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I hereby declare that I have read and understood the regulations governing the submission of LLM dissertation including those relating to length and plagiarism as contained in the rules of this University, and that this minor dissertation conforms to those regulations.

Signature Date 30/12/2013

SUMMARY OF REPORT ON RESPONSE TO EXTERNAL EXAMINER'S COMMENTS

This minor dissertation is a revised version for resubmission referred to as 'R&R'. The first submission was made in September 2012. I have responded to the external examiner's concerns as best as I can.

First, the length: has been reduced to the required minimum which is just under 25,000 words as opposed to the first dissertation which was longer by almost 10,000 words.

Secondly is the scope: the former submission was too wide and on the advice of the examiner, I reduced the scope to TK rather than TK & TCEs as was in the first dissertation.

Thirdly, the body is well structured and repetitions have been avoided and there has been better progression of thoughts from the beginning to the end without the flaw of introducing new content at the end as was the case with the first submission.

In addition to the above, mistakes in naming statutes incorrectly in the first submission have been corrected and this time round the names of statutes have been correctly named. Familiarity with literature has been demonstrated and some of the suggested authorities by external examiner like Correa, Harms, and Dean etc have been consulted and used appropriately. Further, sweeping statements this time round have not been made and any assertion has been referenced accordingly. References, footnotes and bibliography which were not in conformity with the rules and regulations of the faculty in the first submission have been done in conformity with the faculty rules.

Grammar and spelling have been improved considerably and the paper has been proof read thoroughly.

Lastly, commercialisation of TK has been dealt with. It was a matter which was of concern to the external examiner because it had not been covered well in the first submission.

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In putting together this piece of work, I want thank God for health and wealth, my parents for moral support, my wife Vivian for the support and sacrifice, Dr. Ikumi without whom my studies in South Africa would have been a pipe dream, Theo and Taswell my South African hosts who made me feel at home away from home. I thank Leo for encouraging me in times when I was stressed. I thank Lamech who made sure that my final draft is flaw less and is submitted on time. I have not forgotten all of and my friends both at UCT and outside UCT.

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List of Abbreviations & Acronyms

ABS	Access and Benefit Sharing
AG	Attorney General
AIDS	Acquired Immune Deficiency Syndrome
BCP	Biocultural Community Protocol
CBD	Convention on Biological Diversity
CSIR	Council for Scientific and Industrial Research
DEAT	Department of Environmental Affairs and Tourism
DST	Department of Science and Technology
DTI	Department of Trade and Industry
DACST	Department of Art, Culture, Science and Technology
EoF	Expressions of Folklore
EU	European Union
EPO	European Patent Office
FAO	The Food and Agricultural Organisation
GR	Genetic Resources
GIs	Geographical Indications
GATT	General Agreement on Trade and Tariffs
HIV	Human Immunodeficiency Virus
IP	Intellectual Property
IIP	Indigenous Intellectual Property
ICESRC	International Covenant on Economic, Social and Cultural Rights
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IK	Indigenous Knowledge
IKS	Indigenous Knowledge System
IGC on IPGRTKF	Intergovernmental Committee on Intellectual Property, Genetic Resources and Traditional Knowledge and Folklore
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LMOs	Living Modified Organisms
MTA	Material Transfer Agreement
MOU	Memorandum of Understanding

MEC	Member of Executive Council
NEMBA	National Environment Management: Biodiversity Act 2004
NRS	National Recordal System
NGO	Non-Governmental Organisation
OAPI	African Intellectual Property Organization
PCT	Patent Cooperation Treaty
PIC	Prior Informed Consent
RSA	Republic of South Africa
R & D	Research and Development
SU	Stellenbosch University
TK	Traditional Knowledge
TKDL	Traditional Knowledge Data Library
TCEs	Traditional Cultural Expressions
TRIPs	Trade Related Aspects of Intellectual Property Rights
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNCTAD-ICTSD	United Nations Council on Trade and Development and the International Centre for Trade and Sustainable Development
UNDP	United Nations Development Programme
UK	United Kingdom
USA	United States of America
UDHR	Universal Declaration of Human Rights
WCT	WIPO Copyright Treaty
WHO	World Health Organisation
WPPT	WIPO Performances and Phonograms Treaty
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation

INTRODUCTION – Scope and methodology

Intellectual Property today as internationally recognised covers patents, industrial designs, copyright, trademarks, know-how and confidential information.[1]

The current available modes for protecting Intellectual Property (IP) in the Republic of South Africa (RSA) are Patents, Trade Secrets, Copyrights, Trademarks and Industrial Design. Common law remedies are also available to parties whose rights have been infringed. The legislations governing these Intellectual Property (IP) regimes were passed at different periods, some before South Africa became a republic in 1963 and others thereafter, while others were passed after the abolition of apartheid in 1990. For those legislations passed before the Trade Related Aspects of Intellectual Property Rights (TRIPs) in 1994, the RSA had to amend or repeal and enact laws which are TRIPs compatible. However, an area of IP for Indigenous people, also known as Traditional Knowledge (TK), has not been adequately protected due to complexities which cannot be accommodated by an international IP regime. This has led to poor or inadequate commercialisation of TK. TK is also not provided for by TRIPs, thus relegating it further. The scope of this paper is limited to commercialisation of TK. However, it must be appreciated that commercialisation cannot take place in a vacuum. Thus protection of TK is a prerequisite to its commercialisation.

The main reasons for this situation are to be found in the very nature of Traditional Knowledge. TK is traditional, mostly informal and has been passed on from generation to generation by word of mouth. TK can be defined as 'the knowledge that an indigenous community has regarding the use of an indigenous biological resource or a genetic resource'.[2] Another comprehensive definition of TK says these are creations of indigenous people '… such as inventions, models, drawings and designs, innovations contained in the images, figures, symbols, graphics, stone carvings and other details; …suitable for commercial use' [3] and includes '… customs, traditions, beliefs, spirituality, religion, worldview, …traditional knowledge and all other traditional forms of expression of indigenous peoples'. [4]

[1] P Narayanan Intellectual Property Law 3rd Edition Eastern Law House (2001)at 1.
[2] Section 2 *Patents Act No. 57 of 1978* as amended by s. 1 (b) *Patent Amendment Act 20 of 2005.*
[3] Article 1 of Panama Act 20 of 2000.
[4] Article 2 of Panama Act 20 of 2000.

TK in many cases is a general term which is used to include Traditional Cultural Expressions (TCEs). Some authors, for example Dutfield, have differentiated TK from TCEs. For the purposes of clarity, I have here also differentiated TK from TCEs. In my paper, I shall use TK to mean: knowledge of biological and genetic resources; current use, previous use, or potential use of plant and animal species, as well as soils and minerals; preparation, processing, or storage of species; formulations involving more than one ingredient; individual species (planting methods, care, selection criteria, etc); ecosystem conservation (methods of protecting or preserving a resource that may be found to have commercial value, although it may not be specifically used for that purpose or other practical purposes by the local community or the culture); and classification systems of knowledge, such as traditional plant taxonomies, renewable biological resources (eg plants, animals, and other organisms) that originate (or originated) in indigenous lands and territories.[5] TCEs on the other hand are traditional artefacts, folklore, myths, songs, poems, performances, handicrafts[6] etc which are copyright related as opposed to TK which is patent related.

The focus of my paper as has been elaborated is on the meaning of Traditional Knowledge to the definition given above and not on TCEs as provided in the TK Bill 2013. Moreover, although patents Act of 1978 as amended by Patent Amendment Act No. 20 of 2005 purports to protect TK derived from genetic resources, it is insufficient to provide for protection of the indigenous communities and thus unable on its own to lay a foundation for commercialisation of TK. This is a great challenge in the protection of TK in the RSA.

Like in the RSA, in most communities in other countries TK is not documented because this knowledge is passed on orally from generation to generation. However, a few countries like India and China have written evidence of the use of TK from their various ancient texts. This means that TK is in the public domain. In other words, there is prior art. As has been mentioned above, TK is about items which in mainstream IP would qualify to be protected by patents. Judging by the requirements for protection under the international regime like those provided for in article 27(1) of TRIPs for patentability (ie where a patent can be granted for any inventions,

[5] Graham Dutfield *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (2004); Dutfield *Protecting Traditional Knowledge and Folklore* (2003)(UNCTAD-ICTSD Project and Sustainable Development Issue Paper 1 June at 27 Box 1 nos 1-9.
[6] Ibid Box nos 12-13.

whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application[7]), means that TK would not qualify to be protected under such regime in the RSA or anywhere else. Another aspect that adds to the complexity is in the ownership which is communal. Indigenous communities owned property communally. This also includes TK.

TK like IP qualifies as property like any other property. The only difference is that it is not tangible. Like real property, it has an owner with interests by way of title, license etc and therefore can be sold or licensed for a consideration. This makes it even tougher for TK because property needs an owner, either a natural or legal person who can be easily identified. Such ownership or interest by way of license makes it legally possible to sue or be sued in common law in what is referred to as locus standi or standing. Further, it makes it possible for a person to assert their rights over property to which they have some kind of title. This type of title does not exist in TK. However, in most indigenous communities TK is owned in trust by the community, a concept which has been in such communities for centuries. The question is whether this means that TK in the RSA cannot be protected and commercialized. This point has been elaborated on in detail in the chapters that follow.

The absence of a tailor-made system of protection for TK makes it difficult for TK 'owners' to claim and commercialise their 'property'. The current position in South Africa is that there is no adequate legislative protection of TK except for a few provisions in the Patents Act of 1978.

However, the Patents Act of 1978 is drafted in line with the International IP regime with requirements for patentability based on TRIPs as has already been mentioned. The existence of TK has therefore been recognised to some extent by legislation though not adequately. The amendment to the Patents Act of 1978 by inserting section 30A only leans towards procedural requirements for a patent applicant (non-TK holder) with an invention whose source is in TK. TK owners do not get anything in return based solely on this provision. Commercialisation of TK needs proper legal framework and structures which assure TK holders of protection of their TK - a system which would ensure fairness even to non-TK holders but which does not expose

[7] For the purposes of this Article, the terms 'inventive step' and 'capable of industrial application' may be deemed by a Member to be synonymous with the terms 'non-obvious' and 'useful' respectively.

TK holders to exploitation. Positive protection of TK for the patentee is seen in an amendment to the Patents Act no. 57 of 1978 by the Patent Amendment Act No. 20 of 2005 where a new section 30 A has made it necessary for an applicant for patent to disclose the source of invention if the source is TK. This provision does little for the actual TK holders who may have provided the initial information to the prospective patentee. This is crucial if in commercialisation TK holders could be recognised by the Patents Act of 1978. This is not the case. In fact, a non IP legislation is what provides defensive protection seen in the Material Transfer Agreements (MTA) and Prior Informed Consent (PIC) provisions in the National Environmental – Biodiversity Act of 2004 (NEMBA). This provision mirrors the same requirements in Convention on Biological Diversity (CBD) to which the RSA is a signatory. Apart from these provisions, there is no other legislation that directly defines or provides for the protection and commercialisation of TK in the RSA.

Going back in time and evolution, this recognition in the RSA is seen in the policies on Indigenous Knowledge Systems (IKS) which informed the Bills on TK later on in 2007 and 2013 respectively published by Parliament. The need to protect, promote and remunerate TK holders goes back to 1999 when the then Department of Arts, Culture, Science and Technology approached Cabinet to formulate a policy on indigenous knowledge systems.[8] The IKS Policy was adopted by Cabinet in November 2004. Since then, various departments have been tasked with developing policies and legislative amendments that will support the objectives of the IKS Policy; one such department is the Department of Science and Technology (DST).[9]

Participating departments initiated various legislative amendments based on the IKS Policy. For example, the Department of Trade and Industry (DTI) initiated amendments to the Patents Act, 1978, through the Patents Amendment Act of 2005.[10] The Department of Environmental Affairs and Tourism DEAT initiated amendments to the Biodiversity legislation (Biodiversity Act, 2004).[11] These were amendments which touched on one aspect of TK only

[8] DTI, RSA *The Protection of Indigenous Knowledge through the Intellectual Property System* - A Policy Framework at 3.
[9] Ibid.
[10] DST, RSA IKS Policy at 9; DTI, RSA *The Protection of Indigenous Knowledge through the Intellectual Property System* - A Policy Framework at 5 para 4.
[11] Ibid at 5.

and are therefore insufficient as they are solely focused on patent derived from TK based on mainstream patent laws.

In an attempt to initiate a legislation dedicated to TK, the Intellectual Property Laws Amendment Bill, 2007, was published. However, this Bill was a non-patent Bill and in fact dealt with traditional cultural expressions (TCEs). This Bill sought to amend the existing non-patent IP legislations like the Copyright Act, Trade Marks Act etc by incorporating into these Acts works of traditional origin. Had it been passed it would have made it practically impossible for practitioners to use it in IP practice and litigation, therefore it faced criticism from IP practitioners and scholars alike.

Furthermore, the Intellectual Property Laws Amendment Bill, 2007, placed TK on the same footing as mainstream IP. In referring to this Bill, Professor Owen Dean [12]stated in 2011 at the International Intellectual Property Law Conference hosted by Stellenbosch University (SU) that '…TK constitutes a new species of IP and custom-made legislation should be drafted to protect it.' [13] At the same conference, Justice Harms said on the 'IP-isation' of indigenous traditional knowledge: '…the attempt to protect TK through IP would kill IP law as we know it'.[14]

The announcement by the Minister of Science and Technology, Derek Hanekom, during the launch of the National Recordal System (NRS) on 24 March 2013 was the next intervention. The NRS aims to protect, preserve and promote South Africa's indigenous knowledge (IK) by documenting and recording it.

Professor Owen Dean was one of the critics who went further and even drafted what would be a separate form of law[15] independent of mainstream IP. The most recent legislative attempt is the publication of the Protection of Traditional Knowledge Bill 2013, also known as the Wilmot Bill, in the Extraordinary Gazette of 4 April 2013. It did not come as a surprise especially because the Bill was drafted based on the very TK Bill which was drafted by Dean. As

[12] Prof Owen Dean is the incumbent of the Stellenbosch Chair of IP Law (CIP).
[13] Cobus Jooste 'Hot off the Presses - Sui Generis TK Bill Published in the Gazette', available at *http://blogs.sun.ac.za/iplaw/*, accessed on 8 August 2013.
[14] Ibid.
[15] OH Dean *"The Protection of Traditional Knowledge Bill"* Doc: 1OD2012 *IPStell.*

it stands now, there are two conflicting TK Bills in Parliament. However, these Bills only provide for the protection and commercialisation of TCEs and therefore have no relevance for my subject matter.

