

4 JUSTIFICATIONS FOR CLAIMING INTELLECTUAL PROPERTY PROTECTION IN TRADITIONAL HERBAL MEDICINE AND BIODIVERSITY CONSERVATION: PROSPECTS AND CHALLENGES

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ABSTRACT

The importance of intellectual property is substantially justified based on Lockian natural rights theory, personality-based theory and utilitarian/incentive theory in the contemporary world. The natural right and personality-based theories justify intellectual property rights (IPRs) in one's own invention/innovation on morality-based arguments. It is natural for people to own what they have produced using their bodies and minds and the results/products are the reflection of the internal personalities of such people. This justification can be applied the same way for those who have invested their labour and mind in traditional knowledge (TK), including traditional medicinal knowledge (TMK). On the other hand, utilitarian theory justifies intellectual property (IP) protection on economic bases as an incentive to encourage investment in inventions/innovations having high public utility and subsequent disclosure of them. Proponents of IP protection in TMK and biodiversity argue that indigenous people and local communities (LCs) have acquired TMK as a result of long-lived investment of their scarce resources in terms of time and efforts. Biodiversity is also conserved by these people due to the experience they have developed through time. This biodiversity and related TMK have proved to have high public utility for the vast majority of the developing world and even significant populations in the developed world, with regards to medicinal, socio-economic and cultural elements of society. Hence, as researchers assert, this justifies IP protection in biodiversity conservation and related TMK. However, are the indigenous people and LCs in practice making use of IPRs? Is the current IP regime

useful and suitable to accommodate IP protection in biodiversity and TMK? What are the challenges and prospects if any? This paper seeks to analyse these issues in some detail.

Keywords: *traditional medicinal knowledge, biodiversity, indigenous people, local communities, justifications for IP protection*

I. INTRODUCTION

The justifications for claiming IPRs in TMK and related plant biodiversity are not far removed from the justification for IPR claims in industrial knowledge of Western societies. The morality-based arguments from civil law systems and economic-based arguments from common law jurisdictions seem to have the same application in IP protection of biodiversity and related TMK.

Theories justifying IPRs to enhance development are rooted in the Western scientific knowledge system. Relatedly, there is a claim that TK/TMK does not fit the Western knowledge system and hence does not deserve IP protection. On the other hand, there are proponents of IP protection in TK/TMK and biodiversity. They argue that the same philosophies justifying IP protection in contemporary IP regimes are applicable to TMK and biodiversity.

Hence, it is imperative to examine the relevance of such justifications in TMK and biological diversity conservation. There are three main theories justifying strong IP protection of innovative knowledge/information. These are the Lockean theory; the personality-based theory; and the consequentiality/incentive-oriented theory.¹ Accordingly, section II deals with the Lockean natural rights theory. Section III addresses personality-based justification, while section IV discusses the utilitarian/incentive-based theory. Section V discusses challenges to IP protection for TMK and biodiversity. Finally, the paper comes to its end with conclusions.

II. THE LOCKEAN NATURAL RIGHTS-BASED THEORY

The first theory is based on John Locke's natural right conception, which asserts that 'a person owns her body and hence she owns what it does, namely, its labour. A person's labour and its product are inseparable, and so ownership of one can be secured only by owning the other.'² According to Hettinger, Locke believes that objects have negligible human

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¹ S V Shiffrin, 'Intellectual Property', in R Goodin, P Philip and T Pogge (eds.) *A Companion to Contemporary Political Philosophy* (Blackwell 2007).

² E C Hettinger 'Justifying Intellectual Property' (1989), 18(1) *Philosophy and Public Affairs*, 31-52 at page 37: <<http://www.jstor.org/stable/2265190>> accessed 19 November 2009.

value until laboured and 99 per cent of such humanization of natural objects emanate from labour which is intrinsic to one's body. It follows, then, that creators of IP, and thereby owners of IPRs, could exclude others as a natural right.³

However, Locke's natural right-based theory is challenged by a notion that inventors do not create products from a vacuum; rather, they use pre-existing societal/traditional knowledge as the base and develop upon it.⁴

The natural right to one's own product of labour, in favour of which Locke has argued logically, cannot have lesser application in TMK and biodiversity conservation. However, Locke, in opposition to his advocacy of appealing for property right over laboured natural objects in industrial inventions, has rejected the right of indigenous peoples over the land and natural resources upon which they rely for living. Locke argued that aboriginal people, whose livelihood is based on hunting and gathering instead of an established system of property, do not have a property right over the land, but only on the 'fish they catch and the barriers they pick'. In contrast, Europeans, who have a well-established political society and legal system of market-oriented property, had full right over the land they exploit.⁵

However, if the Lockean concept of labour as a value generating factor is the base for claiming property rights, indigenous people should have the right of control over their medicinal knowledge and biodiversity they have conserved using traditional ecological knowledge evolved over a long period of time.

In fact, according to Martin and Vermeylen, evidence in literatures indicates that claims for the rights of indigenous people had been in place in the early 15th and 16th centuries. Contrary to Locke's approach to indigenous peoples, Vitoria and Las Casas during the Spanish colonization of the Americas argued that Indian natives should have right over their natural resources based on universality of human rights.⁶

In the current global order, an issue of indigenous peoples' IPRs over TMK and biodiversity conservation has attracted attention both from right-based and utilitarian perspectives. Let us deal

first with the right-based perspective and then deal with the latter under section IV.

