ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE SUTDIES

SCHOOL OF LAW AND GOVERNANCE STUDIES

PUBLIC INTERNATIONAL LAW

TRIPS AGREEMENT AND PROTECTION OF TRADITIONAL KNOWLEDGE RELATED TO GENETIC RESOURCES

A Thesis Submitted in Partial Fulfillment of the Requirements of LL.M. Degree in Public International Law

By: Milki Shaka Gudeta

Prepared under the Supervision of Dr. Mellese Damtie

November, 2015

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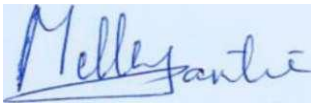
Signature: 

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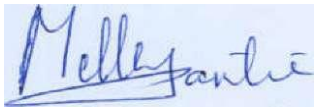
Signature 

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Acronyms

ABS	Access and Benefit Sharing
ARIPO	African Regional Intellectual property Organization
Art.	Article
CBD	Convention on Biological Diversity
EIPO	Ethiopia Intellectual Property Office
FAO	Food and Agriculture Organization
IBCR	Institute of Biodiversity conservation and Research
IP	Intellectual Property
IPR	Intellectual Property Right
IU	International Undertaking on Plant Genetic Resources [for food and agriculture]
NGO	Non-Governmental Organization
P.	Page
PIC	Prior Informed Consent
PGRFA	Plant Genetic Resources for Food and Agriculture
PVP	Plant Variety Protection
TCEs	Traditional cultural expressions
TK	Traditional Knowledge
TRIPS	WTO Agreement on Trade Related Aspects of Intellectual Property Rights
US	United States of America
UPOV	Union Internationale pour la Protection des Obtentions Végétale [International Union For the protection of new varieties of plants)
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Abstract

Traditional knowledge (TK) is a knowledge which is acquired by experience, mostly passed orally from generation to generation, and is developed over time and that continues to develop. This knowledge is used to sustain the community as well as the biological resources necessary for the continued survival of the community. Even if the importance of traditional knowledge related to genetic resources is recognized in different conventions yet, to date, intellectual property (IP) rights are not adequately extended to the holders of TK related to genetic resources and their knowledge are easily appropriated without extending benefit sharing arrangement. The requirements for IP rights protections under current IP regimes remain largely inconsistent with the nature of TK. As a result, TK related to genetic resources is neglected with no protections or benefits for the knowledge holders, or expropriated for the financial gains of others. Thus the main argument of this thesis is that since TRIPS agreement sets minimum requirement for IP protection ,TK related to genetic resources which is passed from generation to generation is excluded and not eligible for protection under TRIPS agreement and this will in turn affects economic benefits of holders of TK and disregards respect for the holders of TK. And it suggests that amending the TRIPS agreement to include mandatory disclosure of origin, prior informed consent and benefit sharing arrangement for those who apply for a patent is the best solution to protect TK related to genetic resources. And additionally providing incentives for holders of TK related to genetic resources so as to enable holders of TK to preserve their traditional knowledge conserve and sustainably use biodiversity is the best solution to protect TK related to genetic resources.

Key words: Intellectual property, Traditional knowledge, Genetic resources.

CHAPTER ONE

1.1 Background

The TRIPS agreement aims at to reducing distortions and impediments to international trade and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade.[1]Because of this Members of the WTO are expected to establish comprehensive intellectual property protection system which covers patents, copyright, geographical indications, industrial design, trademarks and trade secrets. As such, it is considered an important agreement for international IP rules. Intellectual property protection gives exclusive rights to an individual to exploit ahuman creation. The rights deal with informational services which are intangible and not readily susceptible to either possession or delineation.[2]The IPRs reduces knowledge to a commodity which can be privately owned by an individual, legal person who claims exclusive rights over this.[3] Clearly,IPRs can only emerge from a society where individual private property rights are heldinviolable.[4] The WTO established the minimum standards of IPRs protection under its TRIPS Agreement and this has extended IPRs to living organisms and life-processes. This agreement obligates the WTO members to change their IPRs laws to conform to these standards.[5]It is the most comprehensive body of international law on intellectual property rights. TRIPS also have strong and detailed enforcement measures compared to other international agreement. The TRIPS Agreement was

[1] The preamble of the 1994 Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement of the World Trade Organization (WTO)

[2]For example, a patent vests exclusive right to an inventor to develop, control, use and market an innovative industrial process or product for a specified period of time. Trade marks extend protection to brand names that have a particular identity in the market place while trade secrets protect confidential information often of commercial value to an industrial firm or person. Copyright covers literal and artistic works such as computer software, writings and drawings. CUTS: Intellectual Property Rights, Biodiversity and Traditional Knowledge,(2007) p.2 available at: http://www.cuts-citee.org/pdf/MONOGRAPH07-03.pdf [accessed on February 29,2015]

[3] UN, Department of Economic And Social Affairs, Division for Social Policy and Development Secretariat of the Permanent Forum on Indigenous Issues,2005.INTERNATIONAL WORKSHOP ON TRADITIONAL KNOWLEDGE ,Biodiversity, Traditional Knowledge and Rights Of Indigenous Peoples, Panama City, September 21-23 2005.P.7 Available at: http://www.un.org/esa/socdev/unpfii/documents/workshop_TK_taulicorpuz.pdf. [accessed on February 24,2015]

[4] The preamble of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement of the World Trade Organization (WTO) explicitly says that "intellectual property rights are private rights.

[5] Supra note,3 p.7-8

not designed as a treaty that inherently promotes CBD objectives.[6]Different provisions have an impact on the protection of traditional knowledge related to genetic resources and promoting CBDs objectives.TRIPS ignore a large part of human creativity,including traditional knowledge related to genetic resources and innovations generated by local and indigenous peoples around the world.On the other hand the convention on biodiversity (CBD) explicitly recognizes the importance of traditional knowledge, and the rights of indigenous and local peoples in that knowledge.It creates a frame work for ensuring that local people share benefits arising from appropriation and use of their knowledge.[7]

1.2 Statement of the Problem

The TRIPS Agreement does not specifically mention traditional knowledge, and many commentators argue that the tests to gain intellectual property protection, particularly the test for patent protection, are unlikely to protect the rights of holders of traditional knowledge related to genetic resources.[8]This is because under article 27.1 of the TRIPS Agreement, in order for the subject matter to receive patent protection the invention must be new, involve an inventive step and be capable of industrial application.In other words the idea behind this definition is that knowledge that has been passed down orally through generations, as much traditional knowledge is not eligible for patentability, by virtue of the fact that it is not new and involvesinventive steps.Given that it is difficult for traditional knowledge holders to gain the legal protections afforded by the TRIPS Agreement, their knowledge is quite vulnerable to being appropriated by outsiders.[9] Because companies and outsiders after accessing the traditional knowledge and modifying it, they apply for a patent in different countries by using the legal gaps of the TRIPS agreement.

Art.27 (3)b of TRIPS provides that members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by a combination thereof.But what sui

[6] The Convention on Biodiversity and the Nagoya Protocol: Intellectual Property Implications, p.34. Available at: http://unctad.org/en/PublicationChapters/diaepcb2014d3_ch2_en.pdf [accessed on February24,2015]

[7]The CBD in its preamble recognizes : the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge ,Innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components

[8] Rhys M.,2006.developmental perspectives on the TRIPS and traditional knowledge debate, MQJICE, Volume 3 p.114 Available at: http://www.law.mq.edu.au/public/download/?id=14987 [accessed on February 24,2015]

[9] Ibid

generis regime is not clear and controversial and also noted developed countries are likely to promote plant breeders right as the effective sui generis system thereby limiting the ability of developing countries to develop a system to properly reflect their own social and economic needs.[10]

The need to develop some form of protection for traditional knowledge has gained growing recognition in the 1990s.[11]Adoption of the CBD gave impetus to this idea by establishing in art 8(j) obligation on Parties to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity. Nevertheless there are a growing number of instances in which IPRs have been used to gain control over traditional knowledge, without provision for benefit sharing.[12]This may increase the risk of misappropriation of traditional knowledge. The CBD recognizes the relevance of the 'knowledge, innovations and practices of indigenous and local communities' in conserving biological diversity.[13]The existing IPRs fail to provide positive incentives for local and indigenous communities to preserve and protect traditional knowledge.Becausethe existing IPR systems such as patents are largely inappropriate to protect traditional knowledge because of the criteria for patentability.Access and benefit sharing under the CBD may be affected by the IPR systems required by the TRIPS agreement because IPRs are often granted to individuals of one country over genetic resources obtained from another country. Other forms of IP protection have their own limitation for the protection of traditional knowledge related to genetic resources.

1.3 Research Question

The research work, hence, will try to answer the following research questions.

- Does the TRIPS agreement protect traditional knowledge related to genetic resources?

[10]International environmental law research center, Traditional knowledge, Genetic resources and Intellectual property protection: Towards the new international regime, IELRC working paper 2001-2005 p.2 Available at: http://www.ielrc.org/content/w0105.pdf[accessed on February 28,2015]

[11]Petit.M.et al., 2001.why governments can't make policy: The case of plant genetic resources in the international arena. Lima Peru :International potato center (CIP) .p.71

[12] UN, Department of Economic And Social Affairs,Supra note 3,p 8-10

[13] Charles McManus and Yolanda Terán,.2001 Intellectual Property and Human Development, Trends and scenarios in the legal protection of traditional knowledge.p.34 Available at: http://www.piipa.org/files/Book_Content/Chapter%204%20-%20IP%20and%20Human%20Development.pdf [accessed on February 24,2015]

- How the TRIPS agreements can affects the equitable benefit sharing of traditional knowledge related to genetic resources?
- Does the TRIPS agreement provide positive incentives for local communities to preserve their traditional knowledge?

1.4 Objectives of the Study

While the main targets of this research paper are to analyze the legal protection of traditional knowledge related to genetic resources under the TRIPS agreement and Ethiopian IP laws, explaining the effects of the TRIPS agreement onthe benefits and preservation of traditional knowledge related to genetic resources, giving a clear picture about EthiopianIPRs in protecting traditional knowledge related to genetic resources and lastly suggest the way forward for the protection of traditional knowledge related to genetic resources both at the national and international level.

1.5 Significance of the Study

This research work is important in many aspects. Since,there is an adequate and growing evidence of traditional knowledge and associated practices contributing significantly to the conservation and enhancement of biodiversity, it has become such an important concern not only because it is fast disappearing but also because of the growing recognition of its increased economic value and potential for the biotechnology industry.Local communities and households in different parts of Africa have accumulated a broad technological knowledge base to conserve and sustainably use plant genetic resources.[14] They used different and unique technological systems to conserve and use plants and their genetic components. These systems include home gardens and seed banks.[15]The main reason for the move to protect traditional knowledge is that a large number of countries have not derived great benefits from traditional forms of intellectual property, yet find themselves rich with traditional knowledge, especially genetic resources.