Objective

The motivation for this paper is the lack of an effective system which fully and comprehensibly takes into consideration the nature, way of life and the manner of transfer of Traditional Knowledge, the duties of custodians of this knowledge, as well as beliefs, bio-cultural virtues and bio-spiritual aspects which indigenous communities cherish. Further, a mechanism for compensation or sharing of profits earned from the use of TK by non-TK holders has to be sensitive to these aspects. The current lacuna has seen traditional knowledge holders enter into contractual obligations with non-TK holders. In many cases, indigenous communities end up being the losers because they do not understand the complex contracts they enter into. Currently TK holders have two choices. They either protect their knowledge using the patent system or enter into contracts with non-TK holders. In both instances, TK holders are usually at the losing end as these are seldom situations from which they profit.

The success of the above arrangement cannot work in the absence of Indigenous Intellectual Property (IIP) legislations which define concepts and provide laws and regulations for protecting and commercialising indigenous intellectual property. This is what has prompted the investigation for this minor dissertation. This report looks at the intellectual property framework in South Africa aimed at protecting indigenous intellectual property and interrogates whether this framework is sufficient in protecting the rights of indigenous communities and whether it encourages commercialisation. The answer is that it does not. The only intellectual property legislation which has been amended by the Patent Amendment Act No. 20 of 2005 is Patents Act no. 57 of 1978.

First, this report points out that the current available IP legislation as it stands is inadequate in protecting, promoting, developing and ultimately commercialising TK. Secondly, it interrogates this state of affairs by gaining a thorough understanding of what TK portends and its relationship to genetic resources. Thirdly, the report identifies gaps in the current framework that stand in the way of commercialisation of TK by TK holders. This is done by looking at the

current IP regime in the RSA and at the place of TK. In trying to come up with suggestions and recommendations for the various stake holders, ie TK holders, non-TK holders, IP practitioners, the business community and the Parliament for achieving commercialisation, I have looked at the definition of TK as provided by South African legislation, Panama Act Number 20 (a sui generis law of Panama) and renowned scholars. I have come to the conclusion that the main problem in the RSA is that the Patents Act of 1978 does not adequately protect TK holders while it favours non-TK holders applying for patent derived from or associated with TK. What is needed is a law tailor-made to the specific requirements of TK holders, ie a sui generis law.

In summary, this report discusses adequate protection and commercialisation of TK in the RSA. In order for this to be achieved, issues have to be understood in context and a solution found. If solutions to these issues are not found, then commercialisation of TK can be a difficult task. These issues are, first, the difficulty of identifying TK owners or custodians. This is important for the purposes of enforcing rights to TK, seeking Prior Informed Consent (PIC) and identifying recipients of benefits.[16] Secondly, there is the issue of TK information in the public domain and the difficulty in preventing its accessibility to the public.[17] The third issue is that of communities which are spread out over different countries, like the San who are in SA, Botswana and Angola,[18] and the question of what to do where PIC is concerned. Fourthly, there is the issue of state paternalism vis-à-vis equitable sharing, ie whether a PIC arrangement can be done in the absence of state paternalism. The fifth issue is the legal protection of TK and how it can fully take into consideration the nature of TK and the aims of policy makers of perpetual protection, affordable filing and transaction costs, and respect for the spiritual element of TK. Lastly, there are the questions of storage of information on TK, ie what form this should take, what best practices there are, what considerations are needed for storage or recording systems, and what these should achieve. These areas of IP in the RSA are uncharted waters; therefore this dissertation in Chapter Four takes a brief look at the experience in other jurisdictions, namely

[16] Sarah A. Laird *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice* (2002) at 299.
[17] Ibid.
[18] Alan Barnard *Hunters and Herders of Southern Africa: A Comparative Ethnography of the Khoisan People* (1992) at 21.

China, India, Panama, Kenya, and Australia. In this way, South Africa can possibly learn from these jurisdictions as it attempts to tailor-make a regime which is most suited to its need.

In Chapter One, I will look at the state of indigenous communities that own TK and their need to be recognised and attributed by non-TK holders who use their traditional knowledge. For the purpose of clarity, I have defined Traditional Knowledge as knowledge of the use of genetic and biological resources to distinguish it from Traditional Cultural Expressions. I have justified the importance of TK by explaining its role, and have justified the ultimate reason for passing a sui generis law by explaining the lifestyle of indigenous communities. The chapter concludes with a case for commercialising TK which can benefit the country, TK holders and non-TK holders. Chapter Two very briefly looks at the history and evolution of IP in general and patent law in particular. It also looks at the history of TK in a bid to understand the current unsatisfactory state of affairs affecting TK. It looks at issues such as public domain, and requirements of novelty and ownership, and explains that whereas these issues are of importance in the international IP and patent regime, they cannot be applied in the same context when referring to indigenous communities. The reason is that these communities' understanding of these terms is rather different. Their lifestyle is different. Their unique lifestyle, economy and culture further strengthen the case for a sui generis law which takes into consideration the peculiarity of and complexity of indigenous knowledge as embraced and practiced by an indigenous community, for example the often particular concept of ownership and trusteeship. Chapter Three looks at the main issues specific to the RSA, the impact they have on commercialisation of TK and consequences of the vacuum which exists in the current legal framework. In Chapter Four issues of constitutional recognition of TK, ownership, standing or locus standi, a data bank of TK, laws, and trusteeship of indigenous knowledge are investigated with a comparison of case laws on how these issues are dealt with in other jurisdictions such as India, Kenya, Panama, China, and Australia. Chapter Five ends with recommendations and conclusions. The conclusion is that there is no effective legislation for the protection of TK holders and that any legislation which places TK on the same footing as IP will be counterproductive. The best way forward would be a tailor-made law-a sui generis law for the commercialisation of TK in the RSA which is lacking at the moment.

Methodology

This paper is the report of an intensive study of the South African intellectual property framework. A literature review of various articles, text books, statutes and conventions relating to intellectual property in general has been done. At the same time, various statutes have been studied in pari materia for the purposes of interpretation. This is where laws with related subject matter were read in order to arrive at a logical and fair interpretation.[19]

[19] For example, the National Environment: Biodiversity Act of 2004 (NEMBA) though not an IP statute has been examined in understanding TK as provided by the Patents Act of 1978.

CHAPTER ONE

UNDERSTANDING TRADITIONAL KNOWLEDGE, COMMERCIALISATION AND THE ROLE IT PLAYS

I. Introduction

(a) Background

(b) Definition and meaning of Traditional Knowledge

II. The role of Traditional Knowledge

III. Incompatibility of culture, style and economic systems of indigenous communities with Western style

IV. Why commercialisation of Traditional Knowledge makes sense

V. Main issues around Traditional Knowledge in the RSA

VI. Conclusion

I. Introduction

(a) Background

The need for attribution and the decent and respectable treatment of indigenous communities from where Traditional Knowledge (TK) emanate is recognized by various movements[20] and is on the agenda of various forums such as the World Intellectual Property Organization (WIPO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), among others. Terms used to refer to such communities are 'ethnic', 'native', 'aboriginal' or 'indigenous' and may be used interchangeably depending on the 'political correctness' acceptable in a particular jurisdiction.

[20] Mary Riley *Indigenous Intellectual Property Rights-Legal Obstacles and Innovative Solutions –Land, Tenure Systems And Indigenous Intellectual property Rights* an Essay by Catherine M Tucker Altamira Press (2004) at 100 para 2.

Furthermore, although not considered a priority in most indigenous settings is the need to afford the benefits of modern commerce. This need is perhaps a result of exploitation of Traditional Knowledge by capitalist people and organizations at the expense of the communities that assist them during bio-prospecting in their search for herbal remedies for curative or preventive purposes. In the US, it has been estimated that plant-derived prescription drugs originate from 40 species, of which 50% are from the tropics.[21] The 20 species generate about US $4 billion.[22] The search for these plants has been accompanied by the correct use of TK (appropriation) which has lead to intensive drug development. Correct use here means that consent has been obtained from the indigenous communities and other protocols like Material Transfer Agreement (MTA) and Access and Benefit Sharing (ABS) have also been signed.[23] Correct use of TK is advantageous to both bio prospectors and the communities from where TK[24] and its related genetic resources are obtained. Unfortunately, in many bio-prospecting encounters TK holders are defrauded and bio prospectors make profits at their expense. The question is where we refer to for best practice.

The Convention on Biological Diversity (CBD) has introduced provisions arrived at after intensive debate[25] over the plight of indigenous communities and the need to protect the environment, by utilising the knowledge that indigenous communities have in environment conservation. These indigenous communities have always known that the very survival of both humanity and nature depends on the conservation and sustainable use of natural resources. It is for this reason that provisions such as Access and Benefit Sharing (ABS), Material Transfer Agreements (MTA) and regulations on bio- prospecting by national governments have made this convention very popular among developing countries, most of whom have ratified the convention and domesticated it through various national laws. South Africa has domesticated the law through its National Environmental Management: Biodiversity Act of 2004 (NEMBA).

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[21] See Charles Masango *Indigenous Traditional Protection: Prospects in South Africa's intellectual property framework* Department of Research and Innovation University of Cape Town (2010) at 75, available at *http://sajlis.journals.ac.za*, accessed on 20August 2013.

[22] Roht-Arriaza, "Of Seeds and Shamans: The Appropriation of Scientific and Technical Knowledge of Indigenous and Local Communities" (1996) 17 *Michigan Journal of International Law* 919-963.

[23] Ibid.

[24] Art 8 (d) Convention on Biological Diversity; see Secretariat of the Convention on Biological Diversity 3ed (2005) *Handbook of the Convention on Biological Diversity Including its Cartagena Protocol on Biosafety* at 126.

[25] Secretariat of the Convention on Biological Diversity (2005). *Handbook of the Convention on Biological Diversity Including its Cartagena Protocol on Biosafety*, 3ed

Tapping into the Traditional Knowledge of indigenous communities needs to be done within legal frameworks and regulations which are in accordance with NEMBA 2004. This is especially important because bio-prospecting is done for commercial gains, given that commercial enterprises invest millions of dollars into research and development (R&D). This requires laws that define the role of indigenous communities in the bio-prospecting process. It also calls for a clear distinction between the protection of genetic resources and the protection of Traditional Knowledge, and the point at which TK is linked with bio-prospecting. Without precise and distinct laws and guidelines there will be loopholes and confusion in the system, making all arrangements of ABS futile.

After the identification of gaps and the provision of clear laws and guidelines, it then will be possible to ponder on the various ways that TK can be commercialised. Commercialisation should be understood in context. There are two ways here of looking at commercialisation: one is in the context of CBD and NEMBA where benefits derived from genetic resources identified by indigenous communities during bio-prospecting are shared in a pre-determined agreement, for example in a Material Transfer Agreement (MTA). The other context is where commercialisation is encouraged in the absence of bio-prospectors. This means that the indigenous communities themselves are assisted in conducting research, protected either by the granting of patent or utility models also known as petty patents, with access to modern research laboratories and legal institutions and ultimate commercialisation similar to the approach followed by pharmaceutical companies.

The amended Patents Act of 1978 in section 30A provides for disclosure by the patent applicant where invention is derived from TK. This in my opinion is positive protection of TK. However, the Act does not provide for evidence of any MTA between the patent applicant and the TK holders. Where this is not the case, it means that there is no way of determining whether the TK holding community will benefit in any way from the proceeds of the product if the patent is registered. In other words, the TK holder gains nothing from the requirement of this provision. This is counterproductive as this law does not protect the TK holder. Although the Act makes origin disclosure compulsory, ultimately if the patent is granted, such invention would be eligible for protection for a term of only 20 years.[26] This is not adequate for the protection of TK because

[26] S. 46 (1) Patents Act 1978.

by nature TK has certain particular features, for example bio-spiritual elements, which cannot be captured by patents and yet are often a focal point for TK owners and TK policy makers.

(b) Definition and meaning of Traditional Knowledge

Traditional Knowledge (TK) can be defined as creations of indigenous people '…such as inventions, models, drawings and designs, innovations contained in the images, figures, symbols, graphics, stone carvings and other details; …suitable for commercial use'[27] and includes '…customs, traditions, beliefs, spirituality, religion, worldview, …traditional knowledge and all other traditional forms of expression of indigenous peoples'.[28]

TK is termed Indigenous Intellectual Property (IIP) by WIPO.[29] Indigenous Intellectual Property has faced challenges over the years due to inherent weaknesses seen in its salient features compared to mainstream IP. For example, IIP is generally owned by the community and where an individual claims ownership, such ownership is held in trust for the community. Furthermore, there are problems such as definitions and conceptual issues which have been debated by various scholars.[30] I have also read the works of authoritative authors on TK who have made important contributions.[31] I have consulted these authors to better understand the various issues surrounding TK as enumerated in the above introduction.

In defining the meaning of TK I have aligned myself to the school of thought where TK and TCEs or folklore have been differentiated. I agree with Dutfield who has formulated a clear distinction, because TK refers to knowledge which can only be associated with inventions that can be protected by patents. The World Intellectual Property Organisation (WIPO) has also differentiated these two.[32] TCEs on the other hand include traditional expressions, songs and stories which are literary works and may be protected by copyright and related rights. As this paper is on TK, the discussion will be on protection and ultimate commercialisation of TK by

[27] Article 1 of Panama Act 20 of 2000.
[28] Article 2 of Panama Act 20 of 2000.
[29]WIPO *Resources by Indigenous and Local Community Organisations* available at http://www.wipo.int/tk/en/databases/creative_heritage/indigenous/link0002.html accessed on 26/12/2013.
[30]Dutfield,Graber, Robinson, Zografos.
[31] Correa, Abbot, Taubman, Vivos, Vradarajan, Dean, Gervais, Harms.
[32] Jonathan Curci *The protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property Cambridge University Press* (2010) at 91

use of sui generis laws as opposed to the mainstream patent system. The reason is that sui generis law would take into account the various complexities of indigenous communities, for example spirituality, an aspect which cannot be appreciated by mainstream IP.

It is also important to distinguish between indigenous knowledge and indigenous genetic resources. Indigenous knowledge solely refers to biological and genetic resources, benefits derived from such resources, and knowledge about sustainable conservation and preservation of such resources. Indigenous genetic resources on the other hand refer to the genetic or biological resource itself which is subject to sovereign protection as it cannot belong to any citizen, natural or otherwise. It belongs to the state. However, the two are interlinked. Indigenous knowledge would not exist in the absence of biological and genetic resources.

Usually the meaning of TK is mistakenly limited to traditional healing. However, for our purposes, it would be a great injustice to the term to limit its scope to traditional medicine which is a very wide field.[33] Posey and Dutfield summarise the concrete expression of TK[34]which clearly point toward knowledge associated with patent law.

As has been mentioned above, the WIPO acknowledges that it is not easy to give a comprehensive single definition of TK; it also does not group TK and TCEs/folklore together but emphasizes that the two are interlinked. The WIPO defines TK as '….traditional technical know-how, or traditional ecological, scientific or medical knowledge. This encompasses the content or substance of traditional know-how, innovations, information, practices, skills and learning of TK systems such as traditional, agricultural, environmental or medicinal knowledge. These forms of knowledge can be associated with traditional cultural expressions (TCEs) or expressions of folklore, such as songs, chants, narratives, motifs and designs.'[35]

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[33] First name Posey et al *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communitie,* (1996) Ottawa: International Development Research Centre, at 12-13.

