in the paper form).
- It should be used or proposed to be used in relation to goods or services for the purpose of indicating a connection in the course of trade between the goods or services and some person having the right to use the mark with or without identity of that person.
- To choose a trademark, it is advisable to undertake a comprehensive search that includes both market study as well as a study of data base of the country one chooses to trade in, for ascertaining if same/similar mark is used in market.
- If it is a word, it should be easy to speak, spell and remember.
- The best trademarks are invented words or coined words.
- Avoid selection of a geographical name. No one can have monopoly right on it.
- Avoid adopting laudatory word or words that describe the quality of goods (such as best, perfect, super etc)
- **Avoid marks which:**
  - are descriptive;
  - have reference to character and quality of goods;
  - may serve in a trade to designate the intended purpose;
  - can be considered for registration on acquiring a distinctive character as a result of the use;
  - is a well known mark by virtue of extensive publicity;
  - is of such a nature as to deceive the public or likely to cause confusion;
  - is likely to hurt the religious susceptibilities of any class or citizen or society;
  - is containing scandalous or obscene matter which has Marks prohibited under law; e.g., Emblems and Names (Prevention of Improper Use) Act, 1950 or direction of the Central

Government listing the non registrable marks; and

- is containing official seals and identical marks.

The newly enacted Act has some features not present in the 1958 Act and these are:-

- Registration of service marks, collective marks and certification trademarks allowed for the first time in India.
- Exhaustive definitions for terms frequently used
- Simplified procedure for registration of registered users and enlarged scope of permitted use.
- Constitution of an Appellate Board for speedy disposal of appeals and rectification of applications which at present lie before High Court.
- Definition of trademark has been enlarged to include shape of goods, packaging and combination of colours which can be adopted as a trademark.
- Marks used in commerce can be applied to both agricultural and industrial products and services. For instance, trademarks are used to market seeds or spraying services and need to be built for an advantage.
- Single registration of trademark is permitted; a single application would be sufficient and no separate application is necessary for each category / class of goods or services; however, filing fee will be charged separately for each class of goods / services.
- The Act prescribes offences, penalties and procedures. Punishment has been enhanced for the offences relating to trademark on par with the Copyright Act, 1957 to prevent the sale of spurious goods. Further, the Act deals with criminal remedy for the trademark violation.
- Increasing the period of registration and renewal from 7 years to 10 years. The trademark is

  initially registered for a period of 10 years, which is calculated from the date of filing of the application and in case of convention application, from the date of priority. The registration is required to be renewed within 6 months before the date of expiry of the registration, i.e., 10 years from the date of the application or subsequent renewals. The renewal can be done from time to time for an unlimited period by payment of the renewal fees.
- Extension of application of convention countries in India.
- Compulsory licensing of trademark is not permitted.

Registration of a Trademark in India

The Trade Marks Registry was established in India in 1940 and presently it administers the Trade Marks Act, 1999 and the rules thereunder. It acts as a resource and information centre and is a facilitator in matters relating to trade marks in the country. The objective of the Trade Marks Act, 1999 and Rules, 2002 is to register trademarks applied for in the country and to provide for better protection of trademark for goods and services and also to prevent fraudulent use of the mark. The main function of the Registry is to register trademark which qualifies for registration under the Act and Rules.

Benefits of Registering a Trademark

The registration of a trade mark confers upon the owner the exclusive right to the use of the registered trademark and indicates so by using the symbol (R) in relation to the goods or services in respect of which the mark is registered and seek the relief of infringement in appropriate courts in the country. The exclusive right is however subject to any conditions entered on the register such as limitation of area of use etc. Also, where two or more persons have registered identical or nearly similar mark due to special circumstances, such exclusive right does not operate against each other.

Procedure for Registration of Trade Marks

First, an application for registration of a trademark must be filed at the head office or regional trademark office according to territorial jurisdiction. Trade Marks Registry is located at Mumbai (Head Quarters), Chennai, Delhi, Kolkata and Ahmadabad. The application must contain a clear reproduction of the sign filed for registration, including any colours, forms, or three-dimensional features. The application must also contain a list of goods or services to which the sign would apply. It must be distinctive, so that consumers can distinguish it as identifying a particular product. It must neither mislead nor deceive customers or violate public order or morality. Finally, the rights applied for cannot be the same as, or similar to, rights already granted to another trademark owner. This may be determined through search and examination by the national office or by the opposition of third parties who claim similar or identical rights.

Protection of Undisclosed Information including Trade Secrets

The protected subject matter is information lawfully within the control of a natural person or legal person, that is, a secret that has a commercial value. It is a secret because it has been subject to reasonable steps by the person lawfully in control of the information, to keep it secret. Secret is defined in the sense that it is not, as a body or in the precise configuration and assembly of its components, known among or readily accessible to persons within the circles that normally deal with the kind of information in question. Undisclosed information, generally known as trade secret or confidential information includes formula, pattern, compilation, programme, device, method, technique or process.

Protection of undisclosed information is the least known to players of IPR and also least talked about, although it is perhaps the most important form of protection for industries, Research and Development (R&D) institutions and other agencies dealing with IPRs. Protection of undisclosed information or trade secret is not really new to humanity; at every stage of development, people have evolved methods to keep important information secret, commonly by restricting the knowledge to their family members.

A trade secret is an IPR that is with the holder indefinitely or rather as long as he can keep his secret as a trade secret. To enable an enterprise to keep something as a trade secret, the holder must ensure secrecy agreements with the employees in the business. As the maximum number of trade secrets appropriation takes place through current or past employees, corporates, as a rule, enforce a Non-disclosure Agreement on every employee at the time of joining, so that, breach of contract can be used as the legal instrument for prosecution in case of violation. Some MNCs prevent through a service contract agreements, former employees from working for a competitor for a limited period. For information to be treated as a trade secret, it is necessary that there should be commercial value associated with the information, that this commercial value would be lost, damaging the commercial interests of the holder of the trade secret and that the holder had taken reasonable care to protect the secret so that its loss would be possible only through an illegal access. The most quoted trade secret and the one which has established the credibility that trade secrecy can be ensured is the case of the Coca-Cola formula, which is kept locked in a bank vault in Atlanta, can be opened only by a resolution of the company's board and is known to only two employees at the same time. The public has no access to the names of those employees and they are not allowed to fly on the same air plane. It is obvious that such extreme systems and standards for protection of trade secrets are neither necessary nor practiced by many other corporations.

Unlike other types of Intellectual property, the trade secret is fundamentally a "do-it-yourself' type of protection, i.e., it is essentially an internal instrument, the responsibility for its protection remains with the owner of the secret. It is not disclosed to anyone including the Government and is kept confidential. For engineers, inventors, and designers, the trade secrets such as some formulae, programmes, methods, progresses or data collections etc. are to be maintained confidentially. If there is any improper disclosure or use of the trade secret by another person, the inventor may claim and recover damages resulting from illegal use. Enforcement of IPR is definitely private rights. If anybody uses the material without the inventors' permission, the IPR owners can use any remedies available under the civil law.

TRIPS Agreement

Undisclosed information or trade secrets have been provided protection by the TRIPS

agreement for the first time in international law. This explicitly requires undisclosed information - trade secrets or know-how – to benefit from protection.

1) In the course of ensuring effective protection against unfair competition as provided in Article 10 of the Paris Convention (1967), Members shall protect undisclosed information in accordance with this agreement.

2) The Agreement does not demand that undisclosed information should be treated as a form of property, but it does stipulate that the natural and legal persons lawfully in control of such information must have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices so long as such information:

(a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;

(b) has commercial value because it is secret; and

(c) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret (Part II, Section.7: Art 39.1 & 2 of TRIPS).

3) Members, when requiring, as a condition of approving the marketing of pharmaceutical or of agricultural chemical products which utilize new chemical entities, the submission of undisclosed test or other data, the origination of which involves a considerable effort, shall protect such data against unfair commercial use. In addition, Members shall protect such data against disclosure, except where necessary to protect the public, or unless steps are taken to ensure that the data are protected against unfair commercial use (Art 39.3).

Trade secret protection can be used by the agricultural sector to protect, for instance, hybrid plant varieties. Thus, even in countries that do not recognize plant breeders' rights, the use of hybrids gives a certain degree of appropriability as long as it can be kept secret. Trade secrets can be protected against third party misappropriation through laws relating to unfair competition or to restrictive trade practices or to contract law. In the United States, there are separate trade secret laws at the State Level. Protection of trade secrets is not limited in time, unlike patents; the disadvantage of this type of protection is that it is lost the moment it is discovered independently by a third party. If the information of a trade secret is available through any legitimate means and if any inventor is responsible illegally for such leaking, then the trade secret may become ineligible for protection. The advantage, at least to the proprietor, is that, unlike patents, there is no obligation to disclose the inventive or creative ideas to society.

Some developed countries protect test data submitted for obtaining marketing approval of

agricultural chemicals from use by third parties for a limited period of time, generally for 5 or 10 years. Such protection gives exclusive marketing rights to the proprietor. In agriculture, it is for drugs and agricultural chemicals. Although developing countries also require the submission of such test data, no exclusivity is conferred on the originator for any period of time (Watal, 1998). Thus this instrument assumes importance for major institutions and costs for keeping this are enormous.

Trade Secrets Protection in India

India has yet to introduce an effective system for data protection that is compliant with Article 39.3 of TRIPS though the system is in place with existing National Official Secrets Act that binds public servants from disclosing or using confidential information in unauthorized manner that affects the sovereignty and integrity of the country.

At the institutional level, it becomes evident that agreements on confidentiality gain prominence in the light of multi party research programs involving testing at multi locations and many employees. In agricultural research, questions of Material Transfer Agreements (MTA) for exchange of plant / animal material and questions of ownership become important. MTAs are agreements between collector and appropriate authorities and govern the arrangements of confidentiality, ownership or acquisition without affecting research for development.

Under Article 39 of TRIPS, members are obliged to ensure protection of undisclosed information through systems developed through appropriate legislations. Trade secrets and other types of “undisclosed information” which have commercial value are to be protected against breach of confidence and other acts contrary to honest commercial practices. But reasonable steps have to be taken to keep the information secret. Test data submitted to governments in order to obtain marketing approval for new pharmaceutical or agricultural chemicals must also be protected against unfair commercial use. Documentation of this knowledge in India is being done to bring it under legal protection.

Apart from the need for prevention of illegal use of trade secrets, India has yet another relatively unique situation, where a large repository of knowledge and practices are locked up with our traditional vaidyas, hakims, artists and artisans, which remain as trade secrets and have current or potential commercial value. Their protection is vital for the survival of these systems and practices.

Laws relating to all forms of IPR are at different stages of implementation in India, but there is no separate and exclusive law for protecting undisclosed information or trade secret or confidential information. The Contract Act of 1872 would however cover many aspects of trade secrets. To protect the vast repository of Undisclosed Information and knowledge kept as trade secrets by their practitioners, India has taken pro-active initiatives as provided for under Article 10 of

the Paris Convention and Article 39(2) and 39(3) of TRIPS. These steps along with provisions under Breach of Contract or Non-disclosure Agreement would go a long way in developing a culture in the industrial circles to respect trade secrets and undisclosed information as proprietary assets of their owners.