[14]John Mugabe. Intellectual property protection and traditional knowledge: An Exploration in International Policy Discourse, African Center for Technology Studies ,Nairobi, Kenya Available at:http://www.wipo.int/edocs/mdocs/tk/en/wipo_unhchr_ip_pnl_98/wipo_unhchr_ip_pnl_98_4.pdf [accessed on February 28,2015]

[15] In Ethiopia, for example, the Tigray communities' with financial support from some non-governmental organizations (NGO's), have established a community seed bank that currently holds seeds of a wide range of traditional crops. The seeds are selected by the local farmers based on specific cultural, technological and ecological criteria. John Mugabe, supra note 14

Concerning our country, Ethiopia is rich in biodiversity and traditional knowledge related to genetic resources and has applied for the membership of WTO in 2003 and going through the accession process since then. Upon accession one of the instruments that are expected to be signed is the TRIPS agreement. Therefore, this paper is important in suggesting what kind of legal protection we should give to the protection of traditional knowledge related with genetic resources.Lastly, this work will be important in showing the areas which are not well regulated, and in suggesting the kind of measures that should be made if any.

1.6 Scope of the study

The study will deal with definition of traditional knowledge and genetic resources, objectives and purposes of TRIPS agreement, overview of major International convention for the protection of traditional knowledge, Protection of traditional Knowledge under the TRIPS agreement.It will focus only in the area of and issues related with protection of traditional knowledge related with genetic resources.In doing so; it will make reference only to the relevant international legal instruments with special emphasis on to the TRIPS agreement and to domestic IP laws of Ethiopia.

1.7 Methodology

This research is a doctrinal research and has employed a combination of several approaches. The Researcher has conducted literature review, analysis of international and national legal instruments with special emphasis on TRIPS agreement, traditional knowledge and genetic resources.In doing so analysis and explanation of the relevant legal regimes is made in conducting theresearch. To some extent analysis of the Ethiopian IP laws is also made relating with international instruments.

1.8 Limitations of the Study

One of the major limitations to this work is lack of well-organized institutional establishment concerning biodiversity especially for the protection of traditional knowledge and genetic resources and adequate literature and research works on the area of protection of traditional knowledge with emphasis to the case of Ethiopia.

1.9 Organization of the Paper

This paper is comprised of five chapters. The first chapter is shows the proposal of this thesis.

The second chapter deals with the Concept of traditional knowledge, genetic resources, their definition, objectives of TRIPS agreement.The third chapterdeals with overview of major International convention for the protection of traditional knowledge,protection of traditional knowledge in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) includinghow the standards of TRIPS agreement affect protection of traditional knowledge. In the fourth chapter I will deal with some EthiopianIP laws and proclamations and the protection of traditional knowledge related to genetic resources.In the fifth chapter, the last chapter, I willgive conclusive remarks andrecommends the way forward/what should be done concerning protection of traditional knowledge related to genetic resources.

CHAPTER TWO

Intellectual Property Rights and Traditional Knowledge Related to Genetic Resources

2.1 What is Intellectual Property?

Intellectual property is a category of property in intangibles, which may be claimed by individuals, enterprises or other entities.[16] These rights are given by society through the State as an incentive to produce and disseminate ideas and expressions that will benefit society as a whole. [17]The owner of an IP has a right to control and be rewarded for its use. It is based on the premise that such a right to ownership and reward would encourage further innovation and creativity, to the benefit of all. In other words Intellectual property rights (IPRs) may be defined as statutory monopolies conferred by the state for a prescribed term in relation to certain creations of the mind.[18] In general there is no all-embracing definition of IPRs to be found in any national laws or international treaties. Typically, an instrument will contain a list of matters which are considered to be IPRs. Thus the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) states that for the purposes of the Agreement, the term intellectual property (IP) refers to all categories of IP that are the subject of Sections 1 through 7 of Part II of the Agreement.[19]

Protection is conferred on ideas, technical solutions or other information that have been expressed in a legally admissible form and, in some cases, subject to registration procedures. Although the content of intellectual property is the information as such, intellectual property rights are exercised -generally as exclusive rights – with respect to the products that carry the

16 UNCTAD Commercial Diplomacy Program: Training tools on the TRIPS agreement: the developing countries perspective. Geneva, January 2002, P.10 Available at: http://unctad.org/en/Docs/ditctncdmisc17_en.pdf. [accessed on march 5,2015]

[17] Center for WTO studies ,Indian institute of foreign trade, Trade Related Aspects of Intellectual Property Rights, Frequently asked questions, New Delhi Dated: 16.11.2010 p.3 Available at: http://wtocentre.iift.ac.in/FAQ/english/TRIPS.pdf. [accessed on march 5,2015]

[18]Michael Blakeney., 2011.Trends in intellectual property rights relating to genetic resources for food and agriculture, commission on genetic resources for food and agriculture: background study paper no.58,Perth, Australia. P.3 Available at: http://www.icimod.org/?q=2262. [accessed on February 24,2015]

[19] Article 1(2) of the 1994 TRIPS agreement of the world trade organization

protected information.Thus, the owner of a patent can prevent the manufacture, use or sale of the protected product in the countries where the patent has been registered.

The TRIPs Agreement covers a broad range of IPRs, including patents, trademarks, geographical indications, and trade secrets, copyright. It also includes a number of forms of IPR, which have implications for biodiversity conservation, such as sui generis systems for the protection of plant varieties.

2.2 The TRIPS Agreement and its Objectives

The TRIPS Agreement is a comprehensive multilateral agreement on intellectual property.[20] It includes, in one single instrument, all the major IP disciplines and sets minimum standards of protection for them and members are obliged not only to recognize and protect those rights but also to establish mechanisms that guarantee, through administrative, civil and criminal procedures. It applies to all WTO members, mandatorily. The TRIPS Agreement is important for providing and encouraging strong IP law. Before TRIPS, countries could differentiate on the patentability of industrial or technological sectors and choose whether to protect processes and/or products.[21]

The TRIPs Agreement provides the primary international legal basis for intellectual property protection among WTO members.[22]

The objectives of the TRIPS agreement is laid down under article 7 of the TRIPS agreement. Article 7 of the TRIPS agreement states that-the protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations. It is not a treaty to promote the CBD objectives or to protect

[20] Kato Go-go Kingston, 2011.The Implications of 'TRIPS' Agreement 1994 of the World Trade Organization for the Developing Countries, African Journal of Social Sciences Volume 1 Number 1, p 40-42. Available at: http://www.sachajournals.com/user/image/3.-trips-of-wto.pdf [accessed on march5,2015]

[21] For example, by the time the General Agreement on Trade and Tariff Uruguay Round negotiations started almost half of the patent laws throughout the world excluded pharmaceutical products from patent protection. ECLAC – Project documents Collection. 2007. Intellectual Property Rights and Sustainable development: A Survey of Major Issues United Nations Publication, December 2007 Santiago, Chile. Available at: http://repositorio.cepal.org/bitstream/handle/11362/3591/S2007354_es.pdf?sequence=1. [accessed onmarch 5,2015]

[22] Rhys M,supra note 8, p.118

traditional knowledge and many commentators argue that the tests to gain intellectual property protection, particularly the test for patent protection, are unlikely to protect the rights of traditional knowledge holders.[23]

2.3 Definition of Traditional Knowledge

The inter-governmental committee of WIPO on Intellectual Property and Genetic Resources, traditional Knowledge and folklore defines traditional knowledge as knowledge that is:
[(a) Generated, preserved and transmitted in a traditional context.

(b) Distinctively associated with the traditional or indigenous culture or community that preserves and transmits it between generations.

(c) Linked to a local or indigenous community or other group of persons identifying with a traditional culture through a relationship based on a sense of custodianship, guardianship or cultural responsibility such as a sense of obligation to preserve the knowledge, or a sense that to permit misappropriation or demeaning usage would be harmful or offensive, a relationship that may be expressed formally or informally by customary law.

(d) Originating from intellectual activity in a wide range of social, cultural, environmental and technological contexts, and

(e) Identified by the community or other group as being traditional knowledge.][24]

TK is largely oral and is the collective knowledge, beliefs and practices of indigenous people on sustainable use and management of resource and embodies the wisdom developed over generations and encompasses agricultural knowledge, medicinal knowledge, biodiversity related knowledge and the like.[25]

How the term traditional knowledge is defined has important implications for the kind and scope of a possible traditional knowledge protection regime.Traditional knowledge is a very broad term

[23] Ibid
[24]RajuNarayanaSwamy., 2014. Protection of Traditional Knowledge In the present IPR regime: A Marriage or A reality, Indian Journal of Public Administration Vol. LX, NO. 1 p.43-44 Available at:http://www.absinitiative.info/uploads/media/Protecting_TK_Associated_with_GRS_IPRs_and_Beyond__v._Braun_and_Santilli.pdf [accessed on February 29,2015]
[25] Ibid

referring to various knowledge systems, encompassing a variety of areas,held by traditional community or to knowledge acquired to a non-systematic way and held by members of a distinct culture and/or sometimes acquired by means of inquiry peculiar to that culture.[26] TK can be, for example, agricultural, environmental or medicinal knowledge, or knowledge associated with geneticresources. Examples includes knowledge about traditional medicines; traditional hunting or fishing techniques; knowledge aboutwater management. Thus in general TK is a living body of knowledge that is developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.

Characteristically, traditional knowledge is knowledge that: is traditional only to the extent that its creation and use are part of the cultural traditions of a community- traditional therefore, does not necessarily mean that the knowledge is ancient or static; is representative of the cultural values of a people and thus is generally held collectively; is not limited to any specific field of technology or the arts.[27]

The term traditional knowledge or its abbreviation TK is sometimes used as shorthand for the entire field of Traditional knowledge (TK) and Traditional cultural expressions(TCEs).[28]However, nowadays, WIPO most often distinguishes between TK and TCEs, because, from an IP standpoint, a different set of policy questions arises and distinct legal tools are likely to apply for their protection.[29]

Traditional Cultural Expressions(TCEs) are the forms in which traditional culture is expressed.[30] They can be, for example, dances, songs, handicraft, designs, ceremonies, tales or many other artistic or cultural expressions. TCEs may be either tangible, intangible, or, most usually, a

[26]VogBogdandy&R.wolfrum, 2008.Intellectual Property and the Protection of Traditional Knowledge, Genetic Resources and Folklore: The Peruvian Experience, Max Planck year book of United Nations law. ,p.492 Availableat:http://www.mpil.de/files/pdf3/mpunyb_14_thesis_rosa_12.pdf [accessed on February 24,2015]

[27]Daniel Gervais. TRIPS, DOHA and traditional knowledge,p.3-4 Available at: http://aix1.uottawa.ca/~dgervais/publications/TRIPS,%20DOHA%20%26%20TRADITIONAL%20KNOWLEDGE%20(DRAFT).pdf [accessed on February 28,2015]

[28]World Intellectual Property Organization.,2012.An overview of Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions.p.11 Available at: http://www.wipo.int/edocs/pubdocs/en/tk/933/wipo_pub_933.pdf. [accessed on February 27,2015]

[29] Ibid

[30] Ibid,p.10

combination of the two.Although expressions of folklorewas the term used most commonly in international discussions and is found in many national laws,however;WIPO nowadays uses the term traditional cultural expressions (or simply -TCEs) where it is used, "expressions of folklore" is understood as a synonym of TCEs.[31]

2.4 Definition of Genetic Resources

Genetic resource means genetic material factual or potential value and it means they are parts of biological materials that contain genetic information of value; and are capable of reproducing or being reproduced.[32] Examples include material of plant, animal, or microbial origin, such as medicinal plants, agricultural crops and animal breeds.[33] Some TK is closely associated with genetic resources through the utilization and conservation of the resource, often over generations, and through their common use in modern scientific research, because TK often provides researchers with a lead to isolate valuable active compounds within GRs.[34]Genetic resources, has tangible and intangible components.[35] The owner of the physical or tangible component of a genetic resource may not be the owner of its intangible component.[36] This is the reason why the participation of the benefits is an important purpose for the CBD under article 15(7) because the intangible form which is traditional knowledge is from a developing country, for example, a local community, and the tangible form of genetic resources and its scientific entity is from a developed country.

