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**WHY TK INCOMPATIBLE WITH IPR: PRACTICAL IMPLICATIONS AND ILLUSTRATIONS**

BHARTI, Nalin – SATYARTHI, Shaiwal

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**Summary**

*The global economy has gone through a great transformation in recent years. Worldwide integration of economy has provided new opportunities with many fresh challenges. In the post TRIPs and WTO era, various cases of patents and other IPR related issues show the new complexities for the countryside population which has sustained the cumulative body of knowledge, know-how, practices and representations known as TK for generations. Protecting the locality of products is imperative for any developing country. The fundamental concern of this*

*paper is to underscore the incompatibilities between TK and IPRs in general (within some initiatives taken by India and Hungary) which has begun to surface with the rapid globalization and acceptance of concepts and standards for intellectual property. Paper traces steps taken for the protection of TK and argues for the wider protection of TK at WTO level.*

**Key Words:** Globalization, TK, Bio-piracy, patent, *Sui Generis*, Hagyományok-Ízek-Régiók.

**JEL Code:** F01, F02, F51, F59, K11, Q10,

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**Introduction**

Economic interconnections are reaching the new heights today. While Globalization of goods sounds promising, the current form of globalization of agro products, free trade and open markets are also coming under much disapproval in the current *neoliberalism*. In many countries, including United States, globalization is almost surely contributing to our growing inequality (Stiglitz, 2012). It is a fact that for the large part of the population of this globe there is no escape from the need to 'live less or be less'. Countryside population are among those who still lack in terms of resources and having the choice of live less and be less. As Wolfensohn (2001) argued in one of his lectures 'Time is short. We must be the first generation to think both as nationals of our countries and as global citizens in an ever shrinking and more connected planet'. The world has undergone a great transformation in recent years and, the knowledge based society has replaced the material-based society which sustains on information revolution. But, TK (TK), a long time working concept in the field of intellectual property rights is fighting for its own space to be recognized as a right of local communities.

Intellectual property rights (IPRs) could better recognize TK as a right which encompasses the knowledge, innovations and practices of indigenous peoples and local communities embodying traditional lifestyles throughout the world. The knowledge-based economies are directly based on the production, distribution and use of knowledge and information (OECD, 1996). Therefore, the role of intellectual property rights is significant in international economic and trade relations for TK. TK refers to systems of knowledge, generally passed from generation to generation, pertaining to a particular people or territory, and including their creations, innovations, and cultural expressions (Holden, 2006). TK is a cumulative body of knowledge, know-how, practices and representations (UNESCO, 2008). A working concept of TK has been also defined by the World Intellectual Property Organization (WIPO, 2008) as "tradition-based literary, artistic, or scientific works; performances; inventions; scientific discoveries; designs; marks, names, and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields." TK subject matter may include herbal classification, location and properties; geographical assets in territories, such as timber or underground deposits, animal domestication and hunting; and land management and use. The UN Convention on Biological Diversity (CBD) defines TK as "the knowledge innovations and practices of indigenous and local communities embodying traditional lifestyles" as well as "indigenous and local technologies". In order to understand the concept of TK extensively, it could be divided into four types, which could provide basis for the further discussion:

**Table-1 Types of TK and Its Misuse**

Types of TK	Descriptions
Biological Resource	Knowledge about the effects of medicinal plants or the specific qualities of crop*, cultivated crop varieties and domesticated animals etc.
Accessible within a community	Access and use of folk remedy such as Neem in India **. This type of knowledge is regulated and restricted within the community, such as plants used for the ritual purposes. Some GI products may also come under this category.
Specific knowledge	Clearly delimited group, or community or it can be integrated into the culture of society in general
Community secret	Community secrets can be transferred only as a gift. Due to its spirituality it is opposed to marketability which insists on the fairness of transaction and sharing of the benefits. Many traditional cultivation methods, treatments may come under this category.

\* Even after India's initiative to protect Basmati and Darjeeling tea which was passed in December 1999 the US patent office granted a patent for Basmati to American company Rice Tec. Basmati patent was finally revoked after the huge protest by India in WTO.