In the 1990s, many indigenous peoples organized by NGOs started global movements for the respect of their rights. The Earth Charter Conference held in Kari-Oca, Brazil in 1992⁷, the international conferences held in 1993 in New Zealand, which resulted in the Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples⁸, and the Voice of Earth Congress held in the same year in Amsterdam calling upon States and all concerned agencies to develop common policies in consultation with indigenous peoples on how to protect and compensate indigenous intellectual, cultural and scientific properties are some examples.⁹ All these international forums strongly declared that LCs and indigenous peoples have an inherent right to self-determination and an inalienable right to their lands and territories, traditional knowledge and biodiversity.¹⁰ For instance, the Kari-Oca conference participants representing all indigenous peoples claimed IPRs for TK and biodiversity stated:

As creators and carriers of civilizations which have given and continue to share knowledge, experience, and values with humanity, we require that our right to intellectual and cultural properties be guaranteed and that the mechanism for each implementation be in favour of our peoples and studied in depth and implemented. This respect must include the right over genetic resources, gene

³ *ibid*, page 35.

⁴ *ibid*, page 38.

⁵ G Martin and S Vermeylen 'Intellectual Property, Indigenous Knowledge, and Biodiversity' (2005) 16(3) *Capitalism Nature Socialism*, 27–48 at page 35.

<<http://dx.doi.org/10.1080/10455750500208748>> accessed 18 October 2010.

⁶ *ibid*, page 36.

⁷ 'Kari-Oca Declaration and the Indigenous Peoples' Earth Charter' (1992), The World Conference of Indigenous Peoples on Territory, Environment and Development, (preamble), 25–30 May 1992, Kari-Oca, Brazil. (1992) <http://www.idrc.ca/imfn/ev-30141-201-1-DO_TOPIC.html> accessed 26 November 2010.

⁸ 'The Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples (1993), First International Conference on the Cultural and Intellectual Property Rights of Indigenous Peoples,' (introduction part), 12–18 June 1993, Whakatane, New Zealand (1993) <http://www.idrc.ca/imfn/ev-30143-201-1-DO_TOPIC.html> accessed 26 November 2010.

⁹ 'Recommendations from the Voices of the Earth Congress (1993), The Congress entitled 'Voices of the Earth: Indigenous Peoples, New Partners, the Right to Self-Determination in Practice' (1993) held from 10–11 November 1993 in Amsterdam, Netherlands [see political rights section at paragraphs 1 and 5 and Cultural, Scientific, and Intellectual Property section at paragraph 1] <http://www.idrc.ca/imfn/ev-30141-201-1-DO_TOPIC.html> accessed 26 November 2010.

¹⁰ Kari-Oca Declaration, *supra* note 7, at paragraph 58 condemning deforestation for commercialization, Mataatua Declaration, *supra* note 8 [at paragraph 1.1 calling upon indigenous people to define their intellectual and cultural properties, and at paragraphs 2.3–25 pressurize states and the international community to recognize and accept indigenous intellectual and cultural rights and develop in full cooperation with indigenous people appropriate IPRs and cultural regimes compatible with TK.]

banks, biotechnology, and knowledge of biodiversity programmes.¹¹

All these and other persistent movements on the rights of indigenous peoples pressurized the adoption of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007.¹²

The preamble of the UNDRIP asserts that indigenous peoples have been victimized by the historical injustice of colonial dispossession of their land and natural resources, while all people can contribute to the diversity and richness of civilization for common benefits.¹³ In assertion of the justification of indigenous peoples' claim for IPR protection for traditional herbal medicine and conservation of biodiversity, from the rights-based approach, Article 24 of the declaration clearly provides that 'indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals'.

The argument in that line may hold that the right to use, practice and conserve does not mean that the right holders can exclude others from exercising the same right over the same knowledge and resources.

However, in this regard, Article 31(1) of the Declaration clearly provides that indigenous peoples have the right to maintain, control, protect and develop their TK, including knowledge of genetic resources, medicine and properties of fauna and flora. They have also the right to develop and maintain IP on such TK among other things.¹⁴

From this assertion, we can undoubtedly observe that indigenous peoples have the right to protect, among other things, their TMK and resources biodiversity through IPRs. In fact, the UNDRIP is a declaration and it has only an effect of aspiration; it is not a binding instrument except to build moral obligation towards generating consensus on the rights. In addition, some influential countries, including the United States, have voted against its adoption.¹⁵ Hence, the realization of rights of

indigenous peoples, including their IPRs for TK/TMK and biodiversity, becomes doubtful. However, this cannot weaken at a theoretical level the right-based justification to claim IPRs for TMK and the biodiversity LCs and indigenous peoples conserved through their ever evolving traditional ecological knowledge.¹⁶

III. PERSONALITY-BASED THEORY

The personality-based theory argues that intellectual works are the reflection of personality and the identity of their author/inventor. Hence, people have moral rights to control their intellectual works in which their culture, values and personality are publicly expressed.¹⁷ Of course, the assertion is subject to interrogation as to why initial inventors should preclude others who want to innovate on the same subject independently and express their personality and identity in the same manner.¹⁸