[31] Ibid
[32]Article 2 of the 1992 UN Convention On Biodiversity done at Brazil, Reo de Janeiro on June 5, 1992
[33] World Intellectual Property Organization, supra note,28 ,p.12
[34] Ibid
[35] WIPO.,2009.Regional Meeting on Protection of Traditional Knowledge, traditional cultural expressions (Folklore) and Related Genetic resources: SELA's approach in Latin America and the Caribbean Caracas, Venezuela May 28 and 29 2009.p.15 ,Available at: http://www.sela.org/DB/ricsela/EDOCS/SRed/2009/05/T023600003470-0 Protection of traditional kowledge.pdf. [accessed on February 24,2015]
[36] Ibid

Conclusion

Intellectual property is a category of property in intangibles, which gives the inventor or innovator exclusive rights to produce and sell the invention for a limited period of time.On the other hand the owner of an IP has a right to control and be rewarded for its use.Protection is conferred on ideas, technical solutions or other information that have been expressed in a legally admissible form and, in some cases, subject to registration procedures.

The TRIPS Agreement covers a broad range of IPRs, and also includes other forms of IPR, which have implications for biodiversity conservation. It provides strong IP law which applies to all WTO members mandatorily and has also strong enforcement procedures.Before TRIPS, countries have discretion on whether to patent processes, productsor industrial sectors.

There is no definition and mention of TK under the TRIPS agreement and there are no universally adopted definitions for TK.However; it is defined differently by different persons in different times.The definition given by WIPO is comprehensive enough to be taken as a definition. The World Intellectual Property Organization (WIPO) defines TK as ideas developed by traditional communities and indigenous people, in a traditional and informal way, as a response to the needs imposed by their physical and cultural environments and those ideas contrast with the respective expressions, such as folk tales, poetry, and riddles, folk songs and instrumental music, dances, plays, etc.[37]Characteristically traditional knowledge includes knowledge that its creation and use are part of the cultural traditions of a community and is generally held collectively for any field of technology or art.On the other hand genetic resources are parts of biological materials that contain genetic information of value; and are capable of reproducing or being reproduced.

The relationship between genetic resources, traditional knowledge and intellectual property rights is not clear and it is controversial.A key issue is that TK related to genetic resources is misappropriated by outsiders without compensation because of the minimum standards of TRIPS agreement, particularly through a patent and illegal access and use of genetic resources and traditional knowledge. Thus in the next chapter I will deal with the TRIPS agreement and

[37]RajuNarayanaSwamy, supra note 24,p 43-44

protection TK related to genetic resources and the effects of the TRIPS agreement on benefit sharing arrangement and preservation of TK.

CHAPTER THREE

TRIPS and the Protection of Traditional Knowledge related with Genetic Resources

3.1 Overview of Major International Conventions for the Protection of Traditional Knowledge

The need for the protection of traditional knowledge related to genetic resources is now gaining momentum at different international conventions and regional forum;even if enforceable and binding agreement could not be concluded in crucially needed ones like the agreement on trade related aspects of intellectual property.In this regard,mentioned below is a non-exhaustive list of major international conventions having a direct or an in direct bearing on the protection of traditional knowledge.

3.1.1 Convention on Biodiversity (CBD)

The Convention on Biological Diversity, signed at the United Nations Conference on Environment and Development in 1992, was the first international environmental convention to develop measures for the use and protection of traditional knowledge, related to the conservation and sustainable use of biodiversity.[38] It requires the protection of traditional knowledge of indigenous and local communities.[39] By virtue of this Convention, governments agree to preserve and use biological diversity in a sustainable manner. CBD encourages international and national action to be taken with respect to traditional knowledge protection.

Following the CBD, a number of developing countries enacted laws regulating access to genetic resources and associated traditional knowledge within national borders—for example, requiring

[38]Ping Xiong., 2008. Traditional Knowledge and Intellectual Property Protection: The Endeavour of NIUE, 14 REVUE JURIDIQUE POLYNÉSIENNE p.125 Available at:http://www.victoria.ac.nz/law/nzacl/PDFS/CLJP_JDCP/Vol%2014,%202008/8PXiong.pdf [accessed on march 5,2015]

[39] Article 8 of the CBD provides: In-situ Conservation-Each Contracting Party shall, as far as possible and as appropriate: (a)... (j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices. Article 10-Sustainable Use of Components of Biological Diversity: Each Contracting Party shall, as far as possible and as appropriate: (a)... (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

prior informed consent and benefit sharing.[40] But generally, the effect of these provisions does not extend beyond national borders.[41]TK related to genetic resources has been misappropriated, and then exploited to obtain intellectual property rights. Thus, TK issues should be covered by the TRIPS work to reconcile the protection of intellectual property rights with that of TK related to genetic resources and CBD objectives.[42]

Initially, biological resources were considered to be the heritage of mankind and by the same token, until the end of the last century, genetic resources were loosely labeled as common heritage.[43] This refers to the treatment of genetic resources as belonging to the public domain and not owned or otherwise monopolized by a single group or interest. With regard to crop resources, this system implies open access and non-exclusion to seeds and plants from farmers' fields, with due recognition of prior informed consent.

The rise of intellectual property for living material, the commercialization of seed and the increased use of genetic resources in crop breeding have contributed to a change in the treatment of genetic resources as common goods and have led to extensive revisions to the common heritage regime.[44] The demise of common heritage culminated in the CBD, where ownership over genetic resources was mandated to national, sovereign states. [45] In doing so, the CBD

40Deepa Varadarajan,2010.A Trade Secret Approach to Protecting Traditional Knowledge, The Yale Journal of International Law, Vol. 36 .p 387-388 Available at: http://www.yjil.org/docs/pub/36-2-varadarajan-trade-secret-approach-to-protecting-traditional-knowledge.pdf [accessed on march 5,2015]

[41] Thus, for example, while the South African government can prosecute access violations that occur within the country, it can do little to restrain corporate behavior that takes place entirely outside the country. DeepaVaradarajan, supra note 40, p.388

[42] Article 16(5) of the CBD provides that :The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

[43]G. Van Overwalle., 2005. Protecting and sharing biodiversity and traditional knowledge: Holder and user tools, Ecological Economics :Centre for Intellectual Property Rights, Catholic University Leuven, Belgium p 589 Available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.489.6724&rep=rep1&type=pdf [accessed on march 4,2015]

[44] Ibid

[45]See the preamble of the CBD, stating Reaffirming that States have sovereign rights over their own biological resources. Also see article 3 CBD: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction. Also see article 15.1 CBD: Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.

brought about a shift by stipulating that States have sovereign rights over their own biological resources. The convention does not view biological diversity merely in terms of protecting threatened species or ecosystem. It has merged fundamental environmental issue with development issues.

3.1.2 The Convention of the International Union for the Protection of New Varieties of Plants (UPOV)

UPOV adopted its first Convention in 1961 and it has been revised three times since in 1972, 1978 and 1991. The main aims of the Convention are to promote the protection of the rights of breeders of new plant varieties and the development of agriculture and it concerns itself with the protection of plant varieties that are new, distinct, stable and uniform.[46]It is an international treaty and an organization that sets certain standards and designed to establish and protect monopoly rights for plant breeders over the plant types (varieties) they have developed.[47] A country can only become a member of UPOV if its plant variety protection schemes meet these minimum standards. Importantly, under the TRIPS agreement, countries are bound to enact sui generis protection for plants, and the UPOV requirements are generally considered to meet such standards.It form a relevant point for determining an effective sui generis right' under Article 27(3) (b) of the TRIPS Agreement.

All members of the World Trade Organization (WTO) are obliged to adopt some form of PVP law, according to the WTO's Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS).But how they do so is up to national governments.The lack of strong mechanisms to prevent misappropriation of genetic resources and associated traditional knowledge is one of UPOV bearing on TK. Even more so,UPOV may facilitate the misappropriation of TK related to genetic resources ifforeign breeding companies apply for exclusive rights on new varieties that may be created by use of local and traditionalgermplasm.

[46]Peter Munyi, etal., 2012. Access and benefit sharing, the ABS capacity development initiatives, a gap analysis report on the African model law on the protection of the rights of local communities, farmers and breeders, and for the regulation of access to biological resources. Available at:http://www.absinitiative.info/uploads/media/GAP_Analysis_and_Revison_African_Model_Law_FINAL_2902_01.pdf [accessed on March 15,2015]

[47] AFSA and GRAIN.,2015. Land and seed law under attack: who is pushing changes in Africa.p.13 Available at: http://www.grain.org/?page=2,p.13. [accessed on march 8 ,2015]

3.1.3 The International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA)

The International Treaty on Plant Genetic Resources for Food and Agriculture was adopted by the 31st session of the FAO Conference in 2001.[48] The Treaty, in harmony with the CBD, provides for the conservation and sustainable use of PGRFA as the basis for sustainable agriculture and food security. There are three issues covered by the convention on PGRFA. These are (a) the treaty's approach to the protection of farmers' rights;[49] (b) the Multilateral System of Access and Benefit Sharing---This system was established both to facilitate access to genetic resources of major food crops and to share in fair and equitable way, the benefit arising from the utilization of these resources, in accordance with multilaterally agreed terms and conditions and, (c) the Standard Material Transfer Agreement (SMTA) --Central to the smooth and transparent functioning of the Multilateral System of Access and Benefit Sharing.[50]

The international undertaking which was adopted by the FAO conference as a nonbinding instrument and member countries are agreed on the need for a multilateral framework to facilitate access to plant genetic resources of the main crops, for which countries are highly inter-dependent, and which are important for food security, and benefit-sharing, to enable future progress in plant breeding.

The instrument gives countries sovereign right over their plant genetic resources. Plant breeder's right and farmer's right are also recognized.The article on farmers rights focuses on the protection of traditional knowledge, equitable sharing of benefits arising from the exploitation of biological resources and the right to participate in decision making. The treaty included important provisions with particular reference to the farmers rights(Article 9) and benefit sharing which are essentially compatible with the objectives of the CBD.

[48]Munyi, Supra note 46

[49]Farmers' Rights mean rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centres of origin/diversity. Munyi,Supra note 46.

