

Intellectual Property Rights (IPR) in Agriculture: Prospects and Perspectives

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Abstract: Intellectual Property Rights can be defined in general as rights which are legal over innovative and original ideas. By these legal rights, third parties can be prevented from illegal use of the original idea. The different categories of IPR are: Copyright, Trademark, Geographical indications, Industrial designs, Patents, Integrated Circuits and Trade secrets. All IPRs generally prohibit third parties from commercially disclosing hidden and protected content without the permission of the originator for specified time duration. This helps IPR owner to fearlessly disclose their innovation, and to spread among others. IPR helps to stimulate creativity and innovations and for orderly marketing of goods and services. Protection against unwanted competition is the basic philosophy for all IPRs.

The ability of a nation to convert knowledge into money by means of innovation will determine its future. In knowledge based economy, knowledge has become a priceless object that to be used for economic advantage. After the globalization of agricultural market there is not only opportunity but also threat to new ideas and innovations. Greater accessibility leads to free flow of ideas and information across nation, enhances threat too. Only protected innovation can produce wealth but not the unprotected ones. Hence protection of intellectual properties is of great significance.

Patents are now a days the most important IPR for agricultural goods and services because they provide the best protection for patentable plants, animals and biotechnological processes for their production. Many countries have built plant breeder's rights to protect conventional plant breeding effort. Trademarks are used to market seeds and spraying services. Agricultural sectors can use Trade Secret Protection to protect hybrid plant varieties. Some developed countries gives protection to the data submitted for gaining marketing approved of agricultural chemicals from use by third person's for a time period.

Keywords: Intellectual Property, Copyrights, Patents, Trademarks, Agriculture.

INTRODUCTION

Intellectual property rights (IPR) can be broadly defined as legal rights established over creative or inventive ideas such as inventions, works of art and literature and designs. These rights allow holders to exclude the unauthorized commercial use of their creations/inventions by third parties for a specific period of time. Actually, intellectual properties (IP) are the creations of human brain and they are valuable in the field of trade and commerce. The aim of the proposition of rights for intellectual properties is to convey the message to the society that creative ideas will be protected and rewarded. This monopoly right over one's inventions gives

opportunity for the intellectual property holder to get commercial benefits from it. After expiry of the protected tenure, the IPs become the public property and available in public domain for use without any restriction and the society can take full advantage of it (Singh, 2009).

The IP is different from tangible property in terms of duration of time and existence of a moral element, both are present in IP. That's why, IP may be regarded as 'knowledge and its creative application'. With the advancement of civilization and to fulfil the needs of huge growing human and animal population, scientists are facing a big challenge in developing new advanced

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technologies for commercial agricultural production which can significantly influence the demand-supply chain by public research system. Again, management of IP resources has become a concern in the recent years in the field of agriculture and allied sectors. Here is an attempt to concentrate on the different prospects and perspective of IPR related to agriculture. Sometimes, IP rights have been modified or new provisions have been made to new emerging sectors like information technology, biotechnology, bioinformatics etc.

BRIEF HISTORY OF INTELLECTUAL PROPERTY RIGHTS

In the first international agreement held at Paris during 1883, protection of industrial property was signed to help creators ensure that their intellectual works would be protected in other countries. In Berne convention during 1886, literary (e.g. novels, short stories, poems, plays etc.), songs and artistic works (e.g. drawings, paintings, sculptures, architectural works etc.) were protected which aimed to give creators the right to control and receive payment for their creative works on an international level. During Madrid Agreement (1891), first international IP filing service was launched. After two years, the United International Bureaux for the Protection of Intellectual Property (BIPRI) was established in Berne. In the year 1970, BIPRI became an intergovernmental organization which popularly known as World Intellectual Property Organization (WIPO) with its headquarter in Geneva. The WIPO came under United Nations (UN) in 1974 where all member states of the UN were entitled, though not obliged, to become members of the specialized agencies.

The Patent Cooperation Treaty (PCT) came in operation during 1978. To solve international commercial disputes between private parties, the WIPO Arbitration and Mediation Centre was established in the year 1994. The WIPO Academy started in 1998 to provide general and specialized courses on IP. In 2007, WIPO adopted Development Agenda aimed to ensure that the development issues would be undertaken by the organization. To get the benefits of innovations, uniform laws and rules of patents, trademarks, copyright etc. were

framed and thus, IPR became an important constituent of the World Trade Organization (WTO). However, the patent system in India was first introduced by British Government during 1856. There are well-established statutory, administrative, and judicial frameworks for safeguarding IPRs in India. Apart from that, there are many attorneys and law firms dealing with the intellectual property in India in various states. It becomes pertinent to mention here that India has complied with its obligations under the Agreement on Trade Related Intellectual Property Rights (TRIPS) by enacting the necessary statutes and amending the existing statutes. Computer databases and software programs have been protected under the copyright laws in India resulting successfully curtailed piracy through judicial intervention. The Indian Patent and Designs Act (1911) was enforced under the management of Controller of Patents with a patent term of 14 years.