[34] 1. knowledge of current use, previous use, or potential use of plant and animal species, as well as soils and minerals; 2. knowledge of preparation, processing, or storage of species; 3. knowledge of formulations involving more than one ingredient; 4. knowledge of individual species (planting methods, care, selection criteria, etc); 5. knowledge of ecosystem conservation (methods of protecting or preserving a resource that may be found to have commercial value, although not specifically used for that purpose or other practical purposes by the local community or the culture); and 6. classification systems of knowledge, such as traditional plant taxonomies; 7. renewable biological resources (e.g., plants, animals, and other organisms) that originate (or originated) in indigenous lands and territories.

[35] WIPO *Intellectual Property And Traditional Knowledge* Booklet No.2 (year)

The South African legislation has defined TK and related terms as follows:

1. 'traditional knowledge' means the knowledge that an indigenous community has regarding the use of an indigenous biological resource or a genetic resource[36]
2. 'traditional use' means the way in which or the purpose for which an indigenous community has used an indigenous biological resource or a genetic resource[37]
3. 'biological diversity' or 'biodiversity' means the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part, and also includes diversity within species, between species, and of ecosystems[38].

A look at the definitions from NEMBA and the Patents Act of 1978 reveals that these are legislations which can be studied together and interpreted as statutes in pari materia to have a holistic understanding of the subject matter. However, the two statutes protect different things, ie the former protects biological resources and the latter protects patentable traditional knowledge.

TK is associated with patents, given the nature of knowledge held by indigenous communities. The definition by Posey and Dutfield[39] given above makes this clear. Traditional knowledge is a term which has only been defined in the Patents Act No. 57 of 1978 through Patents Amendment Act No. 20 of 2005, thus its scope is limited to patents if it were to be protected by mainstream IPR.

It is important to know that not all definitions differentiate TK from TCEs:[40]

> …the WIPO IGC on IPGRTKF[41] of the WIPO uses the term to refer to "tradition based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields'.

[36] Section 2 *Patents Act No. 57 of 1978* as amended by s. 1 (b) *Patent Amendment Act 20 of 2005.*
[37] Ibid.
[38] Section 1 *National Environmental Management: Biodiversity Act 2004.*
[39] Posey op cit (n36) 12-13.
[40] Jonathan Curci op cit (35) 91.
[41] IGC is Intergovernmental Committee; IPGRTKF means Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore.

Although scholars have come up with different definitions of TK, in all of them traditional knowledge is directly associated with the environment.[42] It is an indication that indigenous communities have been recognized as playing an integral part in conservation and sustainable use of the environment.

In addition to the above definition, Traditional Knowledge is concerned with intellectual property rights belonging to indigenous communities and '… has become the new buzzword in IP law'. [43] It is not to be confused with protection provided under CBD or NEMBA as these provide for protection of the environment from where traditional communities derive their resources by using Traditional Knowledge. In other words, CBD provides for the prevention of bio-piracy. It puts in place measures for the protection of ecosystems particularly those which are home to indigenous biological resources.

There is a difference between the protection of TK and the protection of biological resources. However, the protection of biodiversity ultimately contributes to the flourishing of TK because without resources on which TK thrives, there would be no need to protect TK. The two concepts, though different, are complimentary and supplementary to each other. Furthermore, in his proposition Dutfield[44] suggests protecting TK by what he terms 'defensive protection' which is seen in the provisions of CBD and NEMBA. The famous Access and Benefit Sharing (ABS), Prior Informed Consent (PIC) and disclosure of origin of invention where such invention is as a result of TK all emphasize the 'defensive protection' of the TK concept.

In summary, TK is knowledge of biological and genetic resources and all that indigenous communities do to preserve, conserve and pass on confidential information from one generation to the next by following prescribed protocol which in many cases has bio-spiritual connotations.

In conclusion, although protection of Traditional Knowledge and protection of biological diversity are two different areas, they complement each other.

[42] Graham Dutfield op cit (n4). 20.
[43] Jonathan Curci op cit (35) 91.
[44] Prof Graham Dutfield is founding Course Director of Intellectual Property Law at the University of Leeds and has a D.Phil. in Geography from Oxford University. His areas of competence are patent management, traditional knowledge and medical knowledge, human rights; he is a Research Affiliate of the Intellectual Property Law and Technology Program at Osgoode Hall Law School, York University, Toronto; an Adjunct Professor at the Center for Studies of Intellectual Property Rights at Zhongnan University of Economics and Law, Wuhan, China; a member of the IPBio Network based at Leeds; on the Scientific Advisory Board of a Canadian synthetic biology project called PhytoMetaSyn.

Traditional Knowledge as defined and understood above has become an important entrant in the IP sector. However, amendments are yet to be made to TRIPS to have it included in the list of mainstream IP deserving protection. The main issues that appear to be standing in the way are, among others, communal ownership, public domain and the demand for perpetual protection of TK. Correa[45] appropriately asserts that a sui generis regime is the choice for developing countries as it does not go against TRIPs[46], in fact it operates outside of TRIPs and as such there would be no conflict? These issues have been discussed in this section because they are pertinent in relation to the commercialisation aspect.

II. The role of Traditional Knowledge

In referring to the objectives laid down in The Alma-Ata Declaration of 1978, the World Health Organisation (WHO) has recognized the very important role which TK plays in the provision of health care through traditional remedies.[47] The Fiftieth Session of the WHO Regional Committee for Africa held at Ouagadougou, in Burkina Faso in 2000 documented that there are pilot projects in developing these remedies for various diseases such as chronic diarrhoea, liver disorder, amoebic dysentery, constipation, cough, eczema, hypertension, diabetes, malaria, mental health and HIV/AIDS.[48] In fact, only half the population in Africa has access to formal health care[49] , therefore TK plays a major role in health care. In Asia, the situation is not very different. For example, a very popular traditional medicinal plant called Jamu from Indonesia is even processed like Western medicine and sold in form of powder, capsules, creams and tablets and exported to other Asian and European countries.[50] This is commercialisation of TK where end products, in this case medicine, are processed and packed like Western medicines.[51]

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[45] Director of the Masters Programme on Science and Technology Policy and Management at the University of Buenos Aires, Argentina. He is a lawyer and economist and has worked extensively on intellectual property issues as a consultant to UNCTAD, UNDP, and WHO, amongst others.

[46] Carlos Correa *Integrating Public Health Concerns into Patent Legislation in Developing Countries* first published in October 2000 by the South Centre at 28-30.

[47] WHO Regional Committee For Africa Promoting the Role of Traditional Medicine in Health Systems: A Strategy For The African Region ARF/RC 50/9 March 2000.

[48] Ibid at 2 para 8.

[49] Ibid at 2 para 9.

[50] Sjaak van der Geest, Susan Reynolds Whyte *The Context of Medicines in Developing Countries: Studies in Pharmaceutical Anthropology* (1991).

[51] Jeremie Gilbert *Indigenous Peoples Land Rights Under International Law – From Victims to Actors* (2006) at 108.

Land Tenure is crucial to indigenous communities. The UN Declaration on Rights of Indigenous Peoples Traditional Form of Land Tenure provides for the rights of indigenous communities to own, control and use resources on their communally owned land.[52] Land tenure and land use are prerequisites in natural resource management and conservation, preservation of biodiversity and discovery of pharmaceuticals.[53] TK is used for the preservation and conservation of these resources. This role is also recognised by the CBD.

Farming is another area where TK plays a crucial role. This is seen in traditional practices of farming such as seed preservation and sharing of seeds among farmers specifically referred to as on-farm replanting, purchase of seeds from any source and seed saving. The rights of farmers to share seeds and other knowledge are also referred to as farmers' rights.[54] This has a huge impact on conservation and diversification of genetic resources and preservation of a gene pool, a dying practice in the West where commercial farming and IP claimed by plant breeders has made it impossible to share seeds without the permission of the licenced owner.

Conservation of soil and topography is found in very traditional lifestyles where tractors and ox-driven ploughs are not used at all. Sometimes referred to as zero tillage, it has been accepted as a very sure way of protecting the soil against erosion and depletion of vital nutrients.[55] For example, Brian Oldrieve, a Zimbabwean farmer, experimented and succeeded in zero tillage eventually setting up a movement called Foundations of Farming after his harvest improved tremendously.[56] The movement has spread to South Africa too with training happening in Gauteng.[57]

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[52] Art 26 (2) UN Declaration on Rights of Indigenous Peoples Traditional Form of Land Tenure. See Jeremie Gilbert *op cit* (n54) 108.
[53] Jeremie Gilbert *op cit (N54)* 127.
[54] Art 9 of International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).
[55] FAO Spotlight/2001 magazine *Zero Tillage. When Less means more: A Conservation Agriculture Technique is helping South Asian wheat farmers to increase productivity and conserve their natural resources – by spending less time on land preparation* at para 3 and 5 available at *http://www.fao.org/ag/magazine/0101sp1.htm,* accessed on 5 Novembern2013.
[56] The Foundation at para 2 available at *www.foundationsoffarming.org*, accessed on 5 November 2013.
[57] South Africa General News and Training *http://www.foundationsforfarming.org/trainings/south-africa/,* accessed on 5/11/2013.

Traditional herbs from which medicines are extracted are found in their natural vegetation and topography and these have over centuries been conserved by local communities who have not interfered with the ecology. Indigenous people from the Amazon, Siberia or the Pacific have for many years lived in harmony with nature.[58] Examples are seen in Ayurvedic, Siddha and Unina health systems of South Asian countries which have been documented in ancient texts and formalised and studied in universities.[59] In this way, the preservation of the healing properties of the medicines from these systems is possible. Users and potential users become confident and commercialisation becomes possible. In conclusion, if areas rich in biodiversity and TK can be encouraged to commercialise their wares, society would benefit from such knowledge and products. The biodiversity would also be conserved for future generations to benefit from it in same the way as the present generation.

VII. Incompatibility of culture, style and economic systems of indigenous communities with Western style

Drahos categorically states that developing countries have not been effective within the WIPO in questioning the orthodoxy that increasingly Western style IP norms are better for them [60] and that they continue to struggle with matters of indigenous intellectual property matters. Indigenous communities have a very different approach to matters of economics, property ownership, commerce and lifestyle. Their lifestyle often does not correspond with Western concepts of property, title and ownership. In most indigenous communities, property is owned communally or in trust for the community. This includes indigenous intellectual property. To these communities, TK based on natural resources forms the basis of their culture.[61]

[58] Graham Dutfield op cit (n4) 24.
[59] Graham Dutfield op cit (n4) 21 para 9.
[60] Peter Drahos *Developing Countries and International Intellectual Property Standard Setting* Commission on Intellectual Property Rights Study Paper 8 at 3.
[61] Krystyna Swiderska, Ale jandro Argumedo, Ruchi Pant et al *Protecting traditional knowledge from the grassroots up* iied briefing June 2009 available at *www.iied.org/pubs/display.php?0=17067IIED,* accessed on 1 July 2013.

In addition to this, there are certain rules which determine the sharing or extent of sharing TK. First, there is knowledge which can be shared; secondly, there is knowledge which can be shared only after consulting the ancestors; and lastly, there is knowledge which cannot be shared.[62] The latter category of knowledge remains a secret within the community or with custodians of that knowledge. Moreover, the bio-spiritual and superstitious aspects of Indigenous Intellectual Property in my opinion cannot be quantified in monetary terms.

If TK is not protected from the grassroots up, it will be very difficult to conclusively come up with an externally imposed system of protection.[63] In various ways, not all indigenous communities are the same. However, the underlying issues affecting protection and commercialisation are common to most. This then warrants systems of protection which to a great extent are related to the customs and practices of indigenous communities.[64] Failure to take these into consideration is counterproductive as seen for example in the Free Trade Agreement (TFA) between the USA and Quechua farming communities in Peruvian Andes. [65] In this FTA they signed they are robbed of their bio-cultural heritage in the propagation of potatoes because the FTA drawn up by the USA is based on mainstream IP which refers to patents. This has resulted to the monopolisation of the community's resources by foreign companies.[66] This is an example of how the protection of TK by cultural means fails when mainstream IP protection is used to protect TK when one is dealing with two opposite and conflicting lifestyles, cultures and economic systems. The CBD itself has recognised the importance of TK in protecting natural resources.[67] But the attempt to protect natural resources by means of mainstream IP destroys biodiversity. For example, the protection of plant varieties by patenting is what destroys the diversity of the gene pool unlike traditional agricultural practices like those used in Peru.[68]

[62] IP law University of Cape Town and Natural Justice *Open Air Traditional Knowledge Commons Forum Non Traditional users of Traditional Knowledge: Opportunities and Challenges around Compliance* 1st and 2nd Feb 2012 [check all these details, seems not all correct]WILL CHECK at 6, available at *www.openair.org.za/events,* accessed on 1July 2013.
[63] Krystyna Swiderska op cit (n64).
[64] Ibid at 1.
[65] Ibid at 1.
[66] Ibid at 1.
[67] Art. 8 (j) of Convention on Biological Diversity.
[68] Krystyna Swiderska op cit (n64).

III. Why commercialisation of Traditional Knowledge makes sense

The following announcement emerged from the WIPO Inter-Regional Meeting on Intellectual Property and Traditional Knowledge organized in Chiangray, Thailand, in November 2000:

> With the emergence of modern biotechnologies, genetic resources have assumed increasing economic, scientific and commercial value to a wide range of stakeholders; . . . traditional knowledge, whether or not associated with those resources, has also attracted widespread attention from an enlarged audience; . . . other tradition-based creations, such as expressions of folklore, have at the same time taken on new economic and cultural significance with a globalised information society.[69]

This statement indicates that TK is gaining commercial, industrial and scientific significance. However, given the nature of IP and the complexities that come with it, mainstream IP protection is inadequate in protecting such indigenous IP. It is for this reason that alternative modes of protection have been fronted.

These modes take into consideration the facets of commercialisation in this regard, namely both appropriation regime and asset regime. For the former, defensive protection is appropriate where existing IP and related legislations are amended to protect TK from being misappropriated by providing for such mechanisms as Material Transfer Agreements (MTA). The other facet is where such IP is considered an asset deserving protection irrespective of complexities surrounding its ownership and as such can be negotiated through the institution of trusts.

The evidence of misappropriation of TK is seen, for example, in the Hoodia plant in the Republic of South Africa,[70] Turmeric, Neem, Basmati etc from India[71], and Yellow Beans also

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[69] WIPO Inter-Regional Meeting on Intellectual Property and Traditional knowledge, Meeting Statement: A Policy and Action Agenda for the Future (Nov. 9-11, 2000).