Lecture 7-8: Agribusiness in India

Agri-business is a dynamic and challenging area of employment generation which includes the economic activities such as production, processing, marketing and distribution of various goods and services which are carried out on a commercial or larger scale. The different activities in Agri-business sector can be classified into four broad categories as given below:

Agri-input business enterprises	Agri-output business enterprises	Agro-processing enterprises	Agri-distribution sub system
Agri-input business enterprises includes production and marketing of agricultural inputs such as seeds, fertilizers, plant protection chemicals, agricultural implements, farm machineries and equipments, etc.	Agri-output business enterprises includes production of crops, horticulture, forestry, dairying, fishery, sericulture, prawn culture, mushroom, etc.	Agro-processing enterprises involves pulping industries, beverage industries, sugar industries, cotton textiles, coir and jute industries, etc. which directly or indirectly depends on agriculture for raw materials.	Agriculture distribution sub system involves storage, transportation and marketing of various goods and services produced in agri-input, agri-output and agro-processing sub sectors.

With the inception of New Economics Policy during 1991, many private firms or corporate bodies started investing in agri-business activities on a larger scale which have very good potential in the domestic as well as in the international market. However, the limitation of information on opportunities of agri-business activities in India has not realised the required tempo in view of development of agri-business sector. Hence, there is a need to bring about the strength, weaknesses, opportunities and threads for the benefit of investors in agri-business. Hence, an attempt is made to analyze and highlight the strengths, weakness, opportunities and threats of agri-business activities in the Indian context in general.

Strengths

• Setting up of agro-based industies in and around rural areas can create employment opportunities and improve the economic status of small and marginal farmers, landless labourers and educated unemploys who are specialized in the field of agriculture.

* Establishment of agro-based industries in rural areas resulted in development of suitable infrastructural facilities like roads, electricity supply, storage, transportation, communication, refrigeration, etc.

* Establishment of agro-based industries helps in better dissemination of knowledge or technology in production which in-turn helps in improving quality standards of agri-business products and further may enhance the export potentiality of these products in future.

* Agri-business helps in stabilizing the prices of agricultural commodities through better forward linkages.

Weaknesses

* Modernization of agri-business sector involves high cost of machinery particularly the imported machinaries and equipments.

* Lack of technical and trained managerial expertise to operate modern machineries and also equipments and also inadequate avilability of spare parts.

* Under-utilization of installed capacity due to seasonality in supply of raw materials, lack of proper storage facilities to store the raw materials, cold storage facilities, etc.

* Creation of infrastructure facilities in case of long-term projects involves high capital costs with long gestation period. This may further affects private sector investment in agri-business.

Opportunities

India has very good potential for agri-business in areas such as fruit and vegetables, floriculture, processing sector, small agricultural machineries and equipments, modern irrigation techniques, information technology in the field of agriculture and finaly the human resource development.

1. Fruit and vegetables : India is the third largest producer of fruits (27.83 MT) and second largest producer of vegetables (54 MT). The contribution of fruit and vegetables to the total exports is less than one per cent and is expected to increase in the years to come with the improvement in production technology, post harvest processing capacity, infrastructure facilities, etc.

2. Floriculture : India has good potential for the production of modern flowers like rose, cornations, orchids, etc. At present our country's floriculture sector contribution to the total world export trade is 0.31 per cent. This contribution can be increased further with the improvement in green house technology, timely transportaton and cold storage facilities, good marketing facilities, etc.

3. Processing sector : In India, the existing post-harvest processing capacity can handle only 0.5 per cent of the total annual production (Sivanappan, 2000). According to the estimates, the annual loss of fruit and vegetables due to lack of post-harvest processing is worth of Rs. 300 crores. With the modernization of existing post-harvest processing, establishment of suitable infrastructural facilities, huge amount of countries exchequer can be saved and further helps in feeding the teeming population in the country.

4. Agricultural machinery and equipments : India has tremendous scope for export of hand tool and animal drawn implements, sprayers, motors, processing equipment's specially to Africa, Middle East and South East Asian countries (Sivanappam, 2000).

5. Irrigation : In India, only 33 per cent of the net sown area is under irrigation and still there is a scope to increase area under irrigation by tapping its full potential. Even after harnessing all the water resources potential in the country, only 52 per cent of the total cultivated area can be irrigated and the remaining area will continue to depend upon rainfall (Lokesha, 1996). However, the

adoption of modern irrigation techniques such as drip, sprinkler, improved water management practices, etc. can bring additional area under irrigation with the existing irrigation water.

6. Information Technology : Since agri-business is still in the preliminary stage, there is a scope for information as a technology especially in the field of agri-business. The data generation pertains to production technology, processing, brand equity, market intelligence and distribution of agricultural products to different destinations is necessary for effective functioning and successful operation of the business firms.

Threats

Though the agri-business sector is in the preliminary stage, the adverse effects are already emerging in the Indian context. However, some of the threats to agribusiness sector is mentioned below.

* In view of establishing agri-business units specially near by urban centres, small and marginal farmers are losing their lands and are even becoming landless labourers. This may affect the economic condition and survival of small and marginal farmers who constitute the sizable portion of population in the country.

* Since most of the agri-business activities are of commercial nature, sustainable use of resources (natural resources) may not be possible resulting in degradation of these resources. Further, the effect of degradation of these resources is reflecting in terms of high social cost due to the existing of negative externality.

* Establishment of agri-business units does not consider the social equity especially in terms of providing employment and thus, may hinder the economic development in future.

Foreign direct investment in India

Government initiatives

The Government of India has amended FDI policy to increase FDI inflow. In 2014, the government increased foreign investment upper limit from 26% to 49% ininsurance sector. It also launched Make in India initiative in September 2014 under which FDI policy for 25 sectors was liberalised further. As of April 2015, FDI inflow in India increased by 48% since the launch of "Make in India" initiative.

India was ranking 15th in the world in 2013 in terms of FDI inflow, it rose up to 9th position in 2014 while in 2015 India became top destination for foreign direct investment. The Department for Promotion of Industry and Internal Trade and Invest India has developed the India Investment Grid (IIG) which provides a pan-India database of projects from Indian promoters for promoting and facilitating foreign investments.

Sectors

During 2014–16, India received most of its FDI from Mauritius, Singapore, Netherlands, Japan and the US. On 25 September 2014, Government of India launchedMake in India initiative in which policy statement on 25 sectors were released with relaxed norms on each sector.[16] Following are some of major sectors for Foreign Direct Investment.

Infrastructure

10% of India's GDP is based on construction activity. Indian government has invested $1 trillion on infrastructure from 2012–2017. 40% of this $1 trillion had to be funded by private sector. 100% FDI under automatic route is permitted in construction sector for cities and townships.

Automotive

FDI in automotive sector was increased by 89% between April 2014 to February 2015. India is 7th largest producer of vehicles in the world with 25.5 million vehicles annually. 100% FDI is permitted in this sector via automatic route. Automobiles shares 7% of the India's GDP.

Pharmaceuticals

Indian pharmaceutical market is 3rd largest in terms of volume and 13th largest in terms of value. Indian pharma industry is expected to grow at 20% compound annual growth rate from 2015 to 2020. 74% FDI is permitted in this sector.

Service

FDI in service sector was increased by 46% in 2014–15. It is US $1.88 billion in 2017. Service sector includes banking, insurance, outsourcing, research & development, courier and technology testing. FDI limit in insurance sector was raised from 26% to 49% in 2014.

Railways

100% FDI is allowed under automatic route in most of areas of railway, other than the operations, like High speed train, railway electrification, passenger terminal, mass rapid

transport systems etc. Mumbai-Ahemdabad high speed corridor project is single largest railway project in India, other being CSTM-Panvel suburban corridor. Foreign investment more than ₹90,000 crore (US$13 billion) is expected in these projects.

Chemicals

Chemical industry of India earned revenue of $155–160 billion in 2013. 100% FDI is allowed in Chemical sector under automatic route. Except Hydrocynic acid, Phosgene, Isocynates and their derivatives, production of all other chemicals is de-licensed in India. India's share in global specialty chemical industry is expected to rise from 2.8% in 2013 to 6–7% in 2023.

Textile

Textile is one major contributor to India's export. Nearly 11% of India's total export is textile. This sector has attracted about $1647 million from April 2000 to May 2015. 100% FDI is allowed under automatic route. During year 2013–14, FDI in textile sector was increased by 91%.Indian textile industry is expected reach up to $141 billion till 2021.

Airlines

Foreigner investment in a scheduled or regional air transport service or domestic scheduled passenger airline is permitted to 100,with FDI up to 100% permitted under automatic route and beyond 49% through poor existing airport under automatic route.

Lecture 10: Different forms of registered in India w.r.t. agriculture and allied sectors and IP rights followed by various agribusiness organizations

A business earns most or all of its revenues from agriculture. An agribusiness tends to be a large-scale business operation and may dabble in farming, processing and manufacturing and the packaging and distribution of product. The business sector encompassing farming and farming-related commercial activities.

Why Agribusiness?

India is endowed with varied agro climatic zones. Growing demand for agricultural inputs like feed and fodder, inorganic fertilizers, biofertilizers. Bio technological approaches- seed production, bio control agents, microbes for bakery products. Export can be harnessed as a source of economic growth. Mushroom- domestic consumption and export. Organic farming certification- high valued crops (price). At present processing is done at primary level only and the rising standard of living expands opportunities for secondary and tertiary processing of agricultural commodities. The livestock wealth provides the egg, meat, milk, and poultry products. Forest resources- by products of forest. Beekeeping and apiary- taken up on large scale

Why intellectual property is important for business?

In today's world, the abundant supply of goods and services on the markets has made life very challenging for any business, big or small. In its on-going quest to remain ahead of competitors in this environment, every business strives to create new and improved products (goods and services) that will deliver greater value to users and customers than the products offered by competitors. To differentiate their products - a prerequisite for success in today's markets - businesses rely on innovations that reduce production costs and/or improve product quality. In a crowded marketplace, businesses have to make an on-going effort to communicate the specific value offered by their product through effective marketing that relies on well thought-out branding strategies. In the current knowledge-driven, private sector oriented economic development paradigm, the different types of intangible assets of a business are often more important and valuable than its tangible assets. A key subset of intangible assets is protected by what are labelled collectively as intellectual property rights (IPRs). These include trade secrets protection, copyright, design and trademark rights, and

patents, as well as other types of rights. IPRs create tradable assets out of products of human intellect, and provide a large array of IPR tools on which businesses can rely to help drive their success through innovative business models. All businesses, especially those which are already successful, nowadays have to rely on the effective use of one or more types of intellectual property (IP) to gain and maintain a substantial competitive edge in the marketplace. Business leaders and managers, therefore, require a much better understanding of the tools of the IP system to protect and exploit the IP assets they own, or wish to use, for their business models and competitive strategies in domestic and international markets.