\*\*In 2005, The European Patent Office in Munich gave a long way support to the traditional knowledge and users while dismissed an appeal against revoking a patent granted by it for the preparation of a fungicide derived from the seeds of the neem tree. In another hearing on neem at the European Patent Office in 2000, the European patent (EP0436257) was invalid, because the use of hydrophobic elements in neem, was identified as an attempt to patent indigenous knowledge.

Source: Authors.

It is true that TK frequently has been protected by customary laws<sup>19</sup> within the cultural framework and structures of the communities. However, these customary laws are not sufficient to regulate conditions of exchange and trade in the broader context of the growing interdependence and the globalization of markets, therefore, legal instruments to support TK on national, regional and international levels must be devised in order to protect TK against misappropriation and misuse. Basically, the concerns for the protection of the TK are many folds, which could be read as follows:

<sup>19</sup> Customary law refers to the laws, practices and customs of indigenous and local communities which are an intrinsic and central part of the way of life of these communities (WIPO, 2010).

- TK holders want their traditional lifestyles and Knowledge to be intact.
- TK owners are concerned about the lack of respect for TK.
- TK is being used without any benefit-sharing
- Lack of recognition to promote the further use of TK.

It is always said that the knowledge is valuable only when shared but as far as the TK is concerned the concept of sharing is causing threat to the very knowledge and the knowledge holders or creators. Knowledge is transmitted by various methods like traditional practices and also by our culture.

Moreover, TK concept is just like common heritage of mankind regime wherein, all people are expected to share the management of a common space area and these regions are not the subject of appropriation of any kind, either public or private, either national or corporate(Joyner,1986). Similarly, TK makes contributions to the welfare of humankind as the basis of much of the world's food system and naturally derived medicines. Like, for example healers, in general, have shared their healing knowledge, so this knowledge like common heritage of mankind is not subjected to any monopoly right since; TK is collective in nature and is often considered the property of entire community. Homann and Rischkovsky (2001) argued that the problem for the integration of western and indigenous knowledge is that the former searches for knowledge of universal significance which is not context-related, whilst the latter is a social product closely linked to a cultural and environmental context. 'Farmers' knowledge of natural resources has been displaced by laboratory knowledge and distant commodity chains' (CREPE, 2011).

Apart from the lab induced TK products a large amount of bio-trade<sup>20</sup> and bio-piracy<sup>21</sup> of TK has been also noticed .For instance the use of turmeric in wound healing which was assigned to the University of Mississippi, Medical center, U.S is an example of such piracy. The invention claimed under the patent was the use of turmeric at the site of injury to promote the healing of wound was case of bio piracy (Joyner, 1986). An effort by Syngenta (the Switzerland headquarters agribusiness giant) to collect germ plasm failed in December 2002 as the Raipur based Indira Ghanadhi Krishi Viswavidyalaya (IGKV) was prevented from its repository of 22,972 verities of rice germ plasm, developed over generations by farmers in the Chhattisgarh the state separated from Madhya Pradesh) largely because of protests organized by Chhattisgarh Mukti Morha (Frontline, 2003). Cash-stricken governments often strike bio-trade deals that might not further the interests of TK -holders (Grain and Kalpavriksh, 2002). There have been several instances in Cambodia where unscrupulous individuals and corporate collectors have plundered biological resources. Along with the eco tourism boom, the illicit collection, smuggling and trade in marketable biological resources has become a multibillion dollar business (Klemm, 2000).

## Material and Methods

Materials and authors both are from two diverse backgrounds of Economics and Law. Materials were collected and analyzed at two different levels. At the first level materials from various international organizations such as OECD, UNSIFO, UNESCO, UNCTAD and TRIPs

<sup>20</sup> Bio-trade refers to the movement of biological resources between countries, companies, academic institutions and individuals for actual or potential profit. More and more governments in the region, willingly or unwillingly are allowing overseas and domestic private enterprise to operate in the sector.

<sup>21</sup> Bio-piracy can be defined as the stealing of knowledge from the traditional and the indigenous communities or the individuals. Other kind of Bio-piracy is the physical removal of plant genetic resources that has surfaced in area of eco tourism and nature trails.

in WTO were analyzed in relation to the TK. At the second level specific literature were also collected from across the world to see the compatibilities of the TK with the TRIPs rule. A normative approach<sup>22</sup> of analyzing intellectual property law (post TRIPs) is adopted as a method of research. Separate steps were taken to explore the TK and its compatibilities with the selective IPRs such as copyrights, patents, trade secrets, and geographical indications in the post TRIPs framework. This method has allowed us to apply moral beliefs, or judgment, claiming that the post TRIPs outcome in relation to TK is good or bad while there is enough evidence of misuse of the TK of agro products.

