CHAPTER 4
IMPACT OF GLOBAL PATENT REGIME ON RIGHTS OF
INDIGENOUS PEOPLE

4.1. INTRODUCTION
Since time immemorial, people have always been curious about their environment. When hungry, people hunted, when ill, they found ways to cure or when injured, they found a way to heal. Before the discovery of elements and chemical components, people always relied on natural resource. It has taken a great number of years and effort to understand and attain this knowledge of natural resources. They have experimented, explored and in the process adapted themselves to survive through ages. But it is not limited to that, the people who came up with such knowledge looked into the method of making it, the method of using it and also looked for ways to better it. Thus, the improved process that is currently used is a result of continuous development of the initial knowledge by generations to whom knowledge was transmitted. The knowledge that is possessed by current generations by virtue of tradition is traditional knowledge. Indigenous and local communities around the world “rely on this knowledge for their survival, daily life, healing and nutrition needs”.

Traditional knowledge has been used as a significant “source for commercial research, as well as a starting point for product development in the area of medicine and pharmaceuticals, agriculture and horticulture, and cosmetics”. Though existed for centuries, traditional knowledge assumed much significance, when new technology was used to develop new products and process based on traditional knowledge. This enabled people who have control over new technology access to traditional knowledge to generate wealth. The demand for the protection of traditional knowledge gained momentum when the developers of new products and process based on traditional knowledge started claiming ownership rights on traditional knowledge based products. Exploiting the treasure of biological diversity has led to the “resurgence of interest in traditional knowledge and medicine”. Western societies, earlier, had “not recognized any significant value of traditional knowledge”. These societies looked at traditional knowledge as “information in the public domain, which was freely available for use by anybody”. It is only recently that “western science has become more interested in
traditional knowledge”. They are beginning to see that traditional knowledge, in combination with modern scientific knowledge, can lead to the solution of current problems in diverse areas, ranging from agriculture to health. Scientists of the current generation have often been awestruck by the amazing nature of practices that has been in existence for generations among various communities as traditional knowledge. The problem arises when “individuals or corporations from an advanced capitalist society have contact with a primitive indigenous community. Plant and animal species endemic to the indigenous lands are taken without permission by explorers or given freely to them by indigenous people who have no way of knowing the enormous profits to be made”.

Traditional knowledge creation and access to that knowledge involves an intricate network of relationships that defines owner of knowledge and who is entitled to receive that knowledge. Indigenous communities often “do not have strong traditions of ownership over knowledge like modern forms of private ownership. Indigenous communities have traditions of custodianship over knowledge”. Traditional knowledge and property rights of that “knowledge belong to the group rather than to any individual. Indigenous property rights are not written down, nor are these rights registered with any government agencies, which makes it easy for outsiders to ignore, violate, and steal them”.

4.2. LOSS OF TRADITIONAL KNOWLEDGE

Indigenous people have a “symbiotic relationship with their land and forests”. Their culture and customary laws is the product of their interaction with their land and forests. Yet, at an alarming rate, they have been losing their land and livelihood to industries which wantonly destabilize their habitats. As a result, they have been rendered landless, homeless, foodless, jobless and sadly enough, cultureless. They have increasingly been the victims of a model of development which benefits a certain class of people. There is a “growing concern about the increasing loss of traditional knowledge including plant and animal species as well as destruction of habitats”. Such loss takes place in many different ways. These include “destruction of ecosystems in search for expanded agricultural lands, deforestation associated with harvesting of forest products, over emphasis on oral traditions, lack of documentation and appropriation of traditional knowledge with no rewards for the holders of that knowledge”. The indigenous people are placed in the disadvantaged position as they are not in a position to enjoy the
benefits derived out of their traditional knowledge. As most of their traditional knowledge like, medicinal plants, folkdance, handicrafts, their music, ceremonies and cultures are not documented, there is scope for pirating these by others including multinational companies. These companies are making money by fully utilizing their knowledge without sharing the profit to them.

The very survival of traditional knowledge is at stake because of rapid advancement and growth of science and technology. The localized knowledge which communities have been possessing since time immemorial is facing tremendous strain. The cultural survival of communities is also under threat as their local languages and cultures have been greatly affected.

The missing legal protection for traditional knowledge has “created problems for traditional knowledge holders and for the countries where traditional knowledge is found”. The problems are related to the legal framework in place at the international level and in individual countries concerning traditional knowledge protection. Concerns are, also regarding access to traditional knowledge, traditional knowledge conservation, and protection as well as ethical and spiritual dimensions of traditional knowledge.

4.3. NEED FOR PROTECTION OF TRADITIONAL KNOWLEDGE

Indigenous people are generally worried that their “cultures are being lost and that indigenous people suffer discrimination and pressure to assimilate into their surrounding societies”. Protection of traditional knowledge is a necessary requirement for its preservation and further development. In last few years, two distinct attitudes have developed regarding protection of traditional knowledge, firstly, that “indigenous community themselves must protect their traditional systems, ideas, information, innovations and objects, and that self-protection alone will guarantee the preservation of traditional knowledge, and secondly, there is the claim of some nations that because indigenous knowledge have universal value, it is part of the world’s common heritage”. The latter view considers that community knowledge and materials are in public domain.

One concern of indigenous people is that “present legal regime favours multinationals and other non indigenous interests”. The existing legal regime is seen to “help corporate interests and entrepreneurs who lay claim to indigenous knowledge without appropriate
acknowledgement or compensation for communities who have developed that knowledge”.

In all the available diversity, a “company that wishes to develop a new product often makes use of the knowledge of local people in the form of traditions, folklore, etc. in deciding upon a plant, animal or other biological source to study. If, the study fructifies into a commercially useful product, the company applies for a patent in its own name on this product. The inventor generally does not even acknowledge in his patent application that his product was derived from information provided by a particular community. This use of traditional knowledge as a basis for products of commercial value, which are then patented without sharing any benefit with the source of the traditional knowledge is generally termed bio-piracy”. Biopiracy is a ‘struggle over economic profits from patented products’, as patent laws ensures the promotion of multinational corporations and the creation of an ever expanding market for patented indigenous knowledge.

4.4. CHALLENGES INVOLVED IN PROTECTING TRADITIONAL KNOWLEDGE

The indigenous people face several challenges while protecting their traditional knowledge. “Weak physical infrastructure” in terms of “inadequate patent offices, inadequate intellectual infrastructure, poor public awareness and lack of government policies that are not in tune with the times are some of the hurdles”.

“Inadequate preparedness” of many national patent offices in most of the developing countries is a “serious concern”. The problem areas also pertain to “manual and paper based operations, static manpower resources, rapid increase in the number of applications filed in last few years”, non-uniformity in the procedure of examination of application for patent, inadequate search facilities and tools, poor quality of search and lack of digital data and networks.

There are many problems that emerged on the issue of access to traditional knowledge. By nature traditional knowledge is diverse and scattered. If, traditional knowledge is documented, the majority of it is going to be in local language and the interpretation would be known only to persons who are actually practicing it. In case of undocumented knowledge, it is still with the people who are actually using it.
Identification of the holders of traditional knowledge is another difficult problem in case it is widely spread. Differing “interpretations of the scope of the public domain in relation to traditional knowledge” have been another hurdle confronting the protection of and compensation for traditional knowledge.

These challenges in way of protection of traditional knowledge have led to increasing misappropriation of traditional knowledge, especially, by the multinational companies. These companies taking advantage of these challenges get rights in traditional knowledge based products and the real owners are unable to protect what belongs to them.

4.5. MISAPPROPRIATION OF TRADITIONAL KNOWLEDGE

As demand for “commercialization of biodiversity and traditional knowledge” increases at a rapid pace and as the “world globalizes, develops and modernizes, indigenous societies are being encroached upon faster than traditional knowledge can be protected. Their cultures and knowledge are being lost”. Indigenous people have “shared much of their knowledge resources with global community”. But, the rights of the indigenous people are being violated when their contribution to science and technology are ignored.

The “claims on their knowledge without their consent amounts to misappropriation of their identity and heritage, a violation of their fundamental, inalienable and collective human right”. Traditional knowledge is “being used without the authorization of the indigenous people or communities who have originated and legitimately controlled it since ages”.

The patent laws are criticized as the patent laws are being used for the unauthorised use of traditional knowledge. Patent laws “encourage the misappropriation of traditional knowledge for commercial use and that too without the fair sharing of benefits with the holders of this knowledge. These systems violate the indigenous cultural precepts by encouraging the commodification of traditional knowledge”.

Innovation, under patent laws, is referred to only “formal systems of innovation, namely, that are done in universities, industrial research & development laboratories, etc”. Often not recognized is the technology innovation that takes place in an informal system of innovation, be it by artisans, farmers, tribes or other grass root innovators though these informal innovators have generated a rich store of traditional knowledge. Taking advantage of the modern patent laws, the new technology is monopolized and
controlled by the modern scientists in collaboration with large corporations, majority of who are located in developed countries. The corporations reap the major share of the profits derived out of commercialization of these technologies. The traditional knowledge, on the other hand, is in the possession and control of indigenous and local communities, majority of who are living in developing and least developed countries. Though their knowledge systems were used, their rights were never recognized nor are the communities adequately compensated by equitably sharing the benefit derived from such commercialization.

The pharmaceutical and other industries manufacturing food, personal care products, dyes and industrial oils and other compounds have benefited from the knowledge and resources of indigenous people. Companies have often investigated useful attributes of substances known to indigenous community, and after isolating the active principle, thereof, they have modified the products or sometimes used it as a lead for the design of a new compound. It is an “intriguing and potentially unstable combination, some of the world’s most globalised and hypermodern companies seeking deals with some of the world's most local and traditional people”.