IPRs provide a basis for businesses to:

- prevent others from copying their products or using their innovations – this is particularly relevant in today's competitive markets;
- create a strong brand identity – by product differentiation through the strategic use of one or more types of IPRs;
- obtain valuable competitive intelligence – analysing commercial and technological information from patent, trademark and design databases can increase a company's understanding of technological fields and trends; identify future research and growth areas; and analyse competitors, thereby saving research/development/ marketing time and resources;
- gain revenues through licensing, franchising or other IP transactions;
- obtain financing or venture capital – IP assets which have legal protection and can be valued can be leveraged to obtain capital;
- increase their commercial value; access new markets;
- engage in different types of business partnerships – IP rights provide a basis for collaborative partnerships, e.g. in research, marketing, open innovation, outsourcing etc.;
- ensure freedom to operate – owning or licensing in key IPR can reduce the risk of businesses infringing IPRs of others when using technologies, trademarks, designs, and copyright works; and
- segment geographical markets – in some countries, IP owners can prevent goods protected by their IPRs which are put on the market in one country or region, from being imported into another country in which they also have IPR protection.

Use of IP is one of the key strategies that businesses may rely upon to improve their competitiveness. Innovative enterprises may also rely on lead time, speed to market, contractual agreements, or technical means of preventing copying. In today's competitive environment, innovation is the mainstay for every business that leads to development of intellectual property. Identifying, developing, and leveraging innovation provides competitive edge and aids in long term success of the company. Intellectual property is not limited to technology companies, but is valuable for every business which invests huge sums in research and development for creating indigenous products and services.

A company should be proactive in implementing IP solutions to identify novel innovations and increase revenues. A well-defined IP goal can result in achieving business objectives and help position the business as a leader in the marketplace. With growth in business revenues, the IP strategy can include protecting the unique aspects of the assets and foster innovations to explore new geographies. This can be achieved through licensing or joint ventures to create novel solutions that satisfy the unmet needs in the market.

A company must evaluate its existing intellectual property to determine whether it is in line with business objectives. This helps the company to identify new ways to leverage the intellectual property through licensing opportunities. Successful companies must look for new avenues to expand their product offerings, increase their sales revenue, and foray into new markets.

An organization's patent portfolio is vital for its future success along its various intellectual property assets as designs, trademarks, and copyrights. Thus, organization should ensure the maximum realization of its existing portfolio which can be done through effective portfolio management. Also, the organization should understand the patent portfolio in tandem with its competencies and market opportunities available. There is a need to identify white spaces where the organization can license its patent portfolio or divest to gain financial returns. A clear and effective patent strategy can aid the organization to manage its patent portfolio. An organization should keep in mind the following points while managing patent portfolio as mentioned below:

i) *What are the patents in the organization's existing patent portfolio?*
ii) *Has the organization identified the gaps (white space analysis)?*

iii) *What investment strategy should the organization undertake?*

iv) *What steps should be taken by the organization to effectively manage and develop the patent portfolio?*

A thorough understanding of the key components can help the organization to grow and manage the patent portfolio. It is critical to understand the patent landscape which begins with conducting an audit of the organization's intellectual property assets. An effective market research is involved in understanding the strength of the patent portfolio in light of the competition and technology. It is also helpful for the organization to rank the patents and identify potential players who may be suitable for in-licensing and out-licensing. With a better understanding of the patent portfolio, it is vital for an organization to identify white spaces to drive more growth and revenues. Some of the few points that can help the organization to conduct gap analysis are:

i) *Where can an organization increase research and development investment to build an effective patent portfolio?*

ii) *What are the potential areas where the organization can license the patents to gain competitive advantage?*

iii) *Does the technology pose a threat from the competition?*

iv) *Is there any possibility of merger or acquisition?*

Out- licensing patented technologies is a vital part of the intellectual management and to drive more revenues. Therefore, the organization has to conduct patent analysis to identify the technology and exploit it further for licensing purposes. A detailed patent analysis helps to identify the organizations patenting in the particular field of technology, and thus identify opportunities for out-licensing the technology and potential infringement issues.

Building a strong patent portfolio: An IP portfolio can act as a shield and sword. A strong IP portfolio helps in protecting company's innovations to drive long term revenues and improve market position. Safeguarding intellectual property is critical for every business and cannot be overlooked. Intellectual property helps in developing and maintaining company's long term revenue streams and increase shareholder's value. IP also helps companies to protect technology innovations and gain competitive advantage.

These are of enormous value to an organization as they help to outdo competition and promote innovations in the marketplace. Innovations are crucial for every business success and can be patented to exclude competitors from exploiting the invention during the period. One of the many ways to protect innovation is to file a patent for the invention. A patent is the grant of right to an inventor by the PTO and include objects or processes such as technology or business processes. Generally, a patent is granted for 20 years from the date of filing the application. The right conferred by the patent is to exclude others from making, using, and selling the invention in the country where the protection is sought. Once received, a patent owner can grant license to others to sell or import the invention.

Innovations are important for the long term financial success of the business and make organization more competitive than arch rivals. Organizations need to understand the importance of building intellectual property and use it effectively to devise effective business strategies and achieve long term success in the marketplace. Building a strong portfolio help organizations to market product or services to customers and develop loyalty among consumers.

To remain ahead of the competition, entrepreneurs/innovators should continue to evolve their product portfolio and maintain consistent quality of products and services. Thus, an effective IP system is the primary key to manage the knowledge assets for business. An effective use of intellectual property can prevent any business or industry to take advantage of the goodwill in the marketplace. Without protection of such ideas innovators can't reap benefits of their inventions and would focus less on research and development. Intellectual property rights help innovators in every stage of business development, competition, and expansion strategy.

IP rights provide an incentive for innovations taking place in diverse industries, especially technology space. With the growing recognition and importance of technology innovations, there is a need to create a strong IP system. A strong and effective IP system helps the country to encourage free flow of information and technology. IP plays a vital role in encouraging innovative people and rewarding them for their ideas, thus driving productive growth.

This process leads to innovations or improvements in the existing technology. IP rights also provide an incentive to the innovator to exploit and commercialize their

innovations in the marketplace. Therefore, organizations are realizing the importance of intellectual property assets as it involves a significant percentage of company's valuation during mergers and acquisitions. Stemming from its ability to provide a high rate of return and competitive advantage, companies are protecting their IP assets from competitors. There is an international system for defining, protecting, and enforcing intellectual property rights. Some of the treaties and bodies include Trade-Related Aspects of Intellectual Property Rights (TRIPs), World Intellectual Property Organization (WIPO), World Trade Organization (WTO), and European Union (EU), etc. The return of intellectual property assets can be maximized by developing a strong patent portfolio that helps in attaining significant portion of the earnings through licensing revenue streams.

Lecture 11, 12, 13

Commercialization of IP and Licensing of IPR

License Agreement

Developers and owners of intellectual properties such as patents and trademarks may not wish to make utilize or commercialize(involving others) what they own for various reasons. If others wish to do so, a license agreement is a good vehicle. The detail and complexity of such agreements will vary with the property being licensed and the business in which the license will be utilized. For both licensor and licensee, the license agreement is a vital part of the business plan and therefore, all possible details and arrangements of the license agreement should be considered.

i) Licensed Property: The licensed property may be technology, patents, patent applications, proprietary know-how, trademark, trade secrets or confidential information. The property being licensed should be meticulously defined in the intellectual property license to avoid conflicting interpretations.

ii) Exclusive and Non Exclusive Licenses: Licenses for intellectual property may be exclusive or non-exclusive. “Non-exclusive" means someone else might hold the same rights. "Exclusive" means no one else may hold those rights. Through an exclusive license, the licensor grants the right to use an intellectual property in a specified manner to one other user; this prohibits other users from using the same property for the duration of the license. A non-exclusive license also grants the right to use a given piece of intellectual property in a specified manner; however, the licensor can grant a non-exclusive license to several users simultaneously.

iii) Grant of License: The following aspects need to be addressed before a license agreement is made between licensee and licensor: Is the intellectual property license to be exclusive or non-exclusive? Do the contemplated arrangements include cross-licensing by which the parties grant each other licenses to their respective properties? Should there be a territorial limitation on the license, such as the right to use a trademark only in a certain city or state? Does the licensor wish to restrict how the licensed property will be used? Should the licensee have the right to assign the license or sublicense all or a portion of the licensed property?

iv) Term of the License: How long should the license last? Important factors to consider include: (a) the investment the licensee must make in order to use the licensed property; (b) the time required to develop a successful business with the licensed property; and (c) the possible appreciation or depreciation in the value of the licensed property over time.

v) Changes and Improvements to the Licensed Property: Is the licensee permitted to modify or improve the licensed property? If so, who owns the modifications or

improvements? If the licensor makes changes or improvements, do these automatically fall under the license such that the licensee has rights to use them? Often intellectual property licenses do not adequately address these issues.

vi) Royalties: The royalty involves an agreement whereby an owner of a technological intellectual property (the licensor) allows another party (the licensee) to use, modify, and/or resell that property in exchange for a compensation (consideration). The compensation may take the form of a (i) lump sum royalty, (ii) royalty based on volume of production (called running royalty), or (iii) right to use licensee's technology (called cross licensing). Royalties may be paid in a lump sum or over time for the use of the patented invention to the licensor by the licensee. They may be a sum certain or based on a calculation, for example, as percentage of sales. Royalties might be adjusted downward periodically if the licensed property will decline in value over time, as may be the case with an expiring patent or know-how that eventually becomes public knowledge. Similarly, if the licensor continues to develop new property that comes under the license for the benefit of the licensee, the royalty formula agreed upon might yield higher payments to the licensor. In the case of patents related to food, drug or medicines, the royalty reserved to the patentee under a license shall not exceed 4 per cent of the net ex-factory sale price in bulk of the patented article.

vii) Reports: If royalty payments are based on a formula, the licensor will want adequate accounting and reporting requirements in the license agreement, along with an obligation of the licensee to maintain records. License agreements often contain audit provisions with cost shifting based on the outcome.

viii) Infringement Matters: Consider the extent to which the licensor will warrant that the licensed property does not infringe on the rights of others. All warranties and disclaimers should be set forth in detail. In addition, will the licensor be obligated to take action against infringers, or will such action be optional? Should the licensee have the obligation to provide notice of infringement to the licensor? If there is a successful challenge to the licensor's ownership of the licensed property, are the royalties payable reduced? Should the parties have a right to terminate the license?

ix) Confidentiality: This is very important, especially if trade secrets or confidential proprietary information are included in the licensed property. A designated key employee within the licensee's organization will be responsible for limiting dissemination of such information, assuming control of its return and safeguarding, and reporting on the same to the licensor.

x) Rights and Obligations upon Termination: Will there be materials to be returned to the licensor? Should there be a non-competition agreement for a period of time after termination?

xi) Miscellaneous: Final matters such as choice of law, dispute resolution, no assignment, etc. must be considered and added. Although these matters are routinely included in well-written agreements, they require careful consideration and drafting, and may require negotiation.

xii) Licensing Provisions: Two types of licenses: compulsory licenses and license of rights. Compulsory licenses enabling another party to work the patent can be applied for any time after the expiry of three years from the date of sealing of the patent. In the area of food, drug, medicine or chemical, after the expiry of three years from the date of patent grant, they shall be endorsed with the word "License of Right". These enable any interested person as a matter of right to be entitled to work such patents.

xiii) Use of Patented Inventions by the Government: In order to ensure that scarcity of a patented article doesn't arise and lead to high prices, the government is vested with powers to make use of or exercise any patented invention merely for its own purpose.

xiv) Appeals: In all cases, appeals will be only with the High Court.

