UNIVERSITY OF THE WESTERN CAPE

FACULTY OF LAW

THE NAGOYA PROTOCOL:

A POSSIBLE SOLUTION TO THE PROTECTION OF TRADITIONAL KNOWLEDGE IN BIODIVERSE SOCIETIES OF AFRICA

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DEDICATION

To Jesus, the author, giver, modifier and protector of all knowledge

...and who in a divine twist of artistic splendour, generationally reveals and entrusts for the benefit of all, the priceless gift of the knowledge of the use and preservation of nature's wealth...to the indigenous poor...

...that their survival may mean the earth's survival!

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…but to all others unmentioned, from the depths of my heart, I say a big thank you.

The views, opinions and recommendations expressed, remain those of the author, except where expressly indicated in the research.

DECLARATION

I declare that,

'The Nagoya Protocol: A Possible Solution to the Protection of Traditional Knowledge in Biodiverse Societies of Africa'

is my own work and that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Oluwatobiloba Oluwayomi **Moody**

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Professor Bernard Martin

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July 2011.

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LIST OF ABBREVIATIONS

ABS	Access and Benefit Sharing
AML	African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources
ARIPO	African Regional Intellectual Property Organisation
AU	African Union
BR	Biological Resources
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CK	Community Knowledge
CNA	Competent National Authority
CSIR	Council for Scientific and Industrial Research, South Africa
EARO	Ethiopian Agricultural Research Organisation
EEPA	Ethiopian Environmental Protection Authority
EMCA	Environment Management and Co-ordination Act 1999 (Kenya)
GAGRBSU	Guidelines on Access to Genetic Resources and Benefit Sharing in Uganda
GATT	General Agreement on Tariffs and Trade
GR	Genetic Resources
IBC	Institute of Biodiversity Conservation
IBCR	Institute of Biodiversity Conservation and Research
IGC	Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore
ILC	Indigenous and Local Communities
ING	Interregional Negotiating Group
IP	Intellectual Property
ISD	Institute of Sustainable Development, Ethiopia
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture

IUCN	International Union for Conservation of Nature (World Conservation Union)
MATs	Mutually Agreed Terms
MDGs	Millennium Development Goals
NCA	National Competent Authority
NEMA	National Environment Management Authority (Kenya)
NEMA	National Environment Management Authority (Uganda)
NFP	National Focal Point
NGO	Non-Governmental Organisation
NICB	National Inter-Sectoral Coordination Body
OAPI	African Intellectual Property Organisation (*Organisation Africaine de la Propriété Intellectuelle*).
OAU	Organisation of African Unity
OAU/STRC	Scientific, Technical and Research Commission of the OAU
OECD	Organisation for Economic Cooperation and Development
PIC	Prior Informed Consent
TAB	Technical Advisory Body
TAK	Traditional Agricultural Knowledge
TEK	Traditional Ecological Knowledge
TK	Traditional Knowledge
TK*a*GR	Traditional Knowledge associated with Genetic Resources
TMK	Traditional Medical Knowledge
TNC	Trans National Corporation
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TWN	Third World Network
UN	United Nations
UNCCD	United Nations Conference to Combat Desertification
UNCST	Uganda National Council for Science and Technology
UNCTAD	United Nations Conference on Trade and Development
UNDRIP	United Nations' Declaration on the Rights of Indigenous Peoples 2007
UNEP	United Nations' Environment Programme
UNEP-WCMC	World Conservation Monitoring Centre of the United Nations' Environment Programme

WCED	World Commission on Environment and Development
WG-ABS	Ad-Hoc Open Ended Working Group on Access and Benefit-Sharing
WIPO	World Intellectual Property Organisation
WSSD	World Summit for Sustainable Development
WTO	World Trade Organisation
WWF	World Wide Foundation

ABSTRACT

There is a growing interplay of competing realities facing the international community in the general areas of innovation, technological advancement and overall economic development. The highly industrialised wealthy nations, largely located on the Northern hemisphere are on the one hand undoubtedly at the forefront in global research, technology and infrastructure development. The developing and least developed countries on the other hand are mostly situated on the Southern hemisphere. They are not as wealthy or technologically advanced as their Northern counterparts, but are naturally endowed with unique variations of plant, animal and micro-organism species occurring in natural ecosystems, as well as the traditional knowledge on how to use these unique species. This knowledge has been adjudged to be responsible for the sustainable maintenance of the earth's biodiversity. Increasing exploitation of biodiversity, spurred on by the competing realities identified above, has left the earth in a present state of alarm with respect to the uncontrolled loss of biodiversity. The traditional knowledge of local peoples has significantly offered leads to research institutes from the North in developing major advancements in drugs, cosmetics and agriculture. Little or no compensation has however been seen to go back to the indigenous communities and countries that provide resources, and indicate various possibilities through their traditional knowledge to the use of such resources. Efforts by some biodiversity rich countries to address this trend through legislation developed in accordance with the principles of the Convention on Biological Diversity have been frustrated due to the inability to enforce their domestic laws outside their borders. Theft of genetic resources and its associated traditional knowledge from such countries has therefore remained a major challenge. Against this backdrop, and on the insistence of biodiversity-rich developing countries, an international regime on access and benefit sharing was negotiated and its final text adopted in 2010. This international regime is as contained in the Nagoya Protocol.

This research sets out to examine whether the Nagoya Protocol offers a final solution to the protection of traditional knowledge associated with biodiversity in biodiverse countries. It further examines the importance of domestic legislation in achieving the objectives of the Protocol. The research has been tailored to African biodiverse countries, and seeks these answers within the context of Africa.