At this point, the issue which requires discussion is whether an IPR claim for TMK and biodiversity conservation could be justified through this theory. According to Article 1 of ILO Convention No. 169 and other sources¹⁹, what affirms traditional/indigenous people's identity is their firm belief in their own distinct personality and self identification attached to their pre-colonial ancestral culture and values in a distinct territory. Although the Western capitalist IP regime may not recognize it, Solomon notes that indigenous communities have assimilated their identity and livelihood with natural resources in the ecology they adapted.²⁰ Thus, it is logical that the personality-based theory lays strong justification for IP protection for TMK and biodiversity conservation. This theory seems to overlap sometimes with the right-based theory because when one claims dignity

¹⁶ R Pierotti and D Wildcat, (2000) 'Traditional Ecological Knowledge: The Third Alternative (Commentary)', 10(5) *Ecological Applications*, 1333-1340 at page 1336. (2000) <<http://www.istor.org/stable/2641289>> accessed 28 November 2010.

¹⁷ S V Shiffrin, 'Intellectual Property', in Goodin R, Philip P and Pogge T. (eds.) *A Companion to Contemporary Political Philosophy*, (Blackwell) pp. 660 2007.

¹⁸ *ibid.*

¹⁹ UN Department of Economic and Social Affairs Division for Social Policy and Development Secretariat of the Permanent Forum on Indigenous Issues (2004). *The Concept of Indigenous Peoples; Workshop on Data Collection and Disaggregation for Indigenous Peoples*, *PFII/2004/WS.1/3*. See also R Jose Martinez Cobo, (Special Rapporteur), (1986) 'Study of the Problem of Discrimination Against Indigenous Populations' *UN Economic and Social Council: The Commission on Human Rights and Sub-Commission on the Prevention of Discrimination and Protection of Minorities*, *(E/CN.4/Sub.2/1986/7/Add.4)*, paragraphs 379-382.

²⁰ Maui Solomon, 'Strengthening Traditional Knowledge Systems and Customary Law', A Paper presented to the United Nations Trade And Development Conference, Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovation and Practices, paragraphs 13-16, 30 October-November 2000, Geneva, Switzerland.

¹¹ Kari-Oca Declaration, supra note 7 at paragraph 102.

¹² 'United Nations Declaration on the Rights of Indigenous Peoples', (United Nations General Assembly Resolution 61/295 13 September 2007).

¹³ *ibid* [preamble at paragraphs 3 and 5].

¹⁴ *ibid* Article 31(1).

¹⁵ L J Johnson, Director, ILO Country Office for the Philippines (2010), Message on the Celebration of International Day of World's Indigenous Peoples 10 August 2010: reaffirming the Indigenous Peoples Development Framework under the Indigenous Rights Act (IPRA) Through Convergence. See footnote 2 of the material listing Australia, Canada, New Zealand, and United States as states that voted against the adoption of the UN Declaration on Rights of Indigenous Peoples.

of personality and distinctness, it cannot be separated from rights such as the right to self-determination, the right not to be evicted from traditional territories and natural resources they rely on etc.²¹

Owing to the established rights as discussed above, we can say in general that LCs and indigenous peoples have stronger bases than others to justify their claim for IP protection of TMK with the personality-based-theory.

IV. UTILITARIAN/GOAL-BASED THEORY

The other most prominent theory to justify IPRs, especially in the contemporary knowledge system, is the incentive-based theory, which is alternatively known as the consequentialist, goal-based, or utilitarian theory. Most of the literatures calling for IP protection of inventions/innovations justify their position through the incentive theory as a goal to encourage research and development (R&D) which would ultimately add substantial value in public utility.²² Proponents of strong IP protection argue that unless IP protection is granted to intellectual works, such works will be freely copied and commercialized by free riders. And this will leave owners of the works, who have made a huge investment on the socially demanded products such as life-saving drugs, unable to earn back their investment. Hence, private producers could not have motives to invest in R&D of inventive/innovative works having high social utility.²³

In fact, this argument too is not free from criticism. Some totally deny economic benefits as an incentive to encourage R&D in innovative works, while others opt for alternative incentive modalities, instead of granting an exclusionary monopoly right for a long period of time.²⁴ However, due to time and space

limitation, this paper will not address these criticisms.

The issue that deserves discussion in respect to TMK and biodiversity is whether the incentive based/goal-based theory justifies IPR protection in TMK and biodiversity conservation or not.

In relation to this issue, Schroeder and Pogge ask whether it is fair for serfs not to be paid compensation for their labour and to be starved while working for their lords and producing.²⁵ The authors have also presented that fairness in transaction is more founded on the notion of justice-in-exchange.²⁶ According to justice-in-exchange, one has to pay in return as equivalent as to what one has received. In a similar stance, George and Vermeulen state:

Indigenous peoples with their knowledge about nature's resources are recognized as important custodians of the planet's biological resources. Thus, following the utilitarian way of thinking, indigenous peoples should be given incentives to share their TMK and preserve biodiversity.²⁷

As various studies provide, biodiversity and related TMK are making a vital contribution in a manner to benefit the whole world as sources for scientific knowledge and a consumable end result for many. Thus, what is the reason to deny IP protection for holders of this important knowledge and resources, while individuals are entitled to IP protection for even very specific industrial knowledge which has not public utility, compared to TMK and biodiversity? Is there any difference between knowledge based itself on indigenous experiences and scientific observations? Is that not the outcome/utility of such knowledge which matters for IP protection?