[70] Ilze Vermaak, Josias H Hamman, Alvaro M Viljoen *Hoodia gardonii – An Up-to-date Review of a Commercially Important Anti-Obesity Plant* Department of Pharmaceutical Sciences, Faculty of Science, Tshwane University of Technology, Pretoria, South Africa at 1151, available at *http://www.eating-less.com/wp-content/uploads/2011/09/Hoodia-New-Review.pdf,* accessed on 14 October 2013.

[71] JM Finger, Philip Schuler *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries* (2004) at Ch 7 p 161, available at *http://books.google.co.za/books?hl=en&lr=&id=V64fSz5GepsC&oi=fnd&pg=PR5&dq,* accessed on 18 November 2013.

known as 'Mayacoba' of Mexico[72]. Often, even where consent of traditional communities is sought, they are usually too ignorant of the consequences of their actions. The truth is that these communities have very complex traditional intellectual property systems which do not fit into the mainstream IP systems.[73] Indigenous communities know the concept of individual rights and respect this concept. However, this is inseparable from the concept of collective responsibility.[74] Due to a disconnect with the post-colonial way of life and total disregard of the way of life and appreciation of these concepts among the indigenous communities, there has been misappropriation of these TK by undeserving recipients of proceeds from commercialisation of TK at the expense of indigenous communities.

It is worth noting that in most parts of the world and in South Africa, indigenous groups mostly live in poverty [75]and are marginalised and cut off from the socio-economic activities which other dominant groups enjoy.[76] If there can be well co-ordinated mechanisms to enforce various recommendations and treaties, ratified by the state, that apply to indigenous communities, their economic status can be greatly improved.[77] Such clear and transparent mechanisms as envisioned in the CBD, for example through ABS; this would avoid injustices done to indigenous communities. In South Africa, there are sad examples where San people were disenfranchised by the Council for Scientific and Industrial Research (CSIR). Had it not been for the assistance of the Working Group on Indigenous Minorities in Southern Africa (an NGO) the San people would not have been able to demand a share in profits on the patent of the Hoodia gordonii plant from the Council for Scientific and Industrial Research. It was, however, a legal tussle which the San people abandoned and they opted for a share of 8% in the royalties received from licensees of the CSIR, and 6% after commercialisation. This agreement was signed in 2003 but nothing has been realized to this day as no products were developed out of this agreement.[78]

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[72] Ibid.
[73] Ibid at 24 para 1.
[74] Ibid at 24 para 6.
[75] Ilze Vermaak op cit (n73).
[76] G Wachira Mukundi 'South Africa: constitutional, legislative and administrative provisions concerning indigenous peoples' at 8, available at *http://www.chr.up.ac.za/chr_old/indigenous/country_reports/Country_reports_SouthAfrica.pdf*, accessed on 2 April 2012.
[77] Ibid.
[78] Ilze Vermaak op cit (n73).

According to basic economics supply is determined by demand. TK has commercial value in billions of dollars. Wealth appropriated from tropical biodiversity has been approximated at USD 42 billion in 2000.[79] Similarly with TK, there is mass bio-prospecting happening with the aim of finding cures for various ailments which it is believed could be found in nature. The advantage of medicines derived from nature is often that there are no side effects as opposed to some modern forms of therapy. The World Health Organization (WHO) has recognized[80] the need for research of traditional medicines. In its Alma–Ata Declaration of 1978 referred to by the World Health Organization's (WHO) Provisional Agenda for the Regional Committee for Africa there is recognition of the role of traditional medicine and its practitioners in achieving health care for all.[81]

Researchers have for many years worked side by side with indigenous healers and have not only learnt about the various medicinal plants but have sent these to modern labs where results have shown active compounds that have healing qualities. There have been several cases of patent and non-patent bio-piracy[82] which indicate the deplorable state of affairs. In all these cases, the indigenous communities have been robbed. Where wealth is not attained, at least attribution would be appropriate. Monetary and non-monetary compensation through Access and Benefit Sharing agreements would ensure that these communities fit in the modern capitalistic economy without having to change their way of life; this is crucial in the conservation and preservation of biodiversity and the discovery of pharmaceuticals.[83]

Commercialisation can improve the general economic status of indigenous communities, resulting in better health, sanitation, education, standard of living, lowering of infant immortality, better food security and nutrition, which can all result in longer lifespan. Such communities need to be able to afford good education in order for them to understand their ecosystem well. Scientists, conservationists, doctors, economists, business experts and botanists should emanate from these communities. Traditional medicine in South Africa should be

[79] JM Finger op cit (n74).
[80] Graham Dutfield op cit (n4) 18.
[81] AFR/RC50/9 9 March 2000.
[82] Daniel F Robinson *Confronting Biopiracy - Challenges Cases and International Debates* (2010) at 45-73; 77-97.
[83] Mary Riley op cit (n18) 127.

promoted in line with the Ayurveda and Siddha[84] medicines in India or China, for example. In India, there is ongoing research that aims at collecting these medicines so that the evidence of their healing qualities can be documented. China has evidence-based research that is complete, and its medicines have gained popularity in many parts of the world[85]. People pay for these services which has created employment for many.

The system of collection and recording TK data mentioned above protects TK from direct misappropriation in that it categorizes such knowledge as prior art. India has a databank, the Traditional Knowledge Digital Library (TKDL), which combines the various health systems, Ayurveda, Unani and Siddha, which are documented in ancient texts. [86] India has also signed agreements with the European Patent Office (EPO), the United Kingdom Trademark & Patent Office (UKPTO), and the United States Patent and Trademark Office (USPTO) to reduce misappropriation by giving patent examiners access to the TKDL database for patent search and examination purposes.

How would communities benefit from commercialisation? Parties which have signed and ratified CBD are assured of ABS through agreements entered into with indigenous communities. These benefits can be monetary and non-monetary, such as setting up of schools and medical clinics or provision of clean drinking water, all from royalties earned from the use of TK.

IV. Main Issues around Traditional Knowledge in South Africa

Commercialisation as explained above cannot take place in a vacuum. It has to be done within firm legal frameworks. Policies have to be formulated and laws legislated. Such laws must be sensitive to the expectations of indigenous communities. South Africa today does not have specific laws tailor-made for the commercialisation of TK. First, it is important to consider whether the current IP framework can protect TK against exploitation, given that financial

[84] Bhushan Patwardhan et al "Ayurveda and Traditional Chinese Medicine: A Comparative Overview*"* (2005) 2(4) *Evidence-Based Complementary and Alternative Medicine* 465-473, doi:10.1093/ecam/neh140, available at *http://www.hindawi.com/journals/ecam/2005/629537/abs/,* accessed on 23 October13.
[85] Ibid.
[86] Graham Dutfield op cit (n4) 21.

considerations inform the reason for protecting such a system.[87] Such a law is crucial. Secondly, the issue of perpetual protection of TK in SA has to be addressed. This is important in that the current system of IP in South Africa is based on Western models and as such is insufficient. South Africa partly owes this to its colonial past. Thirdly, ownership of TK in South Africa has to be resolved by correctly documenting and identifying TK owners. Once this has been done, it would make it possible for non-TK owners to identify the people from whom to seek consent for the purposes of Prior Informed Consent and Access and Benefit Sharing as provided in the CBD[88] and NEMBA of 2004.[89] Fourthly, there is the issue of the public domain. The fact that TK is already in the public domain need not be to the detriment of TK owning communities. Rather, it should be to their advantage in the way India has done.[90] In order for South Africa to benefit from this, it has to develop a digital library of its formulations and share these with the major patent offices in the world. They would then be classified as prior art and this would prevent direct misappropriation of South African TK.

There is also the issue of communities, for example the San, who are found in three different countries[91], namely South Africa, Namibia and Botswana. This is crucial because non-TK owning countries must for instance be guided where to seek consent from and what protocols exists between the countries where the San reside. These issues will be discussed further in the following chapters.

V. Conclusion

Given that Western culture, economic system and intellectual property style has no room for indigenous intellectual property, it is imperative for a whole new system and approach to be put in place. Clearly, the intellectual property regime established in the West suits these cultures

[87] See Charles Masango op cit (n19).
[88] Art 8 (j) CBD.
[89] NEMBA Ch 6 Ss 83 (2) and 84(2).
[90] Bhushan Patwardhan op cit (n88).

[91] R Wynberg, Rhetoric, Realism and Benefit-Sharing (2004) 7 *The Journal of World Intellectual Property* 851–876. doi: 10.1111/j.1747-1796.2004.tb00231.x at 856, 868-869, available at *http://onlinelibrary.wiley.com.ezproxy.uct.ac.za/doi/10.1111/j.1747-1796.2004.tb00231.x/pdf,* accessed on 12 November 2013. Also see Alan Barnard op cit (n17) 21.

more because of a property system based on individual ownership, in contrast with communal ownership in many traditional communities. Here, the mode of transmission of TK is often oral and is passed on from generation to generation by entrusting the TK to a person or a group who holds it in trust for the community. This calls for a system of protection which fully appreciates the intricate social systems of indigenous communities. In the following chapter we shall look at these issues to better understand why only a system of protection tailor-made to fit these intricacies would be successful.

CHAPTER TWO

ISSUES OF TRADITIONAL KNOWLEDGE AND THEIR IMPACT ON COMMERCIALISATION

I. INTRODUCTION

II. ISSUES OF TRADITIONAL KNOWLEDGE

a. Traditional Knowledge, the Public Domain and requirements of novelty in Patent Law

b. Problems surrounding ownership: why the Law of Trusts can provide solutions

c. Communities which are spread over different countries

d. Documentation of information on Traditional Knowledge

e. Legal and constitutional protection of Traditional Knowledge

III. Conclusion

I. INTRODUCTION

The commercialisation of Traditional Knowledge by developing countries has faced many challenges.[92] There have been obstacles such as unauthorised appropriation or bio-piracy of TK by developed countries. This is as a result of gaps and difficulties in enforcing national legal regimes and the absence of an effective international TK regime.[93] However, there are also underlying issues which are common in most TK holding communities and developing countries. These are perpetual protection of TK, ownership of TK, public domain, a suitable legal regime for protection of TK, identification of TK owners for the purposes of Prior Informed Consent and Access and Benefit Sharing, lack of novelty, and lack of recorded evidence of TK used from

[92] See J M Finger op cit (n74).
[93] Carlos M Correa op cit (n49).

time immemorial. These are issues which have to be understood in context if commercialisation of TK anywhere is to succeed. South Africa is no exception.

This chapter will look at the above issues around the protection of TK and how they impact commercialisation. Although the chapter is not on protection of TK, the emphasis here is that in order to commercialise, it is important to protect TK to prevent exploitation because financial consideration is a motivating factor.[94]

I have attempted to suggest, although briefly, that a legal regime other than the mainstream IP regime may be more suitable to protect exploitation as it takes into account the specific needs of indigenous communities.

II. ISSUES OF TRADITIONAL KNOWLEDGE

a. Traditional Knowledge, the Public Domain and new requirements of novelty in Patent Law

The main issue which has cast doubt on the claim of TK holding communities to have an IP right over their TK is that most of this knowledge is already known to the public. This is because it has been used over centuries and passed on from one generation to the next either orally or in writing as seen in Indian ancient texts written more than 2000 years ago.[95] Preventing non-TK holders from using it is impossible.[96] Patenting such knowledge would not be possible if it had to be protected by using International IP regimes because novelty and non obviousness are some of the requirements [97] which would disqualify TK from being patented.

This is the very reason why several patents have been challenged by TK holders. An example is the bio-pesticide from the Neem tree also known as Morgassa in English: patent number EPO 436257 and US patent 5 124 349 were successfully challenged by India[98] because it was public knowledge that India had used the Neem in such a manner with evidence in their ancient texts.[99] In South Africa an example of bio-piracy is the Hoodia cactus used by the San people. The CSIR did not know about its hunger and thirst suppressing qualities until it read

[94] Charles Masango op cit (n91).
[95] JM Finger op cit (n74).
[96] Sarah A. Laird op cit (n15) 299.
[97] Art 27 (1) TRIPs.
[98] JM Finger op cit (n74).
[99] Graham Dutfield op cit (n4). 21.

about it in anthropological literature written by botanist Francis Masson.[100] They identified the active compound and patented and even signed deals with the company Phytopharm without the consent of or attribution to the San. This was challenged although later the matter was settled out of court.

b. Problems surrounding ownership: why the Law of Trusts can provide solutions

In the introductory part of this dissertation on the meaning of Traditional Knowledge, I attempted to give the meaning of TK in the broadest way possible. In this section I take a look at a key problem amongst IP experts and recommend a solution to the problem. This problem is to identify the owners of TK[101] and, once they have been identified, to locate or show proof of such knowledge. This is a challenge that allows for bio-piracy by countries that have modern research laboratories.[102]

In most communities, TK was traditionally passed on orally from one generation to the next. However, in other communities there was written literature. India is an example. In an American patent[103] involving the use of turmeric for healing wounds granted to the University of Mississippi Medical Centre, the patent was revoked for non obviousness after an Indian agency showed proof by way of published documentation that turmeric existed in India and had been used there for healing wounds for many years before the purported claim by the university.

I shall now look at the concept of ownership through trust and its attributes that make it conducive for commercial use.[104] Trust is a concept which has evolved in Western legal circles over many years. It is a concept which was developed in the equity courts in England. In fact, the Anglo-American law of trust traces its origins to the Middle Ages when it was used for transferring property from one generation to the other within the family[105]. The concept evolved

[100] R Wynberg op cit (n95).
[101] Sarah A. Laird op cit (n15)
[102] JM Finger op cit (n74).
[103] US Patent No. 5401504 (issued March 28, 1995) at 299.
[104] See David Hayton et al *Modern International Developments in Trust Law Kluwer Law International* 1999 at 183.
[105] Hayton et al *Modern International developments in Trust Law* Kluwer Law International 1999 at 169.

as a result of failure of common law to address the plight of the cestuis que trust or beneficiary whose envisioned benefit from land left in the hands of the feoffees on their behalf failed.[106]

South Africa and other places where indigenous communities reside do not show evidence of the development of the concept of trust on paper. However, it existed in various forms. African communities and indigenous communities had entities which they recognised as their representatives. For example the headman, a hereditary leader, was also a trustee of the one hundred member strong group amongst the Khoekhoe who first arrived in South Africa 120 000 years ago[107], and a tribal chief who was the head of a clan among the Bantus including the Batswana, Basotho, Bapedi, AmaZulu, AmaXhosa, AmaSwati, Vhavhenda, MaTsonga and AmaNdebele consulted with community members before making decisions.[108]

Most modern states and governments recognise these entities as legitimate representatives of their respective communities. Property can be owned in trust on behalf of beneficiaries which in this case would for example place the Council of Elders as the trustees and the indigenous communities as the beneficiaries. In South Africa, these community representatives have been recognized by government as forming an important part of the decision-making process by the Ministry of Environment and MCE at provincial level. These trustees are involved in agreements of material transfer[109], Access and Benefit Sharing (ABS) [110] and Prior Informed Consent (PIC),[111] all of which are statutory and regulatory requirements in bio-prospecting and commercialisation. It is a requirement under section 61(2) of the National Environmental Management: Biodiversity Act (NEMBA) that the scientific authority must consult with local communities before providing any findings or recommendations or giving such advice to the Minister under sections 61(1)(b), (e) and (f).