[50]Munyi, Supra note 46

3.2 TRIPS Protection of Traditional Knowledge Related to Genetic Resources

As one of the agreements to which all Members of the WTO must adhere, the TRIPS agreementhas had a major impact on the scope of IP protection around the world. It establishes minimum standards of IP protection, which must be incorporated through national legislation by WTO Members unless specifically exempted by the WTO as in the case of the Least Developed Countries.[51]

3.2.1 Protection of Traditional Knowledge Related to Genetic Resources through Patents

The general principle with regard to patentability is laid down in article 27 (1) of the TRIPS Agreement , which stipulates that patents shall be available for any inventions in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application..[52]An invention usually needs to meet the requirements of absolute novelty (previously unknown to the public), inventive steps and being capable of industrial application.Patents may be granted for all types of processes and products, including those related to primary production, namely agriculture, fishing or mining.[53] However, since most of traditional knowledge has been used for long periods, the novelty and/or inventive steps requirement of patent protection may be difficult to meet.[54] Because of this most traditional knowledge is not protected by TRIPS agreement. This limitation opens the door for outsiders to appropriate the TK andafter genetically modifying it; they apply for a patent because they can fulfill the minimum standard of patentability under the TRIPS agreement. Additionally, as for community knowledge, it is considered that patent law cannot be used to protect community knowledge acquired and shared over several generations.[55]Because it is difficult to call such knowledge new and it is also difficult to identify the inventor.TK is collectively held and

[51] The Convention on Biodiversity and the Nagoya Protocol, Supra note 6, p.30
[52] Article 27(1) of the TRIPS agreement
[53]RozaGiannina Alvarez Ninez,2008.Intellectual property rights and protection of traditional knowledge ,Genetic resources and folklore: The Peruvian experience, max Planck yearbook of united nations law ,vol.12.p.518 Available at: http://www.mpil.de/files/pdf3/mpunyb_14_thesis_rosa_12.pdf [accessedon February 24,2015]
[54] Ibid
[55] Ibid

generated while patent law treats inventiveness as an achievement of individuals.[56] Traditional knowledge is, in many cases developed and spread throughout the indigenous community, which makes it very difficult, to identify the inventor. Yet while TK is part of the public domain, a new and non-obvious modification to this knowledge achieved by an individual can be the subject of a patentable invention**.**

Another limitation is that some countries like USA-they do not recognize undocumented knowledge.[57] Most of traditional knowledge is undocumented and passed orally from generation to generation.Because of this in such countries it is legal to copy this knowledge and apply it. This will open the door for outsiders to misappropriate TK related to genetic resources without any benefit sharing agreement.

Since patents promote individual rights and creations,the patent rights criteria of new and inventive steps may lead to increased use of monocultures which replace the diverse varieties andthis in return brings decreased crop diversity which lead to erosion of genetic, insect, soil, and ecosystem diversity.[58] Because of these TRIPS Agreement may have effects on the conservation and sustainable use of biological diversity. Additionally the existing system of intellectual property rights and patents do not take into account community knowledge. Because of this it cannot contribute to enhance equitable sharing and in return it provides little or no incentive for conservation of biodiversity and TK in developing countries.

Many developed countries gives patent protection to individuals who appropriate traditional knowledge without benefit sharing for the holders of that knowledge as an incentive for those individuals and against the CBD objectives.In return when developing countries provide for benefit sharing agreement, developed countries and those individuals who appropriate traditional knowledge without benefit sharing challenges developing countries under WTO by invoking the TRIPS agreement. This will affect traditional knowledge holders from getting equitable compensation from their knowledge.

[56] Ibid
[57] Alvarez Ninez, Supra note 53,p.519
[58]Richard Tarasofsky and Chatham House,.2005.Report on Trade, Environment, and Intellectual Property Rights , June 2005 p.7 Available at: http://www.iprsonline.org/resources/docs/Tarasofsky-CATE-IPRs.pdf [accessed on June 15,2015]

TRIPS do not allocate conservation of biological resources to those who will benefit from ownership rights in these resources, for example under the CBD States, local communities and indigenous people are primarily responsible for the preservation of biological resources.[59] TRIPS, instead, allocates these responsibilities to IPR holders, which only cultivates their monopoly by effectively suspending national or community sovereignty over local GRs.[60] Consequently, governments and communities have little means of regulating access to or demanding a share of benefits in their own GRs to which they no longer own the rights.[61]

As I noted earlier, existing IPR systems such as patents may increase the risk of misappropriation of TK and since existing IPRs fail to provide positive incentives for local and indigenous communities to preserve traditional knowledge, this shows that TRIPS agreement does not give much respect for the preservation and respect for traditional knowledge. The TRIPS Agreement itself does not provide any protection for the traditional knowledge and innovations of indigenous and local people but it creates flexibility for establishing alternative intellectual property protection measures.

On the whole, the TRIPS agreement does not cover inventions and innovations of indigenous and local peoples. Their contributions to plant breeding, genetic enhancement, biodiversity conservation and global drug development are not recognized, compensated and even protected. Similarly, the TK of local peoples is not treated as intellectual property worth protection. Because of the above reason the existing IPRs such as patents does not protect TK related to genetic resources and has of little value to protect TK related to genetic resources.

[59] Jonathan Curci, The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property(2010),Cambridge university press p.60
[60] Ibid
[61] Ibid

3.2.2 Protection of Traditional Knowledge Related to Genetic Resources through Trade Secrets

A trade secret refers to financially valuable information held by a business, company, or person.[62] The holder of a trade secret has an indefinite legal protection against theft of the secret by another party, provided that the holder can prove measures to prevent the secret from leaking.[63] The trade secret holder can pursue action against anyone who is told the secret in confidence and wrongfully discloses, sells, or otherwise inappropriately uses the secret and it used to protect non disclosed traditional knowledge.

Although the misappropriation of trade secrets or confidential information has for a long time been actionable in many domestic jurisdictions, the TRIPS Agreement is the first international intellectual property instrument to specifically recognize secret information or undisclosed informationas being protectable intellectual property.[64]This is done through Article 39[65] of the TRIPS Agreement, which makes provision for the protection of undisclosed information under the ambit of unfair competition.

[62]ASSEMBLY OF FIRST NATIONS.,2008.Aboriginal Traditional Knowledge and Intellectual Property Rights, Discussion Paper.p.12 Available at: http://www.afn.ca/uploads/files/env/atk_and_ip_considerations.pdf.[accessed February 29,2015]

[63] Ibid

[64]LA Tong, 2010. PROTECTING TRADITIONAL KNOWLEDGE – DOES SECRECY OFFER A SOLUTION? PER / PELJ ,volume 13 No 4, p.164 Available at: http://www.nwu.ac.za/sites/www.nwu.ac.za/files/files/p-per_old/issuepages/2010volume13no4/2010x13x4_Tong_artl.pdf [accessed on march 5,2015]

[65]Article 39 of the TRIPS Agreement provides that:(1) In the course of ensuring effective protection against unfair competition as provided in Article 10bis of the Paris Convention (1967), Members shall protect undisclosed information in accordance with paragraph 2 and data submitted to governments or governmental agencies in accordance with paragraph 3.(2) Natural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices so long as such information:(a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;(b) has commercial value because it is secret; and (c) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Akey limitationin the application of Article 39 of the TRIPS Agreement to traditional secret information is that it encourages a commercial and competitive environment.[66] It means it may result in the reduced relevance of unfair competition for traditional knowledge holders who do not use their secret information in a commercial context and who is not trade competitors with the person responsible for the misappropriation.[67] The principal criterion for undisclosed information to be protected by IPRs is that the information needs to be confidential and, as the knowledge of the communities is diffused among various members of a community, it is difficult to gain protection through this method.[68]But if the information is kept only by one person, this system may work.Unfair competition rules generally do not provide the holder of secret information with an exclusive right in the information itself but make it possible to prevent acts of disclosure, acquisition and use without consent and contrary to honest business practice within a competition environment.[69]Since there is no criteria of novelty under trade secrets and since the duration of trade secret protection is indefinite– provided that the secret holder does not patent, publish, or in any other way release the secret to the public domainit is useful to keep the inter-generational nature of traditional knowledge.But as the knowledge of the communities is shared and disseminated among various members of a community, it is difficult to give protection to TK related to genetic resources through trade secret. Only those TK which are not in the public domain may be protected through trade secrets.

3.2.3 Protection of Traditional Knowledge Related to Genetic Resources through Geographical Indications

A geographical indication[70] is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.[71] It is not the name of the geographical area but the significance of the geographical area to the name of the product that is

[66]Assembly of first nations, Supra note 64 ,p.165-166
[67] Ibid
[68]Alvarez Ninez Supra note 53,p.520
[69]Assembly of first nations,Supra note 64,p.167
[70]Article 22(1) of the TRIPS agreement defines geographical indication as …indications which identify a good as originating in the territory of a Member[of the World Trade Organization], or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin.
[71]WIPO, Geographical indication: an introduction,Design and Geographical Indication Law, Section of the World Intellectual Property Organization (WIPO), Switzerland, Geneva. P.8 Available at: http://www.wipo.int/edocs/pubdocs/en/geographical/952/wipo_pub_952.pdf. [accessed on February 30,2015]

to be established to qualify for the protection.[72] It is not mandatory to establish all the three conditions stated in the definition (i.e. quality, reputation or other characteristics of the good), to qualify for protection, proof of any one is adequate.[73]

Geographical indicationsare a suitable mechanism to enhance the value of agricultural products, handicrafts and other traditional knowledge-derived products. A number of products that come from various regions are the result of traditional processes and knowledge implemented by one or more communities in a given region. The special characteristics of those products are appreciated by the public, and may be symbolized by the indication of source used to identify the products.

Geographical indication does not protect a specific technology or knowledge but only prevent the false use of the geographical indication.[74]Geographical indication does not protect a specific knowledge but only prevent the false use of the geographical indication because of this geographical indication is irrelevant to protect TK related to genetic resources.

3.2.4 Protection of Traditional Knowledge Related to Genetic Resources through Trade Mark

All goods manufactured and services offered by manufacturers, craftsmen, professionals and traders in native and indigenous communities, or by the bodies that represent them or in which they are grouped as an example cooperatives, may be differentiated from each other with trademarks.[75] The trademark is an essential element in the commercial promotion of goods and services both nationally and abroad.[76] The term of protection for a trademark is potentially indefinite, following an initial registration for a term of no less than 7 years. Members

[72]Gopalakrishnan, N.S. et al.,2007.Exploring the Relationship between GIs and TK: An Analysis of the Legal Tools for the Protection of GIs in Asia, ICTSD Programme on Intellectual Property Rights and Sustainable Development, International Centre for Trade and Sustainable Development, Geneva, Switzerland.p.14. Available at: http://www.iprsonline.org/ictsd/docs/Gopaletal%20-%20GIs&TK.pdf [accessed on February 29,2015]

[73] Ibid

[74] Alvarez Ninez, supra note 53,p.520

[75] Carlos M Correa.,2001.Traditional knowledge and Intellectual property: Issues and options surrounding the protection of traditional knowledge, A Discussion Paper, Quaker United Nations Office Geneva, November 2001.p.11. Available at: http://www.geneva.quno.info/pdf/tkmono1.pdf.[accessed on march 5,2015]

[76]According to Article 15 of the TRIPS Agreement, any sign, or any combination of signs, capable of distinguishing the goods or services of one undertaking from those of other undertakings, shall be capable of constituting a trademark and such signs, in particular words including personal names, letters, numerals, figurative elements and combinations of colours as well as any combinations of such signs, shall be eligible for registration as trademarks.

mayrequire that the trademark be actually used in order to maintain a registration (Article 19, TRIPS).Trade mark does not protect a specific knowledge like TK associated with genetic resources but only prevent the false use of the trade mark because of thistrade mark is irrelevant to protect TK associated with genetic resources.