Licensing Agreements and Commercialization of Plant Varieties in India

On the basis of the national priorities and issues of food and nutritional security, Indian Council of Agricultural Research (ICAR) may decide to place a plant variety solely in the public domain or else it may be licensed for commercial use on exclusive or non-exclusive basis. However, registration and protection of all protectable varieties will be ensured under the PPV&FR Act before placing them in public or commercial domain.

Commercialization of Plant Varieties

i) ICAR may consider any proposal for the grant of exclusive license to a private / public seed agency for commercialization of its protected plant variety abroad. All such varieties of ICAR which have commercialization potential abroad, shall be assigned to Agro Technology Management Centre (ATMC) and licensed under suitable arrangements / agreement keeping in view the interest of Indian farmers and national priorities.

ii) Advance breeding material or parental lines shall not be transferred/ licensed on exclusive basis. These will first be registered with National Bureau of Plant Genetic Resources (NBPGR) before any material transfer/licensing agreement is entered into.

iii) Commercialization of an ICAR variety will be done by the same institution/zonal institute that have secured the PVP title. However, where more than one ICAR institutions are involved/interested in the commercialization of the same variety, or where they are given this specific responsibility in public interest by the ICAR, these institutions will mutually settle the sharing arrangements.

iv) ICAR institutions will obtain assistance/advice of ATMC/ Zonal Technology Management Centre (ZTMC), if needed, particularly for any legal opinion or market

information.

v) The parametric values of all successful licenses will be recorded in the institutional/zonal/ central databases.

vi) ATMC will evolve a suitable mechanism for quick disposal of plant variety licensing cases at different levels in ICAR.

Licensing of Seed and Planting Material

i) **Licensing:** As the ICAR technologies like seed and planting/propagating material have direct impact on the productivity and production in agriculture, their transfer on priority through licensing to various seed producers and distributors shall be facilitated.

ii) **Non-Exclusive Licenses:** ICAR will provide commercial licenses, preferably non-exclusive licenses, for the commercialization of seed/planting material of registered and protected ICAR varieties to any interested party such as the following:

a) Central and State Departments of Agriculture on national/state basis for wide dissemination, popularization and public distribution of seeds / planting materials for development and cooperation.

b) Public Seed Agencies – Central and State Seed Corporations for multiplication and distribution widely.

c) Private/Cooperative seed producers on regional basis for encouraging local multiplication and promoting use of specific varieties.

d) Other contracting parties including foreign clients in seed business who may be interested in commercializing ICAR seed/ planting materials in other countries. The terms and conditions of the license will include, among other things, securing protection of ICAR varieties in the respective countries by the foreign client.

iii) Exclusive Licenses: Exclusive licenses may be given after negotiations and on mutually agreed terms. In the license agreement for an exclusive license, a sub-licensing clause will be negotiated / incorporated so that a part of the license fee and/or royalty from sub-licenses given by the licensee is provided to ICAR. Also, negotiation will be undertaken for a time-line for re-negotiation of the license, if needed, which will be recorded in the agreement.

iv) Compulsory Denomination: The ICAR seed and planting/propagating material shall be licensed under only the registered denomination. The licensee will be required to print the same denomination on the label and to sell the seed/planting material essentially under that denomination. Subsequently, it shall also not be changed by the licensee or by any third party with whom the licensee deals with in that seed.

v) Use of ICAR Mark: Along with the use of registered denomination, all license holders shall be required to use ICAR' s Collective Mark/Trade Mark on all packets of seed/propagules of the licensed seed. In this context, if the licensee is interested to simultaneously use its own trade name in the licensed seed, the same can also be agreed

to.

vi) Seed Quality Assurance: ICAR would provide breeder seed and will lay down the condition before the licensee to maintain the seed quality and purity. However, it will not be held responsible for the quality of subsequent lots produced and sold by the licensee. Thus, the agreement with the licensee shall also have the following clauses:

a) Assurance clause that the licensee will maintain the seed quality and genetic purity of the plant variety licensed by ICAR.
b) Disclaimer clause that ICAR will not be held responsible for the seed quality/purity of the subsequent lots commercialized by the licensee.
c) Indemnity clause that the licensee indemnifies the licensor, ICAR from any legal consequences of his deals in subsequent lots of licensed seed / propagules.

vii) Joint Ownership Cases: Varieties for which ICAR has joint ownership with State Agricultural Universities (SAUs) or others, the joint owner will be given the first priority to use the variety for commercial purposes on mutually agreed terms. In the absence of any such request for a reasonable time period (6 months from grant of PVP title on the variety), the ICAR may award a non-exclusive license to any other contracting party including in the territory of business interest of the joint owner for dissemination of seed to the farmers of that area.

Breeder Seed

i) Depending upon the terms and conditions of the licence agreement, breeder seed will be supplied by concerned institutions only once or recurrently. Subsequent agreement may also be made with the licensee for making fresh supply of breeder seed.
ii) ICAR shall maintain seed purity and health of all their released/registered varieties. Concerned ICAR institution(s) and breeder(s) will maintain and supply the breeder seed of respective registered and protected plant varieties as per licence agreements.
iii) Breeder seed will be provided to the licensees under the terms and conditions that the licensee (seed agency/company producing commercial seed of ICAR varieties) will be responsible and liable for maintaining genetic purity of the seed/propagule and seed quality during the entire term of licence and the licensor will not bear any liability for spurious seed.
iv) ICAR shall have the right to monitor seed genetic purity of the licensee' s seed lots at the cost of the licensee, which will be recorded in the licensing contract.
v) ICAR may provide consultancies on request to the licensees for technical opinion/ assistance/ advice to maintain the genetic purity and seed quality of seed / propagules.
vi) It will be clearly mentioned in the licensing contract as to whether the breeder seed will be given to the licensee on one time basis or on annual basis or on recurrent basis with defined periodicity. The quantity of breeder seed to be given in each case/situation

will also be mentioned.

vii) A clause will be included in the license agreement to the effect that no plant variety license will be valid unless the licensee agrees to produce and distribute/sell quality seed in the respective zone mentioned in the license agreement on a regular basis “in sufficient quantities and at a reasonable price”.

viii) ICAR will use various ways and means to further provide the breeder seed of its licensed varieties in case of any Compulsory Licensing under the PVP law.

ix) Breeder seed of jointly owned plant varieties will be produced maintained and supplied as per mutually agreed terms between ICAR and the other co-owners of the variety.

Licence Fee/Sale Price of Breeder Seed and Royalty

The concerned ICAR institutions will determine the license fee and royalty and/or sale price of breeder seed either on a fixed basis, through negotiations with the licensee, or through an open bidding process as appropriate. Expert opinion and judgment together with the following points will be considered to fix the price/license fee.

i) Cost of seeking and maintaining the plant variety right of the variety to be licensed.

ii) Cost of production, handling and supply of breeder seed.

iii) Other institutional costs as appropriate.

The Institute Technology Management Unit (ITMUs) /ZTMCs may determine the licence fee and/or sale price of the breeder seed at the institute level with the necessary in-house expertise/experience or they may seek assistance from the ATMC. As no standard formulae are available or can be provided for all crops, categories and situations, the ITMC at the institute level will determine the licence fee and/ or sale price of the variety taking into account issues of food and nutritional security, if any, the considerations of “what the market can bear” and cost factors mentioned above. The decision of the ITMC, based on holistic assessment and judgment will be final. If the matter has been referred to the ZTMC/ ATMC, the same procedure will be followed there. For evolving the system of licensing of plant varieties, ATMC/ZTMCs with the help of crop-specific institutions and outside experts, will develop and disseminate model agreements/case studies of different sizes and dimensions for reference purposes.

Research Exemption and Benefit Sharing

There will be exemption for research use of all registered and protected plant varieties and registered genetic stocks of ICAR.

i) Within ICAR, all institutions shall register their elite parental genetic stocks at NBPGR. They will transfer all plant genetic material under Material Transfer Agreement (MTA) through the Bureau; and also deposit a referral seed sample along with passport data set at the National Gene Bank as a pre-requisite.

ii) ICAR will not impose any royalty payment for such breeding material maintained by

private seed companies without registration and protection under the PPV&FR Act as is developed / derived from genetic stocks of ICAR institutions. However, the concerned seed company has to share the commercial benefits accrued using these breeding materials.

iii) Condition of any royalty payment will also not be imposed for materials used in All India Coordinated Research Projects/ Network Projects by SAUs and other partners with whom ICAR has standing MoUs. Rather, such cases will be addressed/settled on mutually agreed terms.

iv) In accordance with the provisions of the PPV&FR Act, ICAR may charge a royalty on seed sale of a protected variety which is developed by another agency/ company/ breeder by using its genetic material, which will be recurrently required for the commercial production of the protected variety.

v) ICAR will consider/discharge any liability of benefit sharing that may be fixed by the PPV&FR Authority. Concerned ITMUs/ZTMCs shall verify the relevant facts and make a detailed case to ATMC for the consideration/approval of the competent authority.

Records and Confidential Information

- Standard records of genetic stocks at the institution along with confidential records (codes) where applicable shall be maintained in signed and countersigned notebooks/registers. Suitable data sets will also be documented in the institutional/zonal/central database.
- All confidential information, such as codes, etc., will be kept safely and would not be revealed by individuals/institutions except through confidentiality agreements which will expressly mention the purpose for sharing such information and other terms and conditions.

Infringements: Concerned breeders/ other ICAR scientists will report all matters of infringement / suspected infringement of plant variety rights in their knowledge to the respective ITMUs / ZTMCs / ATMC. Concerned ITMUs/ZTMCs will handle the cases reported to them or other apprehended cases either on their own or with the assistance of ATMC. Further legal action, if required, will be taken up with the approval of competent authority.

Monitoring and IP/Market Watch: The commercialization of plant variety portfolio will be monitored by ITMUs / ZTMCs / ATMC. The relevant developments / matters of concern, etc. will be critically observed and addressed. ATMC/ZTMCs will develop a mechanism of market watch.

Socio-Economic Impact: ATMC will plan/organize/assign suitable impact assessment studies on socio-economic impact of the commercialized plant varieties/hybrids of ICAR in different crops and regions of the country.

ICAR Guidelines on Licensing IP technologies in India

Central Database of IPR Enabled Technologies

A central database of the IPR enabled technologies will be maintained at the ATMC. The concerned institutions/zonal institutes will make entries of all new cases in their respective datasets and they shall communicate a data set to the ZTMC/ATMC for linking with the zonal/central database. The entire ICAR IP database will be suitably inter-linked through intranet and they shall also update the status of IPR protection/ maintenance in the data set from time to time.