The Indian Patents Rules, 2003 has been amended by way of Patents (Amendment) Rules, 2016. The amendment comes into effect on May 16, 2016. The current amendment is substantial and can certainly have an impact on the patent filing and prosecution strategy, among other related issues. However, in general, the functional and technical inventions are being regulated by Patent Act, 1970 amended in 1999 and 2005; purely artistic works by Copyright Act, 1957 amended in 1982, 1984, 1992, 1994 and 1999; and a symbol, logo, work, sound, colour, design etc. by Trademark Act, 1999 amended in 2000.

TYPES OF INTELLECTUAL PROPERTIES

Broadly, IPR have been categorized into two:

- (a) industrial property including patents, trademarks, trade secrets, geographical indications, layout designs and industrial designs, and
- (b) copyright and related rights, e.g.; artistic works, literary works, performances, broadcasts etc. (Watal, 1998).

At present, intellectual property refers wider meaning. It covers handling infringement, piracy, unauthorized use, and a pool of information to the

general public since all forms of IP are published except in case of trade secrets, *e.g.*; formula, pattern, compilation, programme, device, method, technique etc. At this juncture where internationalization driven by chemical, pharmaceutical, electronic and IT sectors has resulted into huge investment particularly in the field of research and development, the shortening of product cycle and high risk of piracy in the market have become a natural consequence.

IPR ISSUES RELATED TO AGRICULTURE

During last more than two decades, intellectual property protection has been extended to a wide range of information, materials and products related to food and agriculture. Now, the national legislation and concerned law in many jurisdictions have changed a lot due to number of ethical concerns and the scope of patentability of living organisms like microbes, plants, animals and their various components. The conflicts between the insufficient legal recognition of Farmer's Rights including Community Rights and conservation of biological diversity have negative impact in agricultural and global food security. In addition, commercialization and industrialization put immense pressure in biological diversity in agriculture and allied sectors.

Out of several intellectual property rights pointed out in the discussion above, mainly patents, plant breeder's rights trademark, protection of plant varieties and farmers rights (PPV and FR), geographical indications and trade secrets are most relevant to the agriculture. In addition, layout designs for chips especially designed for agriculture, scientific papers, television programmes covering ideas related to agriculture and allied sectors should also be taken into consideration. However, the issues of IP related to agriculture is too exhaustive to complete in one such discussion. Efforts have been made to enrich the knowledge of readers to put the light on some basic aspects of IPR particularly in Indian agriculture. Some important IPR issues have been briefed below.

(a) Patent

It is an exclusive right given by law to the inventor for making use of, and exploiting, his/her

invention for a limited period of time. A patent is a monopoly right granted to a person who has invented a new and useful article or an improvement of an existing article or a new process of making an article. Once any inventor has been granted a patent in any particular country, he/she then has the legal authority to exclude others from making, using, or selling the claimed invention in that country without their consent. In this way, inventor can prevent others from benefiting from his/her ingenuity and getting benefits from the invention, without his/her permission. In return for these ownership rights, the applicant must make public the complete details of the patented invention like background information, the nature of any technical problems solved by the invention, a detailed description of the invention and how it works, and illustrations of the invention where appropriate. Patent protection in a given country does not extend to other countries. To maintain the validity of a patent, the owner needs to pay fees to each appropriate patent authority and if he fails to do so, patent right is lapsed.

Patents are considered as one of the most important IPR today for agricultural goods and services as they provide the strongest protection for patentable plants, animals and biotechnological processes for their production. In India, the law governing patents, Patents Act, was enforced during the year 1970. The Patents Act has also been amended thrice *i.e.* in the year 1999, 2002 and 2005 since 1995 complying with its commitment under TRIPS. The legislation is supported by the Patents Rule, 2003. It is well known that the majority of the population in India depends on agriculture and allied sectors for its livelihood. Government of India has always given due emphasis to agriculture sector for further diversification in farm activities. As a result, India has become self-sufficient in food grain production. In the past decades, the Government of India has strengthened its Research and Development (R&D) section including marketing component. And the Patent Act has been seriously viewed and implemented particularly in generating various research technologies and inventions. According to the Indian Patent Act 1970 and subsequent Patent (Amendment) Act, 1999 and 2002, patents could be applied mainly for agricultural tools and machinery or the processes

for the development of agricultural chemicals. Methods in agriculture or horticulture, life forms of other micro-organisms like plant varieties, strain/breeds of animals, fish or birds including products derived from chemical/ biochemical processes, and any processes for medicinal, surgical, curative, prophylactic or other treatments of animals or plants to render them free of diseases or to increase their economic value or that of their products as such, did not constitute the patentable subject matter under the previous patent regime. Before 2004, the inventions relating to chemical processes *i.e.* biochemical, biotechnological and microbiological process and substances intended for use or capable of being used as drug and food, patent was not granted to the substance but for the method/process of manufacturer. During Patent Amendment Act, 2005, inventions related with agrochemicals have been covered.