In this regard, Brush notes that studies in cognitive anthropology and human ecology are important fields in formulating IPR debates in folk knowledge. According to those studies, cognitive anthropology has revealed a historic affinity and structural similarity between non-Western and Western

²¹ Kari-Oca Declaration, supra note 7 at paragraphs 33 and 34; see also Articles 3, 14 and 15 of International Labour Organization Convention No. 169, 1989.

²² UNCTAD and ICTSD (2003) 'Intellectual Property Rights and Sustainable Development', UNCTAD-ICTSD Project on Intellectual Property Rights and Sustainable Development pp. 30-32; see also World Intellectual Property Organization (2004) *WIPO Intellectual Property Handbook: Policy, Law and Use*, WIPO Publication No. 489 (E), (2nd Ed.), Geneva, 164.

²³ Stanley M Besen and Leo J Raskind (1991) 'An Introduction to the Law and Economics of Intellectual Property', 5(1), *The Journal of Economic Perspectives*, 3-27 at page 5, accessed online on 19 November 2009 13:47, available at: <http://www.jstor.org/stable/1942699>. See also S V Shiffrin, supra note 43 at page 661 and E C Hettinger, supra note 44 pp. 47-48.

²⁴ Bradford S Simon, (2005) 'Intellectual property and Traditional Knowledge: A Psychological Approach to Conflicting Claims of Creativity in International Law', 20 *Berkeley Technology Law Journal*, 1613-1684, at pp. 1626-1627, and 1657, accessed online 12 October 2010 13:45, available at http://www.btlj.org/data/articles/20_04_04.pdf, see also

S V Shiffrin, supra note 1 at page 661, E C Hettinger, supra note 2 at page 41; and A Gosseries (2008) 'How (Un)fair is Intellectual Property?', in A. Gosseries et al. (eds.) *Intellectual Property and Theories of Justice*. Basingstoke [England], Palgrave Macmillan, New York, at page 16.

²⁵ Doris Schroeder and Thomas Pogge (2009) 'Justice and the Convention on Biological Diversity', *Ethics and International Affairs*, pp. 267-280 at page 274.

²⁶ *ibid.*

²⁷ George Martin and Saskia Vermeulen, supra note 5 at page 38.

knowledge systems.²⁸ Moreover, he further argues that specific knowledge based on indigenous experience should be granted the same legal status as specific scientific knowledge, given the structural similarities between the two knowledge systems.²⁹

Although the two knowledge systems are similar, because both of them are based on observation, researchers in human ecology established that LC knowledge is more adaptive in nature to respond to every specific environmental problem.³⁰ Thus, the responsive nature of local knowledge should be rewarded on par with Western knowledge, if not prioritized. In line with this argument, Brush notes:

Western scientific knowledge is justified by the wide public interest served, then indigenous knowledge is likewise entitled to protection as intellectual property because it is useful in such areas as conserving biological diversity or identifying pharmacologically active plant compounds.³¹

Gupta also states that though local people in the past used to serve as a pool for rich genetic resources, biodiversity conservation cannot be sustained by keeping the owners poor, while those who loot the resources become rich by using them.³² She further warns that due to lack of appropriate incentives and esteem, current realities show that young generations are not interested in succeeding TMK and there is a clear threat of discontinuity of intergenerational folk knowledge.³³ In the face of an ultimate erosion of TMK, there will be no way to conserve the benefits such knowledge provides;³⁴ thus, though the tragedy of destruction of biological resources is known to humanity in general, 'plants [will] become weeds.'

Hence, providing due respect and adequate protection of TMK and biodiversity is imperative. However, there are multidimensional challenges to extend IP protection such as patents to TMK and

biodiversity. The following section addresses these challenges.

V. CHALLENGES RELATED TO IP PROTECTION OF TRADITIONAL HERBAL MEDICINE AND BIODIVERSITY CONSERVATION

Sections II to IV have sought to address the importance of IP protection in TMK and biodiversity from different theoretical perspectives and justifications. However, the issue here is whether providing the said IP protection to TMK and biodiversity conservation is suitable and possible. The concern of granting IP protection to TMK and biodiversity is not as easy in practice.

To assess the challenges, it is first required to identify potentially applicable types of IPRs in TMK and biodiversity conservation. Thus, from the eight lists of IPR categories in the TRIPS Agreement, this paper will examine patents and undisclosed information as relevant categories.³⁵

Trade secret is the most suitable tool to protect TMK because it does not require any complicated criteria if it is proved that the method employed is commercially useful, undisclosed and can be kept secret. Although it is not institutionalized, LCs used to keep their medicinal knowledge undisclosed for centuries.³⁶ Licensing this information can benefit the owners for an indefinite time if such protection is legally institutionalized.³⁷ However, it should be noted that there is a possibility that competitors can independently reach the secret through reverse engineering. For communal knowledge such as TMK and biodiversity, it is extremely difficult to keep all knowledge secret. For instance, some community members or collectors may be bribed and there is no means to detect as to who may disclose the information. Hence, patent and patent-like protections such as a petty patent or utility model and plant variety patent could be alternatives to resolve such problems. Patent-like tools are applicable for less complex inventions and require less stringent criteria than conventional patents.³⁸ However, since they cover a shorter period of protection, in many cases seeking protection

²⁸ S B Brush, 'Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology' (1993) 95(3) *American Anthropologist, New Series*, 653-671, at page 658, accessed online on 18 October 2010 05:18, available at: <<http://www.jstor.org/stable/679655>>

²⁹ *ibid.*, 659.