3.2.5 Protection of Traditional Knowledge Related to Genetic Resources through Copyrights

Copyright vests the right of authorship in the creator of a work and enables him to prevent the misuse of his work.[77] Copyright has some closely related rights that follow similar principles of protection. These are called related rights or neighboring rights. These rights protect persons, other than the creators, who are involved in the dissemination of copyrighted works.[78]These related rights could be used for the protection of the performances of singers and dancers and presentations of stage plays, puppet shows and other comparable performances.[79]Originality, identifiable author and fixation are requirements for protection through copyright.[80]Originality meansthat the author has created it by his own skill labor without directly copy it from the pre-existing work.2) Fixation: Since copyright is a protection against a deliberate copying,the work must be fixed in a material form(literary work must exist in written, the musical work recorded, film should be captured)All such works are protected as long as these are original expressions of an idea.[81]Unlike product patents, copyright does not give the right holder any monopoly over commercially viable ideas.

Copy right law deals with the form of expression and does not protect knowledge as such; more relevant to the protection of traditional cultural expression than for traditional knowledge related to genetic resources; the knowhow and substantive content of traditional knowledge related to genetic resources could be taken and used by third parties, commercially.

[77] See generally, Berne Convention for the Protection of Literary and Artistic Works, Paris Text, 1971.
[78]Somesh. K. Mathur, 2001.TRIPS: ISSUES, IMPACT AND THE WAY FORWARD FOR DEVELOPING COUNTRIES INCLUDING INDIA. p.12 Available at: https://www.ifw-kiel.de/konfer/esf-ifw/newtech_0507/mathur.pdf [accessed on march 5,2015]
[79] Correa, supra note 75,p.11
[80]Merges,Robert p., 2006.Intellectual property in the new technological age.4rth Ed. New york: Aspen publishers p.377-388
[81] Ibid

Under copyright protection, as a result of the idea/expression dichotomy, only the expression of an idea in a work and not the underlying ideas are protectable and this excludes the use of copyright as a means of protecting and compensating methods or knowledge of a functional character like traditional knowledge related to genetic resources.[82]

In General,despite the successes of copy right law in protecting TCEs, it has fundamental limitations in the protection of traditional knowledge which is related to genetic resources. whereas copy right requires an identifiable author and a work to be fixed,but traditional knowledge related to genetic resources are oral,not fixed and difficult to find the specific authorship. Because of this copy right law normally excludes traditional knowledge related with genetic resources from eligibility of copy right protection.

3.2.6 Sui Generis System for the Protection of Traditional Knowledge

Sui generis means Latin for "of its own kind," and is used to describe something that is unique or different.[83] What makes an IP system sui generis is the modification of some of its features so as to properly accommodate the special characteristics of its subject matter and the specific policy needs which led to the establishment of a distinct system.[84] In most cases, conventional IP systems and adaptations thereof are not considered sufficient to cater to the unique character of TK. Thus sui generis system is a system used to give protection for some creation by taking into account the special features of the subject matter to be protected such as traditional knowledge related genetic resources.

Starting from the general principles to patentable subject matter which is laid down under article 27(1), in the field of life sciences, biotechnology and genetic engineering the TRIPS agreement contains exclusion to patentable subject matter.Under Article 27.3(b) of TRIPS[85], members are

[82]Correa, Supra note 75,p.11

[83]Department of trade and industry, republic of south Africa, The Protection of Indigenous Knowledge through the Intellectual Property System :A Policy Framework.p.18 Available at: http://www.african-archaeology.net/heritage_laws/south-africa-Indigenous_Knowledge_Systems_Policy.pdf, [accessed on march 5,2015]

[84] Ibid

[85]Art 27(3) (b) of the TRIPS agreement provides that Members may also exclude from patentability :(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof.

given the discretion as to whether they will implement a patent system for the protection of plant varieties, or whether they can adopt their own sui generis system. The terms used in this article are not defined, and it is subject to interpretation by an individual member states.A sui generis system in this context would allow WTO members to adopt their own system of protection for plant varieties, as opposed to adhering to the provisions of TRIPS agreement.

Because of this some countries find patents on biological resources useful and do not choose for the implementation of the exclusionary TRIPS provision in their patent law and they have established strong patent protection for biological material, plants and animals.[86]Other countries have used the room in article 27 (3) (b) of the TRIPS agreement to limit what constitutes patentable subject matter.[87] They exclude plant and animals from patent protection. Rather they have considered different forms of sui generis systems for plant varieties.[88] Patents are most of the time used in developed countries both to protect plant varieties, and to protect genetic material incorporated in plants.[89]Naturally occurring genetic resources are not intellectual property (they are not creations of the human mind) and thus cannot be directly protected as intellectual property. However, inventions based on or developed using genetic resources associated with traditional knowledge may be patentable or protected by plant breeders' rights but there is no benefit sharing for the holders of TK associated with genetic resources. Patenting ofbiotechnology and genetic engineering pose a threat to farmers' traditional practices of reuse and exchange. The above legal gaps caused a serious problem to apply a sui generis system uniformly.

Even If the sui generis route is adopted,whether the search for a regime of protection of TK should aim at a single or comprehensive, regime covering all manifestations of TK, or for a set of different, specific regimes adapted to the nature of the subject matter to be protected is a problem.[90] Thus since there are different subject matter under traditional knowledge, adoption of a single specific sui generis system covering all subject matter is difficult because the nature and characteristics of those traditional knowledge is different and not uniform.

[86]Overwalle, supra note 43,p.589
[87] Ibid
[88] Ibid
[89]Robert p,Supra note 78, p 16
[90]Correa, Supra note 75,p.14

In most cases, IPRs grant exclusive rights, i.e. the faculty to prevent third parties from exploiting the protected subject matter. But what sui generis system grants to an individual is not defined. Additionally, developed countries are likely to promote plant breeders' rights as the effective sui generis system.[91]They may encourage African and developing countries to establish the UPOV arrangement and this could significantly erode rights of local farmers, particularly their rights to share benefits from the use of plant genetic resources.[92]

For example: The legal framework of ARIPO[93]was formulated into a Draft PVP Protocol in 2014 which is based on the rules contained in the 1991 Act of the UPOV Convention.[94] The criteria for protection contained within the ARIPO draft PVP legislation are based on the standards for novelty, distinctness, uniformity and stability incorporated in the UPOV 91 Act.[95]Of particular concern is that the UPOV 1991 model undermines smallholder farmers' rights to freely save, exchange and sell seed or planting material and fails to support mechanisms to prevent the misappropriation of genetic resources, protect traditional knowledge, promote diverse farming systems (agro-diversity)rather UPOV 1991 promotes uniformity.[96] These elements are

[91] John Mugabe ,Supra note 14

[92]International environmental law research center ,supra note 10, p.6

[93]ARIPO is the regional counterpart of the UN's World Intellectual Property Organization (WIPO) for Anglophone Africa and was established under the Lusaka Agreement signed in 1976 and in November 2009, ARIPO's Council of Ministers approved a proposal for ARIPO to develop a policy and legal framework which would form the basis for the development of the ARIPO Protocol on the Protection of New Varieties of Plants (the PVP Protocol). AFSA and GRAIN, Supra note 47, p.13

[94] ibid

[95]Bram De Jonge., 2014.Plant Variety Protection in Sub-Saharan Africa: Balancing Commercial and Smallholder Farmers' Interests, Journal of Politics and Law; Vol. 7, No. 3 Available at: http://www.google.com.et/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&uact=8&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.ccsenet.org%2Fjournal%2Findex.php%2Fjpl%2Farticle%2Fdownload%2F39778%2F22065&ei=lkJ1Vb2PG4m2swHS6Yx4&usg=AFQjCNG-Kn1MZQVYWtN-ubMIBvUSSlrefA&sig2=SdQZp3ZU48gpDmYpL14KZQ&bvm=bv.95039771,d.bGg p.103 [accessed on February 29,2015]

[96]APRODEV., 2014. Discussion Paper on Seeds and Food Security - SEEDS AND FOOD SECURITY: The impact of EU seed laws on food security in Africa, December 2014, p.8 Available at: <https://www.arche-noah.at/files/aprodev_pcd_seed_paper_final_18122014.pdf. [accessed on march 23,2015]

fundamental for the conservation of biodiversity and the protection of farmer'srights.[97]ARIPO therefore establishes legal monopolies or protection on new plant varieties for 20-25 years, depending on the crop and farmers will not be able to save and re-use seed from these varieties on their own farms except for specifically designated crops, within reasonable limits, and upon annual payment of royalties.[98] Under no circumstances they will be able to exchange or sell seeds harvested from such varieties.Civil society groups have said that such limitations ran counter to the International Treaty on Plant Genetic Resources for Food and Agriculture, in particular its Article 9[99]on farmers' rights.[100]

In general the TRIPS sui generis system itself does not provide protection for the traditional knowledge associated to genetic resources becausethe application of sui generis system are not uniform and its capacity to protect TK depend on the type of sui generis regime that an individual state chooses to adopt.

3.2.7 Plant Variety Protection (PVP)

A PVP system is an administrative procedure which an applicant complies with to secure a form of intellectual property right called plant breeders' right. This right is awarded in recognition of the intellectual creation of innovative citizens, as applied on plant varieties,particularly the transformation of plants through breeding. It is an exclusive right that enables the holder of the right to prohibit others from exploiting or using the protected plant variety without any permission or license from the rights holder. Exceptions to this right are that any person or farmers may propagate, grow or use a protected variety for purposes other than commerce, or

[97] Ibid

[98]AFSA and GRAIN ,Supra note 47,p.13

[99]Article 9.3 of the International Treaty on Plant Genetic Resources for Food and Agriculture states that "Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.

[100]Catherine Saez., 2014.Intellectual Property Watch 3 Comments. Available at:http://www.ip-watch.org/2014/04/15/upov-approves-aripo-draft-legislation-spreading-plant-variety-protection-to-africa/ [accessed onJuly 8,2015]

home consumption, use it for further breeding, research and teaching. The right however is limited to a particular time period.

To be protected, a variety has to be different from known varieties and has to be new, uniform, distinct, and stable in its essential characteristics, even after a number of reproduction cycles.[101]Different organizations argue that the criteria used for protection – that varieties are distinct, uniform and stable - lead to genetic erosion and is a cause for the replacement of genetically diverse and locally adapted seeds by genetically uniform modern varieties.[102]

For example: 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.[103] A number of corporations have taken patents on various inventions employing materials derived from the neem tree in uses that often relate to traditional uses of neem.For instance, In 1994, the European Patent Office[104]granted W.R. Grace and Co.

Butin 1993 India challenged the patentby fearing that their genetic resources and traditional knowledge were coming increasingly under foreign control through the legal mechanism of patents.The patent challenge was filed by the members of the neem team on the grounds of lack of novelty.However, the patents were not truly novel because in fact they not only drew upon but consisted of traditional knowledge. They constitute prior art in the form of traditional

[101]Correa, Supra note 75,p.12

[102]Catherine Saez, Supra note 100.

[103] Available at: http://www.gene.ch/genet/2000/Jun/msg00032.html [accessed on march 21,2015]

[104]European Patent Office described as:A novel insecticide and foliar fungicide derived from a neem seed extract comprising neem oil which is substantially free of azadirachtin and salannin, said neem oil being prepared by extracting dried, coarsely ground neem seeds with a nonpolar, hydrophobic solvent to obtain a neem oil extract, and then removing the solvent to obtain the neem oil and these neem oil pesticides exhibit the ability to repel insects from plant surfaces, prevent fungal growth, and kill insect and fungal pests at various life stages.Vandana Shiva,.2000.The neem tree and freedom from Western biopiracy. Available at:http://www.gene.ch/genet/2000/Jun/msg00032.html [accessed on February 8,2015]

knowledge, which should not have been patented.[105] Indeed, the European Patent Office has reportedly revoked one patent held by W.R. Grace on this ground.