As negotiations over access and benefit sharing, disclosure clause inclusions dominate the centre stage of issues relating to traditional knowledge, the larger question of who possesses knowledge rights and who has the sovereign rights over resources that are part of the global commons remains unanswered.

Territorial rights “claimed by indigenous people clash with the eminent domain right of a modern state which provides that every government has an inherent right to take and appropriate the private property belonging to individual citizen for public use”. The state may “allocate large tracts of land within its territory for development programs that would involve exploration and exploitation of natural resources, such as, minerals and water sources under the doctrine of eminent domain”. Indigenous people’s territories are usually the wealthiest places in term of natural resources. States may under the garb of eminent domain acquire land and other property of indigenous people.

One more way through which the indigenous people are being exploited is by converting the collective rights in knowledge into individual rights. There is no doubt that a tremendous amount of traditional knowledge has been disclosed and disseminated over the years without the authorisation of the holders. Indigenous societies often consider each member as having collective rights and responsibilities that are linked
inextricably. The process of globalization is threatening this collective knowledge of society by turning it into proprietary knowledge for commercial profits through patents. Indigenous societies are often so naive that the concept of rights is foreign to them, but if rights are recognized, then individual rights are far subordinate to the rights of the group as a whole. Indigenous society has such strong group cohesion that the rights of the group are vastly more important than the rights of the individual, and intellectual property belongs to the group. In traditional societies, knowledge creation is communal and cumulative in nature because knowledge is developed and handed down from one generation to the other. Each generation contributes to the corpus of knowledge by addition or reformation.

Indigenous world prioritizes the communal interests over and above those of the individual. Ownership of traditional knowledge and expressions of culture is, therefore, a collective, as opposed to an individual phenomenon. Whereas, the rights granted under patents are individual rights. The inventor gets exclusive rights and there are no group rights under patent laws. By reducing human knowledge to the status of private property, patents shrink the human potential to innovate and create, they transform the free exchange of ideas into theft and piracy. The holders of traditional knowledge do not own patent rights or any other form of intellectual property rights over their knowledge. There is rarely only a single inventor, the rights over the knowledge are held collectively, which raises issues in sharing of joint profits from subsequent innovations. Indigenous people do not use their knowledge to amass limitless private profit and wealth. They practice what is in India called as gyan daam, the gifting of knowledge. By their very logic, on the other hand, patents “exploit knowledge for profit by excluding others from its use during the life of the patent”. Since patents are often “based on local knowledge, they amount to an intellectual and material enclosure”. Consequently, people “lose access to the knowledge and resources vital to their survival and creativity and also, to the conservation of cultural and biological diversity”.

4.5.1. MISAPPROPRIATION OF TRADITIONAL KNOWLEDGE THROUGH PATENT LAWS

The problem caused by patent rules “allowing discovered natural substance to be protected is compounded by the increasing numbers of patents being granted for inventions that lack novelty and inventive step and are essentially reformulations of
existing knowledge with claims covering products that differ minimally, if at all, from those that already exist”. Although an “applicant is not allowed to receive a patent if he did not himself invent the subject matter sought to be patented, there are concerns that this loophole sometimes allows people to copy such undocumented foreign traditional knowledge and claim they have come up with a new invention”.

The traditional knowledge of indigenous people, which has no recorded right holder, is pirated by scientists/technologists and/or their employers/companies/corporations by making minor modifications or advances and then, the whole is claimed as their private property. They seek patent rights for their modifications”.

Over the past few years, the “patent system has come under considerable criticism of its failure to prevent the traditional knowledge. While there is wide agreement that protection of traditional knowledge cannot be successively accomplished through the patent system, increasingly, consideration is being given to suggestions to use the patent system as a defensive measure against misappropriation of traditional knowledge”.

A number of concerns have recently been raised regarding the protection of traditional knowledge using the patent rights regime. According to ‘World Intellectual Property Organisation’, there are “two concerns expressed by member states, first, availability of patent protection for traditional knowledge holders and, second, acquisition by parties other than the traditional knowledge holders of patent rights over traditional knowledge based creations and innovations”.

The link of traditional knowledge to patents “arises from the fact that in many instances non indigenous people or their licensees are granted patent rights over the final products, without any acknowledgement of the contribution of countries/regions of origin or of indigenous communities”. Indigenous people are demanding that “when profits are gained with the help of traditional knowledge of indigenous people, the benefits and technologies developed should be shared with the original suppliers of traditional knowledge”.

The lack of protection for traditional knowledge and for traditional knowledge related inventions have important impacts on traditional knowledge. One of the main impacts of patents over traditional knowledge related inventions is that all freely accessible traditional knowledge becomes public domain knowledge. Thus, patents over traditional knowledge related inventions foster a direct or indirect shift in property rights from traditional knowledge holders towards patents rights holders.
Traditional knowledge, it is alleged, does not exist in a form that can be accorded the status of patentable property which is reserved for those innovative ventures that yield results and products that the market and global users can understand. Few nations have notion that the “current patent system cannot protect traditional knowledge for three reasons; first, the current system seeks to privatize ownership and is designed to be held by individuals or corporations, whereas traditional knowledge has collective ownership, second, this protection is time-bound, whereas traditional knowledge is held in perpetuity from generation to generation and third, it adopts a restricted interpretation of invention which should satisfy the criteria of novelty and be capable of industrial application, whereas traditional innovation is incremental, informal and occurs over time”.

4.5.1.1. PATENT AND PROTECTION OF TRADITIONAL KNOWLEDGE

Patent is a “legal concept that deals with creations of human ingenuity”. These creations are considered to be “property and are protected for a certain period of time”. Although there is “no reason why such categories of rights may not apply to various expressions of traditional knowledge, there are several characteristics of traditional knowledge that create barriers to protection through the use of exiting forms of patents”. A claim to “legal control over knowledge will normally fail if there is no external manifestation or precise delineation, no identifiable author or inventor, and no novelty or originality”. Indigenous knowledge, often, “falls short of these requirements”.

A necessary criterion that patentable invention must meet is that it “must be considered non-obvious or novel”. Indigenous knowledge often “falls short of this requirement as traditional knowledge is often orally transmitted, evolves gradually, the prime ambition being to respond to changing ecology and needs. It never actively endeavours to be novel or distinct from nature”. In order to patent the knowledge, it “must be novel and it must not be known to the public”. Traditional knowledge by its very nature is knowledge that has been “known over a long period of time and therefore, it lacks novelty”. For this reason, it “cannot be brought within the ambit of patent protection. The patent system gives the entire economic benefit to those who have only slightly altered the traditional knowledge making it novel and gives nothing at all to those who developed it over generations to its present form”.

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Being traditional is “by definition not new”. It, therefore, cannot satisfy criterion of novelty. The real problem is that, under many international treaties and conventions, there is no requirement for patents to adopt a standard of global and absolute novelty. With some trivial alteration, such traditional knowledge may do away with the tag of novelty and be patented in countries, whose test of novelty is state-centric or World Trade Organisation centric.

Another requirement in patent law to be considered in light of traditional knowledge based inventions is sufficient inventive step. The grant of patent status to traditional knowledge derived inventions is very much dependent on how sufficient inventive step can be established by an individual or commercial entity. The inventive step of an invention will be achieved, when it is “not obvious to a person skilled in the art, taking into account any matter which forms part of the state of the art”. Patent authorities are responsible to ensure that these “substantial requirements to patentability are met by the claimed invention before a patent is actually granted”. The broad development underlying this issue is that, as the “reach of the intellectual property system in the global information society extends to new stakeholders, such as, indigenous and local communities, their knowledge base, including in particular their traditional knowledge, constitutes an increasingly relevant body of prior art”. Prior art under the regulations under ‘Patent Cooperation Treaty’ (PCT) is “everything which has been made available to the public anywhere in the world by means of written disclosure and which is capable of being of assistance in determining that the claimed invention is or is not new and that it does or does not involve an inventive step”.

When traditional knowledge is disclosed, it becomes ‘publicly available’ and hence, under current patents rules lies in the public domain making it an obvious form of knowledge that cannot be claimed as intellectual property. As the Indian Supreme Court in Bhishwanath Prasad Radhey Shyam vs. Hindustan Metal Industries has held “it is important to bear in mind that in order to be patentable, an improvement on something known before or a combination of different matters already known, should be something more than a mere workshop improvement, and must independently satisfy the test of invention or an inventive step. To be patentable the improvement or the combination must produce a new result, a new article, or a better or cheaper article than before. The combination of old known integers may be so combined that by their working inter-relation, they produce a new process or improved result. Mere collection
of more than one integers or things, not involving the exercise of any inventive faculty, does not qualify for the grant of a patent”. This was reiterated in the case of Dhanpath Seth & ors vs. Nil Kamal Plastic Crates Ltd., partly “recognized the importance of inventive step when applied to a traditional knowledge derived invention. The essential inference is that as long as a traditional knowledge derived invention does not qualify as prior art, it safely sails through the process of a grant. This however, is quite dependent on the patent office examining such applications”.

One more essential condition under patent law is that invention must be “useful and capable of industrial application”. Since indigenous systems are “non industrial but part of folk traditions or small scale production processing and use, they also do not meet criterion of industrial application”. Patents are recognized only when “knowledge and innovation generate profits”. Traditional knowledge does not always reap profits, so it is unable to fulfil this criterion for grant of patent.