Transfer of IPR Enabled Technologies

Notwithstanding the fact that only a small proportion of protected IP generally meets with commercial success world-wide, the Agro-technology Management Centre (ATMC) and Zonal Agro-Technology Management Centre (ZTMC)/ Institute Technology Management Unit (ITMU) will make efforts for technology commercialization with the primary objective of technology transfer to end-users. Depending upon factors such as the nature of technology, public need or marketing prospects, scale of technology etc. a decision will be taken by the competent authority whether the technology will be placed in the public domain through open access, or it will be transferred to end-users through commercialization.

Registration of Commercial Entities

The ITMUs/ZTMCs/ATMC shall develop a system of registering industry/ enterprises/ cooperatives for technology transfer/commercialization of ICAR technologies.

i) Registration of area/discipline/zone-wise potential licensees from industry / enterprises / cooperatives will be undertaken by inviting applications through advertisement.
ii) The registered entities will be informed of the IPR enabled technologies available from time to time for transfer through commercialization.
iii) A nominal registration fee will be charged and the registration renewed annually.

Disclosure/Advertisement of IP Enabled ICAR Technologies

The ITMUs will disclose the salient features of technology ready for commercialization. The technology disclosure for commercialization will be made in a confidential agreement. The ITMUs shall supply the catalogue/ information to the registered agencies on the technology developed giving its details/ specifications and potential benefits. The ITMUs/ZTMCs/ATMC will also advertise the IP enabled ICAR technologies available for commercialization by suitable means. The IPR enabled ICAR technologies ready for transfer / commercialization will also be given publicity through web portals of federation / chamber of commerce, such as Federation of Indian Chambers of Commerce and Industry (FICCI) or Confederation of Indian Industry (CII) and other organizations for wider reach to interested clients.

Commercializing IPR Enabled Technologies

The IPR enabled technologies will be transferred for commercial purposes with suitable understanding/agreement or contracts with the concerned parties. Specific terms of licensing can be negotiable. Commercialization will be undertaken either by ITMUs of the concerned institutions that have the requisite expertise and experience or the concerned ZTMCs/ATMC. Commercialization in foreign countries shall be undertaken by the ATMC.

Cost and Pricing of Technology

Broadly, the worth of an IPR enabled technology will be derived from the likely benefits that may accrue to its end-users. The worth can be best determined on the judgment of technical experts, producers of technology and business managers. As there is no standard method or formula for assessing the worth of a technology, costs and pricing in ICAR will be determined on a case-to-case basis. The ICAR institutions will determine the license fee and royalty and/or sale price of its IPR enabled technologies either on a fixed basis, through negotiations with the licensee, or through an open bidding process as appropriate. Expert opinion and judgment viewpoint together with the following points will be considered in determining the price/license fee.

i) Cost of IPR protection and maintenance.
ii) Cost of production and handling.
iii) Other institutional costs as appropriate.

The ITMU may determine the license fee and/or sale price of the technology at the institute level similar to that of the breeder seed. The life of an IPR enabled technology in the market will vary and so will its popularity and sales. The recurring royalties will be mainly based on these factors. Therefore, the modes of payment (license fee and/or royalty) will be on mutually agreed terms with the licensee, and flexible/determined on a case-to-case basis rather than rigid. The terms of commercialization may also be revised over time. In evolving the process, ATMC will also support studies for developing indicative models/case studies for valuation, costing and pricing of IPR enabled agricultural technologies of different fields. Suitable models/case studies can be published as reference material.

Licensing of Intellectual Property

Licensing of IPR enabled ICAR technologies will encompass out-licensing. The framework for licensing will be developed/refined/evolved by ATMC/ ZTMCs/ ITMUs. Licenses will be case-specific non-exclusive or exclusive licenses. Appropriate joint commercialization agreements would also be entered into.

Normally, non-exclusive licenses will be executed for technologies such as inputs (e.g. bio-pesticides or bio-fertilizers) so that these can lead to their wider adoption and thereby maximize research benefits to farmers and other end users. For non-exclusive licenses, there will be flexibility in fixing the license fee.

When a technology is licensed through an open tendering/bidding process, it will normally be given to one licensee. But depending upon the licensee's manufacturing capacity and size of business, other interested parties from outside the territory of his business/interest may also be considered if the technology has to be rapidly and widely disseminated. Alternately, a sub-licensing clause will be incorporated, which may require the licensee to share a part of the license fee and/or royalty from any sub-licenses that he may enter into with that technology.

Exclusive license will also be issued when (i) an IPR enabled ICAR technology is to be commercialized in countries abroad, and (ii) the technology is to be disseminated in difficult areas offering low incentives. As exclusive licenses are preferential, commensurate license fee and/or royalty will be negotiated and settled on mutually agreed terms with the licensee.

Joint commercialization of IPR enabled ICAR technologies will be undertaken on mutually agreed terms with another commercial enterprise when a close scientific supervision of scaling up or product development is required or in any other appropriate situation.

The duration for which ICAR will issue licenses will also be negotiated with the Licensee and settled on mutually agreed terms.

The ATMC will empanel professional consultants and agencies having the necessary experience and proven track record at the national and zonal levels as License Managers for licensing the IPR enabled ICAR technologies. Their services will be utilized as and when required by ATMC/ZTMCs/ITMUs.

Implementation of Licenses

Transfer of IPR enabled technology by ATMC/ZTMCs/ITMUs and payments by the licensees will be in accordance with the terms and conditions, including the time limits recorded in the licensing contracts/ agreements. If required, the concerned scientists/ innovators will demonstrate the technology on lab scale to the licensee under a confidentiality agreement.

Use of ICAR knowledge/IP by Foreign Clients: In cases of use of ICAR knowledge base by foreign clients for research and/or commercial purposes, all issues relating to contracting, target domain, pricing, payment and ownership of intellectual property will be pre-determined in a Memorandum of Agreement (MoA) signed by ICAR and the foreign client. The terms and conditions, and limitations of the Agreement with prospective foreign client will be set/ negotiated by ATMC/ICAR headquarters. Wherever required, Technology Managers / License Managers or IP Consultants may be engaged. Approval of the competent authority in the ICAR shall be essential to proceed for any agreement with foreign clients for commercialization.

Monitoring and IP & Market Watch

A mechanism of monitoring the licensing/commercialization activities in ICAR will be developed. This mechanism will include IP and market watch with a view to safeguard ICAR interests and to bring further refinement in their approach to commercialization.

Types of Agreements

i) Collaboration Agreements: While similar to teaming agreements, collaboration agreements are executed between institutions irrespective of whether sponsored funding is anticipated. They cover the same programmatic issues as teaming agreements. In addition, if collaborators from one institution will be using the facilities of the other institution, collaboration agreements may include the typical provisions of a Facility Use Agreement mentioned below. Collaboration agreements may also have fairly detailed intellectual property terms.

ii) Intellectual Property (IP) Agreements: These agreements are written to cover inventions or other discoveries that may result from a collaboration. The coverage of intellectual property (IP) agreements would be essentially the same for inventions as for copyrights. The basic issue covered is ownership of the intellectual property (i.e., who owns what, and under what conditions). Other items addressed would be license rights between the parties, and perhaps provisions on sharing costs and income related to the protection and licensing of IP.

iii) Umbrella Agreement: The All India coordinated research in SAUs is governed by the umbrella MoUs between ICAR and the respective SAUs. To sustain partnerships in *National Agricultural Research Systems (NARS)* under the evolving IPR regime, ICAR will review and modify the standing MoUs with SAUs to include sharing of IP on mutually agreed terms. Specific collaborative programmes under this umbrella will be covered as per respective Memoranda of Agreement (MoA).

iv) Other Agreements Used in Formalizing Aspects of Collaborations

As noted above, the following types of agreements may be collaborative in nature or they may be used to formalize aspects of collaborations. In other situations, these agreements are used solely to define non-collaborative business transactions.

a) Data Sharing Plans: These are sometimes a requirement of national program announcements. Essentially, they contain information concerning the means by which data developed under a sponsored project will be made available to others requesting access. While the data sharing plan is not, in and of itself, evidence of collaboration, it does open the possibility for new collaborations to be established based on the data having been shared.

b) Material Transfer Agreements: A material transfer agreement (MTA) covers situations in which one collaborator owns research materials such as a chemical compound or a biological substance, and has received a request from another collaborator for samples of

the material. Frequently MTAs are not a reflection of a true collaboration, but rather a contractual relationship established for the sole purpose of obtaining a given research material. Whether a true research collaboration exists or not, the terms and conditions of the MTA are identical, primarily because they address institutional rights to intellectual property. The issues addressed are generally: (i) an acknowledgement that the provider retains ownership over the original material and any duplicates of the material created by the recipient, (ii) an agreement concerning who owns other materials created through the use of the material, and (iii) the responsibility for liability that may occur in the conduct of research using the material.

c) Facility Use Agreements: When a researcher from one institution wishes to use a piece of equipment or a laboratory at another institution, the latter will often require that a facility use agreement is executed. The provisions of such agreements would cover insurance and liability issues, the cost of access, the ownership of intellectual property, and any limitations or restrictions that may be imposed on the visiting researcher. Frequently, collaborators visit and work in one another's facilities for short periods of time. Institutions may find it difficult to balance the need to facilitate research by encouraging collaborations while at the same time ensuring that its facilities are held harmless from damages, and that the institution is protected from any liability caused by the visiting researcher in the conduct of the research.

Lecture 14. IPR Policy in India- Effectiveness of TRIPS and patent policy - Protection and Utilization of Public funded Intellectual Property Bill

Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS)

The Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) was adopted under the framework of the WTO in 1993. The agreement provides many principles and systems to other country's legal system for promoting intellectual property system into the integration process. TRIPS agreement achieved the goal to link international trade with people's intellectual property rights. And the result is that it not only to expand intellectual property protection to the outside of the traditional areas of trade, but also penetrate into the technical trade and service trade, etc. all aspects of international trade, and accelerate the international trade into a new trade pattern.

a) Inclusion of TRIPS in WTO: The precursor to the WTO was the GATT which sought to address issues related to international trade in goods. The operation of the GATT over the years resulted in lowering of tariffs in general in international trade. As a result, increasingly, other domestic policies of nations came into focus of the trading nations. The developed countries like the United States started facing increasing competition in manufactured exports from Newly Industrializing Countries (NICs) of Asia. For intellectual property issues in general, the negotiators were required to "clarify GATT provisions and elaborate as appropriate new rules and disciplines" in order to reduce distortions and impediments to international trade. As technology became more important in goods and commodities, having higher proportion of invention and design (intellectual creativity) in their value, IPR became important in international trade. As a result, in the Uruguay Round negotiations, the IPRs dominated the discussions.

The inclusion of TRIPS was the culmination of an intense lobbying effort by the United States, supported by the European Union, Japan and other developed nations. Campaigns of unilateral economic encouragement under the Generalized System of Preferences and Coercion under Section 301 of the Trade Act played an important role in defeating competing policy positions that were favoured by developing countries, most notably Korea and Brazil, but also including Thailand, India and Caribbean Basin states. In turn, the United States' strategy of linking trade policy to intellectual property standards can be traced back to the entrepreneurship of senior management at Pfizer in the early 1980s, who mobilized corporations in the United States and made maximizing intellectual property privileges, the number one priority of trade policy in the United States (Braithwaite and Drahos, 2000, Chapter 7).