The patenting of those products like the neem tree which consists of traditional knowledgeis seen as formsof bio piracyby the developing south countries.[106]There are different effects on the global south by the patenting of products which consist of traditional knowledge related to genetic resources. First, the farmers and holders of traditional knowledge related to genetic resources will no longer be able to use these products without paying royalties to the company that has a patent on it and secondly local communities should not receive a share of the profits even if the companies learned the value of the species and the genetic resources from local knowledge because there is no benefit sharing arrangement for traditional knowledge holders under the TRIPS agreement.

[105] Available at: http://pame.european-patent-office.org/pubs/hararepdf/neem_and_hoodia.pdf[accessed on September 10,2015]
[106] Available at: http://www1.american.edu/ted/neemtree.htm [accessed on September 8,2015]

Conclusion

The need for the protection of traditional knowledge is now get great attention at different international conventions like the CBD and PGRFA,even if enforceable and binding agreement could not be concluded in crucially needed ones like the TRIPS agreement.These international conventions have their own limitation on the protection of TK related to genetic resources. The TRIPS Agreement establishes minimum standards of IP protection, which must be incorporated through national legislation by WTO Members.Due to the minimum standards established to acquire a patent under the TRIPS agreement, it is difficult to give patent protection to traditional knowledge related to genetic resources through a patent. An invention usually needs to meet the requirements of absolute novelty, inventive steps and being capable of industrial application.However, since most of traditional knowledge has been used for long periods and considered as part of the public domain, the novelty and/or inventive steps requirement of patent protection may be difficult to meet and since TK is held collectively, it is difficult to identify the inventor which is required under a patent application. .[107] Because of this most traditional knowledge is not protected by TRIPS agreement through a patent.

The patent rights criteria of new may lead to increased use of monocultures which replace the diverse varieties and this in return brings decreased crop diversity which lead to erosion of genetic, insect, soil, and ecosystem diversity.[108] Because of these TRIPS Agreement may have effects on the conservation and sustainable use of biological diversity.Since there no controlling mechanism for illegal access to TK related to genetic resources under the TRIPS agreement, the knowledge is easily misappropriated without compensation which is against their economic benefits and this will in turn bring effect on local and indigenous communities to preserve their traditional knowledge.

In relation with secret information, since TK related to genetic resources is not secret and diffused among various members of a community, it is difficult to gain protection through this method.Geographical indication and trademarks does not protect a specific knowledge but only prevent the false use of the geographical indication and trademarks respectively,because of this

[107] Alvarez Ninez, Supra note 53,p.518
[108] Richard Tarasofsky, Supra note 58 ,p.7

they are irrelevant to protected TK associated with genetic resources.Copy right law has its own limitations in the protection of traditional knowledge which is related to genetic resources. Because under copy right law identifiable author and fixation of work is required, but TK related to genetic resources is oral, not fixed and collectively held.

In the field of life sciences, biotechnology and genetic engineering even if the TRIPS Agreement contains exclusion to patentable subject matter, the effectivesui generis terms used in article 27(3)(b) are not defined, flexible and it is subject to interpretation by an individual member states. Because of this WTO members adopt their own system of protection for plant varieties, as opposed to adhering to the provisions of TRIPS. This creates a great problem to adopt sui generis system uniformly. Because of these developed countries encourage African countries to establish the UPOV arrangement as an effective sui generis system and this could significantly erode rights of local farmers, particularly their rights to share benefits from the use of plant genetic resources.[109]To be protected by plant breeders right a variety has to be different from known varieties and has to be new, uniform, distinct, and stable in its essential characteristics.This criterion is criticized because itpromotes uniform agro-biodiversity rather than diverse agro-biodiversity.These elements are fundamental for the conservation of biodiversity and the protection of farmers'rights.

In general the TRIPS agreement does not cover inventions and innovations of local peoples. Their contributions to plant breeding, genetic enhancement, biodiversity conservation and global drug development are not recognized, compensated and even protected. Similarly, the traditional knowledge of indigenous and local peoples is not treated as intellectual property worth protection. Rather the TRIPS Agreement creates flexibility for establishing alternative non-conventional intellectual property protection measures.

[109]International environmental law research center, Supra note 10, p.6

Chapter four

4.1 DEVELOPMENT OF IP SYSTEM AND PROTECTION OF TRADITIONAL KNOWLEDGE RELATED TO GENETIC RESOURCES IN ETHIOPIA

Intellectual property rights, if carefully managed and protected can play a significant role in the course of the development process of a country.[110] As a result our country Ethiopia hasincorporated IP matters in the national development programs. Due to this fact the need and protection of intellectual property rights in Ethiopia started with the enactment of the country's civil code(1960) and criminal code (2005) which recognizes and protects literary and artistic works ,other creation of the human minds and penalizes infringements of such personal rights.[111] In addition, the commercial code of the country is also devoted to the protection of intellectual property rights such as the trade mark or good will of a business organization and states acts of unfair competition and remedies for it.[112]

However these laws are general, not complete to protect IPRs in Ethiopia. Due to its inadequacy and the need to strengthen the country's IP system, the government has adopted or enacted a number of other policies, proclamations proclaimed at different times to deal with matter of intellectual property rights.

In this regard the supreme law of the country, the country's constitution for the first time recognizes the need for the protection of IPRs and provides the federal government the power to protect IPRs.[113]This constitutional recognition of IPRs serves as a milestone for the development and further enactment of specific laws, policies and institutions.

In Ethiopia an organized national IP policies is a recent phenomenon. It begins with the establishment of the Ethiopian intellectual property office in 2003.[114]The office is established with a vision to be: a leading development oriented national IP office, has the aim of promoting local inventive and creative activities and encourages flow of foreign technologies, investment

110 EIPO.,2011.IP law and administration in Ethiopia, Presented at the WIPO training on effective intellectual property asset management. Addis Abeba, Ethiopia November 30-december 2,2011.

111 Example: art.717-724 of the criminal code deals with crimes against intangible rights, like marks designs and unfair competition.

112 Art 131-134 of commercial code of Ethiopia deals with the protection of intellectual property rights

113 Article 51 of the FDRE constitution

114 EIPO, Supra note 110 ,p.2

and ensuring a competitive markets, assists the identification protection and exploitation of the country's IP assets, and thereby make a contribution for the development commerce,industry and as well as for the improvement of the living standards of its citizens.[115]To achieve its vision the Ethiopian intellectual property office has made a number of institutional reforms. Among this reforms the department for the Protection and development of copyright and traditional knowledge is established-a department responsible for the protection of copyright and identification, protection, exploitation of genetic resources and traditional knowledge.Generally the reform focus on shaping the office to a development oriented IP system that would optimally achieve the national development goals.

In addition to the above IP developments,Protection of farmers' and community traditional knowledge is recognized in all relevant laws.[116] All these laws recognize the rights of farmers and communities to share the benefits arising from the use of indigenous knowledge and plant genetic resources that they maintain and develop.[117] Ethiopia has advocated in different international forums for the fair and equitable sharing of the benefits arising from the use of genetic resources and for farmers' rights.Following the CBD the government of Ethiopia enacted legislation which provides for community rights and access to genetic resources and traditional knowledge.[118]The proclamation subjects access to genetic resources and community knowledge in the country to the requirement of permit from the Institute of Biodiversity Conservation, and stipulates the conditions under which access to genetic resources may be denied.[119]This shows that there have beenmany developments in connection with implementing the international norms and principles in national laws of Ethiopia.

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[115] Ibid

[116]Regassa Feyissa,.2006. Farmers' Rights in Ethiopia: the Farmers' Rights Project, Background Study 5 The Fridtjof Nansen Institute, A Case Study: p.8 Available at: http://www.fni.no/doc&pdf/FNI-R0706.pdf. [accessed on March 11,2015]

[117] Ibid

[118]Regine Andersen and Tone Winge,.2012.The Access and Benefit-Sharing Agreement on Teff Genetic Resources: Facts and Lessons: Norway, Fridtjof Nansen Institute. p.21-22. Available at: http://www.fni.no/doc&pdf/FNI-R0612.pdf[accessed on march 18,2015]

[119]MelleseDamtie and Mesfin Bayou, Overview of Environmental Impact ,Assessment in Ethiopia :Gaps and Challenges.p.30 .Available at: http://www.melcaethiopia.org/images/stories/Publication/Overview%20of%20EIA-book.pdf [accessedon March 11,2015]

4.2 Some Ethiopian IP Laws and Protection of Traditional Knowledge Related to Genetic Resources

There are a lot of proclamations, laws and directives in Ethiopia in the field of IP rights. Proclamation Concerning Inventions,Minor Inventions and Industrial Designs Proclamation No. 123/1995 which entered into force on May 10, 1995,the Copyright and Related Rights Proclamation, TheTrademark Registration and Protection Proclamation no.501/2006which entered into force July 7, 2006 are some of the proclamation in the field of IP and there is also plant breeders proclamation no.481/006 which have implication for biodiversity conservation.In the following topic I will deal with the above proclamations in relation with their relevance to protect TK associated with genetic resources.

4.2.1 The Proclamation Concerning, Inventions Minor Inventions and Industrial Designs

The Proclamation Concerning, Inventions Minor Inventions and Industrial Designs was issued in 1995.This law gives four forms of Protection: Patents, Patents of Introduction, Utility Model Certificates and Certificates of Registration of Industrial Designs. The objectives of the Proclamation is to create a favorable environment in order to promote local inventive and related activities as well as to encourage the transfer and adoption of foreign technology, by giving protection to local inventions it encourages further creativity and the development of indigenous technological capability, through the protection it gives to foreign technology owners, it facilitates the transfer of foreign technology.[120]

According to the proclamation in order to be granted a patent, an invention must fulfill three conditions.[121]

An invention must be new. According to art.3 (2) of the Ethiopian patents, minor inventions and industrial designs proclamation no 123/1995, an invention shall be considered new if it is not anticipated by prior art.[122] According to this proclamation an invention is said to be novel when

[120]Preamble of the proclamation no. 123/1995 the Proclamation Concerning Inventions,Minor Inventions and Industrial Designs.

[121]Art 3(1) of the proclamation no. 123/1995 the Proclamation Concerning Inventions, Minor Inventions and Industrial Designs.

[122] Article 3(2) of proclamation no. 123/1995 the Proclamation Concerning , Inventions Minor Inventions and Industrial Designs provides that-Prior art shall consist of everything disclosed to the public, anywhere in the world,

it is not known in any form (oral or written) before the date of application,hence was not part of a prior art. Prior art in the Ethiopian context refers to any information related to a claimed invention in oral or documented forms in the public domain. The definition of prior art in some countries poses serious threat to give defensive protection for TK related to genetic resources. In some countries like the USA ,prior art refers to knowledge known within the territory of the state in which the patent is requested or that there ought to exist a written documentation in a third state, basically excluding oral information which constitutes a major share of traditional knowledge in a developing countries.[123] Traditional knowledge existing orally in a country will then be misappropriated by others like the US. Countries should therefore forge their efforts to mitigate this aspect of misappropriation of their traditional knowledge assets by redefining priority art to include oral information.