Another feature which prevents traditional knowledge being regarded as patentable is the element of disclosure. When traditional knowledge is disclosed, it becomes publically available hence, under patent rules, lies in the public domain making it an obvious form of knowledge that cannot be claimed as patent. Indigenous knowledge is “not traceable to a specific community or geographical area and is often classified as falling within the public domain”. The public domain has been used to serve as a tool to deny the claims of traditional knowledge for patent protection. On the other hand, if forms of traditional knowledge are undisclosed and remain non-codified, they get termed as folk, rural, tribal and indigenous, “based on traditional beliefs, norms and practices, on centuries old experiences of trials and errors”, and therefore, cannot be classified as innovation.

The “identification of prior art constitutes a cornerstone for the substantive examination of applications for titles, since requirements, such as, novelty and inventive step are established by comparing the claimed subject matter with the relevant prior art”. There have often been instances where, patents based on or derived from traditional knowledge have been granted without considering adequate requirements with respect to novelty and inventive step. This has happened mainly due to the absence of thorough research by patent examiners or because of the inadequacy of information available for the purposes of searching for prior art.
The most challenging aspect in protection of traditional knowledge is the “substantive examination of patent applications to ensure not only that the claimed invention is novel, inventive and industrially applicable, but also that the applicant meets the disclosure requirements”. Some “patent applications, now, run to thousands of pages of technical data, in a wide array of technology fields, and substantive examination involves both professional/technical competence and access to the international patent information computer databases”. Very “few developing countries are capable of doing substantive examination in a broad range of technology sectors in-house”.

There is growing worldwide “opposition to the granting of patents on traditional knowledge”. Farmers and indigenous people are concerned that “plants that they developed are being hijacked by companies”. There is growing “public outrage that these companies are being granted patents for products and technologies that make use of the genetic materials, plants and other biological resources that have long been identified, developed and used by farmers and indigenous people”. 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”. Patent protection “transforms farmers into suppliers of free raw material, displaces them as competitors, and makes them totally dependent on industrial supplies for vital inputs such as seed”. The “knowledge and use of biodiversity resides with these farmers and indigenous people, who have shared their knowledge and plants freely”. Yet “through patent applications, the companies are claiming the exclusive right to produce and sell many modified knowledge, which have been manipulated to contain selected foreign genes”. The “knowledge, innovation and efforts of these communities are not acknowledged and indeed are discarded”.

According to patent laws, “patents cannot be granted for substances that exist in nature or traditional knowledge taken as it is, as these do not fulfill the criterion of novelty or inventive step”. However, the “procedures followed in determining the novelty of patentable inventions differ even amongst industrialized countries”. Developing countries rightly believe that “patent systems that are not based on searching both the written and oral prior art for worldwide novelty and that do not insist on disclosure of the origin and proof of prior informed consent for the use of the biological materials or traditional knowledge on which the invention is based”.

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The irony is that “India has suffered even though its traditional knowledge has been documented extensively”. However, the documentation is available in languages which are not found to be easily accessible to international users. For instance, “Ayurvedic texts are in Sanskrit and Hindi, Unani texts are in Arabic and Persian and Siddha material is in Tamil language. Patent examiners, when considering the patentability of any claimed subject matter, use available resources for searching the novelty and appropriateness of the patent in question”. Patent literature, however, is usually wholly “contained in several distinctive database and does not access prior art that may be buried somewhere in the many and diverse sources of non patent literature”.

4.5.2. MISAPPROPRIATION OF TRADITIONAL KNOWLEDGE OF INDIA

A little publicized fact about India is that there are “around 100 million forest dwellers in India, most of whom belong to tribal communities. The forests provide them with sustenance. The forest dwellers have over the centuries gathered knowledge from the natural environment around their community”. This community has “carried on the traditions of their ancestors”. The “forests and its dwellers give to India an abundant knowledge about the traditional value of various forest products”.

Some traditional knowledge especially in India have through history become “disclosed as a result of codification (that is, formalization in written form), wide use, or through collection and publication by anthropologists, historians, botanists or other researchers and observers”. Different cultures have evolved different knowledge traditions, and different values and norms for the sharing and exchange of that knowledge, for example, at the beginning of the agricultural season in India, during a festival called Akti, farmers bring their diverse seeds together and exchange them. In this cultural context, the seed is treated as common, not private property. Such traditions are part of heritage of India.

India has a “rich and ancient heritage of medicinal knowledge based on its vast resources of medicinal plant biodiversity”. Even today, “over seventy per cent of health care needs of India are met by these systems of traditional knowledge. According to an ethno botanical survey, there are 7500 species of plants which have been used for medicinal purposes by the local indigenous communities”. Everywhere local people have made “independent appraisals of their local resources”. Today, “these production
systems and their technologies are under severe threat from the new monopolistic protections being carved out for multinational corporations through patent regime”. The “sharing and exchange of biodiversity and knowledge” of its properties and use has been the “norm in all indigenous societies, and it continues to be the norm in most communities including the modern scientific community”. Sharing and exchange “get converted to piracy when individuals, organizations or corporations who freely receive biodiversity from indigenous communities and knowledge convert the freely received gifts into private property through patent claims”.

Indians have the attitude of “sharing the knowledge to others without protecting it”, which has proved to be a major drawback at some times. Thus, there was “no mention in the Patents Act, 1970 for the protection of products, such as, Darjeeling tea and Basmati rice, which are famous for their superior quality from that geographical location. In addition to these, since ancient times some plant parts of turmeric, neem were well used as medicine, but there was “no mention in the Patents Act, 1970 for the protection of the ancient knowledge which is being used since generations”.

In April 2004, the Indian Government amended the Patents Act, 1970 to cover food, agribusiness and pharmaceuticals. By doing so, India succumbed to the pressure from developed countries, in particular the United States, to not only ensure “compliance with the World Trade Organisation (WTO), Trade Related Aspects of Intellectual Property Agreement (TRIPs)” but to actually go beyond its requirements. Referred to by critics as TRIPs Agreement plus legislation the main beneficiaries of the amended law are multinational companies in the developed countries. While the “government has gone to great length to protect the patents rights of foreign companies in the food, agribusiness and pharmaceutical sector, it has done little to protect the patents rights of local farmers”. The major issue emerging in India is the “right to survival of two thirds of India-poor people who derive their livelihood from natural resources and traditional technologies”. A large number of proportions of the people displaced by development projects in India belong to tribal communities. It is a matter of concern that around 40 percent of the people displaced belongs to tribal communities though they account for only eight percent of total population of the country.

4.5.3. MISAPPROPRIATION OF TRADITIONAL MEDICINAL KNOWLEDGE OF INDIA
Traditional medicines have long been “used all over the world to treat a wide variety of ailments”. One strand of “modern medical research has focused on isolating and then marketing the active ingredients in these medicines, recognizing that there is a wealth of potential cures in the world’s flora, particularly in tropical countries. The drug companies, recognizing the profit potential have followed rediscovering what was long ago discovered by traditional cultures and in some cases doing no more than rebranding it”. Developing countries and their traditional communities have contributed considerably to the global pharmaceutical industry. The commercial exploitation of the plants has been accompanied by appropriation of traditional knowledge. Though the discovery of biologically active constituents and trade in medicinal plants from “developing countries has increased in the past few decades, little, if any, benefits accrue to the source countries or the traditional communities”.

Of the “120 active compounds currently isolated from the higher plants and widely used in modern medicine, 75 percent have uses that were known in traditional systems. Fewer than a dozen are synthesized by simple chemical modification; the rest are extracted directly from plants and then purified”. Patents on “biodiversity or products of biodiversity or uses of biodiversity falsely claim properties of plant derived drugs as products of the mind, when they are actually products of plant biodiversity”. Patents cannot “offer protection to the intellectual heritage” of practitioners of indigenous medicinal traditions. The “knowledge of utilization of biodiversity for particular health problems which is available in traditional systems is not patentable by indigenous practitioners since the criteria of patentability novelty, non obviousness and industrial application are not fulfilled”. However, when “knowledge from these ancient systems is transferred to the west, translated into western systems for commercialization on a large scale, it gets treated as novel, non obvious and having industrial application”.

Volumes of documentation reveal the extent to which commercialized patented products, a very large proportion of patented products being pharmaceuticals, stem from the traditional use patterns and knowledge bases of the traditional communities, which ought to have been recognized as evidence of prior use in order to contest novelty or non obvious claims for patents. The United States Patents and Trademark Office had “already granted fourteen patents on mustard, seven on castor, four on amla, three each for cassia, and kumara, and two for bitter guard, black cumin, jatropha and black nightshade for their various properties”, says the report by Afzar H. Jafri, Deputy
Director of Research Foundation for Science Technology and Ecology. The report lists “twenty two medicinal and agricultural plants, including ritha, amaltas, kumara, pomegranate, balsam and Rangoon creeper that have been patented in America and Europe. The United States tops the list with the maximum number of patents for Indian plants, followed by Japan, Canada, France, Germany, and the United Kingdom”.

Corporate driven globalization has not yet bridged ideological and cultural differences apparent in the patent laws of nations. Forced attempt at the harmonization or unification of dissimilar national patent laws merely paper over deep cracks. Interestingly, discussion on unification or harmonization of law has suffered from an initial false assumption that law is a simple single conception. Under this imperialistic, one size fits all assumption, the conception of law that is regarded as material is the western conception. All other legal cultures, especially those that are opposed to or sceptical about patent systems, are assumed to be retarded, primitive, and backward.