As the ratification of TRIPS is a compulsory requirement of WTO membership, any country seeking to obtain easy access to the numerous international markets opened by the

WTO must enact the strict intellectual property laws mandated by TRIPS. For this reason, TRIPS is the most important multilateral instrument for the globalization of intellectual property laws. States like Russia and China that were very unlikely to join the Berne Convention have found the prospect of WTO membership a powerful enticement. Furthermore, unlike other agreements on intellectual property, TRIPS has a powerful enforcement mechanism. States can be disciplined through the WTO's dispute settlement mechanism.

b) Intellectual Property Rights (IPR): According to the World Intellectual Property Organization (WIPO), intellectual property refers to creations of the mind, inventions, literary and artistic works, symbols, names, images and designs used in commerce.

Broadly, intellectual property is divided into two categories. The first category covers industrial property, which includes patents, industrial designs and trademarks which have industrial applications. The other refers to copyright laws which are applied to such things as literary, dramatic and artistic works; rights relating to performing artists, the production of phonograms; and rights of broadcasters in their radio and television programmes. Intellectual property (IP) rights as a term can be collectively used for multiple protection of different aspects of an inventive work as given below:

viii) Patents including the protection of new varieties of plants
ix) Copyrights and related rights (i.e., the rights of performers, producers of sound recordings and broadcasting organizations)
x) Trademarks, including service marks
xi) Registered (industrial) design
xii) Layout-designs (topographies) of Integrated Circuits (IC)
xiii) Geographical indications including appellations of origin, and
xiv) Undisclosed information, including trade secrets and test data

The **Agreement on Trade-Related Aspects of Intellectual Property Rights** sets down minimum standards for many forms of intellectual property regulation as applied to nationals of other WTO Members. The TRIPS agreement introduced intellectual property law into the international trading system for the first time and remains the most comprehensive international agreement on intellectual property to date. TRIPS also specify enforcement procedures, remedies, and dispute resolution procedures. Protection and enforcement of all intellectual property rights shall meet the objectives to contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

In 2001, developing countries concerned that developed countries were insisting on an overly narrow reading of TRIPS, initiated a round of talks that resulted in the Doha

Declaration. The Doha declaration is a WTO statement that clarifies the scope of TRIPS, stating for example that TRIPS can and should be interpreted in light of the goal "to promote access to medicines for all". Specifically, TRIPS requires WTO members to provide copyright rights, covering content producers including performers, producers of sound recordings and broadcasting organizations; geographical indications, including appellations of origin; industrial designs; integrated circuit layout - designs; patents; new plant varieties; trademarks; trade dress; and undisclosed or confidential information.

c) The Requirements of TRIPS: TRIPS requires member states to provide strong protection for intellectual property rights. For example, under TRIPS:

- Patents must be granted for "inventions" in all "fields of technology" provided they meet all other patentability requirements (although exceptions for certain public interests are allowed (Article 27.2 and 27.3) and must be enforceable for at least 20 years (Article 33).
- Exceptions to exclusive rights must be limited, provided that a normal exploitation of the work (Article 13) and normal exploitation of the patent (Article 30) is not in conflict.
- Legitimate interests of third parties have to be taken into account by patent rights (Article 30).
- Copyright terms must extend at least 20 years, unless based on the life of the author. (Article 12 and 14).
- Copyright must be granted automatically, and not based upon any "formality," such as registrations, as specified in the Berne Convention. (Article 9).
- Computer programs must be regarded as "literary works" under copyright law and receive the same terms of protection.
- National exceptions to copyright (such as "fair use" in the United States) are constrained by the Berne three-step test.
- No unreasonable prejudice to the legitimate interests of the right holders of computer programs and patents is allowed.
- In each state, intellectual property laws may not offer any benefits to local citizens which are not available to citizens of other TRIPS signatories under the principle of national treatment (with certain limited exceptions, Article 3 and 5). TRIPS also has a most favored nation (MFN) clause.

Many of the TRIPS provisions on copyright were copied from the Berne Convention for the Protection of Literary and Artistic Works and many of its trademark and patent provisions were modeled on the Paris Convention for the Protection of Industrial Property.

d) Links among TRIPS, WTO and WIPO: Intellectual Property Rights (IPRs) at a multilateral level have their genesis in the Paris Convention for the Protection of Industrial Property in 1883 which protected industrial property, i.e., Patents and trademarks and the Berne Convention for the Protection of Literary and Artistic Works in 1886 for copyrights and

related rights. World Intellectual Property Organization (WIPO) which began its work in 1967 taking over from the Bureau for the Protection of Intellectual Property that had been working since 1893, is the international agency under the United Nations that administers the work of these conventions. The WIPO administers many other international conventions on IPRs also.

While the IPR Conventions and treaties create the international standards in protection of IPRs which are to be followed by the member countries, substantive trade related disciplines on IPRs under these international conventions have been adopted by reference into the WTO through the TRIPS Agreement. This means that the Agreement provides rules for trade and investment in ideas and creativity by incorporating standards laid down in certain exact provisions of the major IPR conventions. The WTO provides that "intellectual property" should be protected when trade is involved. Thus, through the TRIPS, the WTO makes it mandatory for all its member countries to follow basic minimum standards of IPR provided for under TRIPS and bring about a degree of harmonization of domestic laws in this field.

e) TRIPS plus Provisions in Free Tree Agreements (FTAs): IPRs are territorial rights and can be acquired in the territory of the country having an IPR law. That is, IPR acquired in one country cannot be enforced in another country. The TRIPS Agreement lays down only certain minimum standards of protection and enforcement of IPRs by its Members through enactment of such national laws and regulations. The TRIPS Agreement, however, allows Members to have higher levels of protection than the minimum standards laid down in it, thus leaving the flexibility to Members to have 'TRIPS plus' laws and regulations. The developed countries are moving toward higher, enhanced standards of IPR protection to evolve TRIPS-plus regime. These higher standards now appear in various Free Trade Agreements (FTA) and the developed countries are negotiating and entering into with their trading partners. Since these provisions go beyond minimum standards established under TRIPS, they may take away the flexibilities (for example the ability to issue compulsory licenses for medicines required in public health emergencies) that exist in the TRIPS Agreement. These countries negotiate rules and commitments in bilateral, sub regional and regional agreements that go beyond the multilateral level in WTO.

By entering into FTAs with the developed countries, developing countries have some advantages in tariff reductions on agricultural, clothing and other products. In return, developed countries seek better market access and investment opportunities for products and services of their interest. In addition, developed countries also seek to raise the minimum levels of protection for IPRs as they have a comparative advantage in technology products and services. At the same time, developing countries find it difficult to put forward the issues of their concern through the FTA negotiations including the harmonization of

TRIPS and UN Convention on Biological Diversity (CBD), access to medicines, and protection against the bio-piracy of their biological genetic resources, farmers' rights and associated traditional knowledge, ability of their farmers to continue their subsistence and livelihood related farming practices and getting the same level of protection for their geographical indications as for wines and spirits of developed countries. As a consequence, FTAs create an imbalanced set of rights and obligations in favour of developed countries by ratcheting up the levels of IPR protection.

While it can be argued that there is no bar on developing countries in walking away from unequal agreements, it can also be argued that owing to unequal negotiating strengths, many bilateral agreements do turn out to be unequal. If the immediate need to benefit from reduced tariffs, etc. is high then a developing country can be guided into making concessions in areas of longer term impact such as IPRs.

f) Implementation of TRIPS in Developing Countries

The obligations under TRIPS apply equally to all member states, however developing countries were allowed extra time to implement the applicable changes to their national laws, in two tiers of transition according to their level of development. The transition period for developing countries expired in 2005. The transition period for least developed countries to implement TRIPS was extended to 2013, and until 1 January 2016 for pharmaceutical patents, with the possibility of further extension.

Lecture 15. Governance of IPRs in knowledge transfer -Protection of plant genetic resources- protection of Bio-diversity in India

Convention on Biological Diversity

Plant Genetic Resources (PGRs) are the foundation for the development of a food and nutritionally secure society. Over 90 percent of plant species for food and agriculture are located in the economically developing parts of the world namely, the Asian, African, Latin American and the Far East Islands. In a reversal of the normal economic pattern in the world, the richest nations are poor in plant genetic resources. Although the growth of applied sciences and modern technologies is seen as an opportunity to improve the living standards of human beings, concerns have been increasing to also protect the traditional gene rich resources and the indigenous wisdom. PGRs were treated as the 'heritage of mankind' and were shared freely among nations, till the concerns for conservation of biological diversity were raised by the Convention on Biological Diversity (CBD), which came into force in 1993.

The Convention on Biological Diversity (CBD) has expressly provided for the rights of indigenous communities (Article 8 (i) of the CBD), and the International Undertaking on Plant Genetic Resources (IUPGR) has provided defined farmers' rights (CBD 1994, FAO 1983) *inter alia* affirm that "the past, present and future contributions of farmers in conserving, improving and making available the genetic resources is the basis of farmer's rights". The CBD, known informally as the Biodiversity Convention, is a multilateral treaty which has three main goals:

i) conservation of biological diversity (or biodiversity);
ii) sustainable use of its components; and
iii) fair and equitable sharing of benefits arising from genetic resources.

In other words, its objective is to develop national strategies for the conservation and sustainable use of biological diversity. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993. The year 2010 was the International Year of Biodiversity.

The convention recognized for the first time in international law that the conservation of biological diversity is "a common concern of humankind" and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the

use of genetic resources, notably those destined for commercial use. It also covers the rapidly expanding field of biotechnology through its Cartagena Protocol on Bio-safety, addressing technology development and transfer, benefit-sharing and bio-safety issues. Importantly, the Convention is legally binding: countries that join it ('Parties') are obliged to implement its provisions. The convention reminds decision-makers that natural resources are not infinite and sets out a philosophy of sustainable use. While past conservation efforts were aimed at protecting particular species and habitats, the Convention recognizes that ecosystems, species and genes must be used for the benefit of humans.

The safety and regulatory concerns associated with transgenic crops is a contentious issue because many lack the regulatory frameworks and technical capacity necessary to evaluate these crops and the conflicting claims surrounding them. There is less scientific consensus on the environmental hazards associated with transgenic crops. Regulatory procedures should be strengthened and rationalized to ensure that the environment and public health are protected and that the process is transparent, predictable and science-based. Appropriate regulation is essential to command the trust of both consumers and producers, but duplicative or obstructionist regulation is costly and should be avoided.

Cartagena Protocol on Bio-safety: Convention on Biological Diversity adopted a supplementary agreement known as the Cartagena Protocol on Bio-safety on 29th January 2000. [Cartagena is in Colombia]. The protocol became international law in September 2003 and has since been ratified by more than 100 countries excluding USA. India has acceded to the Bio-safety Protocol on 17th January 2003.

Scope: The Protocol seeks to protect from the potential risks posed by Living Modified Organisms (LMOs) resulting from modern biotechnology intended for direct use for food, feed or processing. It incorporates procedure for import of LMOs with respect to Food, Feed and Product.