Similarly, protection for plant varieties was provided integrating the rights of breeders, farmers as well as village communities through *sui generis* system or by patents or by using both combinations. *Sui generis* enables the design of one's own system of protection for plant varieties as an alternative or addition to a patent system for protecting plants. By the Second Amendment, the following innovations related to agriculture, that are not inventions within the meaning of the Patents Act, have been added:

- (a) plants and 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,
- (b) an invention which, in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components.

The panel of eminent experts on ethics in Food and Agriculture also recommended the Food and Agricultural Organization (FAO) to review the following issues.

- Unpredictable or undesirable dissemination of organisms or genes claimed in patent applications that may affect agricultural development and sustainability

- The acquisition of patent rights that may stimulate the development of technologies that generate suffering of animals or risks to the sustainability of farming practices and agriculture
- The patentability of materials discovered in nature, not "invented" by the applicant
- patents on genes that cover all possible functions thereof, including those not discovered by the patent applicant
- Overly broad patent claims such as those drafted in functional terms (covering all ways of addressing a problem), which extend protection to entire species or reach back to parent breeding lines or unimproved germplasm contained in relatives of a patented cultivar
- Patents covering plant varieties that prevent their use as a source of further varietal improvement
- Patents over plant materials that restrict farmers' rights to save and re-use seeds in accordance with their traditional practices
- The use of border measures in a way that unduly restrains legitimate trade in agricultural products, particularly from developing countries.

However, the patenting of genetic resources coupled with biotechnology will definitely affect the freedom of both the conventional seed industry and farmers' breeding systems to use modern varieties to safeguard food supply. It is a great concern in developing countries. In view of the lack of food security in many regions/ countries, and in the face of climatic vulnerability, this would have serious consequences especially since agricultural biodiversity offers as yet unexploited possibilities for securing the world food supply in future.

(b) Plant Breeder's/ Farmer's Right

Plant breeders' rights (PBR) are rights granted to the breeders that give the breeder exclusive control over the propagating materials *e.g.* seed, cuttings, divisions, tissue culture etc. and harvested materials *e.g.* cut flowers, fruit, foliage etc. of a new variety for an ascertained time period. The Indian

Government considered this right for Breeders as well as for Farmers favour and passed one Act by the Parliament in 2001 which is known as Protection of Plant Varieties and Farmers Rights Act (PPV and FRA). The act came in enforcement on 30th October, 2001. It helps the breeder/farmer to encourage in conserving, improving and making available plant genetic resources for the development of new plant varieties. It is necessary to protect plant breeders' rights to stimulate investment for research and development, both in the public and private sector. The Act is based on the important principle of distributing ownership rights in a fair and equitable manner. In order to qualify for these exclusive rights, a variety must be-

- (a) new, if it has not been commercialized for more than one year in the country of protection;
- (b) distinct, if it differs from all other known varieties by one or more important botanical characteristics, such as height, maturity, colour etc.,
- (c) uniform, if the plant characteristics are consistent from plant to plant within the variety, and
- (d) stable, if the plant characteristics are genetically fixed and therefore remain the same from generation to generation, or after a cycle of reproduction in the case of hybrid varieties.

PPV and FR Act allows four types of varieties to be registered-

- (a) new variety,
- (b) extant variety,
- (c) essentially derived variety, and
- (d) farmers variety.

Seed is submitted to the plant variety office for its verification and rights are granted for a specified period. The variety is identified with a specific generic name. Without the written approval of that breeder/farmer, sale for propagation is not allowed. There is also a breeders' exemption (research exemption in the 1991 Act) that allows breeders to use protected varieties as sources of initial variation to create new varieties of plants (1978 Act) or for other experimental purposes (1991 Act). Provision of compulsory licensing is there for the national

interest if the breeders/farmers are unable to meet the demand to protected varieties. PPV and FR Act (2001) provides intellectual property protection of farmer's variety as equivalent to plant breeders and can distribute the benefits sharing proceeds from the sale of protected varieties.