The concept of trusteeship plays a core role in the management of indigenous biological resources. Trusteeship does not exist without property. Ownership of traditional knowledge

[106] Philip Pettit *Equity and the Law of Trusts* 8th Edition Butterworths 1997 at 10-11.
[107] G Wachira Mukundi op cit (n80) 9.
[108] Ibid.
[109] S. 84 (1) National Environmental Management: Biodiversity Act 2004.
[110] S. 83 (1) National Environmental Management: Biodiversity Act 2004.
[111] S. 82 (2a) National Environmental Management: Biodiversity Act 2004.

remains with the community who may elect to request a representative of a state authority[112] to hold it in trust on their behalf.[113]

The South African law defines 'trust' under the Trust Property Control Act 57 of 1988 as follows:

> 'Trust' means the arrangement through which the ownership in property of one person is by virtue of a trust instrument made over or bequeathed - (a) to another person, the trustee, in whole or in part, to be administered or disposed of according to the provisions of the trust instrument for the benefit of the person or class of persons designated in the trust instrument or for the achievement of the object stated in the trust instrument; or (b) to the beneficiaries designated in the trust instrument, which property is placed under the control of another person, the trustee, to be administered or disposed of according to the provisions of the trust instrument for the benefit of the person or class of persons designated in the trust instrument or for the achievement of the object stated in the trust instrument, but does not include the case where the property of another is to be administered by any person as executor, tutor or curator in terms of the provisions of the Administration of Estates Act, 1965 (Act 66 of 1965).

South Africa has a law governing trusts which may be different from the law of trusts from other jurisdictions. However, the principles of trust law are essentially the same.

A solution to the debate on the question of who owns Traditional Knowledge lies in the law of trusts. A trust is a very practical institution, less cumbersome and with a flexible administration system, thus making it a perfect tool for ownership of TK.

Trustees have special privileges and are legal owners with powers to transact, negotiate and even sue or file complaints where necessary. The obligations imposed on the trustees by fiduciary law make them an important part of the commercialisation of TK. The institution of trust is not alien to indigenous groups because it existed in their communities long before the intrusion of their communities by outsiders in what today can be described as an implied trust. Traditional leaders in these groups held land and other resources in trust for the communities.

[112] *http://www.epa.gov/superfund/programs/nrd/trustees.htm* accessed on 11/3/2012.

[113] Resulting trust: where property is passed from an owner to a person an implied express trust is made by the owner to that person, it is therefore held for the owner by the person and this is the Resulting trust.

Similarly, owners of IP in many indigenous communities held knowledge as individuals but in trust for the whole community.[114]

c. Communities which are spread over different countries

Indigenous communities have often occupied certain territories prior to present day boundaries and can be spread out over different countries. For the purpose of identifying custodians of TK, it can be a problem how to resolve matters of Prior Informed Consent where non-TK holders seek custodians for purposes of PIC[115], because of communal ownership of TK where territorial boundaries cannot deny the fact that the community is one. South Africa, for example, has the Khoisan community which is spread out over four countries, namely South Africa, Angola, Namibia and Botswana.[116]

d. Documentation of information on Traditional Knowledge

The documentation of TK information by developing countries or the lack thereof can be a crucial factor in the commercialisation of TK. India is an example of a country which has compiled its TK in a digital library.

e. Legal and constitutional protection of Traditional Knowledge

One important and crucial issue is identifying the legal framework which is best suited for commercialisation of TK and its associated genetic resources (GR). In attempting to commercialise TK and biodiversity, the issues discussed above have to be dealt with.[117] This is not easy in the face of the international legal framework. Although TK is intellectual property for indigenous communities, the most difficult problem facing developing countries and both TK holding and non-TK holding communities, is protecting TK using the existing modes of IP recognised by Trade Related Intellectual Property Rights (TRIPs).[118]

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[114] *John Bulun Bulun & Anor v R & T Textiles Pty Ltd* (1998) *Indigenous Law Bulletin* 87*;* (1998) 4(16) *Indigenous Law Bulletin* 24.

[115] Sarah A. Laird op cit (n15) 299.

[116] Alan Barnard op cit (n17) 21.

[117] Sarah A Laird op cit (n15) 270-290.

[118] IP Law University of Cape Town and Natural Justice *Open Air Traditional Knowledge Commons Forum Non Traditional users of Traditional Knowledge: Opportunities and Challenges around Compliance* 1st and 2nd Feb 2012, available at *www.openair.org.za/events,* accessed on 1July 2013.

In order to pursue protection of TK, it is important to have a mindset that commercialisation of TK is possible and that entrepreneurs and inventors have succeeded in commercializing TK in rich countries.[119] One fallacy that we should not accept is the perception that TK does not have commercial value and therefore commercialization of TK is difficult.[120] In order for a smooth trade of TK there must be acceptable legal frameworks nationally and internationally. Many countries have provided for TRIPs compatible IP legal framework in their national laws. These are Patents, Trade Marks (TM), Copyright, Industrial Designs and Confidential Information. There are countries with protection for their wines in the form of Geographical Indications like Champagne.

Concepts of patent are based on novelty (or lack of anticipation)[121] and inventive step (or lack of obviousness)[122]. Concepts of design are based on novelty or originality of the design. TM is based on distinctiveness and similarity of goods and services, while copyright is based on originality of work and is reproduction in material form.[123] Confidential information is all that information imparted to servants or agents in confidence.[124]

The debate in this section briefly dwells on the suitability or otherwise of these modes of protection for TK. First it is important to note from the onset that it is possible to protect TK using the above named modes of protection. Copyright protection may be only suitable for Traditional Cultural Expressions. Article 15 (4) (a) of the Berne Convention provides for anonymous or pseudonymous authors.[125] It is therefore not suitable for TK in the context of this dissertation.

Trade mark is a unique IP right because unlike other IP rights, a TM is a sign attached to a commodity and not a legal device for stimulating the production.[126] It cannot exist independently

[119] J M Finger op cit (n74).
[120] Ibid.
[121] *Article 28 (a)* TRIPS.
[122] *Article 27(1)* TRIPS.
[123] P Narayanan *Intellectual Property Law* 3ed (2001) at 2; Catherine Colston *Principles of Intellectual Property Law* Cavendish Publishing Limited 1999 at 347.
[124] Ibid at 367.
[125] "In the case…where the identity of the author is unknown… ."; *section 3(3) (a)* Copyright Act No. 98 of 1978.
[126] Catherine Colston op cit (n131) 30.

of other IP rights and yet the protection outlasts[127] the other IP rights in that although the protection lasts for the duration of ten years, [128] it is renewable upon expiration[129] and can be renewed indefinitely from time to time. [130]Trademarks have certain limitations when viewed holistically. The expense involved the necessity for trade marks to be used commercially and the inability to obtain exclusive rights to trade marks where third parties have already registered such a mark stand out.[131]

Patents are a bargain made by the patentee and the public through the agency of the state[132] to the effect that, on the one hand, the patentee discloses his invention so that when the patent is granted for a limited period of 20 years,[133] the public can access such an invention without prior permission. Where TK holders are comfortable with this mode of protection, their inventions will be offered protection as long as the requirements of novelty, inventive step, lack of obviousness and disclosure of the invention are met. Given the lack of resources, identifiable owners of invention and a number of other challenges facing indigenous communities, like technology and access to legal facilities, patents are inadequate in protecting TK. Fees for hiring patent attorneys is prohibitive.[134]

Geographical Indications (GIs) are indications of goods whose quality, characteristics or reputation are attributable to their geographical locations.[135] Thus the indications not only go beyond that of the origin of the goods[136] but also to the relationship between the characteristics of the goods and the particular geographical topography, climatic pattern, altitude and an amount of cultural practices of the community directly involved in their production. GIs are practically an IP right which ensures authenticity, genuineness and consistency of a particular product. Although GI can be a good mode of protecting TK, a deliberate effort is seen in article 23 of

[127] Section 37 (1) of Trade Marks Act No. 194 of 1993.
[128] Ibid.
[129] Ibid.
[130] Ibid.
[131] Daphne Zografos *Intellectual Property and Traditional Cultural Expression* Cheltenham: Edward Elgar (2010) at 101.
[132] Catherine Colston op cit (n131) 37.
[133] Article 33 TRIPs.
[134] Graham Dutfield op cit (n4).105.
[135] Article 22 (1) TRIPs.
[136] Paris convention.

TRIPs to protect wines and spirits[137] effectively, disqualifying any other product. Other challenges of TRIPs are, first, its implementation, because a multilateral agreement requires a 100 per cent consensus. Secondly, protection does not extend to generic terms which were in existence at the start of TRIPs, i.e. on 15 April 1994. GIs fit well with the aim of TK policy makers of a perpetual protection. In addition to this, it is also inexpensive and does not involve registration and hiring of expensive IP lawyers. However, given the technicality mentioned above, protecting TK using GIs may be difficult.

Article 39 of TRIPs provides for protection of undisclosed information, making it a possible protection for TK[138] as it permeates all the other IPRs. In other words, there are trade secrets behind products protected by patents, industrial designs, copyright, geographical indications etc. Thus the scope is wide. Traditional Medicinal Knowledge for example is shrouded in secret rituals, magic and spiritual belief, providing perfect justification for protection through trade secrets. The regime of trade secrets has for example been given adequate protection by the customs and tradition of the Manyu people of Cameroon's Obasinjon – a secret society who is known to possess unimaginable healing powers, and it would be an aberration against the society to envisage different form of protection for their knowledge which is only acquired through initiation.[139]

Industrial Design is a functional[140] or an aesthetic design applied to an article for the pattern, shape, ornamentation or configuration or any combination of these, as long as it is appealing to the eye.[141] It includes an integrated circuit[142] or integrated circuit topography.[143] An industrial design that is new, novel or original and that has been independently created deserves protection from member countries[144] or Convention Countries[145] or members of the Special Union.[146] In

[137] Article 23 (1) TRIPs.
[138] Jonathan Curci op cit (35) 311.
[139] Jonathan Curci op cit (35) 313.
[140] *Section 1 (ix) Designs Act No*. 195 of 1993.
[141] *Section 1 (i) Designs Act No*. 195 of 1993.
[142] *Section 1 (xii) Designs Act No*. 195 of 1993.
[143] *Section 1 (xiii) Designs Act No*. 195 of 1993.
[144] *Article 25 (1*) TRIPs.
[145] *Section 1 (vi) Designs Act No*. 195 of 1993.
[146] *Article 1 (1)* of Locarno Agreement Establishing an International Classification for Industrial Designs Locarno, 8 October 1968 as amended on 28 September 1979.

South Africa, the duration of a registered design is 15 years if aesthetic [147] and 10 years if functional.[148] Design is not appropriate for TK unless the product in question has a particular design which TK holders intend to own.

However, it is worth mentioning that the protection of TK using these modes is strongly opposed by TK policy makers due to the aim of perpetual protection of traditional intellectual property, concerns by policy makers about the manner in which signs regarded as sacred by indigenous communities are used by others in ways that these communities find offensive, [149] disrespectful, abominable and at worst even as a sacrilege. As such, there is a need for decent and respectful treatment of products which emanate from indigenous communities.[150] TK policy makers have to a great extent suggested that a better mode of protection would be a sui generis law which takes into consideration the conceptual idea of ownership among indigenous communities, and mysteries and complexities associated with TK.

Furthermore, national constitutions play a very important role in the protection and recognition of indigenous communities as seen in various countries like the Philippines, Thailand, Ecuador, Venezuela, Costa Rica, Brazil[151] and Kenya. In these countries, the national constitutions protect and recognise the rights, tradition, culture, land tenure and intellectual property of indigenous communities. In this way, national legislations which are passed by the various parliaments aimed at protecting the TK of indigenous communities cannot be in contravention with the Constitution. The Philippines, for example, has a national law which aims 'to accelerate the development of traditional and alternative health care.'[152] This springs from Section 17, Article XIV of The Constitution of the Philippines of 1987 which provides that 'The State shall recognize, respect and protect the rights of the indigenous cultural communities to preserve and develop their cultures, traditions and institutions.' Act No. 8423 (1997) of the Philippines aims 'to accelerate the development of traditional and alternative health care'. The

[147] *Section 21 (i) (a) Designs Act No*. 195 of 1993.
[148] *Section 21 (i) (b) Designs Act No*. 195 of 1993.
[149] Daphne Zografos Title? (2010) at 101.
[150] Mary Riley op cit (n18) 100 para 2.
[151] Carlos M Correa op cit (n49).
[152] Act No. 8423 (1997).

main points here are the importance of having provisions in national constitutions aimed at the recognition and protection of TK in order to guide parliaments when passing their national laws.

Lastly, a suggestion is made for a sui generis law which is suitable for the commercialisation of TK because it is the option left for developing countries who wish to seek protection of their specific TK without going against TRIPs.[153] Passing such laws however should not be simply aimed at protecting TK in a way that limits access to it, but rather governments should aim to promote the commercialisation of TK and put measures in place to prevent misappropriation of TK.[154]

The Convention on Biological Diversity (CBD) and its Nagoya and Cartagena protocols provide for indigenous communities to participate in conserving, protecting, preserving and benefiting from their TK and genetic resources.[155] This makes provision for appropriate legislative, regulatory and policy measures for effective participation in biotechnological research by developing country which contributes to genetic resources.[156]

III. Conclusion

The above discussed issues are important in understanding the complexities which exist in an attempt to commercialise TK. They are to be kept in mind by policy makers who intend to develop a suitable legal regime which may help to commercialize TK. It should however be a regime which not only protects but also commercialises TK without compromising the culture, rituals, beliefs, and traditions of TK owning communities. A balance has to be struck between adherence to international conventions and the sovereignty of states in legislating national laws which guarantee TK as enshrined in their constitutions.

[153] Article 27 (3) (b) TRIPs.
[154] Carlos M Correa op cit (n49).
[155] Art 19 (2)CBD.
[156] Article 19 (1) CBD; see OECD paper by Matthew Herder and Richard Gold.