In an unequal world, in which the gulf between the rich and poor countries is wide, the patent rights system, instead of bridging the gulf, widens it further and proves detrimental to the interest of the poor countries. One issue among the many debated in connection with the “recognition and protection of traditional knowledge is whether or not it is possible for traditional knowledge holders to use the existing patent system to their advantage”. Patent laws are “very technical and sometimes complex”. This complexity is further compounded when they are “exploited by states as instruments of both domestic and international economic policy”.

4.6. GLOBAL PATENT REGIME AND PIRACY OF TRADITIONAL KNOWLEDGE

So far as globalization is concerned, it came within the comprehension of people in 1990s which not only led to overall growth and development, but also opened a pandora box leading to various socio-economic and cultural problems. The major problem has been faced by indigenous and tribal people who became victims in the hands of globalization.

The interests of the developing nations are increasingly neglected in global community which is dominated by developed nations. As the ‘trade and commerce of developing countries is going to be enriched with rapid speed, as they are rich in biological resources and traditional knowledge’, and the industrialized countries are not able to
tolerate this enrichment as it adversely affect their trade. Doubts are being raised that
the developing countries and the underdeveloped countries will not be allowed by the
developed countries to reap the benefits of globalization and free markets, as all the
benefits will be grabbed by the resourceful rich countries of the west. Multinational
Corporations have encroached upon the traditional knowledge of indigenous people.
These corporations have exploited the natural resources causing ecological imbalance.
Any activity affecting the resources has its impact on the lives of indigenous people.
Similarly, any activity affecting the indigenous people will also have an impact on the
natural resources. So, the protection of the traditional knowledge of the indigenous
people has become one of the most contentious and complicated issue.
The traditional knowledge is drawing global attention due to recent awareness regarding
the value of this knowledge. This has “not only made the traditional knowledge systems
popular but has also made the indigenous system prone to patenting both within the
country of origin as well as outside”. The “patents though can be obtained on slight
modification of the indigenous way of processing for the product, it cannot be given for
indigenous knowledge directly, since these are age old practices and do not meet the
basic criteria for patentability”.
Notwithstanding the attempts at harmonization of patent laws and procedure, there is no
international patent system in the strict sense of the word, rather, individual states while
maintaining an essentially domestic patent system of varying degrees of effectiveness,
attempt to synchronize their national patent laws and systems with one another. The
overwhelming dominance of powerful states and industry in the formulation of patent
law rules has global implications. The patent for innovations in high-tech areas, are in
the hands of the developed countries. So, evidently the primary and immediate
beneficiaries of the programme of harmonization of patents are likely to be already
industrialized countries and the developing countries are at a distinct disadvantage as
receivers.
The fact of today is that existing patent law in “most developed countries provide little
protection for traditional knowledge. The key players in the patent arena, the developed
nations, are “unwilling to extend international protection to traditional knowledge”. 
These nations often view this traditional knowledge and the practices as being
“unsuitable for patent, since they pertain to collective rights, which have no identifiable
inventors”. This view is criticized as “overemphasizing the role of individuals in
knowledge creation, by providing them with patent protection, while failing to reward knowledgeable communities that supplied the intellectual raw materials which formed the true basis for the protected work”.

4.6.1. UNITED STATES PATENT LAW
Developed countries are making billions of dollars by pirating the knowledge of the local communities relating to diverse uses by claiming patents on it. The phenomenon of bio-piracy by the western commercial interests, who claim product innovation derived from indigenous knowledge as their intellectual property, has “emerged as a result of the devaluation and invisibility of indigenous knowledge systems and the lack of existing protection of these systems”. While the United States has been the leading voice against piracy of intellectual property, the United States is also the country leading in biopiracy through patent in biodiversity related knowledge. India is one of the biodiversity rich countries which are losing its precious natural heritage to the west.

In the United States, “to qualify as an invention, an item has to be useful, novel, and non-obvious. Most jurisdictions apply this threefold test. Anything already in the public domain is not considered novel as it is prior art. Since traditional knowledge generally has been public within the society for centuries, it falls within the public domain”. Although traditional knowledge has many uses, these uses often fail to meet the novelty and non-obvious requirements of patent applications.

The United States and most other developed countries” jurisdictions operate on the first to file system, i.e., the person who files first gets the patent”. These jurisdictions “restrict their search for use in the public domain to the country in which the patent application is made”. This is in spite of the fact that the subject of the “patent may have long been in use in public domain in other parts of the world”. Prior art in foreign countries “anticipates a United States patent, only when the foreign activity is in a tangible, accessible form such as a published document or a patent”.

The notion of printed publication has not been given any clear meaning in the United States. The prior art must not only be printed but also published to fulfil the criteria. Most of the people and cultures in the developing countries tend to rely on the oral transmission of knowledge, so, the cultural and economic damage that this regime wreaks on them is enormous.
The United States operates regime of limited, state-centric and geographically specific notions of printed publications in the determination of prior art. United States issues almost half of all patents operative in the world. The obvious consequence is that, for states and people who do not have strong formal structures for patenting their knowledge and for publishing their knowledge in journals, their natural resources could be discovered and taken to the United States for the purposes of patent. Considering the huge information gap between the developed and developing and under developed countries, the enormous global ignorance of traditional knowledge of developing and under developed countries and the limited knowledge of diversity of plant life forms available to and in common use among traditional people in these countries, it hardly takes more than a visit to a village in these countries for someone from developed nations to become a discoverer or inventor.

### 4.6.2. EUROPEAN LAW

National and regional “patent laws vary with respect to how information or material in the public domain should be presented or described in order that they constitute novelty-defeating prior art”. The ‘European Patent Convention’ considers an “invention to be new if it does not form part of the state of the art, which is held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application. This indicates that articles which are publicly available may form the state of the art whether or not they have been described in writing or even orally”. Furthermore, the “information disclosed by a product is not limited to the information that is immediately apparent from looking at the product”. The information available to the public also “includes information that a skilled person would be able to derive from the product, if they analysed or examined it”. However, developing world has to be cautious because any “information that is obtained as a result of an analysis undertaken by a person skilled in the art must be obtained without undue burden or without the need to exercise any additional inventive effort. This analysis of how Europe defines and assesses novelty-defeating prior art suggests that many so-called biopiracy cases could not be legally challenged there, and that traditional knowledge databases will make little difference”.

It is well established in the patent laws of Europe and America that while one “cannot claim as an invention something as it occurs in nature, it is possible to do so if one
extracts it from nature and thereby make it available for industrial utilisation for the first time”. This argument may not always convince a patent examiner or a court, though, but one almost certainly will, if one changes the substance or life-form in some way such as by “adding something to it, subtracting something from it, mixing it with something else to create a new effect, or structurally modifying it so that it differs in an identifiable manner from what it was before”. It, also, appears to be “possible to get a patent on a natural substance by simply being the first to describe it in the language of biochemistry”.

4.6.3. TRADE RELATED ASPECTS OF INTELLECTUAL PROEPRTY RIGHTS AGREEMENT

Knowledge and resources are “systematically alienated from the original custodians and donors and have become the monopoly of the multinational corporations”. Through this trend, “biodiversity is converted from a local commons into an enclosed private property”.

The creation of property through the “piracy of other’s wealth remains the same as 500 years ago”. The freedom that “transnational corporations are claiming through patents protection in the General Agreement on Trade and Tariff (GATT) and Trade Related Aspects of Intellectual Property Rights (TRIPs) Agreement is the freedom that European colonizers have claimed since 1492. It seems that the western powers are still driven by the colonizing impulse to discover, conquer, own and possess everything, every society and every culture”.

The Trade Related Aspects of Intellectual Property Rights Agreement is “not the result of democratic negotiations between the larger public and commercial interests or between developed countries and the developing countries”. It is the “imposition of values and interests by western transnational corporations on the diverse societies and cultures of the world”. As the TRIPs Agreement was being negotiated in Geneva in 1993, “the Council of Economic Advisers and the Office of Science and Technology Policy in the White House tried to make the American negotiators understand their deep reservations”. American and European negotiators “adopted the positions of the drug and entertainment industries, and others, simply wanted the strongest intellectual property rights. Not surprisingly, given the respective bargaining power of those at the
The agreement that emerged was close to that demanded by special interests in the United States’.

The preamble of the TRIPs Agreement “recognizes intellectual property rights only as private rights. This excludes all kinds of knowledge, ideas and innovations that take place in the intellectual commons, in villages among farmers, in forests among tribal people and even in universities among scientists”. TRIPs Agreement is a “mechanism for the privatization of the intellectual commons and a deintellectualization of civil society”. There is a “shift from common rights to private rights”.

The TRIPs Agreement is one of the mechanisms that facilitates and provides incentives, “in the form of patents and related intellectual property rights”. The Agreement has set new “international norms for the protection of intellectual property rights and the enforcement of those norms”. It envisages a uniform regime of intellectual property right for all countries, without taking into consideration the different levels of the development. This approach is harsh towards the developing and underdeveloped countries. The developing and underdeveloped countries cannot compete with the developed countries by any stretch of imagination and are bound to lag behind in the race of invention and innovation.

Article 27 of TRIPs Agreement provides for the general rule all the inventions are patentable, subject to certain exceptions which can be laid down by member countries keeping in view the relevance of the invention for public order, morality, environment and animal kingdom including plants. In addition to the exception found in this article, “the member countries may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions of the patent do not unreasonably conflict with the normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner”. Article 27(2) provides for “exclusion from patentability inventions, whose commercial use needs to be prevented to safeguard against serious prejudice to environment”. This phrase is rather vague. A country would be required to “first define what serious prejudice is, then justify the prevention of commercial use and only then justify non-granting of patents”. Article 27(3) provides “the countries to exclude plants and animals from patentability by providing an effective means or sui generis system of protection of intellectual property rights related to these, which will be interpreted differently by various countries”.