An invention should be capable of industrial application. This means it must be something which can be industrially manufactured or used. An invention must be non-obvious. This means it should not be an invention which would have occurred to any specialist working in the relevant field.

The above criteria of patentable invention arealmost similar with the criteria of the TRIPS agreement which is specified under article 27(1). As I have explained in chapter three there are several obstacles to afford patent protection to traditional knowledge related to genetic resources in Ethiopia. Such obstacles are originates from the minimum standards established to acquire patent rights in the TRIPS agreement and the criteria specified under article 3(1) of the proclamation no. 123/1995 ,the Proclamation Concerning , Inventions Minor Inventions and Industrial Designs.

Since most of traditional knowledge has been used for long periods, the novelty and/or inventive steps requirement of patent protection may be difficult to meet.[124] Because of this it is difficult to protect traditional knowledge related to genetic resources through the Proclamation Concerning, Inventions Minor Inventions and Industrial Designs. This limitation opens the door for outsiders

by publication in tangible form or by oral disclosure, by use or in any other way, prior to the filling or, where appropriate the priority date, of the application claiming the invention.

[123] Alvarez Ninez,Supra note 53,p.519

[124] Alvarez Ninez, Supra note 53, p.518

to appropriate the traditional knowledge and in relation with plant genetic resources, after genetically modifying and improving it; they apply for a patent because they can fulfill the minimum standard of patentability under the TRIPS agreement.

According to article 9(3) of the proclamation no. 123/1995 the Proclamation Concerning , Inventions Minor Inventions and Industrial Designs, the patent application shall contain a request for the grant of a patent and include a description of the invention,one or more claims, an abstract, and where necessary. drawings, and according to article 9(4) (b) of the same proclamation it is provided that the descriptionshall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by aperson having 'ordinary skill in the art, and shall, in particular, indicate at least one mode known to the applicant for carrying out the invention. However; it is difficult for traditional knowledge holders which are related to genetic resources to complete a patent specification.[125] While a useful characteristic of a plant or animal may be well known to such an individual or group they do not have the ability to describe the phenomenon in a scientific way and this would make it almost impossible to apply for a patent**.** Because of this traditional knowledge is not well protected under the TRIPS agreement and the proclamation no. 123/1995 the Proclamation Concerning, Inventions Minor Inventions and Industrial Designs. Because of the above reason it is also difficult to give protection to traditional knowledge related to genetic resources through the existing patent system.

4.2.2 Trademark Registration and Protection Proclamation No. 501/2006

Trademarkmeans any visible sign capable of distinguishing goods or services of one person from those of other persons; it includes words, designs, letters, numerals, colours or the shape of goods or their packaging or the combinations thereof.[126]It can protect the reputation and goodwill of business persons, protect the interest of consumers by guiding their choices and avoid confusion of similar goods. It also assists economic advancement on trade and industry by encouraging investments, ensures fair trade and stimulating creative activities.

[125] Ibid

[126]Article 2(12) of the Ethiopian Trademark Registration and Protection Proclamation No. 501/2006 Entered into force: July 7, 2006

The law protects both trademarks, collective marks and well known marks.A descriptive mark, non-distinctive mark or that is similar with the pre-existing mark, sound and smell marks, marks contrary to public order and morality are inadmissible for protection through trademark in Ethiopia.[127]

Trade marks may be used to protect signs or symbols of commercial interest for local communities and it protect all goods manufactured and services offered by manufacturers, craftsmen, professionals and traders in native and indigenous communities.[128]

For example: The flavors of the Ethiopian coffees reflect not just the soils and climate of Ethiopia, but also the agricultural methods used by the people and Because Ethiopian coffee farmers are an identifiable group of people in a given community who have used and continue to use information that is based on experience and adaptation to a local culture and environment, coffee farming in Ethiopia is TK that is indigenous to the people who live there.[129]In 2004, the EIPO launched its Trademarking and Licensing Initiative to gain worldwide recognition of the value of Ethiopia's coffees, to create greater demand for its coffees and ultimatelyto increase the price of coffee for poor coffee producers to enable them live a decent life. To date EIPO has registered trademarks for Sidamo, Yirgacheffe and Harar in more than 30 countries.[130] If the trade marking and licensing initiatives are successfully implemented, the coffee farmers can get higher amount of dollars from their coffees.[131] This can change their lives.

However; the unlimited duration of protection and the possibility of collective ownership make trademarks comparatively better options to the protection of certain categories of traditional knowledge. Trademarks does not protect a specific knowledge which is something intangible but

[127] Ibid, art 6
[128]Alvarez Ninez,Supra note 53, p.521

129 Mary O'Kicki,.2009.Lessons Learned from Ethiopia' s Trademarking and Licensing Initiative: Is the European Union' s Position on Geographical Indications Really Beneficial for Developing Nations?, 6 Loy . U . Chi. Int' l L. Rev . 311 (2009),p.327-328 Available at: http://lawecommons.luc.edu/cgi/viewcontent.cgi?article=1044&context=lucilr [accessed on March 11,2015]

[130]Ethiopian Coffee, Intellectual Property Rights And Geographical Indication Protection Perspectives, p.13 Available at: http://ec.europa.eu/agriculture/events/2011/gi-africa-2011/sentayhu_en.pdf[accessed on March 11,2015]
[131] Ibid

only prevent the false use of the name of the trademark ,because of this they are irrelevant to protect TK associated with genetic resources.

4.2.3 Ethiopian Copyright and Related Rights Proclamation

Copyright is protected on the basis of the copyright and related rights proclamation issued in 2004.Originality, identifiable authorship and fixation are requirements for copyright protection.[132]Copyright protection entails for its author or assigneeeconomic rights. The rational for economic right is that the author should be compensated and rewarded. Rights of reproduction, adaptation, translation are economic rights. It is protected for the life of the author plus fifty years and registration is not a requirement for protection, a work which is original and being reduced to some tangible form becomes automatically protected

Even if copy right is important in protecting traditional cultural expressions, it has fundamental limitations in the protection of traditional knowledge which is related to genetic resources.Copy right requires an identifiable author; the idea of authorship is a problematic concept in many traditional knowledge because they are communally held. Additionally copy right normally requires works to be fixed. However, among some traditional groups, traditional knowledge are not fixed, but are passed on orally from generation to generation. Because of this copy right law normally excludes traditional knowledge related with genetic resources from eligibility of copy right protection. Because of the above reason copy right law is irrelevant to protect TK associated with genetic resources.

4.2.4 Ethiopian Plant Breeders' Rights Proclamation no 481/2006

The sui generissystem has been taken as a preferred option for protection of plant varieties in developing countries.Because of this in Ethiopia the Plant Breeders' Rights Proclamation (Proclamation No. 481/2006) was developed to encourage plant breeders by offering economic rewards as incentive for their contributions in the agricultural sector, realizing that the utilization of new plant varieties developed through research play a significant role in improving agricultural production and productivity.[133]

The Proclamation also recognizes the contributions of local farmers in the conservation and use of genetic resources that constitute the basis for breeding new varieties for agricultural

[132] Robert p ,Supra note 80,p.377-388
[133]RegassaFeyissa, Supra note 116,p.6

production.Local farmers have made and will continue to make in the conservation and sustainable use of plant genetic resources that constitute the basis of breeding for food and agriculture production.[134]

However, the inclusion of farmers' rights into the Plant Breeders' Rights Proclamation is more about the conditions under which farmers are to be allowed to use protected varieties.[135] Farmers can save, use, multiply and sell protected varieties but not as a certified seed. The role that farmers play in conserving and developing plant genetic resources that constitute the basis of breeding and rewarding them for what they are doing and will continue to do, are not mentioned.[136]

The farmers' exemption under plant variety protection is important in protecting the rights of farmers.Because it explicitly provides a farmers' exemption, which encompasses the right to use, save, sell, and exchange the protected variety or propagating material without paying compensation to the plant breeders. The only limitation to the exemption is that "farmers cannot sell farm-saved seed or propagating material . . . on [a] commercial scale.However thereis no mechanisms under plant breeders law by which farmers' varieties are protected because farmers' varieties may not satisfy the standard of plant variety protection criteria and there is no mechanism under the proclamation aimed at enabling benefit sharing among farmers from the use of such varieties and genes.

[134] Article 27 of Proclamation No. 481/2006: Plant Breeders' Rights proclamation
[135] Ibid art.28
[136] RegassaFeyissa, Supra note 116,p.9

CONCLUSION

The existing laws and Directives in Ethiopia in the field of IP laws and proclamationsdo not give protection to traditional knowledge related to genetic resources.In relation with patents because of the criteria specified under Proclamation Concerning, Inventions Minor Inventions and Industrial Designs issued in 1995, TK related to genetic resources is not eligible for protection.Because since most of traditional knowledge has been used for long periods, the novelty and/or inventive steps requirement of patent protection and patent specification makes traditional knowledge related to genetic resources difficult for protection through a patent.

Trademark Registration and Protection Proclamation No. 501/2006may be used to protect signs or symbols of commercial interest for local and indigenous communities and they does not protect traditional knowledge related to genetic resources which is intangible. However; compared to other IP forms,the unlimited duration of protection and the possibility of collective ownership make trademarks better options to the protection of certain categories of traditional knowledge.However; trademarks does not protect a specific knowledge which is something intangible but only prevent the false use of the name of the trademark ,because of this they are irrelevant to protect TK associated with genetic resources.

Ethiopian copyrightand related rights proclamation requires an identifiable author;the notion of authorship is a problematic concept in traditional knowledge. Additionally copy right normally requires works to be fixed. However, among some traditional groups, traditional knowledge are not fixed, but are passed on orally from generation to generation. Because of this copy right law normally excludes traditional knowledge related with genetic resources from eligibility of copy right protection.

The Ethiopian plant breeders right proclamation is a sui generis system of law and The Proclamation recognizes the contributions of local farmers in the conservation and use of genetic resources that constitute the basis for breeding new varieties for agricultural production.However ; there is no mechanism under the proclamation aimed at enabling benefit sharing among farmers from the use of farmers varieties and genes.

In generalthe existing laws and Directives in Ethiopia in the field of IP laws and proclamations do not give protection to traditional knowledge related to genetic resources. Ethiopia, as of yet, has no an enforceable, effective, and binding IP laws and proclamations which provides protection for TK related to genetic resources.

Chapter five

CONCLUSION AND RECCOMMENDATION

1) CONCLUSION

The relationship between genetic resources, traditional knowledge and intellectual property rights is among the most controversial in the negotiations of several international organizations. A key issue is illegal access and use of genetic resources and traditional knowledge.The appropriation of traditional knowledge by outsiders is not new. However, traditional knowledge holders are not compensated for allowing outsiders to reproduce their knowledge.Of all the agreements administered by the WTO, TRIPS is the most controversial with respect to its impacts on the protection of traditional knowledge related to genetic resources. The agreement requires all WTO member states to establish minimum standards of legal protection and enforcement for a number of different forms of intellectual property rights (IPRs). The rights covered by TRIPS include patents, copyright and related rights; trademarks; geographical indications; industrial designs; layout-designs of integrated circuits; protection of undisclosed information (trade secrets); and control of anti-competitive practices in contractual licences.