Risk Assessment and Risk Management Framework and Capacity Building: Risk management measures include food labeling, conditions on marketing approvals, post marketing monitoring and development of methods to detect or identify foods derived from modern biotechnology.

Salient features of the protocol are:

i) Precautionary principle: The Cartagena Protocol reaffirms the ‘Precautionary principle’ in decision procedures, risk assessment and risk management in the context of the protocol. The precautionary principle is similar to the idea of ‘safety first’. When applied to new technologies, it means holding back from using a new technology until there is conclusive

evidence that it will do no harm. Critics of GM technology say it is too early to say this conclusive evidence exists.

ii) Advance Informed Agreement (AIA): It establishes an advance informed agreement (AIA)

procedure for ensuring that countries are provided with the information necessary to make informed decisions before agreeing to the import of such organisms into their territory. The objective is to allow a receiving country to assess potential risks to biological diversity and human health from such transfers.

iii) Traceability: Protocol calls for provision of detailed information for handling, packaging and transportation, and clear identification of LMOs. Importer of LMOs should be able to trace back the original exporter.

iv) Liability and Redress: The term "liability" is normally associated with the obligation under the applicable law to provide for compensation for damage resulting from an action for which that person is deemed to be responsible. Liability and redress in the context of the Protocol concerns the question of what would happen if the trans-boundary movement of living modified organisms (LMOs) has caused damage. Negotiators were unable to reach any consensus regarding the details of a liability regime under the Protocol.

v) Bio-safety Clearing-House [BCH]: The Bio-safety Clearing-House was established by the Protocol to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.

The issues dealt under Convention on Biological Diversity of 2010 include:

- Measures and incentives for the conservation and sustainable use of biological diversity.
- Regulated access to genetic resources and traditional knowledge, including Prior Informed Consent of the party providing resources.
- Sharing, in a fair and equitable way, the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources (governments and/or local communities that provided the traditional knowledge or biodiversity resources utilized).
- Access to and transfer of technology, including biotechnology, to the governments and/or local communities that provided traditional knowledge and/or biodiversity resources.
- Technical and scientific cooperation.
- Coordination of a global directory of taxonomic expertise (Global Taxonomy Initiative).
- Impact assessment.

- Education and public awareness.
- Provision of financial resources.
- National reporting on efforts to implement treaty commitments.

Nagoya Protocol

At the 2010, 10th Conference of Parties (COP) to the Convention on Biological Diversity

in October in Nagoya, Japan, the Nagoya Protocol was adopted. On 22 December 2010, the UN declared the period from 2011 to 2020 as the UN-Decade on Biodiversity. They, hence, followed a recommendation of the CBD signatories during COP10 at Nagoya in October 2010. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity is a **supplementary agreement to the Convention on Biological Diversity**. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources thereby contributing to the conservation and sustainable use of biodiversity. The Protocol was adopted on 29 October 2010 in Nagoya, Aichi Province, Japan, and will enter into force on 12 October 2014. It has been ratified by 53 states and the European Union.

Relevance: The Nagoya Protocol is intended to create greater legal certainty and transparency for both providers and users of genetic resources by:

- establishing more predictable conditions for access to genetic resources; and
- helping to ensure benefit-sharing when genetic resources leave the contracting party providing the genetic resources.

By helping to ensure benefit-sharing, the Nagoya Protocol creates incentives to conserve and sustainably use genetic resources, and therefore enhances the contribution of biodiversity to development and human well-being.

Scope: The Nagoya Protocol applies to genetic resources that are covered by the CBD, and to the benefits arising from their utilization. It also covers traditional knowledge (TK) associated with genetic resources that are covered by the CBD and the benefits arising from its utilization.

International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

Popularly known as the **International Seed Treaty**, it is a comprehensive international agreement in harmony with the Convention on Biological Diversity, which aims at guaranteeing food security through the conservation, exchange and sustainable use of the world's plant genetic resources for food and agriculture (PGRFA), as well as the fair and equitable benefit sharing arising from its use. It also recognizes Farmers' Rights: to freely access genetic resources, unrestricted by intellectual property rights; to be involved in relevant policy discussions and decision making; and to use, save, sell and exchange seeds, subject to national laws. However, as Regine Anderson of the farmers' rights project, among others, including Olivier De Schutter, the UN Special Rapporteur on the Right to Food, argue the interpretation and realization of farmers' rights is weak and is not the same across all countries. Without a consistent, strong international focus on the realizing the rights of farmers who conserve and sustainably use PGRFA to save, use, exchange and sell seeds saved on-farm, genetic variety of crops and related agricultural biodiversity will suffer. India, for example, includes an interpretation of farmers' rights in its Plant Variety Protection and Farmers' Rights Act, allowing farmers a restricted right to save and sell seed they have produced on-farm as they always have, even if it contains genes from a protected variety.

The treaty has implemented a Multilateral System (MLS) of access and benefit sharing, among those countries that ratify the treaty, for a list of 64 of some of the most important food and forage crops essential for food security and interdependence.

The treaty was negotiated by the Food and Agriculture Organization (FAO) of the United Nation’s Commission on Genetic Resources for Food and Agriculture (CGRFA) and since 2006 has its own Governing Body under the aegis of the FAO. Composed of representatives of all Contracting Parties, its basic function is to promote the full implementation of the Treaty, including the provision of policy guidance on the implementation of the Treaty. The Governing Body elects its Chairperson and Vice-Chairpersons, in conformity with its Rules of Procedure. They are collectively referred to as "the Bureau".

Some believe the treaty could be an example of responsible global governance for ensuring that plant genetic resources essential for present and future food security can be kept accessible to all farmers and in the public domain.

- The Governing Body met for the first time in Madrid in June 2006.
- The Second Session of the Governing Body was held in Rome in October/November 2007. This meeting discussed the implementation of Farmers' Rights, financial rules; the

funding strategy, relationship with the Global Crop Diversity Trust; and implementation of the Multilateral System (MLS) for access and benefit-sharing, among other issues.

- The Third Session of the Governing Body was held in Tunis in June 2009. This meeting continued the unfinished business of the previous meeting and discussed, among other issues, funding strategy, compliance, sustainable use, the implementation of Farmers' Rights, relationship with the Global Crop Diversity Trust and the CGRFA, implementation of the Multilateral System (MLS) for access and benefit-sharing.
- The Fourth Session of the Governing Body was held in Bali, Indonesia in March 2011. Prior to the Governing Body meeting, Ministers adopted the Bali Declaration on the Treaty that commits them to engage in further enhancing Treaty implementation to help meet the challenges of agricultural biodiversity erosion, food insecurity, extreme poverty and the effects of climate change. The relationship of the Treaty with the CGRFA, the CBD's Nagoya Protocol, the Global Crop Diversity Trust and Biodiversity International were also included in resolutions.
- The Fifth Session of the Governing Body was held in Muscat, Oman in September 2013. The Fifth Session achieved: a good resolution on Farmers' Rights (FRs), which renewed the commitment of governments to implement Farmers' Rights; commitments to review and change the Multi Lateral Access and Benefit Sharing mechanism (MLS), to prevent pillaging of the System by patents on native traits, for example; and a request to the Secretary to report on relevant discussions that relate to Farmers' Rights within other UN fora including the Committee on World Food Security.

Negotiations and Entry into Force: The treaty was under negotiation for 7 years. A previous voluntary agreement, the International Undertaking on Plant Genetic Resources for Food and Agriculture (IU), was adopted in 1983. However, the IU was reliant on the principle of genetic resources being the common heritage of humanity. The Convention on Biological Diversity (CBD) (1993) brought genetic resources under the jurisdiction and sovereignty of national governments. However, the CBD recognized the special and distinctive nature of agricultural genetic resources: they were international - crossing countries and continents - their conservation and sustainable use requires distinctive solutions and they were important internationally for food security. Subsequently, the IU was renegotiated, to bring it in harmony with the CBD, and was renamed as a treaty.

The treaty was approved during the FAO Conference (31st Session resolution 3/2001) on 3 November 2001, with 116 votes and 2 abstentions (USA and Japan). The treaty was opened for signatures until 4 November 2002 by all members of FAO or any state member of

the United Nations or of the International Atomic Energy Agency. 77 countries and the European Union had signed the treaty by that date. Having reached the required number of instruments in order for the treaty to enter into force (40) on 31 March 2004, on which date 13 instruments (including the European Union) were deposited with the Director-General of FAO, the date of entry into force was on 29 June 2004.

Discussion: Plant genetic resources are essential to a sustainable agriculture and food security. FAO estimates humans have used some 10,000 species for food throughout history. However, only about 120 cultivated species provide around 90 per cent of food requirements and 4 species (Maize, Wheat, Rice and Potatoes) provide about 60 per cent of human dietary energy for the world's population. A large number of these crop varieties developed by farmers over millennia, which form an important part of agricultural biodiversity, more than 75 per cent have been lost in the past 100 years. Some fear that corporate financial interests might prevent safeguarding of livelihoods, promotion of food security, biodiversity-rich farming under control of local communities, and implementation of Farmers' Rights. Some of the points raised are:

- to what extent will intellectual property rights be allowed on genetic resources in the MLS, within treaty rules: some argue an agreement aiming at open access to genetic resources for food and agriculture should not allow restrictive property rights, and the treaty says in Article 12.3.d that *"Recipients shall not claim any intellectual property or other rights that limit the facilitated access to the plant genetic resources for food and agriculture, or their genetic parts or components, in the form received from the Multilateral System"*;
- to what extent will farmers and communities be allowed to freely use, exchange, sell and breed the seeds, and what enforcement procedures will be used by national governments to ensure principles of Farmers' Rights will be respected;
- Dispute settlement mechanism under the Third Party Beneficiary and the role of FAO.
- The first group of 11 projects funded by the treaty was announced during the Third Session of the Governing Body in Tunis in June 2009. The projects were funded according to criteria established by the Governing Body including regional balance: 5 from Latin America, 5 from Africa and 1 from Asia. The ranking of the projects was done by a Group of Experts nominated by the 7 regional representatives of the Bureau and the final approval was done by the Bureau on behalf of the Governing Body.

- while the whole Brassica family (Cruciferae) including all its sub-species and varieties is in the MLS, the total number of food crops and forages and their relatives included in the treaty is very limited. Soya, sugar cane, oil palm and groundnut are among important crops missing from the list.

The treaty came into force on 29 June 2004 at which time there were more than 54 ratifications by countries. From the entry into force, countries that previously signed are allowed to ratify the treaty, while countries that did not sign the treaty before it came into force can also accede to it. The instrument of ratification has to be deposited with the Director-General of FAO.

National Biodiversity Authority (NBA)

NBA is a statutory autonomous body under the Ministry of Environment and Forests, Government of India established in 2003 to implement the provisions under the National Biological Diversity Act, 2002, after India signed Convention on Biological Diversity (CBD) in 1992. In 2012, NBA organized the first ever National Biodiversity Congress (NBC) at Thiruvananthapuram, Kerala. On this occasion, National Biodiversity Students' Congress was also held. The International Treaty on Plant Genetic Resources (ITPGR) recognized the rights of farmers to save, use and exchange and sell farm saved seeds or propagating material. The Biological Diversity Act (2002) mandates implementation of the Act through decentralized system with the NBA focusing on advising the Central Government on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of benefits arising out of the utilization of biological resources; and advising the State Governments in the selection of areas of biodiversity importance as heritage sites and measures for the management of such heritage sites.