## Results

There are certain contradictions in protecting TK namely as “private proprietary rights” because it would facilitate the process of economic exploitation and cultural erosion. A major problem which became evident is the confusion about the concept of ‘protection’, which means very different things in intellectual property law and in ordinary usage. ‘Protection’ in the intellectual property sense means that the owner of a patent, a copyright, a trademark or some other piece of intellectual property has a legal right to exclude others from using or reproducing it. It is that specific piece of property which is protected, no more, no less.

In ordinary usage, ‘protection’ of course has a much broader sense. When developing countries speak about the need to protect TK, it is quite obvious that they mean ‘protection’ in the sense of safeguarding the continued existence and development of TK. As repeatedly pointed out by indigenous peoples’ Organizations, this necessarily implies protecting the whole social, economic, cultural and spiritual context of that knowledge, something which simply is not possible to achieve with IPRs. It is often argued that IPRs are private monopoly rights and therefore incompatible with the protection of TK. TK is held as part of a community heritage passed down from generation to generation, and not allowed either to be privatized or to slip into the “public domain”, since, it is a concept, and current legal reality, that indigenous peoples strongly contest.

Since the fundamental concern of this paper is on the incompatibilities between TK and IPRs which has begun to surface with the rapid global acceptance of western concepts and standards for intellectual property. Thus the above mentioned incompatibilities and complexities of TK will be discussed with various forms of IPRs and selected cases of trade implications. For an example ‘numerous geographical indications and appellations of origin are applied to protect products which are the result of TK but yet more is to be done to commercialize and to affirm them, as well as to protect and market such products, especially in the countries of the European Union’ (Jovanović et al., 2012). The patent system contributes to economic growth and development, by creating conditions for the economic and commercial use of inventions in several ways:

- ⊕ It gives an incentive to the creation of new technology which will result in, *inter alia*, new products, inventions and commercial opportunities, or;
- ⊕ It contributes to the creation of an environment which facilitates the successful industrial application of inventions and new technology and legal framework which encourages investment, including from foreign countries;
- ⊕ It acts as a catalyst for the commercialization of inventions and their transfer to productive use;

<sup>22</sup> Normative approach focuses more on what *ought to be* rather than *what actually is*.

 It is an instrument of commercial and industrial planning and strategy. According to the U.S. Patent Act (Title 35 U.S. Code, Section 102), if an invention a) was known or used by others in the United States, or patented or described in a printed publication in this or a foreign country before the invention thereof by the applicant for patent, or b) was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, then it is not entitled to a patent.

Lack of information about a traditional remedy led to a problem in 1995 when a U.S. patent covering the use of the turmeric plant in healing wounds was mistakenly granted to Indian nationals from the University of Mississippi Medical Center. Turmeric has a long traditional root in India to heal wounds, which was well documented in majority of ancient publications in India. The Indian Council for Scientific and Industrial Research requested a reexamination of the patent, and the U.S. Patent and Trademark Office revoked the patent for lack of novelty. The ability of a third party to request reexamination and the eventual cancellation of the claims when a mistake has occurred demonstrate that the current patent system works well to correct itself.

The importance of publishing TK and making that information available to patent examiners internationally cannot be overemphasized. Documentation is conversion of TK information provided by Communities (Grain and Kalpavriksh, 2002). But the indigenous and local knowledge holder feel cheated when their knowledge is used and produced for the market without acknowledgment and without sharing the economic benefits of such production with local and traditional people.

Trade secrets protect undisclosed knowledge through secrecy and access agreements, which may also involve paying royalties to knowledge holders for access to and the use of their knowledge. Firstly, the knowledge must have commercial value, secondly, must not be in the public domain, and thirdly, is subject to reasonable efforts to maintain secrecy (WIPO, 2000). Since misappropriation would enable people to economically exploit the knowledge of local communities or indigenous people, it is argued that, “the international community should help poor people use modern methods to benefit from the commercial value of TK and should aim that poor people can commercialize the indigenous knowledge (Finger and Schuler, 2004).