TRIPS is silent about TK related to genetic resources and developed countries are misappropriated TK related to genetic resources through a patent without any compensation. There are several obstacles to afford patent protection to traditional knowledge related to genetic resources. Such obstacles are originating from the minimum standards established to acquire patent rights in the TRIPS agreement. An invention usually needs to meet the requirements of absolute novelty, inventive steps and being capable of industrial application.However, since most of traditional knowledge has been used for long periods, the novelty and/or inventive steps requirement of patent protection may be difficult to meet.[137] Because of this most traditional knowledge is not protected by TRIPS agreement. Traditional knowledge is collectively held and generated while patent law treats inventiveness as an achievement of individuals.[138]Since patents promote individual rights and creations, the patent rights criteria of new and inventive steps may lead to increased use of monocultures which replace the diverse varieties and this in return

[137] Alvarez Ninez, Supra note 53,p.518
[138] Ibid

brings decreased crop diversity which lead to erosion of genetic, insect, soil, and ecosystem diversity. Because of these TRIPS Agreement may have effects on the conservation and sustainable use of biological diversity.The criteria of Patent specification which must be written in a technical way that examiners can understand,is the other problem for the protection of TK related to genetic resources through patents.Because it is difficultfor a traditional knowledge holders to complete a patent specification.

Existing IPR systems such as patents may increase the risk of misappropriation of traditional knowledge and fail to provide positive incentives for local communities to preserve their traditional knowledge.Since holders of TK related to genetic resources have great contribution to plant breeding, genetic enhancement, biodiversity conservation and global drug development, we have the moral obligation to preserve this knowledge because everybody may benefit from it. Preservation of TK need some amount of money or capital. Since most of TK related to genetic resources is found in developing countries, they might not have the capital used to preserve the knowledge.However; TRIPS fail to provide incentive for local peoples to preserve their TK andholders of TK are unable to safeguard traditional knowledge that is often communally held and passed through the generations and there is no access and equitable sharing of benefit arrangement under the TRIPS agreement and it does not cover inventions and innovations of local peoples.This will affect their equitable share of benefits which is recognized under the CBD. Similarly, the traditional knowledge of local peoples is not treated as intellectual property worth protection, while the knowledge of modern scientists and companies is granted protection.This is because under article 27.1 of the TRIPs Agreement, in order for the subject matter to receive patent protection the invention must be new, involve an inventive step and be capable of industrial application.

Whether copyright is the right form of protection for TK related to genetic resources is an important question, as TK related to genetic resources may not meet criteria relating to authorship and originality. Since traditional knowledge are not fixed, and are passed on orally from generation to generation, copy right law normally excludes traditional knowledge related to genetic resources from eligibility of copy right protection. In relation with trade secret,as the knowledge of the communities is diffused among various members of a community, it is difficult

to protect TK related to genetic resources through this method.As to geographical indication and trade mark -theydoes not protect a specific technology or knowledge but only prevent the false use of the geographical indication and trademark respectively.Because of this it is irrelevant to protect traditional knowledge related to genetic resources which is an intangible knowledge.

Article 27.3 of TRIPS is a compromise about patenting life forms. It requires patenting of microorganisms, microbiological processes and non-biological processes.However; under art.27 (3) b whether they adopt patents in the area or not, countries are required to provide effective protection for new plant varieties, in the form of plant breeders' rights. Such systems provide exclusive marketing rights for developers of new plant varieties including those of genetic modification. Plant breeders' rights may be used as a measure of effectiveness under the TRIPS Agreement andthey may encourage developing countries to establish the UPOV arrangement and this could significantly erode rights of local farmers, particularly their rights to share benefits from the use of plant genetic resources, undermines agro-biodiversity and promotes uniformity.[139] Additionally, there is controversy as to what an effective sui generis regime is and effectiveness of the sui generis system is not defined and the nature of a sui generis system is also left to individual members to determine.[140] This makes it difficult to apply a sui generis system uniformly.Even If the sui generis route is adopted, whether the search for a regime of protection of TK should aim at a single or comprehensive, regime covering all manifestations of TK, or for a set of different, specific regimes adapted to the nature of the subject matter to be protected is a problem.

In general the TRIPS Agreement itself does not provide any protection for the traditional knowledge and innovations of local people but it creates flexibility for establishing alternative non-conventional intellectual property protection measures.

In the Ethiopian scenario the existing laws and Directives in the field of IP laws and proclamations do not give protection to traditional knowledge related to genetic resources.The criteria of patents specified under Proclamation Concerning, Inventions Minor Inventions and Industrial Designs issued in 1995, is the same as that of the TRIPS agreement. This criterion is a great obstacle to afford protection to TK related to genetic resources which is under the public

[139]International environmental law research center, Supra note 10, p.6
[140] Ibid

domain and passed communally from generation to generation. The patent specification under article 9(3) of the proclamation no. 123/1995 the Proclamation Concerning,Inventions Minor Inventions and Industrial Designs is difficult for TK holders to complete a patent specification because it is difficult for them to explain the phenomenon.Even if Ethiopian trade mark lawsmay be used to protect signs or symbols of commercial interest for local communities and it does not protect traditional knowledge related to genetic resources which is intangible. Since the notion of authorship and fixation is a problematic concept in many traditional knowledge it is difficult to give protection to TK related to genetic resources through copyrights.Because traditional knowledge are not fixed, but are passed on orally from generation to generation. Because of this copy right and related rights proclamation of Ethiopia normally excludes traditional knowledge related with genetic resources from eligibility of copy right protection.

The farmers' exemption under Ethiopian plant breeder's right is important in protecting the rights of farmers.Because it provides a farmers' exemption, which encompasses the right to use, save, sell, and exchange the protected variety or propagating material without paying compensation to the plant breeders.However; there is no mention of reward for farmers even if they contribute and continue to contribute in conserving and developing plant genetic resources and there is no mechanism under the proclamation aimed at enabling benefit sharing among farmers from the use of such varieties and genes.

In generalEthiopia, as of yet, has no an enforceable, effective, and binding IP laws and sui generis system which provides protection for TK related to genetic resources. If Ethiopia accede to WTO it has no discretion to provide protection for traditional knowledge related to genetic resources whichcontradicts to major international agreements like the TRIPS agreement.

2) RECCOMMENDATIONS

TK related to genetic resources is misappropriated by others without paying appropriate compensation.The TRIPS Agreement does not guarantee any protection of TK related to genetic resources. Even if the question of legal protection of TK is not an easy one,I will give the following recommendation concerning TRIPS protection of traditional knowledge related to genetic resources.

1)Based on article 71.1 of the TRIPS agreement,article 27(3) and article 29 of the TRIPS agreement must be amended and the requirement for patent applicant such as mandatory disclosures of origin/source of traditional knowledge related to genetic resources, the certificate of prior informed consent and benefit sharing arrangement must be added as an additional requirement for patent application which have connection with traditional knowledge related to genetic resources which is used to develop the inventionis the best solution to ensure that countries that are party to TRIPS honor such an obligation.This will enables the WTO members to recognize respect for and preservation of traditional knowledge, the rights of communities to obtain compensation for their contribution to latest innovation and also ensures that access and benefit sharing are subject to conditions on appropriation and acknowledgment of source.

For example: India uses the existing IPR models (example, patents) for the protection of traditional knowledge related to genetic resources. The amendment of the Indian patent bill1999 provides grounds for rejection of the patent application, as well as revocation of the patent,which include non-disclosure or wrongful disclosure of the source of origin of biological resource or knowledge in the patent application.[141]

2)Since the existing requirement of patent application makes TK related to genetic not eligible for protection ,TRIPS must provide its members with discretion as to the criteria and requirement that will be applied in order for TK related to genetic resources to be eligible for patentability or strong sui generis system of protection.

3) There must be minimum requirement for effective sui generis system and the rights which it confers to the individual must be specified and the term effective Sui

[141]Rhys M, Supra note 8,p.123

generismust be defined so as toprovideprotection to the holders of TK related to genetic resources, recognizethe rights of holders TK and respect PIC and benefit sharing arrangement which is specified under the CBD.

4) There must be appropriate incentives for holders of TK related to genetic resources and for those countries which are rich with genetic resources to preserve their TK and to sustainably promote diversified farming systems that safeguard the rights of holders of TK related to genetic resources. This will enable holders of TK to preservetheir traditional knowledge, conserve and sustainably use biodiversity.To achieve this purpose there must be a provision under TRIPS agreement which obligates developed countries to provide appropriate incentives for holders of TK related to genetic resources.

5) Development of registries of traditional knowledge:The development of registries of traditional knowledge related to genetic resources at the national level or international levels, and the sharing of this information with patent offices throughout the world, can contribute to preventing the misappropriation of traditional knowledge and this in turn supports traditional knowledge's status as prior art.[142]At least there should be an effort to register the types of traditional knowledge existing in the public domain. This type of a system could potentially provide the patent offices with an easily accessible database on which to conduct a search. This may serve to partially mitigate this problem.

6) Those minimum requirements for patent application must be uniformly defined nationally and internationally. For example: what is novel or prior art must be carefully and uniformly defined to ensure that traditional knowledge related to genetic resources is not with in the public domain.

The following actions must be taken at the national level to protect traditional knowledge related to genetic resources

1) Like that of India, at the national level countries including Ethiopia by using the existing IPR models like patents, they must provide a IP law which rejects and revokes a patent

[142] Center for International Environmental Law(CIEL), Using Intellectual Property as a Tool to Protect Traditional Knowledge: Recommendations for Next Steps ,CIEL Discussion Paper prepared for the Convention on Biological Diversity Workshop on Traditional Knowledge Madrid, November 1997.p.11 Available at: http://www.ciel.org/Publications/UsingIPtoProtectTraditionalKnowledge.pdf [accessed onmarch 17,2015]

application on grounds of non-disclosure or wrongful disclosure of the source of origin of genetic resource or traditional knowledge associated with genetic resources in the patent application.

2) The CBDs requirement of PIC, benefit sharing arrangement and mandatory disclosure of origin of the genetic resources must be inserted as additional requirement under Ethiopian patent laws and under national patent laws of any country only for TK associated with genetic resources.
3) There must be mechanism under the Ethiopian plant breeders proclamationaimed at enabling benefit sharing among farmers from the use of farmer's varieties and genes.
4) Ensuring that national intellectual property offices including EIPO are adequately and well resourced. They must have sufficient resources to developregistries of traditional knowledge which is recommended under number five (5) aboveand to avoid granting inappropriate patents.
5) Those countries which are in the process of accession to WTO must delay their accession process until the TRIPS agreement is amended. Because if once countries accede to WTO the TRIPS requirement of patentability and its minimum standard will mandatorily apply to that country.This will create great problems for those countries to protect TK related to genetic resources and to apply and implement the CBD's objectives.If countries accede to WTO it has no discretion to provide protection for traditional knowledge related to genetic resources which contradicts the TRIPS agreement. Because of this our country Ethiopia must delay its accession process until the TRIPS agreement is amended in the above way.

In general to protect TK related to genetic resources national measuresalone cannot ensure that citizens from other countries do not misappropriate the genetic resources of the source countries. For example,following the CBD, a number of developing countries enacted laws regulating access to genetic resources and associated traditional knowledge within national borders—for example, requiring prior informed consentand benefit sharing. But generally, the effect of these provisions does not extend beyond national borders. At the international level, the TRIPS requirement of patent application must be amended to protect against misappropriation, and to ensure fair benefit sharing. No international system has yet been developed to adequately

preserve traditional knowledge, protect the rights of knowledge holders, and compensate them equitably for its use.

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