³⁰ *ibid.*, see also Fikret Berkes, Johan Colding and Carl Folke, 'Rediscovery of Traditional Ecological Knowledge as Adaptive Management' (2000) 10(5) *Ecological Applications*, pp. 1251-1262 at page 1259.

³¹ S B Brush, *supra* note 28 at page 659.

³² A K Gupta, (2005), 'WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Associated Traditional Knowledge'; WIPO and UN Environmental Programme, at page 39.

³³ *ibid.*, 26.

³⁴ *ibid.*, 40.

³⁵ TRIPS Agreement, part two outline.

³⁶ Krishna Ravi Srinivas 'Traditional Knowledge and Intellectual Property Rights: A Note on Issues, Some Solutions and Some Suggestions' (2008) 3 *Asian Journal of WTO and International Health Law and Policy*, 81, [end note FN 17].

³⁷ Gavin Stenton 'Biopiracy within the Pharmaceutical Industry: A Stark Illustration of How Abusive, Manipulative and Perverse the Patenting Process Can Be towards Countries of the South' (2004) 26(1) *European Intellectual Property Review*, 17-26 at page 24.

³⁸ Darrell A Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (1996) International Development Research Centre, Ottawa, Canada K1G 3H9, at page 62.

through a patent is unusual. Nevertheless, obtaining patents for TMK has become contentious. So, what are the challenges posed in this regard?

A. CHALLENGES RELATED TO THE PATENTABILITY OF TRADITIONAL HERBAL MEDICINE AND BIODIVERSITY CONSERVATION

The first concern concerning protection of TK, including TMK, is related to the challenge that the existing IP regimes do not support. Conventional IP systems are designed to protect individual-based Western industrial knowledge instead of community-based traditional knowledge.³⁹ The opponents of patent protection for TMK strongly argue that this type of knowledge does not fit the current patent protection system, because it does not satisfy patentability requirements, especially novelty and inventive-step⁴⁰ elements.

Novelty refers to the newness of the invention and it could be either relative or absolute. Most jurisdictions, including the European Union and Japan, use absolute criteria, in which an invention published, described even orally or by any other means in public, or used publicly anywhere before the date of application for patent is considered as prior art.⁴¹ But the United States and China apply a relative novelty standard, which only requires written publication to establish prior art for inventions in their jurisdiction. In addition, inventions in use, patented, or known in the jurisdiction of the concerned country is also prior art.⁴²

Traditional medicinal knowledge is perceived as lacking novelty because it has been in use by the community for generations and hence is prior art under the current patent system. However, as Correa rightly argued, from the perspective of relative novelty, it is hard for TK—and TMK—to fail to meet the novelty criteria, because most of the knowledge is not published. Even from an absolute novelty standard, most of TMK has been confined to

a local name known only to the community which would claim patent protection.⁴³ In addition, a certain portion of the knowledge is not even known by the whole members of the community concerned, rather it is limited to the family lineage only. For example, Chinese patent law does not consider the use of TMK as prior art, unless such use is widely known outside of the community concerned.⁴⁴

Thus, precluding TMK from patent protection for lack of novelty is not sound. Rather, the element of inventive step is a more obvious challenge, as in many cases traditional herbal medicine is directly extracted from natural plants without undergoing any complicated inventive process. Here, though the medicinal property found in a plant may be unknown to anyone before and has substantial societal utility, contemporary IP laws exclude it as a simple discovery of a naturally existing product for lack of inventive step.⁴⁵ However, Western pharmaceutical companies are obtaining patent protection by making a slight structural change in natural products without materially altering the medicinal use of such products that was identified by local communities.⁴⁶

In this regard, Stenton condemned the situation stating:

The fact that discoveries are theoretically excluded from patentability is paradoxical in the sense that it licenses the exploitation of developing countries as they are deemed never to have invented anything and legitimizes the gratuitous expatriation of their TK and resources, which are subsequently, in a pharmaceutical context, afforded monopolistic patent protection following minor superficial modifications in Western laboratories.⁴⁷

³⁹ S Swarna Latha 'Biopiracy and protection of traditional medicine in India', 31(9) *European Intellectual Property Review* (2009) 465-477 at page 470; see also O A Arihan and M G Özkan 'Traditional Medicine and Intellectual Property Rights', (2007) 36(2) *J. Fac. Pharm, Ankara*, 135-151 at pp. 139-140. [Accessed online on 26 November 2010], available at: <<http://dergiler.ankara.edu.tr/dergiler/24/546/6744.pdf>>

⁴⁰ Thomas Cottier and Marion Panizzon 'Legal Perspectives on Traditional Knowledge: the Case for Intellectual Property Protection' (2004) 7(2) *Journal of International Economic Law* 371-399 at pp. 381-382

⁴¹ X Li 'Novelty and Inventive Step: Obstacles to Traditional Knowledge Protection under Patent Regimes: A Case study in China' (2007) 29(4) *European Intellectual Property Review* 134-139 at pp. 134-135.

⁴² *ibid*, 135.