Solutions to the protection of TK and folklore may be sought in terms of “positive protection” and “defensive protection”. Positive protection refers to the acquisition by the TK holders themselves of an IPR such as a patent or an alternative right provided in a *sui generis* system<sup>23</sup>. Defensive protection refers to the provisions adopted in the law or by regulatory authorities to prevent IPR claims to knowledge, a cultural expressions or a product being granted to unauthorized persons or organizations (Dutfield, 2002). In India it could be further protected under Indian Copyright law (Section 13, the copy right Act 1957).A geographical indication identifies a good as originating in a territory or region or locality in that territory, where a given quality, reputation or other characteristic of the good is attributable to its geographical origin (TRIPS, 1994). For example, Swiss watches are associated with a tradition of high quality, so the term Swiss watch is geographical indications that assume a watch came from Switzerland. But, it does not protect against use of TK not claiming geographical name. The global push for privatization of TK has encouraged the ownership over various forms of TK. Listed here are a few of international legal bodies whose work reflects the efforts made in the development of protecting TK with intellectual property rights.

<sup>23</sup> In general, *sui generis* system refers to a special form of protection, a form that is particularly adapted to a specific subject, circumstances, specific needs, priorities and reality etc.

The WTO has taken some steps to protect the TK at the international level. TRIPs has failed to recognize the importance of TK. There has been a lot of demand to review of article 27.3(b)<sup>24</sup> and, also a review of the whole of the agreement.

**Table-2 Incompatibilities of TK with IPR**

Items	incompatibilities with the exiting IPR in TRIPS
<b>Patent*</b>	Some holders of TK fear that others will seek patents based on their long held knowledge and reap the benefits from it. But an applicant trying to patent TK likely cannot meet the three necessary requirements.
<b>Trade Secrets**</b>	But once the knowledge is diffused to the public, this option no longer exists. Hence, it does not provide legal protection to maintain secrecy and if discovered or leaked to the public domain, it can be used by others which, if it is applied on TK would make it difficult to protect its right against misappropriation.
<b>Copyright***</b>	Solutions to the protection of TK and folklore may be sought in terms of “positive protection” and “defensive protection”. Positive protection refers to the acquisition by the TK holders themselves of an IPR such as a patent or an alternative right provided in a <i>sui generis</i> system. Defensive protection refers to the provisions adopted in the law or by regulatory authorities to prevent IPR claims to knowledge, a cultural expressions or a product being granted to unauthorized persons or organizations.
<b>Geographical Indications****</b>	But majorities of GI products (accept wines and spirits) are not fit for the protection under TRIPS.

\* Patents provide legal monopoly and the exclusive control over the use, development and financial benefits.

\*\* TK that is maintained with in a community could be considered a trade secret.

\*\*\* Rights granted to authors of literary and artistic works, and the rights of performers, producers of phonograms and broadcasting organizations. The main purpose of protection of copyright and related rights is to encourage and reward creative work.

\*\*\*\* A geographical Indication identifies a good as originating in a territory or region or locality in that territory, where a given quality, reputation or other characteristic of the good is attributable to its geographical origin (TRIPS, 1994).

**Source:** Author's compilation from various sources such as Hanson and Vanfleet, (2003) Dutfield, (2002).TRIPS (1994) etc.

The convention on biological diversity, signed at the United Nations conference on environment and development (UNCED) in 1992, was the first international environmental convention to develop measure for the use and protection of TK, related to the conservation and sustainable use of biodiversity. The CBD establishes three main goals in order to maintain the world's ecological resources: the conservation of biological diversity the sustainable of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. However, broadly speaking, there is subtle interconnection between TK and biological diversity at the local, regional and global level. In looking at the interface between TK and trade, there is close interaction between the generation and maintenance of knowledge and the condition of natural environment is to be taken care of. In India and generally in all over the world the biological diversity can be classified in several ways:

- ✚ Religious traditions: temple forests, monastery forests, sanctified and deified trees
- ✚ Traditional tribal traditions: sacred forests, sacred groves and sacred trees
- ✚ Royal traditions: royal hunting preserves, elephant forests, royal gardens etc.