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Article 31 of the TRIPs Agreement permits a World Trade Organisation “member to pass a national law providing for use of the subject matter of the patent without the authorization of the patent holder under certain conditions”. This can be done by granting compulsory licence. The conditions include the obligation to “grant such licences if an unsuccessful attempt has been made to acquire a voluntary licence on reasonable terms and conditions within a reasonable period of time.

The TRIPs Agreement “fails to protect traditional knowledge because it does not provide an international rule of novelty and gives too much discretion to states in shaping their own domestic patent law”. Moreover, it also “does not recognize the need for equitable sharing of benefits accruing from use of knowledge related to biodiversity”. This has, thereby, resulted in “conflicts between commercial use of biodiversity related knowledge and the community use of this knowledge. Besides, TRIPs Agreement also ignores the responsibility of protection and conservation of this biodiversity, which is being used commercially and traditionally”. The agreement has become an “instrument for displacing and dispensing with the knowledge, resources, and rights of indigenous people”, especially those who depend on biodiversity for their livelihoods, and who are the original owners and innovators in the utilization of biodiversity. Thus, it can be submitted that international treaties and agreements have failed to prevent piracy of traditional knowledge.

4.7. CASES OF PIRACY OF TRADITIONAL KNOWLEDGE OF INDIGENOUS PEOPLE OF INDIA

Concern that has been expressed in the discussions on different platforms is about the “grant of patents covering traditional knowledge to persons other than the indigenous people or community who have originated the knowledge and legitimately controlled it”. Granting patents on traditional knowledge already in public domain “without the consent of indigenous people and local communities amounts to unauthorized appropriation” of the traditional knowledge. It happens mostly because of “deficiency of the local legislations and systems with regard to prior art in foreign countries”. This is best illustrated by what is “probably the most celebrated case of its kind, a patent on healing properties of turmeric granted in the United States”.

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4.7.1. TURMERIC

The turmeric case was a “landmark case, as it was the first time that a patent based on the traditional knowledge of a developing country had been successfully challenged”. Turmeric (Curcuma longa) is a “plant of the ginger family used as a spice for flavouring Indian cooking”. It also has “properties that make it an effective ingredient in medicines, cosmetics and as a colour dye. As a medicine, it is traditionally used to heal wounds and rashes”. On December 28, 1993, an “application for a patent on the use of turmeric in wound healing was filed before the United States Patent and Trademark Office. Suman K. Das and Hari Har P. Cohly were shown as the inventors, and the University Of Mississippi Medical Centre was shown as the assignee. The patent was granted by the United States Patent and Trademark Office on March 28, 1995 under Patent No. 5,401,5041”. The main claim in the patent was a “method of promoting healing of a wound in a patient, which consists essentially of administering a wound-healing agent consisting of an effective amount of turmeric powder to said patient”.

The ‘Council of Scientific and Industrial Research (CSIR)’ in India filed a “re-examination case with United States Patent and Trademark Office (USPTO), challenging the patent on the basis of prior art i.e. existing public knowledge and that the inventors have added nothing new to this knowledge”. Council of Scientific and Industrial Research claimed that the “patent did not fulfil the legal requirement of novelty”. The Council argued that “turmeric has been used in India for thousands of years for healing wounds and rashes and, therefore, its medicinal use was not novel invention”. This claim was “supported by documentary evidence of traditional knowledge”. India was able to show, by means of “32 documents that the claimed new use for turmeric had in fact been well-known in India long before the filing of the patent application”. Council presented an “ancient Sanskrit text including a paper published in 1953 in the Journal of the Indian Medical Association”. As per the conditions of patentability, under United States patent law, the prior art clause is recognized if it is described in a printed publication. The patent was “granted on the basis of limited searches for prior art which did not indicate that the claims were a part of public domain”.

The United States Patent Office “upheld the objections filed by the Council and revoked the patent”. The revocation was done on the “ground that the alleged invention was actually a part of public domain knowledge in India”. The patent was eventually
“cancelled in 1998 after re-examination proceedings”. This case “revealed to India and to indigenous societies around the world, how easy it was to falsely patent centuries-old traditional knowledge”.

The turmeric dispute highlights the central “issue of whether the use of turmeric in wound healing should have qualified as a patentable United States product and whether it meets the legal criteria of novelty, non-obviousness, and utility”. United States patent law is criticized for “discriminating against developing countries by failing to recognize products like turmeric as non novel, despite the fact that this medicinal plant and other traditional agrochemicals have been used in healing for thousands of years”. The patent should never have been granted in the first place”. This is because in many countries the examination process is not as thorough as it should be. In the United States, “documentary proof is necessary to show novelty outside the country. Oral knowledge is not considered novel if it is found abroad, but it is considered novel if found in the United States”. As the “turmeric patent had been filed in the United States, the patent law as found in the United States applied. This meant that it was necessary to produce documentary proof that spoke both of turmeric powder and wound healing (the words used in the claim), other terminology being inadequate to satisfy the patent law”.

India considers the use of turmeric in wound healing to be well known. As the Matsya Purana said, as early as in the 8th Century AD, “All poisons can be removed from the human body if treated with a paste of turmeric”. However, “a patent office abroad may consider the same use to be novel, when unknown to that office”. The dispute “exemplifies collision between indigenous people and commercial interests over so-called biological prospecting, the growing practice of scouring the globe for exotic plants, microbes, and other living things ripe for commercial exploitation”. That has not stopped some of the world’s poorest countries which are also the richest pockets of natural biodiversity, from contesting patent claims based on their knowledge resources.

4.7.2. NEEM

The grant of patents on non-original innovations particularly, those linked to traditional medicines, which are based on what is already a part of the traditional knowledge of the developing world, have been causing a great concern to the developing world. After patent of turmeric another case of grant of patent on neem came into light that is another example of misappropriation of traditional knowledge of developing world.
Neem (Azadirachta indica) is a tree from India and other parts of South and Southeast Asia. It is now planted across the tropics because of its properties as a natural medicine, pesticide and fertilizer. The neem tree is known in several Indian communities as a cure of ailments, as a wonder tree. Ancient Indian Ayurvedic texts have described the “neem tree and it’s medicinal healing properties” as far back as in 5000 BC. For hundreds of years, at least, “rural people in India have used various parts of the neem tree for a variety of uses ranging from toothpaste to pesticide”. Neem extracts is “used against hundreds of pests and fungal diseases that attack food crops, the oil extracted from its seeds is used to treat colds and flu and mixed in soap, it is believed to offer low cost relief from malaria, skin diseases and even meningitis”. In some parts of India, the “New Year begins with eating the tender shoots of the neem tree. In other parts, the neem tree is worshipped as sacred. Everywhere in India, people begin their day by using the neem datun (toothbrush) to protect their teeth with its medicinal and anti-bacterial properties”.

This heritage is “being stolen under the guise of patents. For centuries, the western world ignored the neem tree and its properties, the practices of Indian peasants and doctors were “not deemed worthy of attention by the majority of British, French, and Portuguese colonists”. In the last few decades, however, “growing opposition to chemical products in the west, in particular pesticides, has led to a sudden enthusiasm for the pharmaceutical properties of neem and other plants with such properties”. Despite neem’s ancient tradition, over twelve United States “patents were taken out on neem based emulsions and solutions”. One patent taken out by “W. R. Grace and Co. in the United States covered a technique for improving the storage stability with the help of neem seed extracts containing azadirachtin (United States Patent No. 4946681). Another patent obtained by the same company covered a storage stable insecticidal composition including a neem seed which had increased stability (United States Patent No. 5124349)”. The increase in “stability of this preparation over traditional neem preparations presumably makes it more convenient for commercial distribution as well as on-farm use”. Many of the “patented inventions were, though, different from traditional uses of neem, the holders of a number of patents drew upon knowledge of traditional practices in India”. Some of the patents were “not truly novel because in fact, they not only drew upon but consisted of traditional knowledge. Some of them actually
constitute prior art in the form of traditional knowledge”, which should not have been patented.
In 1994, the ‘European Patent Office (EPO)’ granted a patent no. 436257 to the US Corporation, W.R. Grace Company and United States Department of Agriculture for a “method of controlling fungi on plants through hydrophobically extracted neem oil”. In 1995, a “group of international Non Government Organizations and representatives of Indian farmers filed a legal petition against the patent. They submitted evidence that the fungicidal effect of extracts of neem seeds had been known and used for centuries in Indian agriculture to protect crops”, and thus was a prior art and unpatentable. The Indian government filed a “complaint in the United States patent office accusing W.R. Grace of copying an Indian invention. The European Patent Office, after five years of legal battle, in 2000 withdrew the European patent grant to W.R. Grace and the United States Department of Agriculture for a process to extract oil from the neem tree”. After five more years of litigation, in 2005, “the patent for the anti-fungal properties of neem was also finally revoked and invalidated”. The Opposition Board of the European Patent Office found that the “patent granted lacked novelty”. Following extensive testimony by expert witness, the “four person panel judged that the claimed invention was lacking in inventive step, which is a prerequisite for obtaining patent protection. The panel had earlier ruled that the United States of America/Grace neem fungicide product was lacking in novelty, another patent criterion, and established that its properties and use were prior art years before the proprietors applied for a patent”.