⁴³ *ibid*, see also Carlos M Correa (2002) *Protection and Promotion of Traditional Medicine: Implications for Public Health in Developing Countries*, 86-89 accessed online on 16 June 2010 21:30], available at: <<http://apps.who.int/medicinedocs/pdf/s4917e/s4917e.pdf>> at pp. 54-55.

⁴⁴ X Li *Supra* note 41, at pp. 135-136.

⁴⁵ Murat Kartal, 'Intellectual Property Protection in the Natural Product Drug Discovery, Traditional Herbal Medicine and Herbal Medicinal Products' (2006) 21 *Phytotherapy Research: Phytother. Res.*, 113-119 at page 115, accessed online on 24 September 2012 20:03], available at: <www.interscience.wiley.com> DOI: 10.1002/ptr.2036.

⁴⁶ Shayana Kadidal, (1993) 'Plants, Poverty, and Pharmaceutical Patents', 103(1), *The Yale Law Journal* 223-258 at page 238, accessed online on 18 October 2012 04:20, available at <<http://www.jstor.org/stable/797080>>

⁴⁷ Gavin Stenton, *supra* note 37 at page 20.

Here, opponents of patent protection for TMK have undermined one reality; in most cases, indigenous communities do not discover the medicinal use of natural plants by accident. Instead, they obtain such medicinal use of plants after a long period of observation in the course of their biodiversity conservation and management efforts. Hence, they invest time, energy, and knowledge based on longstanding experience.⁴⁸

It is in the face of this reality that TMK and biodiversity resources have been excluded from patent protection due to the lack of inventive step, while providing undeniable utility to the society. It in turn has opened a gate for biopiracy by Western multinational firms.⁴⁹ The point here is whether it is fair to snatch one's property and grant the exclusive rights to others who have never made significant changes on the former's finding except for translation into Western languages. This paper shares Correa's condemnation of Western legal regimes and patent examinations for their failure to consider the nature of TMK and examine patentability only from criteria set only by a Western perspective.⁵⁰

Why has TMK failed to comply with the requirement of patentability? Is it because this type of knowledge is inconvenient to protect, in part because it is so freely exploited? Or is this because the contemporary IP regime does not want to incorporate it as valid knowledge? The latter is perceived as the right reason. Of course, the problem stems from the unfair global order, which has standardized policies and rules, including globalizing IPRs, in a manner to serve only the interest of the transnational capitalist world.⁵¹ This seems a continuation of the colonial imperial dichotomization of Western epistemology and indigenous knowledge, placing the former at the top of the hierarchy and the latter at the bottom.⁵²

In contrast, Gupta advocates that indigenous knowledge, which has made an immense contribution to biodiversity conservation and been an information pool of useful features of plants, will not stand long unless due respect and adequate protection, including IP protection⁵³, are provided

soon. Hence, it seems appropriate to devise some form of *sui generis* system. In this regard, examining the experiences of some countries is important.

The Ethiopian legal regime, particularly the Access to Genetic Resources and Community Knowledge, and Community Rights (CR) Law enacted in 2006 constitutes features of access and benefit sharing (ABS), IPRs and CR, provisions compatible with customary laws and human right principles.⁵⁴

In comparison to problems raised in Ethiopia, the legislative process of Peru, Costa Rica and the Philippines in their newly adopted laws have shown remarkable advancements in consulting and participating indigenous and LCs, regardless of the value given in practice to the interests of such groups.⁵⁵ Regarding the scope of protection, the Peruvian law addresses only IPR-type collective knowledge, while Costa Rican legislations, which also consider individual rights, provide protection to biodiversity associated with TK only. The Philippines Indigenous Peoples Rights Act (IPRA) 1997 in this regard has broad-based indigenous knowledge (IK) protection systems and practices encompassing both collective and individual right protection.⁵⁶

The Act provides a broad range of protection and ownership, including intellectual rights on ancestral lands, resources, IK products and derivatives thereof.⁵⁷ This Act, like the Ethiopian one, also provides full recognition and protection to customary laws, whereas the Peruvian and Costa Rican regimes do not, at least not explicitly. The three regimes agree in requiring PIC for access and utilization of biodiversity and associated TK.⁵⁸ Section 34 of the Philippine IPRA explicitly embraced TM and health practices, medicinal plants, animals, and minerals together with related knowledge, as sole properties of cultural communities and indigenous peoples.

Of the three regimes, the Costa Rican is the only one which requires firms or researchers to present a certificate of origin as a requirement to apply for IPRs, while Peruvian law only requires a licence contract as a pre-requisite. The Philippines' IPRA

⁴⁸ F Berkes, J Colding and C Folke, supra note 30.

⁴⁹ Gavin Stenton, supra note 37 at pp.21-22.

⁵⁰ Carlos M Correa, supra note 43 at page 57.

⁵¹ B S Chimni, 'International Institutions Today: An Imperial State in the Making' (2004) 15(1) European Journal of International Law, 1-37 at page 8 accessed online on 23 July 2010 11: 05, available at <<http://www.ejil.org/pdfs/15/1/334.pdf>>

⁵² Atilio A Boron, 'Hegemony and Imperialism in the International System', *New Worldwide Hegemony: Alternatives for Change and Social Movements* at pp 134 and 139 accessed 7 August 2010 9:45, available at: <<http://bibliotecavirtual.clacso.org.ar/ar/libros/hegeing/Boron>>

⁵³ A K Gupta, supra note 32 at page 39.