The State Biodiversity Boards (SBBs) focus on advising the State Governments, subject to any guidelines issued by the Central Government, on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits arising out of the utilization of biological resources. The SSBs also regulate, by granting of approvals or otherwise requests for commercial utilization or bio-survey and bio-utilization of any biological resource by Indians. The local level Biodiversity Management Committees (BMCs) are responsible for promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms and chronicling of knowledge relating to biological diversity.

Status of India's Biodiversity: India is one of the 17-mega biodiversity countries of the world. With only 2.4 per cent of the land area, India already accounts for 7-8 per cent of the recorded species of the world. Over 46,000 species of plants and 81,000 species of animals have been recorded in the country so far by the Botanical Survey of India and the Zoological Survey of India, respectively. India is an acknowledged centre of crop diversity, and harbors many wild relatives and breeds of domesticated animals and fish besides millions of microbial diversity, insects and other species.

Implementation Structures of Biodiversity Act, 2002

The NBA with its headquarters in Chennai, Tamil Nadu, delivers its mandate through a structure that comprises of the Authority, Secretariat, SBBs, BMCs and Expert Committees. Since its establishment, NBA has supported creation of SBBs in 28 States and, facilitated establishment of around 32,131 BMCs. The Act and the Rules are implemented in India through a decentralized system. A three tiered structure has been established under the Act at the national, state and local levels.

- At the local level, the Biodiversity Management Committees (BMCs) are to be established by institutions of local self-government for implementation of specific provisions of the Act and
  Rules.
- At the state level, the State Biodiversity Boards (SBBs) are established to deal with all matters relating to implementation of the Act and the Rules.
- At the national level, the National Biodiversity Authority (NBA) is established to deal with all matters relating to implementation of the Act and the Rules. Each of these structure are required to be connected for decision making processes on various issues, including on issues of access and benefit sharing (ABS).

Checking of Biopiracy under the Act: In order to check misappropriation of Indian biological resources, the Act provides that access to Indian biological resources and associated knowledge are subject to terms and conditions which secure equitable sharing of benefits. Further, it would be required to obtain the approval of the National Biodiversity Authority before seeking any IPR based on biological material and associated knowledge obtained from India.

Provision of Exemptions under the Legislation

i) Exemption to local people and communities of the area for free access to use biological resources within India

ii) Exemptions to growers and cultivators of biodiversity and to Vaids and Hakims to use biological resources

iii) Exemption through notification of normally traded commodities from the purview of the Act only when used as commodity

iv) Exemption for collaborative research through government sponsored or government approved institutions subject to overall policy guidelines and approval of the Central Government and conforms to the central government guidelines.

Benefit Claims

- The benefit claimers are conservers of biological resources, creators and holders of knowledge and information relating to the uses of biological resources.
- The benefits could include monetary and non-monetary components. Examples could include grant of joint ownership of IPRs, transfer of technology, association of Indian Scientists in R&D, setting up of venture capital fund, etc.
- Under Rule 22 (6) of the Biological Diversity Rules, 2004, the BMCs' main function is to prepare the People's Biodiversity Register (PBRs). These registers are used, where available, to identify the BMCs where from the biological resources are accessed and benefits will be provided to the Local Biodiversity Funds (LBFs) maintained by BMCs.

In cases where specific individuals or group of individuals are identified, the monetary benefits will be paid directly to the Local Biodiversity Fund to be used by the BMCs.

Lecture 16 & 17 Case study on IP issues

IPR Issues

Since R & D in biotechnology is extremely time consuming and requires huge investment, granting IPR is an effective tool to protect biotechnology inventions. There are, however, no internationally accepted guidelines for the management of IPR in biotechnology.

Legislative Framework

The legal protection remains very sensitive and complex in case of biotechnology in general and agricultural biotechnology in particular because of technical and ethical issues involved. Indian biotech industry at present is facing great challenges of the emerging TRIPS compliant patent system in India from January 1, 2005. Article 27.3 (b) of TRIPS excludes biological processes for the production of plants or animals as a patentable subject matter, but patents can be granted to the microorganisms, non-biological, and microbiological processes used in the production of plants and animals. This covers even the gene sequences, which may be for a particular character, or a promoter or genetic markers or similar ones.

IPR protection of new life forms raises a number of difficult technical and ethical issues because of which the patentability of new biological forms and processes is still not accepted in many countries. Indian Patent Act 1970 defines patentable invention as: a new product or process involving an inventive step and capable of industrial application. Since IPR protection is granted **only for invention and not for discoveries**, in case of biotechnology innovations, it is difficult to say whether the new life form in the form of gene, DNA, cell etc is a scientific discovery or a technological invention. Discovery is merely making available what already exists in nature. A substance freely occurring in nature, if merely found or discovered, is not patentable. However, if the substance found in nature has first to be isolated from its surroundings, and a process for obtaining it is developed, that process is considered invention and hence patentable.

The consideration of industrial application is yet another obstacle for securing patents for inventions in biotechnology. However, in India there are several ethical issues too related to patenting of life forms, the most important being extent of private ownership that could be extended to life forms. In the traditional cultural context, Indians have considerable problems fixing monetary value to anything that is not a tangible physical article that has market value. Hence, there is an urgent need for developing countries like India to define clear policies for IPR in case of scientific and technological innovations.

Several Civil Society Organizations (CSO) and Non-Governmental Organizations (NGO) argue that naturally occurring organisms are God’s gift, and are common property of

the mankind, and therefore cannot be appropriated by any person(s) or organizations or entities by just modifying it or tinkering with it. The idea of profit making by exploiting any common heritage of civilization or culture is unacceptable to lots of people and communities.

Farmers and indigenous peoples in developing countries such as India are facing serious problems as plants that they developed and conserved are being 'appropriated' by private entities leading to bio-piracy and exploitation of traditional knowledge claiming the exclusive right to produce and sell many 'modified' plants and animals. This is a great matter of concern today that knowledge, innovation and efforts of these communities are not acknowledged when the legal 'intellectual property rights' systems grant patents on genetic and biological materials and on living organisms to private corporations.

In 2000, CSIR found that almost 80 per cent of the 4,896 references to individual plant based medicinal patents in the United States Patents Office that year related to just seven

medicinal plants of Indian origin. Three years later, there were almost 15,000 patents on such medicines spread over the United States, UK, and other registers of patent offices. In 2005, this number had grown to 35,000, which clearly demonstrates the interest of developed world in the knowledge of the developing countries. Whilst the corporations stand to make huge revenues from this process, the local communities are unrewarded and in fact face the threat in future of having to buy the products of these companies at high prices. Hence such system of IPR only benefits the private industries or multi-national corporations of industrially developed countries at the expense of the developing countries. There is need to define guidelines and policies for the implementation of IPR in India so that the people like farmers get recognition for their efforts and contributions and prevent bio-piracy. World Intellectual Property Organization (WIPO) is now developing guidelines to protect traditional and indigenous knowledge systems.

The new trait-genetic use restriction technology (T-GURT) is being employed as a part of biotechnology by means of terminator and traitor genes. In this case, users have to rely upon the chemically dependent plants with proprietory genes. Although this protection restricts unauthorized copying of patents and monopoly in the international marketing, these technologies have led to substantial conflicts between business ethic and humanitarian concerns because farmers cannot save seeds of their crops at the end of the crop season. It may therefore pose a potential threat to our food security. Therefore, the Consultative Group on International Agricultural Research (CGIAR) has decided not to incorporate T-GURT in forthcoming plant breeding programmes of international institutions as it may affect the

sustainable agriculture due to negative effects on biodiversity and uncertain effects on socio-economy of the country. For example, whether terminator seeds are consumable and safe for humans, animals, birds, beneficial insects and micro-organisms is uncertain; pre-soaking of seeds in tetracycline solution is dangerous to environment and human health; pollens of plant containing terminator gene pollinate and produce seeds that are self destructing.

Basmati Rice: The Swiss and German scientists developed GM rice containing snippets of DNA borrowed from bacterium Erwiniauredovora and daffodils that gives a grain a golden yellow hue and hence nicknamed as "Golden rice". Indian scientists have sequenced 6 million base pairs of chromosome II of rice for desired genotype for higher productivity and improved quality. Food Standards Agency is now proposing an isotope and trace elements analysis, which can reveal the geographic origin of rice by comparing the unique trace elements in it.

Basmati is a variety of rice from the Punjab provinces of India and Pakistan. The rice is a slender, aromatic long grain variety that originated in this region and is a major export crop for both countries. Annual basmati exports are worth about $300 million, and represent the livelihood of thousands of farmers. Indian rice in the foreign markets witnessed a tough challenge as a consequence of the decision of the US Patent and Trademark Office (USPTO) because this office granted a patent (US5663484) to US Rice breeding firm Rice Tec Inc. on 2 Sep 1997 under brand name "Texmati" to domestic and foreign markets with a label claiming the product to be superior or at least equivalent to Indian Basmati Therefore, Government of India filed a petition in the USPTO and subsequently Rice Tec Inc. surrendered four claims in September 2000 and 11 more claims in August 2001. The Rice Tec Inc is presently selling basmati after developing its novel lines named BAS-867, RT-117, and RT-112. The UK is allowing basmati only from India and Pakistan though it is patented as Texmati in the USA and as Jasmati in Thailand.

The dispute has however moved on from the patent to the misuse of the name "Basmati." In some countries the term "Basmati" can be applied only to the long grain aromatic rice grown in India and Pakistan. RiceTec also applied for registration of the trademark 'Texmati' in the UK claiming that "Basmati" was a generic term. It was successfully opposed, and the UK has established a code of practice for marketing rice. Saudi Arabia (the world's largest importer of Basmati rice) has similar regulations on the labelling of Basmati rice. The code states that "the belief in consumer, trade and scientific circles [is] that the distinctiveness of authentic Basmati rice can only be obtained from the northern regions of India and Pakistan due to the unique and complex combination of environment,

soil, climate, agricultural practices and the genetics of the Basmati varieties." But in 1998, the US Rice Federation submitted that the term "Basmati" is generic and refers to a type of aromatic rice. In response, a collective of US and Indian civil society organizations filed a petition seeking to prevent US-grown rice from being advertised with the word "Basmati". The US Department of Agriculture and the US Federal Trade Commission (USFTC) rejected it in May 2001. Neither considered the labelling of rice as "American-grown Basmati" misleading, and deemed "Basmati" a generic term. The problem is not just limited to the US; Australia, Egypt, Thailand and France also grow basmati type rice and may take the lead from the US and officially deem "basmati" a generic term. The name "Basmati" (and the Indian and Pakistani export markets) can be protected by registering it as a Geographical Indication. However, India and Pakistan will have to explain why they did not take action against the gradual adoption of generic status of basmati over the last 20 years. For example, India did not lodge a formal protest when the USFTC formally declared "basmati" generic.