<sup>24</sup> The TRIPS Agreement requires a review of Article 27.3(b) which deals with patentability or non-patentability of plant and animal inventions, and the protection of plant varieties. Paragraph 19 of the 2001 Doha Declaration has broadened the discussion. It says the TRIPS Council should also look at the relationship between the TRIPs Agreement and the UN Convention on Biological Diversity, the protection of TK and folklore. See the detailed documents circulated under the 2001 mandate of the Doha Development agenda under Article 27.3b, in the area of TK and biodiversity on [http://www.wto.org/english/tratop\\_e/trips\\_e/art27\\_3b\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm). A large number of issues being raised by many developing economies on this particular issue.

- ↳ Livelihood traditions: forests and groves serving as cultural and social space and source of livelihood products and services.

Since, biological resources are primarily traded as goods for consumption, the system of trade in raw materials has an important influence on biological diversity and thus directly also on the maintenance of TK (TRIPS, 1994). Biotechnology has set new insights into the use of biological resources which is being constantly supported by consumer interest. In such process the role of TK plays a pivotal role in identifying biological resources significant for commercial exploitation such as, providing information on specific qualities of crops which is helpful in the breeding process (UNCTAD, 2002).

It is significant to note that the incentives of the liberalized world trade thus favor the destruction of biological diversity and hence, contribute to environmental degradation and indirectly to the loss of TK (Kellem, 2000). With the modern biotechnology tools, scientists within industrial innovations are engaged in patenting the information for industrial exploitation without further improvement, inventive steps and the consent of the holders of the resources with no compensation and sharing profits. This is complained by some people or communities as *piracy of TK*. TK and its relationship to the formal IPR system has emerged as a mainstream issue in international negotiations on the conservation of bio-diversity, international trade and IPRs including the TRIPS agreement. In the past few years, high level deliberations on the subject have been taking place at the WTO, the Conference of the Parties (CPO) to the Convention on Biological Diversity (CBD), and at World Intellectual Property Rights (WIPO) which has established an Inter-governmental Committee (IGC) on Intellectual Property and Genetic resources, TK and folklore. IGC has brought greatly increased awareness and understanding of TK between 2001 and 2003. The CBD declares the obligation to obtain prior informed consent for access to genetic resources. The Bonn guidelines (2002) further link genetic resources with TK in the obligation to acquire informed consent. Article 1 and 8(j) of the CBD encourage the equitable sharing of benefits arising from TK for conservation and sustainable use of bio- diversity. Principle 22 of the main document that came out of the 1992 Earth Summit in Rio de Janeiro recognizes role of the indigenous people in environmental management and development with their TK and practices. In the above discussed context of TK and globalization of IPR, specific steps have been taken by India and Hungary in past few years.

In the post Independence era , contribution of agriculture in India's GDP has declined drastically but the dependency of population in absolute number on agriculture has increased due to constant increase of the Indian population which has increased by three times in 2010 compare to the year 1947. Agriculture in India is primarily labour intensive and traditional in nature, characterized by dependence on the irregular monsoon rains (Grabowski et al, 2007). With this note it is indeed important to see the need of protecting the Indian Agriculture especially when globalization is in full speed.

Indian legislature has also encouraged the ownership over various forms of TK under various enactments. Some provisions are as follows. The Indian Legislature keeping in mind the benefit that is due to the local community enacted the Biodiversity Act in the year 2002. An



Figure-1: Logo of the Darjeeling Tea  
Source: <http://www.wipo.int/ipadvantage/en/details.jsp?id=2540>

enabling provision was included in the Act for protecting TK. Section 35(5) of the Act provides for protection of knowledge of local people relating to biodiversity through measures such as registration of such knowledge, and development of a *sui generic system*. This Act contains provisions for mandatory disclosure of source and geographical origin of the biological material used in the invention of a product while applying for patents in India. If there is no disclosure or wrong disclosure of such source the patent application will be rejected and if the patent has already been granted the same will be revoked. The logo of Darjeeling tea<sup>25</sup> is now registered with the GI office in Chennai in India. Darjeeling tea with a bud of three leaves in the hand of a lady is now being widely used and known (Saha and Bharti, 2005). India has many products to offer to the world at large. This deserves protection of law by some kind of registration. But when it is related to the global rules of IPR there are many pre-conditions where such items are already in public domain or previously used treated unfit of having the IPR.