4.7.3. BASMATI RICE
For centuries basmati rice has been grown and developed in the greater Punjab region. Basmati rice is world famous for its “fragrant aroma, long and slender grain, and distinctive taste”. The Oxford dictionary defines basmati as a “long grained aromatic kind of Indian rice”. Basmati refers to a “particular class of rice, of which there are over 400 varieties in India and Pakistan. Over one million hectares of rice paddy are cultivated in India with basmati rice per annum and 0.75 million hectares are cultivated in Pakistan”.
In 1997, a Texas based company “Rice Tec. acquired United States patent no. 5,663,484 on basmati rice lines and grains. Rice Tec. had applied for registration of a mark Texmati before the United Kingdom Trademark Registry”. Rice Tec. had been “trying
to enter the international basmati market with brands like kasmati and Texmati with minimal success. With the patent rights, Rice Tec. would be able to not only call its aromatic rice basmati within the United States, but also label it as basmati for its exports. This was likely to hit Indian exporters of basmati rice badly”. The patent had “twenty claims covering not only the novel rice plant but also various rice lines, resulting plants and grains, seed deposit claims, method for selecting a rice plant for breeding and propagation”. Rice Tec.’s “claims were for a specific rice plant (Claim 1-11, 14) for seeds that germinate the patented rice plant (claim 12), for the grain that is produced by that plant (claims 13, 15-17) and for method of selecting plants for breeding and propagating particular grains of rice (Claims 18-20)”. Claims 15-17 were for “a rice grain having characteristics similar to those of Indian basmati rice”. The patent was “successfully opposed by the Agricultural and Processed Food Exports Authority (APEDA), India”. One of the “documents relied upon by Rice Tec. as evidence in support of the Rice Tec. was United States patent 5,663,484 granted by the United States Patent Office on September 2, 1997”. This United States “utility patent claimed a rice plant having characteristics similar to the traditional Indian basmati rice lines, and with the geographical delimitation covering North, Central or South America, or the Caribbean Islands”. Evidence from the “Indian Agricultural Research Institute (IARI), New Delhi” was used against claims 15-17. The “evidence was backed up by the germplasm collection of the Directorate of Rice Research, Hyderabad, since 1978”. The various “grain characteristics were evaluated” by Central Food Technological Research Institute (CFTRI) scientists and accordingly the “claims 15-17 were opposed on the basis of the declarations submitted by Central Food Technological Research Institute scientists on grain characteristics”.

The Indian government put up a fight against the patent granted to Rice Tec., following which a United States court rules that “the company did invent new technologies and that the patent is valid”. India, then, re approached and filed a “request for re-examination of this patent on April 28, 2000”. Soon after filing the re-examination request Rice Tec. chose to withdraw claims 15-17. Re-examination was on the issue of nomenclature and attempted to protect the name basmati as a geographic indicator. After a prolonged legal battle, the Basmati patent was revoked in 2001. Further, “on January 29, 2002, the United States Patent and Trademark Office issued a re-examination certificate cancelling claims 1-7, 10, and 14-20 (the broad claims covering
the rice plant) and amended claims 12-13 concerning the definition of chalkiness of the rice grains”. In this case, the “patent on basmati not only appropriated of a globally recognized name but also threatened the livelihood of thousands of Punjabi farmers who exported basmati rice”. According to the South Asia Commission on Economic and Social Policy, Rice Tec.’s patent also, “violated the Convention on Biological Diversity in not recognizing the sovereign rights of India and Pakistan over basmati rice”. Basmati case demonstrates the problem that patents are granted to biotechnological processes.

4.7.4. WHEAT

4.7.5. The patent “laws embodied in the TRIPs Agreement have “unleashed an epidemic of the piracy of nature’s creativity” and millennia of indigenous innovation”. One more example of piracy is patent of wheat by European Patent Office. The European Patent Office in Munich revoked Monsanto’s “patent on the Indian variety of wheat Nap Hal”. This was one more victory on the patent front after turmeric, neem and basmati. This was made possible under the “campaign against patent on life as well as against biopiracy”. Monsanto, the biggest seed corporation, was assigned a “patent (European Patent 0445929 B1) on wheat on May 21, 2003 by the European Patent Office in Munich under the simple title plants”. On January 27, 2004, ‘Research Foundation for Science Technology and Ecology’ along with ‘Greenpeace’ and ‘Bharat Krishak Samaj’ filed a petition at the ‘European Patent Office (EPO), Munich’, “challenging the patent rights given to Monsanto on Indian Landrace of wheat, Nap Hal”. The patent was revoked in October 2004 as it lacked novelty. This case once again established the fact that there is an “urgent need to ban all patents on life and living organisms including biodiversity, genes and cell lines”.

4.7.6. GINGER

A patent specification titled “pharmaceutical composition for the treatment of excess mucous production was filed at British Patent Office having a patent priority date of March 16, 2006 by the inventor Nicholas John Larkins. The British patent application discloses a composition comprising ginkgo biloba or extract or component
thereof; apocynin; and a gingerol. The composition may be used to treat diseases such as cystic fibrosis and chronic obstructive pulmonary disease”.

The patent applicant found that “compositions according to the invention may have a remarkable effect in reducing excessive mucous production. Moreover, the use of a gingerol in combination with ginkgo biloba (or extract or component thereof) and apocynin provided a substantial clinical improvement Zingiber Officinale is the scientific name for ginger and commonly known as adrak in India”. Ginger has been “used as medicinal remedy for cough and cold since ages in India”. Moreover, the “medicinal properties of ginger have been the traditional knowledge of India”. Consequently, the “Department of AYUSH and Council of Scientific and Industrial Research (CSIR) intervened and provided evidence from age-old ayurveda and Unani books, dating back to the 18th century that talked about ginger to treat cough and other diseases”.

Patent prior art knowledge was “retrieved from the Traditional knowledge Digital Library (TKDL) database of India and submitted at the United Kingdom patent office”. Subsequently, the “patent examiner took into consideration of the prior art traditional knowledge of India and rejected the patent application for the ginger based pharmaceutical composition for the treatment of excess mucous production”.

4.7.7. JEEVANI

The case of Jeevani drug is one case of benefit sharing in India. The traditional knowledge of India was used with the consent of indigenous people and the people were given share of profits, but this practice didn’t prove beneficial to the indigenous people.

Jeevani is a “restorative, immuno-enhancing, anti-stress and anti-fatigue agent, based on the herbal medicinal plant arogyapaacha, used by the Kani tribals in their traditional medicine”. The “Kani tribe members were using only the fruit of the plant whereas Jeevani was developed from its leaves (never used by the Kani tribe members). Only 13 to 15 percent of the plant was used for the final product, while the remaining ingredients were based on other ingredients developed from ayurvedic knowledge and wisdom”.

Patent applications were filed by Tropical Botanical Gardens Research Institute (TBGRI) “for the process of making the novel formulations. No product patent was applied for at that time, since India did not have a product patent regime” in place but
only a seven year process patent was available. “Twelve active compounds were isolated from arogyapacha. Five patent applications emanated from the research work. Five process patent applications were filed since 1994. Out of them, there were three patent applications in which the plant Arogyappacha was included, one was for diabetes, the second a sport medicine, and third for cancer”.

The Tropical Botanical Gardens Research Institute “licensed the process for manufacturing and marketing the drug to Arya Vaidya Pharmacy, a private company, for a period of 7 years [the term of the pharmaceutical patent at that time] for a consideration of an upfront licence fee of Rs 1 million (USD $25,000) and a right to receive royalties from the sale of the drug at a rate of two percent ex factory price on the sales of the product”. Jeevani was “successfully sold in India as well as in other countries” like the United States of America and Japan. Tropical Botanical Gardens Research Institute “voluntarily agreed to share 50 percent of the license fee and 50 percent of the royalty from the licensing agreement with the Kani tribals, although at that time neither the Biological Diversity Act nor the Forests Rights Act had came into existenc’e.

With the help of officials of Kerala State Government, “the Kanis set up a trust which kept the money in a fixed deposit, and used the interest for activities benefiting the Kani community”. The trust started with nine members in 1997, and by 1999 had 1000 members. Subsequently, a majority of the Kani families became members of the trust. The trust fund was established “to share the benefits arising from the commercialization of the traditional knowledge. The operations of the fund with the involvement of all relevant stakeholders were used for sustainable harvesting of the arogyaapaacha plant”.

Before Jeevani, the Forest Department had turned a “blind eye to the Kani’s activities in collecting the plant but after the properties of the plant became well known, traders directly started entering the forest in search of the plants and removed the plant in large quantities”. The Forest Department “had to halt all collection activities, thus curtailing and punishing even the traditional collection by the Kanis. Attempts were made to grow the plant in nurseries outside the forest, but it was found that these nursery grown plants did not have the same properties as the forest variety. By 1999, the drug could not be produced in sufficient quantities. Financially, therefore, everyone lost out – not only Arya Vaidya Pharmacy and Tropical Botanical Gardens Research Institute, but also the Kanis, who were probably the biggest losers”.

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4.8. PERCEPTION OF RESPONDENTS

The situation of piracy of traditional knowledge of India discussed above has been substantiated by primary study conducted to understand the work done in field of traditional knowledge and to have knowledge about the initiatives taken by the Government and other organisation for the protection of traditional knowledge. In order to study the perception, respondents from Government offices in Chandigarh and New Delhi and from people working in Non Government Organisations working in field of patents and for protection of traditional knowledge have been interviewed.

The study was an attempt to look into the realities about the piracy of traditional knowledge. The study, in this context, revealed that the initiatives taken by the government lack sincere implementation of legislations and lack of vision of the government leading to more and more cases of piracy of traditional knowledge.