⁵⁴ Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation (2006), The Ethiopian Federal Democratic Republic, Federal Negarit Gazeta, Proclamation No. 482/2006.

⁵⁵ Graham Dutfield, (2004) 'Developing and Implementing National Systems of Protecting Traditional Knowledge: Experiences in Selected Developing Countries'; in S Twarog and P Kapoor (eds.) *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions*, United Nations, New York and Geneva, at page 150.

⁵⁶ *ibid.*

⁵⁷ The Philippines Indigenous Peoples Rights Act (1997), Republic Act No. 8371, Sec. 34.

⁵⁸ Graham Dutfield, supra note 55.

does not refer to IPRs at all but only to intellectual rights and a right-based cultural approach of protection.⁵⁹

The Costa Rican and Peruvian systems are *sui generis* types mainly based on biodiversity conservation and ABS. The Costa Rican law also involves community intellectual rights⁶⁰, while the Peruvian regime further incorporates right-based protection of collective indigenous knowledge.⁶¹ The Philippines' IPRA has treated TK and related resources from the perspectives of indigenous rights which can be manifested in human rights, including the right to self-determination and customary rules and practices.⁶²

We can infer from the experiences of these countries that there are a variety of ways to promote and protect TK/TMK and biodiversity, and that there is no one right way. Thus, various combinations of methods⁶³ appropriate to protect TMK and bio-resources can be applied.

However, national regimes alone cannot guarantee effective protection of TK and associated biodiversity through *sui generis* methods, unless such arrangements recognize and are enforced from the perspective of international minimum standards.⁶⁴

B. OTHER CHALLENGES

Challenges that less developed countries have been facing in securing patent protection for TMK and biodiversity conservation is not only limited to patent-intrinsic difficulties—meeting novelty and inventive-step criteria. There are other multidimensional challenges, including but not

limited to the cost of obtaining patents and management, identifying actual inventors and treating a community as a legal entity, valuation of community contribution, and public health concerns.

The first point is that the process of patent acquisition is time-consuming and complex. According to Heath and Weidlich, obtaining all evidence to defend the validity of the claim for patents prosecution would be onerous for poor LCs who have no expertise in the area.⁶⁵ Studies also show that the cost of patent registration in most countries is between USD 5000 and 23000.⁶⁶ It is further established that the cost of legal remedies against possible infringements of the protection is another impediment unaffordable by LCs.⁶⁷ Dutfield has correctly asserted that current patent systems are designed to be accessible only to big firms who can afford all these costs. These firms can further abuse rights of those who cannot defend.⁶⁸

Second, opponents of IP protection for TMK and biodiversity allege that the subject is inconvenient for IP protection. They argue that IP is given to individuals who have actually contributed something valuable and not to the community at large. What is more, Euro-centrism does not acknowledge communal innovations.⁶⁹ However, this argument does not take into consideration that biodiversity conservation requires active involvement of every member in the community and neglecting some in the benefits will have a destructive effect on the environment and related TMK.

Another challenge is that sometimes the same knowledge and biodiversity resources may be owned by different communities in different territorial boundaries. For instance, *Glinus lotoides*, *Hagenia*

⁵⁹ *ibid.*

⁶⁰ J A Medaglia Cabrera (2004) 'Access to Genetic Resources, Protection of Traditional Knowledge, and Intellectual Property Rights: The Costa Rican Experience'; in: S Twarog and P Kapoor (eds.) *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions*, United Nations, New York and Geneva, at page 200.

⁶¹ The Peruvian Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources (2002), Law No. 27811 (published in the Official Journal 'El Peruano', Articles 11 and 12.

⁶² Act No. 8371, *supra* note 126, see sections. 2, 5, 7, 13, 16, 17, 29, and 32-35.

⁶³ Mpazi Sinjela and Robin Ramcharan, (2005), 'Protecting Traditional Knowledge and Traditional Medicine of Indigenous Peoples through Intellectual Property Rights: Issues, Challenges and Strategies', 12 *International Journal on Minority and Group Rights*, pp. 1-24, at page 18.

⁶⁴ United Nations Conference on Trade and Development (2000), Expert Meeting on System and National Experience for Protecting Traditional Knowledge, Innovations and Practices; TD/B/COM.1/EM.13/L.1, 9 November 2000, at page 7, accessed online on 17 January 2011, available at: <<http://www.unctad.org/en/docs/c1em13l1.en.pdf>>; see also T Cottier and M Panizzon, *supra* note 40 at page 386.

⁶⁵ C Heath and S Weidlich (2003) 'Intellectual Property: Suitable for Protecting Traditional Medicine?', 1 *Intellectual Property Quarterly*, pp. 69–96 at page 84.

⁶⁶ D Milius (2009) 'Justifying Intellectual Property in Traditional Knowledge', 2 *Intellectual Property Quarterly*, pp. 185-216 at page 205.

⁶⁷ *ibid.*, see also K Timmermans and T Hutadju, (2000) 'The TRIPS Agreement and Pharmaceuticals', Report of an ASEAN Workshop on the TRIPS Agreement and its Impact on Pharmaceuticals, 2-4 May 2000, Jakarta at page 47; see also G V Overwalle, (2005) 'Protecting and Sharing Biodiversity and Traditional Knowledge: Holder and User Tools', 53 *Ecological Economics*, 585– 607 at page 594.