CHAPTER THREE

ISSUES SPECIFIC TO SOUTH AFRICA AFFECTING COMMERCIALISATION OF TRADITIONAL KNOWLEDGE

I. Introduction
II. Gaps in the South African Indigenous Knowledge System standing in the way of commercialisation

a. Legal and constitutional protection of Traditional Knowledge in South Africa

i. Constitutional protection
ii. Patents Act of 1978 and NEMBA 2004 are inadequate to protect Traditional Knowledge

b. San communities living in Namibia and Botswana: lessons from the Hoodia agreement
c. Identification of Traditional Knowledge holding communities: lessons from the Hoodia agreement
d. Lack of a data bank of Traditional Knowledge
e. Commercialisation of Traditional Knowledge in SA: which models to use

III. Conclusion

I. INTRODUCTION

This Chapter looks at commercialisation of TK in South Africa and challenges faced by TK holders and non-TK holders in commercialising TK. Issues such as constitutional recognition of indigenous people and their TK, inadequacy in the legal frame work, difficult questions of seeking PIC, ABS and MTA where communities are spread across borders[157], and identifying indigenous communities are dealt with.

I have attempted to justify the necessity of putting in place a legal framework which is not only as close as possible to the bio-cultural and bio-spiritual beliefs of the indigenous people of South Africa but also encourages commercialisation without misappropriation of TK and

[157] R Wynberg op cit (n95).

genetic resources. Where there are laws, such Intellectual Property laws in SA have not fully been amended to cater for TK holders. An example is the Patents Act of 1978 which was amended in 2005 to cater for TK by requiring disclosure of origin where inventions have originated from TK.

In certain places in SA there are protocols which communities followed. For example, the Biocultural Community Protocol (BCP)[158] by the healers of Mpumalanga living in the Bushbuckridge area in Gauteng[159] defines bio-spiritual [160]virtues.

II. Gaps in the South African Indigenous Knowledge System standing in the way of commercialisation

a. Legal and constitutional protection of Traditional Knowledge in SA

i. Constitutional protection

In Chapter Two, I pointed out the importance of a national Constitution because legislations are made from the broad provisions of the national Constitution. In this section I will briefly look at other Constitutions and conclude that the Constitution of the RSA is inadequate in providing protection and laying the foundation for the commercialisation of TK.

Unlike the national Constitutions of Kenya[161], the Philippines[162], Thailand[163], and Ecuador[164], to mention but a few, the South African Constitution has no single provision which

[158] The term 'bioculture' implies ways of being and knowing of communities whose way of life is based on a deep sense of kinship with the land, the plants and animals. A biocultural community protocol is a protocol that is developed as a result of a consultative process within a community that outlines the community's core cultural and spiritual values and customary laws relating to their traditional knowledge and resources based on which the community provides clear terms and conditions under which access to their knowledge and resources shall be provided. See Elan Abrell, Kabir Sanjay Bavikatte, Gino Cocchiaro, Harry Jonas and Andrew Rens *Imagining a Traditional Knowledge Commons a Community approach to ensuring the local integrity of environmental law and policy* International Development Law Organization (2009) at 7.

[159] Elan Abrell et al op cit (n166) 7.

[160] Biospiritual virtues are virtues at the heart of the spirituality of biocultural communities and form the ethical foundation of customary laws and cultural practices of these communities. See Elan Abrell et al op cit (n166) 7.

[161] The Kenyan Constitution 2010 Article 69 (1) (c): *'The State shall… protect and enhance intellectual property in and indigenous knowledge of, biodiversity and the genetic resources of the communities… .'*

[162] Section 17 Article XIV of The Constitution of the Philippines of 1987 says: 'The State shall recognise, respect and protect the rights of the indigenous cultural communities to preserve and develop their cultures, traditions and institutions.'

expressly recognises Traditional Knowledge or Indigenous Intellectual Property. Rather, it is left to interpretation. Section 31 (1) (a) for example recognises the right to culture, religion and language.[165] Section 27 provides that the State must take reasonable measures including passing legislations to achieve realisation of the right to health care, food and social security of its citizens. In line with this section of the Constitution, the Traditional Health Practitioners Act (Act 22 of 2007) was passed. This is directly relevant to TK in two ways. First, it recognises that indigenous communities rely mainly on traditional medicine to treat most of their ailments. Secondly, the Act recognises and regulates the practice of South Africa's traditional healers.[166]

Further, promotion of the indigenous languages of the Khoi, Nama and San people, in addition to the official languages of the Sepedi, Sesotho, Setswana, siSwati, Tshivenda, Xitsonga, Afrikaans, English, isiNdebele, isiXhosa and isiZulu, indicates recognition of these indigenous communities by the Constitution.[167] However, the deliberate absence of a provision in the South African Constitution which promotes Indigenous Intellectual Property or sui generis law leaves the fate of TK open to ambiguous interpretations. This, in my opinion, is a gap or lacuna in the SA Constitution. The following provides a comparison with some Constitutions of other countries which have specifically provided for TK.

For example the Constitution of Ecuador: it states categorically under Article 84 that it recognises collective intellectual property rights on communities' ancestral language. Another example is the Venezuelan Constitution which states: 'The collective intellectual property of indigenous knowledge, technology and innovations is guaranteed and protected. Any work on genetic resources and the knowledge associated therewith shall be for the collective good. The registration of patents in those resources and ancestral knowledge is prohibited'.[168]

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[163] Section 46 of Thailand's Constitution of 1997 states: 'Persons so assembling as to be a traditional community shall have the right to conserve or restore their customs, local knowledge, arts or good culture of their community and of the nation and participate in the management, maintenance, preservation and exploitation of natural resources and the environment in a balanced fashion and persistently as provided by law.'

[164] Article 84 of The Constitution of Ecuador (1998) recognises 'collective intellectual property rights' on communities' ancestral knowledge; Art 377 of The Intellectual Property Law (No. 83, 1989) establishes a *sui generis* system of collective intellectual rights of indigenous and local communities.

[165] Section 31 Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996).

[166] G Wachira Mukundi op cit (n80) 50..

[167] S. 6 (1) and 6(5) (a) (ii) of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996).

[168] Art 124 of The Constitution of the Republic of Venezuela of 1999.

A comparison of the specific provisions of the above mentioned Constitutions with the South African Constitution shows an obvious gap. Perhaps an amendment of the South African Constitution in form of additions of specific provisions touching on the protection of indigenous knowledge as well as resources would provide a foundation for the commercialisation of TK. Section 2 of the Constitution states that the Constitution is the supreme law of the land. If it can be amended, this can be a step in the right direction for legislations like sui generis laws for example to be passed for the purposes of commercialising TK in the RSA. This does not mean that the South African Constitution is entirely silent on other aspects touching on traditional communities. It provides for participation of traditional leaders[169] in issues affecting their communities and the establishment of houses of traditional leaders.[170] This ensures that traditional leaders are consulted on customary and related laws touching on the traditional communities.

However, for the commercialisation of TK to flourish, specific provisions in regard to TK must be provided in the Constitution to guide Parliament and policy makers, and at the same time to make it available to TK holding communities to invoke its supreme authority as and when required.

ii. Patents Act of 1978 and NEMBA 2004 are inadequate to protect TK

In 2005, through Section 2 of Patents Amendment Act 20 of 2005, an amendment to the Patents Act of 1978 was made. This amendment was made to section 30 which became section 30A. It reads as follows:

> …Every applicant who lodges an application for a patent accompanied by a complete specification shall, before acceptance of the application, lodge with the registrar a statement in the prescribed manner stating whether or not the invention for which protection is claimed is based on or derived from an indigenous biological resource, genetic resource, or traditional knowledge or use.

[169] Section 212(1).
[170] Section 212 (2) (b).

From this definition it is clear that there is positive protection of TK. However, this provision does little to protect the actual TK holders who may have provided the initial information to the prospective patentee.

Section 2 of the Patents Act was also amended by Section 1 (b) of the Patents Amendment Act 2005 to accommodate such definitions as 'genetic resource', 'indigenous biological resource', 'traditional knowledge' and 'traditional use':

> ...'traditional knowledge' means the knowledge that an indigenous community has regarding the use of an indigenous biological resource or a genetic resource…
>
> 'traditional use' means the way in which or the purpose for which an indigenous community has used an indigenous biological resource or a genetic resource...

On the definition of 'indigenous biological resource', reference has been made in the Patents Act to National Environmental Management: Biodiversity Act (NEMBA) Act No. 10 of 2004 which in section 1 defines it as follows: '… (a) when used in relation to bio prospecting, [it] means any indigenous biological resource as defined in chapter 6 section 80(2)'[171] which amplifies and expands the definition. Of note is that indigenous biological resource includes exotic organisms genetically engineered using chemical compound found in indigenous species.

In the same chapter 6, NEMBA 2004 further provides for Prior Informed Consent (PIC)[172] and Material Transfer Agreement (MTA)[173] between the non-TK holder and TK

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[171] "…(2) In this Chapter- indigenous biological resources *(a)* includes-

(i) any indigenous biological resources as defined in paragraph *(b)* of the definition of 'indigenous biological resource' in section 1, whether gathered from the wild or accessed from any other source, including any animals, plants or other organisms of an indigenous species cultivated, bred or kept in captivity or cultivated or altered in any way by means of biotechnology;

(ii) any cultivar, variety, strain, derivative, hybrid or fertile version of any indigenous species or of any animals, plants or other organisms referred to in subparagraph (i); and

(iii) any exotic animals, plants or other organisms, whether gathered from the wild or accessed from any other source which, through the use of biotechnology, have been altered with any genetic material or chemical compound found in any indigenous species or any animals, plants or other organisms referred to in subparagraph (i) or (ii); but

(b) excludes-

(i) genetic material of human origin;

(ii) any exotic animals, plants or other organisms, other than exotic animals,

(iii) indigenous biological resources listed in terms of the International Treaty plants or other organisms referred to in paragraph (a,) (iii); and on Plant Genetic Resources for Food and Agriculture.

[172] Section 82(2) (a) of NEMBA 2004.

holders, Access to Benefit Sharing (ABS)[174] of profits that non-TK holders get from utilising TK and Genetic Resources from bio-prospecting. It should be noted further that this Act mirrors the Convention on Biological Diversity (CBD) whose prime aim is, among others, the preservation and conservation of genetic resources by involving indigenous communities. Having recognised the importance of conserving and preserving biodiversity for environmental purposes and for discovery of pharmaceuticals, and the role of indigenous communities,[175] the CBD seeks not only to protect TK through proper management of the biological diversity but also provides for ways in which traditional or indigenous communities[176] can participate[177] and, rightfully as stakeholders, benefit[178] from the exploitation of their resources which come from their habitat.

Clearly, NEMBA 2004 and the CBD have highlighted the complexity of involving indigenous communities whose knowledge of the environment has been recognised in its protection for the purposes of bio-prospecting. This knowledge cannot be comprehensibly protected through section 30A and 30B of the Patents Act of 1978. It would be, in the words of Justice Harms, 'ipisation'[179] of TK (while commenting on the TK Bill 2007), the consequences of which have been undesirable, because by requiring the patent applicant to only show evidence of having derived his invention from an indigenous source is wholly procedural and does not necessarily assure the TK owners of anything in return.

b. San communities living in Namibia and Botswana: lessons from the Hoodia agreement

In Chapter Two I discussed in general that where communities are spread out beyond one territory, it becomes complicated to enter into PIC, ABS and ATM arrangements. Yet it is an important issue in the commercialisation of TK.[180] In this chapter, I revisit this topic from a real case involving the first benefit sharing agreement of its kind in the world between the Council

[173] Section 84 of NEMBA 2004.
[174] Section 82 (2) (b) (ii) of NEMBA 2004.
[175] Preamble of Convention on Biological Diversity.
[176] Article 8(j) CBD: '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 holders of such knowledge, innovation and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices.'
[177] Mary Riley op cit (n18) 347-348.
[178] Mary Riley op cit (n18) 153-168.
[179] Bringing TK in the ambit of International Intellectual Property Regime.
[180] Sarah A. Laird op cit (n15) 270.

for Scientific and Industrial Research (CSIR) and the San community. At the centre of the agreement was a patent (P57) of the Hoodia gardonii plant used by the San as a hunger suppressant.[181]

The San are an indigenous community in South Africa. They were the first inhabitants of South Africa who arrived approximately 120,000 years ago.[182] They occupy vast tracks of land and are spread out over the Kalahari Desert across present day South Africa, Botswana and Namibia.[183] The CSIR learnt of the Hoodia plant from literature recorded by the botanist Francis Masson and went ahead to do research on it in a major project in 1963.[184]

In 1995, a patent application was lodged for the active component of the Hoodia, and in 1998 a license agreement was signed between the company Phytopharm and the CSIR for commercialisation of P57.[185] However, the CSIR mistakenly sidelined the TK holders of the Hoodia gardonii - the San people. The topical issue discussed here was raised by the CSIR because they were hesitant in entering into an agreement with San communities from countries outside of SA. Nevertheless, through Working Groups of Indigenous Minorities in Southern Africa (WIMSA), the South African San Council was mandated to represent San groups in Namibia and Botswana as well as South Africa. The lesson learnt here is that even though the community is spread out over different countries, it remains the same community and the benefits must be spread out to the rest of the community regardless of border restrictions. Another important issue is the identification of TK holders.

Thus in a famous agreement a trust was formed in 2004 and it was unanimously agreed that 75 per cent of all the trust income would be equitably distributed to the San communities in Namibia, Botswana and South Africa.[186] The other question here is the manner in which TK holders can be identified as having genuine knowledge of genetic resources. What happens when another community purports to have knowledge of the same genetic resource and therefore demands a share of the profits? This is discussed in the next section.

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[181] R Wynberg op cit (n95).
[182] See G Wachira Mukundi op cit (n80) 8.
[183] Alan Barnard op cit (n17).
[184] R Wynberg op cit (n95).
[185] Ibid at 858; See G Wachira Mukundi op cit (n80) 51.
[186] R Wynberg op cit (n95).

c. Identification of Traditional Knowledge holding communities and beneficiaries: lessons from the Hoodia Agreement

When more than one community claims TK over the same genetic resource, can there be a way of determining the real or prior owners? What happens if there is no way of determining the prior owners of that TK?

The San are known for having used the Hoodia gardonii plant for centuries. However, there are other communities which knew about and used the Hoodia too. These communities are the Nama, Damara and Topnaar. [187] To answer the above questions, we take a look again at the manner in which these groups were treated in the Memorandum of Understanding (MOU) between the CSIR and the San in the famous benefit sharing agreement.[188] First, it is easy to suggest from the distribution of the Hoodia plant that not all groups of the San had used the plant. Secondly, if this was the case, given the San's history of nomadic life and translocation, was it possible to have an accurate record of the groups that used Hoodia? The best way forward would be to accept that common heritage is indivisible and that benefits should be shared equally.[189]

d. Lack of a data bank of Traditional Knowledge

A data bank of TK in whatever form is a huge advantage in that it is evidence of prior art and as such can be used for challenging patents which have claims that cover those used by TK holding communities.[190] The RSA has never had a data bank of its TK which is a serious deficiency. This is a serious lack, even though there are plans of recording TK,[191] because chances are high that so much has already been lost as that knowledge may have disappeared with the TK holders who are no longer alive, thus making assertions of prior knowledge difficult. The National Recordal System (NRS) was established in line with the Indigenous Knowledge Systems (IKS) Policy which was adopted by cabinet in 2004. Central to its success will be the National Indigenous

[187] R Wynberg op cit (n95).
[188] Ibid.
[189] Ibid at 862.
[190] EPO patent No.436257
[191] News-Science and Department of Technology DST's press release dated 27 May 2013, available at *http://www.dst.gov.za/index.php/media-room/latest-news/640-news-released-27may-2013-minister-hanekom-launches-recordal-system-for-indigenous-knowledge,* accessed on 27 June 2013.