The researcher had filed two applications under the Right to Information Act, 2005. One application was filed to ‘Office of National Biodiversity Board’, which is given the responsibility of conservation of biodiversity of India under Biological Diversity Act, 2002 and the other one to ‘Council of Scientific and Industrial Research’, the council which has successfully challenged the cases of piracy of Turmeric and Basmati rice and Wheat.

The application filed to National Biodiversity Board, Chennai sought information on present status of biodiversity of India and about the cases of piracy of traditional knowledge since 1993. The National Biodiversity Board gave the information that the board has no specific information regarding the matters. The researcher has filed an appeal against this application to appellate authority of the Board. In answer to the appeal, the authority informed the researcher that the authority has the information which consists of 142 pages. The researcher is asked to deposit Rs. 284 for getting the information. The reply to the application also, states that the information can be viewed and downloaded from “http://www.cbd.int/doc/world/in/in--nr--05--en.pdf”.

Another application was filed to ‘Council of Scientific and Industrial Research (CSIR)’ seeking information about the case of patent of turmeric by a United States company which was challenged by the Council. In answer to the application, the council replied that the Council has the information on this query and that material consists of 500 pages. The researcher can get information after depositing Rs 1000 to CSIR.
The study is based on unstructured interviews. The insight and experience of respondents provided valuable opinions for the present research. When asked about the situation about the piracy of traditional knowledge, one of the respondents stated that the situation is very dicey. The cases of piracy of traditional knowledge go unreported. The herbal and pharmaceutical companies make unauthorised use of traditional knowledge whereas the use of this knowledge by the pharmaceutical companies is organized. These industries do not report the source of material being used (though it has been made a condition for grant of patent to disclose the origin of material after the amendment in patent law). The respondents stated that the piracy of traditional knowledge is being done at international level even today. The corporations are manipulating the laws for their benefit. People, holding traditional knowledge, are not aware about their rights, so their rights are being violated frequently. The indigenous people are losing their rights on their own flora and fauna. Corporations are taking away what the nature has given to these indigenous people.

One respondent the researcher that the patents branch of Intellectual Property Office of India grants patents to the applicants after following the procedure provided in the Patents Act, 1970. The office before granting the patent rights makes sure that the applicant has fulfilled all the essentials as required by the patents law. The office tries to make sure that the applicant’s product, for which patents is applied, is not taken from anything which exists prior to the application. The requirement of disclosure of origin is to be fulfilled by the applicant.

When asked about the reasons for the piracy of traditional knowledge the respondents submitted that the reasons behind the present situation in Punjab is that the rules made by the State Government as authorized by Biological Diversity Act, 2002, are yet to be implemented. No action for piracy can be taken till the rules are implemented by the State Government. Reconciliation between Centre and State (Punjab) is yet to be achieved on implementation of rules. This is the biggest hindrance in protection of traditional knowledge. Another respondent said that one of the hindrances in protection of traditional knowledge is failure of government in proper and sincere implementation of Biological Diversity Act, 2002. The respondents when asked about the difficulties in implementation of Biological Diversity Act stated that there are some serious issues in implementation of the Act.

a) The definition of traditional knowledge is not provided clearly.
b) The provision for benefit sharing also creates impediments. There is no mention of any framework for working out the benefit sharing. One important issue related to this is as with whom the benefits should be shared, with the community or with the chief of community.

c) The procedure provided for getting permission of the National Biodiversity Board is lengthy, hence proves to be expensive.

The respondents stated that the laws are not adequate and helpful. Indigenous people, who are the possessors of traditional knowledge, are not aware about the laws that can help them. If traditional knowledge is used without consent of indigenous people, then the process to challenge the piracy is very lengthy and expensive. People show less interest in natural ways of protecting their farms and crops, as the practices show result in four to five years which in their view is a long period. The respondents admitted that the traditional knowledge which should be used by the farmers is being used by foreign countries. Those countries are getting benefits from the knowledge, but Indians are going other way and using pesticides and other chemical things for protection of their crops.

One of the respondent stated that the reason that is facilitating the piracy most is the attitude of multinational companies who treat the knowledge as commodity. For them, knowledge has commercial value only. Those companies treat traditional knowledge and other natural resources as ways to earn money. The companies believe that at this time, natural resources are the best way to earn money and make profits, so these companies exploit the traditional knowledge and natural resources to earn profits. The lack of knowledge about the laws leads to piracy of traditional knowledge of India. In other words, the ignorance of the indigenous people is main cause for piracy of traditional knowledge.

The researcher was keen to know about the experience of people working for protection of traditional knowledge. When the respondents were asked to share their experiences, one of the respondents submitted that the Non Government Organisation named Navdanya, where the respondent works, alongwith some other associations and with the help of Government of India, challenged the grant of patent on Neem. The respondent stated that the Neem patent case was a difficult fight. The litigation went on for twelve years. The farmers from Germany also participated in the fight against grant of patent to Neem. Different marches were organized. A signature campaign against the grant of
patent to Neem was also carried out. Literature regarding uses of Neem was searched out and produced in the Courts. All these efforts bore fruit and the patent granted to Neem was revoked. When further asked about the difficulties faced during the campaign against the patent to neem, the respondent replied that there were many difficulties in carrying on this campaign, firstly, searching for the literature was a big task as use of neem is part of India’s traditional knowledge and this knowledge is orally transferred. Another difficulty faced was Government’s apathy. The Government of India provided little help in the campaign against grant of patent to Neem.

One of the respondents heads the women cell of another Non Government Organisation named Bebe di Rasoi meaning thereby kitchen of the grandmother. The respondent encourages the women to opt for organic farming and other traditional ways of farming instead of use of pesticides. While sharing the experience, the respondent told the researcher that farmers are getting advantage from the organic farming. The respondent stated that the companies are not involved much in the field of organic farming, but now, the companies are trying to make entry in this field too.

One of the respondents who have actively participated in opposition of piracy of basmati rice case shared the experiences during the fight against the grant of patent to basmati rice. The respondent informed the researcher that awareness campaigns against the patents granted to Neem and Haldi were organized time and again. The respondent contributed when affidavits were filed in the United States Patents and Trade Marks Office and Courts in India and United States for proving that Neem and haldi are prior art i.e. already being used in India for the purposes these were granted patents. To oppose the patent granted to basmati rice, the respondent started holding meetings with the farmers associations. The respondent met representatives from Swadeshi Jagaran Manch. Processions in front of United States Embassy were organized by the respondent. A memorandum opposing the grant of patent to basmati was also given to the United States embassy. It was only after the efforts of different associations that the patent granted to basmati turned into an issue.

The research pursued by the researcher is about the role of patent law in piracy of traditional knowledge. When the researcher asked the respondents about the role of patent law in protection of traditional knowledge, one respondent stated that the original Patents Act that was passed in 1970 was a better piece of legislation. After the amendments in the law, it has become more market centric. It, now, provides for
process patent. The law benefits the multinational companies. This law does not have any provision for the common people. The law is not protecting the traditional knowledge. The present patent law is based on western concept of property and western concept of knowledge. Indian concepts of knowledge and its sharing are different.

Few provisions of present patent law of India can be helpful in protection of traditional knowledge like mandatory disclosure of origin of material on which invention is based, exception clause providing that no patent will be granted on traditional knowledge. But the irony is, the farmers and indigenous people are not aware of these laws. They don’t understand the patent law, not even the meaning of patent. The respondents have stated that people working for protection of traditional knowledge, most of them, are working pro-intellectual property rights that is they are, in fact, working in favour of intellectual property rights for corporations not for indigenous people, as rights for indigenous people will not benefit these workers but, rights for corporation will benefit these workers, too. The corporation with the help of monetary benefits makes people work for them. Even Non Government Organisations, who claim they are working for betterment of indigenous people, in reality, help the corporation as these corporations provide funds for these organisations. There is transgression of intellectual property rights, even at international level. One issue that emerged out of discussion was that in case of piracy of traditional knowledge, the burden of proof is on owner to prove that there has been piracy whereas it should be on the person who has committed that piracy. Even the international conventions and treaties protect private interest. TRIPs Agreement promotes commercial interests only.

The Government of India has very successfully challenged the grant of patents to turmeric, neem, basmati rice and wheat. The efforts of Government led to the revocation of these patents by United Nations Patent Office and European Patent Office. The researcher made an inquiry into the efforts being put in by the Government for the protection of traditional knowledge. The researcher was informed that the government has made efforts at various levels to protect the traditional knowledge. The Government has amended the patent law and passed few legislations like ‘Biological Diversity Act, 2002’; ‘Protection of Plant Breeders and Farmers Rights Act, 2001’; ‘Geographical Indication (Registration and Protection) Act, 1999’. All these legislations provide for protection of traditional knowledge in one way or other.
The Biological Diversity Act is the most important piece of legislation for protection of traditional knowledge of India. The act creates three tier system for conservation of traditional knowledge. At the national level, the National Biodiversity Authority is responsible for conservation and sustainable use of traditional knowledge. Similarly, the State Biodiversity Boards are given the responsibility for implementation of the Biological Diversity Act at state level. Any application filed for grant of patent is first consented to by the State Biodiversity Board. Biodiversity Management Committees are established at district level. Biodiversity Registers are also maintained in villages. The Patents Office in Intellectual Property Office has been convening meetings with the National Biodiversity Board for better implementation of the Act. The patent office has from time to time worked in coordination with the board so that the traditional knowledge of the nation is not stolen anymore.