⁶⁸ Graham Dutfield, 'Developing and Implementing National Systems for Protecting Traditional Knowledge: A Review of Experiences in Selected Developing Countries'; (2000) UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, 30 October–1 November 2000, Geneva, at page 9, accessed online 29 September 2010 9:55, available at: <http://www.unctad.org/trade_env/docs/dutfield.pdf>

⁶⁹ J Chen, 'Biodiversity and Biotechnology: A Misunderstood Relation' (2005) *Michigan State Law Review*, 51, at page 56; see also G V Overwalle, *supra* note 67.

abyssinica, *Milletia ferruginea*, and *Ruta chalepensis* are well known medicinal plants by some local communities in Ethiopia. However, the medicinal value of *Glinus lotoides* and *Hagenia abyssinica* are known to other African countries and communities, as well (*Glinus lotoides*—Egypt and Mali; *Hagenia abyssinica*—Tanzania and Kenya).⁷⁰ This creates difficulties as to who should be entitled to IP protection for such knowledge and resources. It has been further alleged that communities collectively have no legal status by which they can create a relationship with the state when most indigenous communities are neglected by their governments.⁷¹ But this is not sound when a group of people can jointly own IPRs under the contemporary IP regime.⁷²

Third, opponents also argue that evaluating the exact contribution of genetic resources is difficult and so the holders should not be compensated for their alleged contribution. For example, local communities may identify one medicinal property of plant X, but a pharmaceutical company (a licensee) may find additional medicinal properties in that plant. For instance, Rosy is a known medicinal plant by a local community in Madagascar with anti-diabetic use; however, Western pharmaceutical firms have used it for treating leukemia. Hence, how Rosy should be valued if the community in Madagascar has to license it becomes unclear.⁷³

Fourth, studies show that between 70 and 90 per cent of the population in poor countries rely on TM, mainly due to its affordability.⁷⁴ However, there is concern that if traditional herbal medicine and associated biodiversity are protected, poor people may no longer have any access to it. In this regard, Correa argued that patenting TMK and biodiversity would compel consumers to pay the cost of a licence and royalty, which would be out of reach of the poor majority. A further concern is that unless people in less developed countries can commercialize products in which they have comparative advantage, they cannot develop; development requires investment of time and money, and it will not happen without economic compensation and motivation. Gupta shared the concern regarding the fear of public health affordability stating: 'It is also ignored many times that the concept of IP is not inconsistent with community-wide sharing of

knowledge for self-use.⁷⁵ Therefore, since IP protection of TMK and biodiversity does not preclude free exchange of such resources for personal use among LCs, the fear related to public health concern is not practical.

VI. CONCLUSION

Traditional herbal medicine is a plant component of TK. It is mainly developed in communities of the global South, whose main focus is on biodiversity resources related to TMK. According to various sources, the majority of the population in developing countries mainly rely on TMK for their health, socio-economic and cultural ends. It is an alternative therapeutic material for developed countries and also an important source for Western pharmaceutical companies in producing chemical drugs, for which they earn billions of dollars. However, the local communities, who are the owners of TMK and stewards of related biodiversity, have neither remained with their resources nor derived benefits from them.

There are three alternate theories which rely on three main justifications to provide IP protection to TMK and biodiversity conservation. These are the Lockean natural right-based theory, the personality-based theory and utilitarian justification. The first two are more justified based on natural rights and human rights on their own labour, including rights to obtain IP protection for community knowledge and resources. On the other hand, the utilitarian theory is justified—as is the contemporary IP regime—as an incentive to indigenous people and LCs for their contributions in conserving biodiversity and sharing the TMK they have acquired through long-lived experiences.

However, the contemporary IP regime has been intentionally designed to exclude TK/TMK from IP protection. Particularly, the patentability criteria of novelty and inventive step are unachievable for LCs in the current context. TMK is argued to lack novelty, because it has been in use by the LCs for generations and hence is prior art. But there are counter-arguments and experiences viewing the use of TMK by indigenous people and LCs that do not amount to prior art, unless such knowledge is published, known, or used out of communities holding such knowledge. The inventive step is far more challenging to establish for LCs seeking patents for TMK based in naturally occurring flora and fauna.

Hence, devising a *sui generis* system suitable for the protection of TK/TMK and biodiversity conservation is imperative. In this regard, this paper assessed the

⁷⁰ J McGown, *Out of Africa: Mysteries of Access and Benefit Sharing*, (2006), B Burrows (ed.), The Edmonds Institute, Washington, United States in cooperation with The African Centre for Biosafety, South Africa, at page 7.

⁷¹ S B Brush, *supra* note 28 at page 664.

⁷² G V Overwalle, *supra* note 67.

⁷³ S B Brush, *supra* note 28 at page 665.

⁷⁴ World Health Organization (2002), *Traditional Medicine Strategy 2002–2005*, WHO, Geneva.

⁷⁵ A K Gupta, *supra* note 32 at page 15.

experiences of some countries. National experiences show that the *sui generis* system envisaged should define its scope and be composed of the current IP regime, the new traditional IP (TIP) system, CR and customary laws, and ABS rules to be applied as appropriate. However, these national efforts are required to be supported by international regimes recognizing the proposed *sui generis* system.

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