Knowledge Management System (NIKMAS), an information and communication technology platform.

A data bank of its TK would help the RSA in profiling the various sources from different communities. It did not come as a surprise that the launch of this project by the Minister of Science and Technology, Derek Hanekom, was in Moruleng, in the North West, home to the Bakgatla-Ba-Kgafela tribe. Here, the Minister told this community which had been participating in the project of the urgency to document TK in South Africa because South Africa was rapidly losing its elders.[192]

A TK data library shows evidence of prior knowledge. This prevents bio-prospectors from patenting such existing knowledge. This would ultimately prevent bio-piracy of South African TK and increase the protection and commercialisation of TK goods without fear of expensive law suits which challenge their commercialisation.[193] The National Recordal System (NRS) is loosely modeled on the Indian TKDL. It is important to understand what this system is meant to do, ie it aims to protect, preserve and promote South Africa's indigenous knowledge (IK) by documenting and recording it. Initially it will only record traditional medicines and food.[194]

If it can fulfil a function like the TKDL in India, this will be very advantageous to TK in the RSA. The Indian TKDL is a database containing 34 million pages of formatted information on some 2,260,000 medicinal formulations in multiple languages and is designed to assist patent examiners of major Intellectual Property (IP) offices. India has signed TKDL Access Agreements with the European Patent Office (EPO) and the patent offices of Australia, Canada, Germany, the United Kingdom and the United States. It continues negotiations with the patent offices of New Zealand and Japan where agreement in principle has been reached.[195]

However, from the description of the NRS, it seems that it will be very unique once it becomes operational because it 'will include audio and video recordings of TK, which will be linked to:

- A semantic digital repository with custom-developed metadata schemata.

[192] Ibid.
[193] US patent No. 5,401,5041; see Carlos M Correa op cit (n49).; also see JM Finger op cit (n74)
[194] News-Science and Department of Technology DST's press release, op cit (n198).
[195] WIPO Magazine op cit (n201).

- A geographic positioning system (to document the locations of TK holders, communities and plants).
- A sophisticated security model to preserve and protect TK.
- An advanced semantic search engine to aid intelligent searching across a number of possibly related IK entries…'

It will be the first of its kind in the world.[196]

e. Commercialisation of Traditional Knowledge in SA: which model to use

Although commercialisation of TK is happening in the RSA, it can be boosted further if the gaps discussed above have been filled.

The Hoodia plant, Rooiboos tea, the Baobab tree (South Africa's tree of life), the Marula tree, Devil's Claw, the Kigelia sausage tree, the Trichila tree etc are all products which are subject to thriving trade not only in South Africa but beyond its borders.[197] Some of these have been the centre of controversies like the Hoodia cactus or Rooiboos, and what is important is the choice of model South Africa intends to make in commercialising its genetic resources and TK. At the moment lessons from the Benefit Sharing Agreement of the Hoodia gives us two models of commercialisation of TK.[198]

First, there is the most common model replicated all over the world. This is that of a governmental research body like the CSIR entering into partnerships with large foreign companies. This is very successful, however, '…a major criticism of this model is that it simply perpetuates imbalances of the past through a very disempowering, patronising and unequal relationship'.[199]

The second model is that of unregulated trade. This means that traders take advantage of publicity and 'free-ride' on a patent which has been granted already. The disadvantage here is

[196] News-Science and Department of Technology DST's press release , op cit (n198).
[197] Indigenous Plant Products, available at *http://www.sustainable-commerce.co.za/indigenous-plant-products,* accessed on 8 December 2013.
[198] R Wynberg op cit (n95).
[199] Ibid.

that that trade takes place in total disregard of the TK holders and countries of origin. It also leads to over-exploitation of genetic resources.[200]

III. Conclusion

Commercialisation of TK in the RSA has been going on for many years. There is huge potential in TK. What is important is for the country to put in place a legal framework that can support commercialisation. In the following chapter I have given a few examples from different jurisdictions on how they have handled the issues raised here and in Chapter Two.

[200] Ibid.

CHAPTER FOUR

TRADITIONAL KNOWLEDGE ISSUES AND WHAT OTHER JURISDICTIONS HAVE DONE – A LESSON FOR SOUTH AFRICA

I. Introduction

In the previous chapter, I discussed gaps in the South African indigenous knowledge system. I also looked at various approaches employed for the protection of TK in other jurisdictions and how these jurisdictions have overcome similar hurdles to the ones facing the RSA.

II. Constitutional provisions for TK and related genetic resources – Kenya, Ecuador and Venezuela

Like the RSA, Kenya does not have IP legislations which adequately protect Indigenous Intellectual Property Rights. The NEMBA's Legal Notice No. 160 of 2006 seeks to protect resources with similar provisions of the CBD on Access and Benefit Sharing and Material Transfer Agreements which mirror the CBD. However, unlike South Africa, the Constitution of Kenya of 2010 provides for TK and its associated Genetic Resources.

In Kenya's new Constitution of 2010 under articles 11 and 69, it is mandatory for the state to protect TK and its associated Genetic Resources. Articles 11 and 69 of the Kenyan

Constitution provide a legal framework for the protection of IP in relation to culture (traditional knowledge) and (associated) genetic resources. National Environmental Management Authority's (NEMA) Legal Notice No. 160 of 2006 provides regulations on access to intangible knowledge and associated Traditional Knowledge and benefits sharing.

The Draft National Policy on Protection of Genetic Resources, Traditional Knowledge and expression of Folklore provides for the development of a sui generis system of protection of TK. Further, Kenya's Copyright Board (KECOBO) is drafting a TK/TCEs bill that will give the necessary protection.

Kenya's Constitution is the supreme law of the land and for this instrument to recognize TK is a big step forward because any law or regulation which denies the rights of TK owners will be unconstitutional and therefore rendered void. Parliament will therefore enact laws which have to be in line with the Constitution.

The following looks at the relevant provisions of the Kenyan Constitution that provide for the recognition and protection of Indigenous Intellectual Property,[201] conservation of Genetic Resources[202] and equitable sharing of benefits and royalties derived from their culture.[203]

Looking closely at some of these articles reveals the following: first, that the Constitution recognises the culture of the Kenyan people.[204] This would include indigenous people who are Kenyans as the Constitution has not categorized these cultures. Secondly, it is clearly stated that it is the role of the state to promote TK.[205] This emphasises the commitment of the state to promote and protect IIP. Thirdly, it is affirmed that the state shall not only recognize but shall also promote indigenous science, technologies[206] and intellectual property. [207] Lastly, it is a requirement that laws be passed for the above purposes and the protection of Genetic Resources and equitable remuneration and royalty for the communities.

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[201] *Art 69 (1) (c) protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities; Art 11 (2) (b) recognise the role of science and indigenous technologies in the development of the nation.*

[202] *Art 69 (1)(a) ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits*

[203] Ibid.

[204] Kenya Constitution 2010 article 11(1).

[205] Kenya Constitution 2010 article 11 (2)(a).

[206] Kenyan Constitution 2010 article 11(2)(b).

[207] Kenyan Constitution 2010 article 11(2)(c).

Article 69 emphasises that utilization of genetic resources must be sustainable and it is the duty of all Kenyans to do so. Article 69 (1) (c) shows that there is a connection between indigenous knowledge and genetic resources: '…protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities….'

Although the Constitution provides for the protection of TK and its related Genetic Resources, it also recognises international treaties and conventions under article 2 (6)[208]. This therefore means that laws for protecting TK can only be enacted as long as they do not offend international treaties ratified by Kenya. In this case, such laws cannot offend TRIPs and therefore can only make use of TRIPs flexibilities which point towards sui generis laws, among others. In addition to this, the Constitution has in these articles also aligned itself to the CBD.

With such backing from the supreme law of the land, policy makers in various agencies are aligning their policies to the constitutional provisions. There is a Draft National Policy on Protection of Genetic Resources, Traditional Knowledge and Expression of Folklore at the Attorney General's (AG) Office which provides for development of a sui generis system for the protection of TK. In addition to this there is a Traditional Medicine and Medicinal Plants Policy document.

The Constitution of Ecuador states categorically under article 84 that it recognises collective intellectual property rights on communities' ancestral language. Another example is that of the Constitution of Venezuela which says: 'The collective intellectual property of indigenous knowledge, technology and innovations is guaranteed and protected. Any work on genetic resources and the knowledge associated therewith shall be for the collective good. The registration of patents in those resources and ancestral knowledge is prohibited'.[209]

My concluding remarks here are that it is possible to align legislations with the supreme law, in a way that does not prejudice anybody's rights particularly the right to property real or intellectual.

III. Traditional Knowledge Data Library - India

[208] "Any law ratified by Kenya shall form part of the law of Kenya under this Constitution."
[209] Art 124 of The Constitution of the Republic of Venezuela of 1999.

For a long time, perhaps spanning over many centuries, India has used traditional medicines and has evidence of this in its various scripts. In 2001, the government of India created the Traditional Knowledge Digital Library (TKDL) as a repository of formulations of various systems of Indian medicine, such as Ayurveda, Unani and Siddha, and 1500 yoga postures; this has been translated into 5 languages, namely Japanese, German, English, French and Spanish.

India has signed the TKDL Access Agreements with European Patent Office (EPO) and the patent offices of Australia, Canada, Germany, the United Kingdom and the United States, by giving them access to the TKDL database for patent search and examinations purposes. It continues negotiations with the patent offices of New Zealand and Japan where agreement in principle has been reached.[210] Dr. V.K.Gupta was the architect behind the famous Indian Traditional Knowledge Data Library (TKDL)[211] which has over 2,260,000 medicinal formulations.[212] Books by the following authors were used by the TKDL for citing prior art of evidences: Khazaain-al-Advia, Muheet-e-Azam, Vaidyamanorama, Rasayoga Sagara, Rajanighantauh, Bhavaprakasa, Siddhabhesajamanimala and Ilaaj-al-Amraaz. [213]

Such a data library serves as evidence of prior art and can be used, as has been done several times, in challenging patents filed or granted based on these known medicinal uses.[214] Such a system is now contemplated by the RSA but may have come late because such a recordal system can exist independent of a TK law and serve one of the main purposes, namely that of preventing bio-piracy by showing existence of prior art. The lack of such a system in the RSA has been a gap which can only be filled in 2015[215] if the announcement made on 24 May 2013 by the Minister for the Department of Science and Technology, Derek Hanekom, is anything to go by. The question therefore is what the position has been until now and what the position will be in the period before 2015.

[210] WIPO Magazine op cit (n201).
[211] WIPO Magazine op cit (n201).
[212] Ibid.
[213] India Foils US Firm bid to patent Turmeric, available at *http://www.hindustantimes.com/India-news/NewDelhi/India-foils-US-firm-bid-to-patent-turmeric/Article1-1002749.aspx,* accessed on 8 September 2013.
[214] Ibid.
[215] Veronica Mohapeloa 'News Released 27 May 2013: Minister Hanekom launches recordal system for indigenous knowledge', available at *http://www.dst.gov.za/index.php/media-room/latest-news/640-news-released-27may-2013-minister-hanekom-launches-recordal-system-for-indigenous-knowledge,* accessed on 27 June 2013.

The Hoodia example illustrates how the lack of a data library may perhaps have contributed to the Hoodia patent being claimed by the CSIR, and yet the San people had used it for centuries.

IV. Sui generis law - Panama and its sui generis TK law: Panama Act 20

Like South Africa, Panama has several local IP legislations and is a signatory to similar treaties and conventions. However, it also has a sui generis legislation which is tailor-made to suit the peculiar TK of the Panama people.

Panamanian legislations include Law No. 15 of August 8, 1994 on Copyright and Neighbouring Rights and Enacting other Provisions; Law No. 35 of May 10, 1996 on Industrial Property 1996; Law No. 23 of July 15, 1997 Title V provision for Protection of Plant Varieties 1997; and Law No. 20 of June 26, 2000 Special System on Collective Intellectual Property Rights of Indigenous People for the protection and defence of their Cultural Identity and their Traditional Knowledge 2000. This last piece of legislation is a sui generis law which protects Indigenous Intellectual Property.[216] According to the WIPO '…the sui generis system of Panama actually constitutes the first comprehensive system of protection of traditional knowledge ever adopted in the world.'[217] These legislations are so unique that they not only provide protection of TK and traditional cultural expressions in all forms[218] but also of the customs, traditions, beliefs, spirituality, religion and worldview of the indigenous peoples of Panama, ie the Kuna, Ngöbe and Buglé, Emberá and Wounaán, Naso and Bri-bri peoples. [219]

[216] Executive Decree No. 12 of March 20, 2001 regulating Law No. 20 of June 26, 2000 on the Special Intellectual Property Regime governing the Collective Rights of Indigenous Peoples for the Protection and Defence of their Cultural Identity and their Traditional Knowledge, and enacting other provisions, available at *http://www.wipo.int/wipolex/en/details.jsp?id=3397*, accessed 13 September 2012.
[217] World Intellectual Property Organization "Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore" (2002) Third Session. Geneva. Review of existing intellectual property protection of traditional knowledge. [WIPO/GRTKF/IC/3/7]
[218] Article 1 Law No. 20 of June 26 2000 Special System on Collective Intellectual Property Rights of Indigenous People for the protection and defence of their Cultural Identity and their Traditional Knowledge.
[219] Article 3 of Panama Act 20 of 2000.

There cannot be exclusive rights of third parties without the consent of the indigenous communities.[220]

The other outstanding feature of these laws is the relative ease and affordability of registration of Indigenous IP rights.[221] In fact, neither services of a lawyer nor fees are paid.[222] Small scale trading in replica indigenous items by non-indigenous people is exempt from the Act[223], and government is expected to play a proactive role locally and internationally in promoting traditional artifacts and culture.[224]

As far as revenue generation and allocation from the fines levied is concerned, this Act further provides that fifty per cent (50%) shall go to the National Treasury, and the other fifty per cent (50%) shall be earmarked for the investment expenses of the corresponding indigenous region or person.[225]

This Act, as can be seen, has features which are pragmatic, progressive and reasonable and which take into consideration the particular characteristics of the lifestyle and ideology of indigenous people. This is a perfect example of positive protection which has elements of compensatory liability regime[226] to the TK holders. In my opinion, this is a perfect example of positive protection. It has all the features of the aims of TK policy makers to ensure perpetual protection and inexpensive and simple procedures of registration.