Mithila/ Madhubani painting is another example from India which has its long past and tradition. This painting is mainly made by women in the Mithila region of Bihar in north India. Since at least the 14th century women of this region have painted colorful promising images made of the natural color extracted from the grass, leave and flowers. Now this painting has a global demand with a high price. With a proper protection of such knowledge, India and many other economies will be in more advantageous position in the current wave of globalization.

These days Hungary has a variety of traditional and countryside agricultural products and foodstuffs labeling initiative which gives the possibility to obtain the right to use of the Hagyományok-Ízek-Régiók (HÍR) trademark<sup>26</sup>. The Ministry of Agriculture and Rural development launched the Traditions – Tastes – Regions (TTR) program which is named as HÍR program in Hungarian in 1998. The main objective of this program was to found the gathering of Hungarian traditional and country side regional foodstuffs and improving their competitiveness within and outside the economy. The main criteria followed for the TTR Collection were: Production by traditional method, linked to a specific region, historical dimension (at least 2 generations), good reputation and existence of production and distribution. This program has resulted in a great success; some of the remarkable successes are as follows:

- ⊕ Around 300 product descriptions were gathered (excluding wines and recipes).
- ⊕ Trademark of collected HÍR were also registered by the Hungarian Patent Office in 2002
- ⊕ Book form of the Collection was published in two volumes and its CD version in Hungarian, English, and German as well.



**Figure-2 Mithila Painting**  
Source: [http://www.mithilapaintings-eaf.org/contact\\_us.html](http://www.mithilapaintings-eaf.org/contact_us.html)



**Figure-3. Trade Mark of Herbaria**  
Source: Herbaria Co, 2013.

<sup>25</sup> Darjeeling Tea may be referred as the first important case as a protection of GI about 15 years ago by developing a 'Darjeeling Tea' logo in 1983.

<sup>26</sup> In English- Traditions-Tastes-Regions, TTR.

- Hungary has the root of such protection in its past also. At the level of individual firm, one cannot really overlook the *Herbária* which was established long time back in 1949 to collect, produce, and process and trade medicinal plants and to manufacture herbal teas. As a result, currently quite a few products such as tea and tea mixtures both in bags and in filter bags, essential oils, beauty products for hair, body, face and mouth care and also natural food are offered by Herbaria. That puts *Herbária* Co. on the top of the leading companies in the herbal product sector in Hungary. This has shown the how new scientific researchers and agro-product-developers employ and update the Hungarian TK with the latest scientific results. Figure-3 shows the trade mark of the Herbaria. Hungary has a long past (several hundred years) of the usage and knowledge of herbs, medicinal plants. The manuscripts which were remained in the abbeys prove that monks arrived and settled in Hungary in the medieval times have already collected, cultivated and used medicinal plants.

## Conclusion

The discussion and results show us continuing incompatibilities between TK and IPR. The new IPR rules are wished-for protecting the investor rather than the inventor. The exiting IPR are too distress to make out the new product but it is less concern for recognizing other traditional innovations which has its root in past. The safety of TK is expected to take a backseat because policy-makers are more active in the protection of traditional resources against *bio-trade and bio-piracy* in which pharmacy companies are awarded patents for inventions arising from bio resources sourced from local plants and animals. India and Hungary were presented as two different cases of seeing the domestic protection. But these steps are not enough if the countries are not active to protect its TK at WTO level. India and Hungary may be an example for many other economies for the protection of its traditional agriculture products and art which is in the wider arena of TK. These traditional products with a scientific innovation and protection can really make new directions in the developing countries trade.

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## Authors

### **Nalin BHARTI, PhD**

Assistant Professor of Economics

Indian Institute of Technology Patna, India

[nalinbharti@gmail.com](mailto:nalinbharti@gmail.com)

[nalinbharti@iitp.ac.in](mailto:nalinbharti@iitp.ac.in)

### **Shaiwal SATYARTH**

Assistant Professor of Law

Chanakya National Law University, Patna, India

[shaiwal.law@gmail.com](mailto:shaiwal.law@gmail.com)