The Government has been providing free facilities to farmers. Biotech Department of Government of India has organized few training programmes. In the beginning, farmers were suspicious about the Government policies. But now, as the farmers have become aware of the positive things, they are now cooperating in implementation of government’s policies. Less number of cases of biopiracy are being reported. Geographical Indications (Protection and Registration) Act, 1999 has been quite helpful in protecting the knowledge which people are having for time immemorial. The corporations got hit by this Act, as now, the corporations cannot use the products registered under this Act.

The respondents submitted that the creation of Traditional Knowledge Digital Library has contributed immensely in protection of traditional knowledge of India. More efforts like this are needed, so that the knowledge of India can be protected and cases like turmeric, neem, basmati and wheat can be stopped.

There are respondents who think that the government is not sincerely putting efforts for protection of traditional knowledge. There has been no help from Government for the indigenous people in protection of traditional knowledge. Though, few departments of Central Government help the farmers and indigenous people but the attitude of State Governments is painful. The right of farmers and indigenous people is one field which is the most neglected field. Right of these people is not an issue at first place for the Government. The Government is promoting Genetically Modified food which is destroying the traditional farming system slowly and gradually. Government is
permitting experimenting of genetically modified food products and promoting such products. This will lead to deterioration of health of public.

Some of the respondents submitted that it’s the Non Government Organizations who are working hard for the protection of rights of indigenous people and for the protection of their traditional knowledge. The Non Government Organizations have been organizing awareness campaign to make farmers aware about how they can use the natural products available to them for the betterment of their crops. The Non Government Organizations have been working in the fields along with farmers.

The efforts put in by the Government and Non Government Organizations have shown results and people are now becoming aware of their rights. The researcher when asked the respondents about the suggestion that can lead to better protection of traditional knowledge of India, the respondents submitted that there should be a single legislation dealing with all the aspects of traditional knowledge. Piecemeal efforts will not help indigenous people as they are not much aware of the laws formulated for these people and it’s not an easy job to make them understand as to which laws can be helpful to them. There is need for comprehensive and consistent efforts.

The respondents shared the opinion that the government should promote use of traditional methods of farming that will help to increase the fertility of land and then will lead to better and pure products. Such farming reduces the dependency of farmers on market. This will be a factor that will stop the multinational companies to interfere in the traditional systems of the country. Patent law should be amended to prohibit grant of patent on traditional knowledge. The western companies take advantage of public domain concept.

Whatever knowledge is there in the Vedas should be protected under public domain concept. Knowledge, which is provided in Vedas and the oral traditional knowledge, should be protected and also, the inventions and products derived from this traditional knowledge should be protected. People should be made aware of their rights to protect the traditional knowledge and if any patent is granted on traditional knowledge, the opposition should be at grass root level meaning thereby opposition to the grant of patent should be filed at early stages and people should be made aware of their rights. The education system and research which are western based and corporate controlled should be used to make people aware of their rights.
Government should formulate law for protection of traditional knowledge in which the community should be made the custodian of the traditional knowledge. The Non Government Organizations working in the field should be encouraged and Government should do their best to protect and conserve the heritage of the country. Efforts like Traditional Knowledge Digital Library have been proved quite successful. Traditional Knowledge Digital Library has been helpful in curbing the cases of piracy of traditional knowledge of India. Government should make such efforts in all other fields and take more steps in this direction to help the indigenous and traditional people to protect their knowledge.

Biological Diversity Act, 2002, can provide for a solution for the piracy. Benefit sharing is not the issue at this time. The issue is ownership of traditional knowledge. Government should make provisions in the Act clearly defining ownership of the traditional knowledge and also, who can be authorized to use the knowledge.

One of the respondents suggested that lawyers can, also, contribute in protection of traditional knowledge, as they can use their knowledge of law to help indigenous people protect their knowledge of traditional things and practices. Lawyers can also help indigenous people by representing those people if any piracy is committed. Media can also play an important role. Role of media was also, discussed. It was submitted by the respondent that media can arouse the sensitivity in people which they have lost. Farmers and consumers are not concerned with the needs of each other though they are dependent on each other. Media can help them to become sensitive towards needs of each other. Attitude of people needs a change so that farmers and customers can share positive vibrations and can help each other in their respective fields.

From the analysis of the responses to the interviews and the applications under Right to Information, the following facts were found:-

1. Biological Diversity Act, 2002 can be an effective tool in protection of traditional knowledge as it provides for different agencies at different levels to protect the traditional knowledge, but the Act has not been able to achieve its objective. One of the reasons for this is the negligence of highest authority constituted for protection of traditional knowledge under the Act. The information provided in reply to application under Right to Information, filed to National Biodiversity Authority by the researcher is an example. The authority, which was constituted to protect the
2. The National Biodiversity Authority was constituted to conserve and protect the traditional knowledge and to provide benefit sharing to the people whose knowledge is used. In reply to the application under Right to Information filed by the researcher to the authority, the authority submitted that it has no information on cases of piracy of traditional knowledge. If the authority which is constituted to protect and conserve the knowledge, has no information about the piracy of such knowledge, how it is expected to protect it and control the further cases of piracy of the traditional knowledge.

3. The officers working in the government institutes submitted that the Government is making efforts to protect traditional knowledge through changes in legislation and through passage of new laws but as per the submissions of the persons working with Non Government Organizations, the government has not played its role properly. The efforts put in by the government, but not sufficient for the protection of traditional knowledge.

4. The main reasons for the piracy or theft of traditional knowledge have been the negligent attitude not only of Government, but of people as well. The attitude of people is shown in their ignorance and that of Government in not implementing properly the laws passed for protection of traditional knowledge.

5. The Patent Law of India, which was amended in tune with TRIPs Agreement, to make it internationally accepted law has been more in favor of the multinational corporations and not of indigenous people. The corporations believe in commercialization of the knowledge and to earn profits these corporations are using the traditional knowledge of indigenous people and the patent law is unable to tackle this piracy. Even today, traditional knowledge of India is being patented by other countries.

6. The experience of the respondents from Non Government Organizations show that the patents granted to haldi, neem and basmati were revoked mainly because of the efforts put in by the Non Government Organizations as Government has only been the helping hand in revocation of these patents whereas the Government should have been the main agency for revocation of the patents.
7. The Government of India, though, has passed laws to deal with the piracy of traditional knowledge, it is the initiative in form of Traditional Knowledge Digital Library that has to some extent helped the Government to deal with the increasing cases of piracy of traditional knowledge of indigenous people. The limited scope of this library is an impediment, as the library consists of information about Ayurveda only. The other aspects of traditional knowledge are not covered by the library. In other words, it is only one aspect that is covered and protected with the help of this digital library.

8. The need of the hour is more efforts on part of the government to protect the traditional knowledge of indigenous people. Government should make indigenous people aware of their rights and also people should be educated about the rights of indigenous people. The legislations should be made more stringent and Government should ensure the proper implementation of the laws made for the protection of rights of indigenous people.

4.9. CONCLUSION

Traditional knowledge is “treated as knowledge in the public domain for free exploitation without showing any respect or concern for the effort taken by the communities to preserve and promote the same”. The “absence of the international standards causes serious negligence for the protection of the traditional knowledge and the benefits of new technology. The industrial property systems were set up centuries ago for inanimate objects and that too in formal system of innovation. The time has come to revisit them. An urgent action is needed to protect the knowledge systems through national policies and international understanding linked to intellectual property rights, while providing for its development and proper use for the benefit of its holders. Particular focus on community knowledge and community innovation is needed”.

Traditional farmers have always shown better insight into the nature and utility of plants than have the so called expert commercial seed breeding companies whose loyalties usually lies with the world of stock markets. For example, official government researchers on research stations in the Indian state of Andhra Pradesh rejected a “new variety of rice known as mashuri”. Local women rice farmers got hold of this rejected variety of rice, experimented with it in their farms with other rice varieties and “finding, its performance well suited to local conditions, facilitated its spread to other local
farmers”. It has been reported in recent times that mashuri is now the third most popular rice variety in the whole of India.

Patents system has not been sensitive to the dignity, rights and worldviews of indigenous and traditional people. Patents rights systems for traditional knowledge should be developed by adapting existing intellectual property laws for prevention of misappropriation of traditional knowledge and/or by developing new legislation for recognition and registration of rights and establishing a “reward system for sharing of benefits with the holders of traditional knowledge. In the absence of legal protection system for biodiversity and traditional knowledge in the respective countries across the world, regulating biopiracy will be a tough nut to crack”.

Neem, Turmeric, basmati exemplifies a typical story of bio piracy, defines it as a process by which the “biological and natural resources of communities and the country are freely taken, without recognition or permission, and are used to build global economies”. The big corporations are freely still appropriating biodiversity and traditional knowledge basis of the people, generally by means of patents without compensation to the indigenous groups who originally developed such knowledge. Once traditional knowledge is appropriated from unprotected commons, repackaged and made scientifically tested and commercially accessible, the erstwhile traditional knowledge, divested of its essential identity, is claimed as an innovation and then as intellectual property.

India is losing out in big way because biopirates are patenting Indian herbs, basmati, cumin, gooseberry, blackberry, pepper, bitter gourd, brinjal and many other plants and their fruits, are being patented by foreigners. Indian producers of herbal products could find it difficult to sell them in the US and other developed countries because of the broad spectrum patent by US Patent and Trade Marks Office to the derivatives of these herbs.

Now it is “high time to protect and preserve rich heritage of indigenous people” from the clutches of the new international patent regime, as “traditional knowledge is not only more valuable for those who depend on it, but equally more valuable for the modern industry and agriculture”.

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