VI. Terra nullius and trusteeship - Australia –Case law

In the following cases, the following issues were considered by the Australian Courts: trusteeship, land rights and ownership among indigenous communities.

[220] Article 2. The customs, traditions, beliefs, spirituality, religion, worldview, expressions of folklore, artistic expressions, traditional knowledge and all other traditional forms of expression of indigenous peoples are part of their cultural heritage; they may not therefore be the subject of exclusive rights of any kind on the part of third parties that have not been authorized via the intellectual property system, such as copyright, industrial designs, marks, geographical indications and other indications, unless expressly requested by the indigenous peoples. Nevertheless, the rights recognized above shall be observed and unaffected pursuant to existing legislation.
[221] Article 7 of Panama Act 20 of 2000.
[222] Ibid.
[223] Article 23 of Panama Act 20 of 2000.
[224] Chapter IV of Panama Act 20 of 2000.
[225] Article 21 of Panama Act 20 of 2000.
[226] Graham Dutfield op cit (n4).

In *Bulun Bulun v R&T Textiles*, Bulun Bulun, a renowned artist, painted a traditional artwork known as 'Magpie Geese and Water Lilies at the Waterhole'. Unbeknown to him or to his Ganalbingu people, R&T Textiles had cashed in on this artwork by printing it on fabric and selling it. They only knew about the infringement when the fabric containing the painting was brought back from a shop in Darwin. It was held that an individual had a fiduciary duty to the community even though the work belongs to an individual, as long as the work was a traditional piece, in other words he becomes a trustee.

The following case highlighted the importance of land and its resources among indigenous communities.

In *Mabo and Others v Queensland*[227] , Eddie Mabo, David Passi, James Rice and others brought an action against the State of Queensland and the Commonwealth of Australia in the High Court on 20 May 1982 for the purpose of claiming land rights to the Murray Islands based upon their local custom and traditional native title. The state was swift and vigorously denied the existence of any land rights claimed by the plaintiffs. It was held that the common law of Australia recognized native title, that Aboriginal peoples and Torres Strait Islanders may have existing rights and interests in land and waters according to traditional laws and customs, and that these rights are capable of recognition by the common law. In particular, the decision overturned the concept of terra nullius (a land belonging to no one) on which Australia's whole land tenure system had been based.

VII. Locus standi and the role of local government - China

One of the technical problems in civil litigation that has made it difficult for indigenous communities to bring an action to court is the problem associated with communal ownership and identifying capacity to sue.

The question is that where there is an infringement of indigenous rights, who can be recognised as the person or institution with the capacity to sue in the name of the community. In

[227] *Mabo and Others v Queensland* [(1992) 175 CLR].

the following Chinese case, in the absence of a trustee the courts solved the problem by allowing a local government to sue on behalf of the Hezhe community. In the *Hezhe* case[228], Guo Song, a local musician, composed a song where the rhythm element of the main part was that of the ethnic Hezhe, without attributing the adaptation to the Hezhe. It was held that the song should be identified as an adaptation and not an original composition.

There are two lessons to be learnt from this case. First, the court recognized the local government of the Hezhe as having locus standi, thus entertaining the matter. Secondly, even though the ethnic song was already in the public domain, the local ethnic community had a valid claim against a third party who adapted it in their song without attribution, and such ethnic community could be provided with civil protection over the use of folklore.

VIII. Conclusions

In conclusion, it is clear that Panama has a law, though sui generis in nature, which has fulfilled the desires of TK policy makers for perpetual and affordable protection of TK and TCEs. Kenya on the other hand, though it does not have a TK law has constitutional recognition and protection for TK and related Genetic Resources. Ecuador and Venezuela are good examples of countries with specific constitutional provisions on the protection of TK. However, Kenya has a TK policy in place which needs reworking in order for a direction towards enactment of laws for the protection of TK to take shape. Australia has case law which has solved the intricate and rather complex system of ownership of TK. China too has provided a precedent on the role local government can play in representing indigenous communities as it has capacity to sue on behalf of the community which resides within its territory in the absence of a trustee.

South Africa could take these jurisdictions as examples as it ponders on the best way forward to protect its TK and related resources.

Third world countries as a whole can achieve much more if they unite behind a common agenda affecting them in the area of TK and its related Genetic Resources, and as members of the UN, and the WIPO can do more than it does at the moment.

[228] *Beijing Higher People's Court Case No. 246*(2003) (final) (2006) 37 IIC 482-7.

South Africa has the sovereignty to ensure the development of the most suitable method or a combination of methods for protecting its TK. In doing so it should be pragmatic, remembering that it is a member of the WTO and the international community. It does not have to be drastic in its approach in a way that would make it a pariah state, but it can utilize TRIPs flexibilities and learn from other countries without necessarily re-inventing the wheel.

First, however, effective policies have to be in place. A thorough understanding of the intricacies surrounding TK must be demonstrated and best practice of protection of indigenous knowledge and successful commercialisation should be emulated by South Africa from the above-mentioned jurisdictions.

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSIONS

I. Introduction

II. Recommendations

a. Defensive protection

b. Positive protection i.e. sui generis law

c. Trusts as a solution to the problem of ownership

d. Data bank and publication

e. Amendment of the RSA Constitution

I. Introduction

The challenges of protecting TK in a global intellectual property regime which is skewed towards Western interests and based on Western concepts and ideologies of commercialisation have made it necessary to take a path which balances the needs and interests of indigenous communities on the one hand and the realities of repercussions of going against WTO's TRIPs on the other.

Conventions like Convention on Biological Diversity (CBD), FAO International Treaty on Plant Genetic Resources for Food and Agriculture, have clearly provided a legal framework for the protection of indigenous resources and indigenous intellectual property. Scholars have done much research on the subject and made recommendations to governments on various ways of not only protecting TK but also fulfilling the aim of TK policy makers of a perpetual, affordable and simple straightforward system of application which does not involve expensive legal requirements. A case in support of this point is the TK sui generis law of Panama. [229]

[229] *Articles 1 & 2* Act No. 20 Concerning the Special System for Registering the Collective Rights of Indigenous Peoples, for the Protection and Defense of their Cultural Identity and Traditional Knowledge, and Setting out other Provisions; Decree No. 12.

The main propositions are defensive[230]and promote positive protection;[231] with the former capitalising on existing IP legislations as is the case in South Africa, and the latter emphasising a sui generis law. Ultimately the task rests on the government of the day and the political, social, cultural and economic climate. There must be political will to drive this important agenda.

II. Conclusions and Recommendations

a. Defensive protection

The Republic of South Africa passed an amendment of the Patents Act of 1978 by Patents Amendment Act No. 20 of 2005, requiring disclosure by the applicant of a patent where the source is indigenous in nature, thus making it possible to protect TK. This is even uncomplicated because this type of protection makes use of existing legislation. This regime is in my opinion workable but does not take into consideration the aims of policy makers of perpetual and affordable protection because it brings TK into the ambit of a mainstream IP regime which is unable to provide effective protection to TK. It is however a possible path to follow.

However, there is an obvious problem with this system because indigenous intellectual property is now equated with the mainstream IP. This is dangerous and totally tangential because, first, the two systems reflect two different social, commercial and economic institutions. Secondly, this does not fulfil TK policy makers' policy of perpetual and affordable protection as the patent granted will be treated like any other patent with a 20 year life span and with the expensive legal fees having to be paid to patent attorneys for filing.

b. Positive protection

This is where a sui generis law is passed by parliament to effectively protect TK like in the case of Panama Act 20 discussed in chapter five. This regime in my opinion is the best as it takes into consideration the aim of policy makers of perpetual and affordable protection. It also takes into

[230] Graham Dutfield op cit (n4). 9; *Section 81* defensive protection of TK can be discerned if this provision is read together with *s. 82 (1) (b) (i) & (ii)* (point to protection of TK); *s. 82 (2) (a)* (Prior informed consent (PIC)); *s.82 (2)(b)(ii)* (access and benefits sharing (ABS)); *s. 83 (1) (b) (iv) & (v).*
[231] Ibid.

account the style, culture, tradition, religious and concepts of property and ownership as understood and practiced by indigenous communities. This last point is particularly of great importance because it is here where there is discord between the Western approach to IP protection and that of indigenous communities. Indigenous intellectual property cares less about Western approaches to commercialisation because of its particular system where its use is not contemplated outside of the community. Its economy is neither advanced nor capitalistic but communitarian as opposed to the Western model. Dutfield comments:

> '…a pragmatic approach is to allow the use of such knowledge but to require that its original producers or providers be compensated. There are different ways the compensation payments could be handled. The government could determine the rights by law. Alternatively, a private collective management institution could be established which would monitor use of TK, issue licenses to users, and distribute fees to right holders….'

Furthermore, indigenous intellectual property has a spiritual element to it which has been totally ignored by these amendments. Also, ownership is communal and where an individual owns such rights, he or she does so in trust of the community.

Such a system should provide formulae for sharing profits which are obtained from the sales of TK. For example, 75 per cent is to be shared by the TK holding communities. This should go towards improving their lifestyle, education, health care, conservation of biodiversity and promotion of TK.

Such effective, reasonable and pragmatic indigenous intellectual property protection laws must be positive. These must not only be reflective of the indigenous cultures, economic systems, social systems and psyche but also take into consideration the aims of TK policy makers for perpetual protection. The suggestion is that this can be attained through a sui generis system.

c. Trust as a solution to the problem of ownership

As has been discussed, concept of trust in my opinion is the best solution to ensuring that indigenous knowledge is protected and commercialised, mainly because this is an institution recognized in law and there are repercussions for breach of trust. It would also solve the problem

of tracing the owners of indigenous IP which is usually a bone of contention in mainstream IP grant to TK. The trust may be provided by a sui generis law, and necessary procedures and requirements of registration of such a trust may be included in such a law. Powers of the trust can extend to seeking a patent on behalf of the TK holding community it represents. A provision can be included in a sui generis law stating that the law of trust of South Africa under Trust Property Control Act 57 of 1988 shall apply. This would prevent a possible conflict of laws.

Trust offers a very practical institution. It is not cumbersome and has a flexible administration system. This makes it a perfect remedy for the lacuna in ownership of TK.

As has already been discussed in Chapter Two, trustees have special privileges. They are legal owners with powers to transact, negotiate and even sue or file complaints where necessary. Fiduciary law imposes obligations on the trustees thus making the institution of trusts an important part of the commercialisation of TK.

Moreover, the institution of trust is not alien to indigenous groups. Traditional leaders in indigenous groups hold land and other resources in trust for the communities. Similarly, owners of indigenous IP in many indigenous communities hold knowledge as individuals but in trust for the community.[232]

The situation in South Africa offers many possibilities for such an arrangement of trust between the community and the various community representatives. This is an arrangement which is crucial if meaningful commercialisation is to take place. The community land and resources and Traditional Knowledge must be held in trust by the community representatives for the benefit of the community and for the practical purpose of entering into various contracts like access and benefit sharing, material transfer agreements, and for suing for infringement in civil matters or filing complaints in criminal matters. This is because the law needs to correctly identify who or which organization has locus standi.

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[232] *John Bulun Bulun & Anor v R & T Textiles Pty Ltd"* (1998) IndigLawB 87*;* (1998) 4(16) Indigenous Law Bulletin 24.

Representatives of TK holding communities play an important role. Section 61(2) (a)[233] of the National Environmental Management: Biodiversity Act (NEMBA) of 2004 no doubt contemplates such an arrangement because it provides for consultation with the community and non-governmental organizations. A good example where a non statutory organization advocated for the indigenous communities was in the famous Hoodia gardonii plant patent. This plant was patented by the Council of Scientific and Industrial Research (CSIR) who did not attribute the patent to the San people who had used it for centuries. The Working Group on Indigenous Minorities in Southern Africa assisted the San in their demand for a share in the profits of the patent. [234]

Provincial and local government can play an important role in owning community property and traditional knowledge. South Africa could look to China with regards to the Hezhe case[235] where the local authority (local government) was held to have locus standi in suing for infringement when a local musician Guo Song made an adaptation of Hezhe music without attribution. This case, though a TCE case, shows that local authority can sue on behalf of an indigenous community as it was considered to have locus standi. NEMBA provides for extensive consultation between the Minister of Environment and the Provincial Government in section 99 (2) (b).[236]

Of importance is that Trust makes it possible to adopt modern ways of commercialisation as a trustee is recognised as having the full authority to transact on behalf of beneficiaries in whatever manner. This would give the community confidence in that there would be accountability and at the same time make it possible for prospective traders to trust this institution which is recognised by the law.

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[233] NEMBA 2004 S. 61 (2) In performing its duties, the scientific authority must
(b) consult, when necessary, organs of state, the private sector, non-governmental organizations, local communities and other stakeholders before making any findings or recommendations or giving any advice.

[234] G Wachira Mukundi op cit (n80) 51.

[235] *Beijing Higher People's Court Case* No. 246 (2003).

[236] Section 99 (2) (b) "The Minister must, in terms of subsection (1) -… in accordance with the principles of co-operative governance set out in 10 Chapter 3 of the Constitution, consult the MEC for Environmental Affairs of each province that may be affected by the exercise of the power …. ."

d. Publication and databank of TK

South Africa at the moment has no databank or publication with records of TK. The launch of the National Recordal System (NRS), on 24 March 2013 by the Minister of Science and Technology, Derek Hanekom, is a step in the right direction. The NRS aims to protect, preserve and promote South Africa's indigenous knowledge (IK) by documenting and recording it. It promises to be very useful when fully implemented.

Setting up the system will take about three years to accomplish, and South Africa will join the likes of India which has had such a system for a while. As has been mentioned in the previous chapter, this data library serves as evidence of prior art and can be used as has happened several times in challenging patents filed or granted based on these known medicinal uses. It exists independently of a TK law preventing bio-piracy by showing existence of prior art.

The advantage of such a system has been demonstrated in the American patent case[237] involving the Mississippi Medical Centre where India brought evidence in published documents indicating that turmeric had been used in India since time immemorial. Therefore all a country has to prove through such publication and databank is prior knowledge and use which will render the item unpatentable.

e. Amendment of the South African Constitution

The supremacy of the South African Constitution places it as a very useful supreme document for the purposes of providing guidance to law makers.[238] TK must be included in the South African Constitution to add much needed support in terms of constitutional recognition. Kenya never had such a provision in its old Constitution but has provided such protection and recognition under articles 11 and 69 as discussed earlier. Act No. 8423 (1997) of the Philippines, which aims 'to accelerate the development of traditional and alternative health

[237] US Patent No. 5401504 (issued March 28, 1995).
[238] Section 2 The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996).

care',[239] was legislated in line with the provision from the Constitution of the Philippines as discussed in Chapter Two.

My recommendation is that South Africa amends its Constitution to include the state's role in protecting Traditional Knowledge and Traditional Knowledge holders.

[239] Carlos M Correa op cit (n49).

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