(c) Geographical Indication

A geographical indication (GI) is a sign used on a product to denote its origin where a specific quality, characteristic or reputation of the product is essentially attributable to that origin, e.g. "Darjeeling Tea". In India, Darjeeling is protected as a certification mark as well as through a system established by the Tea Act of 1953, which mandates the licensing of all tea dealers and the issuance of certificates of origin in respect of all legitimate exports of the tea. "Darjeeling Tea" is also protected as a GI. It may also be eligible for registration as a trade mark under the Trade Marks Act. A trademark is defined as a sign which distinguishes one service or product from another trader's service or product. This sign can be in the form of a logo, words, colour schemes, or slogans. To be eligible to register a sign as a trademark it must be able to be graphically presented *i.e.* in words or pictures. However, GI is different from trade mark. A GI indicates consumers that a product comes from a certain place and has special qualities due to that place of origin, while a trade mark is used to distinguish a business' goods or services from those of its competitors. A GI may be used by all producers or traders whose products originate from that place and which share typical characteristics, while a trade mark gives its owners the right to prevent others from using the trade mark.

Under Articles 1 (2) and 10 of the Paris Convention for the Protection of Industrial Property, GI is covered as an element of IPRs. The issue of GI is described under Articles 22 to 24 of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement, which was part of the Agreements concluding the Uruguay Round of GATT negotiations.

India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration and Protection)

Act, 1999 has come into force with effect from 15th September 2003. Article 22 of the World Trade Organization's Agreement on TRIPS Agreement (1994) defines GIs as-

"indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin".

A geographical name can therefore operate as a GI once a given quality, reputation or other characteristic of the product using the name is essentially attributable to its geographical origin. The Geographical Indications of Goods (Regulation and Protection) Act' was passed by the Indian Parliament in 1999 for registration and better protection of GI relating to those goods derived from agriculture, natural goods or manufactured goods as originating or manufactured in the territory of a country or a region or locality in that territory.

(d) Copyright

Copyright is also a type of IPR. It legislates for the fair use and reproduction of original creations. Anything printed, written or recorded in any format is subject to copyright law from the moment of its creation. Copyright law exists to give legal protection to creators and publishers of works like books, films, sound recordings, newspaper and journal articles, photographs etc. One of the most important functions of Copyright law is to act as a safeguard to originality. Copyright law is essential in ensuring the development and continuation of writing, performing and creating and the existence of economic gain and financial reward for original creators. Amongst the rights that are protected by the Copyright Act are the Moral Rights of the creator which includes the Paternity Right and the Integrity Right.

The Copyright Act, 1957 came into effect from January 1958 in India. This Act has been amended five times since then, *i.e.* in 1983, 1984, 1992, 1994, 1999 and 2012. The Copyright (Amendment) Act, 2012 is the most substantial. As per copy right policy any material should be reproduced after taking permissions from the concerned authority. The

material has to be reproduced accurately and not to be used in a derogatory manner or in a misleading context. Wherever the material is being published or issued to others, the source must be properly acknowledged.

(e) Trade Secret

Literally, the term "Trade Secret" refers to the information either in the form of a formula, practice, process, design, instrument, pattern, commercial method or compilation of information that is maintained in secrecy and has commercial value. Unlike patent, trademark or copyright protection, there is no set time period for trade secret protection. A trade secret is protected as long as it is kept secret. Once a trade secret is lost, it is lost forever. Trade secret protection is very important in agriculture and allied sectors to protect the production of hybrids, process involved in many biotechnology-based products, special techniques/methods relating to different agricultural value added products/by-products, identification of special gene etc.

In 2008, the Department of Science and Technology, as part of the Ministry of Science and Technology in India published a draft legislation titled the National Innovation Act in 2008 that would in part "codify and consolidate the law of confidentiality in aid of protecting Confidential Information, trade secrets and Innovation".

BASIC REQUIREMENTS FOR IMPLEMENTING IPR

To meet out the challenge of food security for whole population and adopting modern lifestyle, every nation in the globe is engaged in developing sustainable and modern technologies with the help of scientific knowledge and skills. At this juncture of competition, issues of intellectual property rights have become a strategic asset for different industries and public domain. It is very essential to follow certain basic principles so that the rights of different intellectual properties are protected for the benefits of whole world. However, the success depends on the attitude and willingness of people to adopt. The basic requirements for fruitful implementation of IPR in any country are:

- Awareness among people
- Knowledge about ground reality
- Confidence on IP policy
- Screening channels
- Nature of documentation
- Minimum time frame
- Agreement procedures
- Nature of guidance from IP authority
- Attitude of implementation
- Punishment procedure

CONCLUSION

Considering the future demand of huge human and animal population in the globe and extensive use of science in developing advanced technologies, there is an urgent need to develop a policy and law which can effectively ensure all the countries to secure their rights over their available resources. The idea of equal sharing of benefits arising out of the use of these resources and adequate protection of indigenous knowledge and technologies are to be assured in performing the intellectual efforts. Inventors should be given incentive and well deserved rights for the protection of their own proprietary items for better future yield.

On the ethical ground, it should be mandatory to properly acknowledge the use of resources. Finally, there should be the provision of applying stringent legislation to control the defaulters for the betterment of the society and country as well.

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