KEYWORDS

Access and Benefit Sharing
African Model Legislation
Biodiversity
Biopiracy
Convention on Biological Diversity
Genetic Resources
Indigenous and Local Communities
Mutually Agreed Terms
Nagoya Protocol
Prior Informed Consent
Traditional Knowledge

In Nature's Laboratory

Papa what are these leaves for?

These are almond tree leaves my son. Please kindly assist me in picking them from the floor; we need to gather some for the visitor at home who is suffering from sickle cell anaemia.

Will they heal her?

Yes my son

But why are we picking only the ones on the floor papa?

The condition for efficacy is that the leaves selected for the medicine must be ripe and fallen from the tree!

But papa that's really strange! Is there any difference between the ones on the tree and the ones on the floor?

Yes my son, I cannot explain fully, but from experience, I know the ones on the tree can kill, the ones on the floor will heal...it's the way the gods conserve the trees! We only pick the ones on the floor, which are the ones they've empowered with healing virtue and given to us!

Papa how come you know so much about these?

I simply learnt them by watching my own father!

In the Scientific Laboratory

'...our work on Terminalia catappa (Indian almond) indeed presents another example of how not to discard in one stroke the "nonsense" associated with traditional medical practice...a professional colleague, who was later to become one of my postgraduate students, noticed in her community pharmacy practice some years ago that a number of her sickle cell disease patients using the fallen leaves of this plant as prescribed by traditional healers were experiencing very much reduced monthly pain episodes. The condition for efficacy was that the leaves selected for the decoction must be ripe and fallen from the tree. We examined and compared the anti-sickling activities of the ripe fallen, ripe but not fallen, and the unripe and not fallen leaves. Results revealed that the ethanol extract of the reddish brown ripe freshly fallen leaves exhibited the highest anti-sickling activity (78% inhibition at 180 min incubation). Extracts of the other leaves harvested when still on the tree were in fact found to cause lysis of the red blood cells...'[1]

[1] Moody J '*The Sense and Nonsense of Traditional Medicine in Africa: An Odyssey of a Herbalist's Grandson in Nature's Laboratory'* (2010). Excerpts from an inaugural lecture delivered by the Dean, Faculty of Pharmacy, University of Ibadan, Nigeria on 2 July 2010 reflecting his achievements in drug discovery and research.

1.0 CHAPTER ONE:

Traditional Knowledge and Biodiversity: An Endangered Indigenous Heritage.

1.1 INTRODUCTION/ BACKGROUND TO THE RESEARCH

After about 6 years of negotiation, in 2010, following two weeks of intense discussions in Nagoya, Japan, the world finally struck a comprehensive deal on access to genetic resources[2] and the fair and equitable sharing of benefits arising from their utilization.[3]

The adoption of the 'Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity' (the Nagoya Protocol), is a landmark achievement by the Convention on Biological Diversity (CBD). This achievement was wrought in the midst of intense negotiations on the protection of traditional knowledge (TK) associated with the utilisation of genetic resources (GRs) at several multilateral forums. Most notable of these are such ongoing negotiations at the World Trade Organisation (WTO)[4] and the World Intellectual Property Organisation (WIPO).[5]

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2 The Convention on Biological Diversity (CBD) defines 'genetic resources' to mean 'genetic material of actual or potential value'. See Article 2 of the CBD Available at *http://www.cbd.int/convention/text/* (accessed on 16th February 2011).

3 Reji J 'International Regime on Access and Benefit Sharing: Where Are We Now?' (2010) 12 *Asian Biotechnology and Development Review* No 3 79. This landmark decision was adopted at the 10th Conference of the Parties (COP) to the CBD (the 'Kyoto Conference for All Living Things') which held between 18 and 29 October 2010 in Nagoya, Aichi Prefecture, Japan. For the full decisions of the Parties, see *http://www.cbd.int/decisions/cop/?m=cop-10* (accessed on 31 January 2011). The Nagoya Protocol is opened for signing between 2 February 2011 and 1 February 2012, and is expected to become effective 90 days after the 50th Party deposits its instrument of ratification with the Secretary General to the United Nations, who is the depository to the Protocol. See Article I.2 of Decision X/1 COP 10 'Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization' at *http://www.cbd.int/decisions/cop/?m=cop-10* **(**Accessed on 31 January 2011**).**

4 The Marrakesh Agreement establishing the World Trade Organisation (WTO) was signed on 15 April 1994 and became operational on 1 January 1995. This Agreement significantly increased the scope of the General Agreement on Tariffs and Trade (GATT) 1947 to incorporate other aspects of trade, including *inter alia* services and Intellectual Property (IP). The Council for Trade-Related Aspects of Intellectual Property Rights (TRIPS) is currently in review of the provisions of Article 27.3 (b) of the TRIPS Agreement which gives members the right to exclude plants, animals as well as biological processes from patentability. It however permits microorganisms, a category in which GRs fall, to be patented. There is a general view by developing countries that in addition to the failure of the TRIPS to recognise traditional knowledge (TK), it further promotes the piracy of same. Extensive submissions are still being negotiated and received from members with regard to this issue. Some of the ongoing pressing issues in the line of the Nagoya Protocol include *inter alia* the review of the provisions of Article 27.3 (b) in 'IP/C/W/369'; the relationship between the TRIPS Agreement and the CBD in 'IP/C/W/368'; and the protection of TK and folklore in 'IP/C/W/370'. See generally the WTO, Council for Trade-Related Aspects of Intellectual Property Rights Working Paper *Review of the Provisions of Article 27.3(b); Summary of Issues Raised and Points Made*. IP/C/W/369/Rev.1, (9/03/2006). Furthermore, issues of TK and biopiracy are on the agenda at the ongoing Doha Round

Simultaneous with the efforts leading to secure protection for TK and genetic resources (GRs), growing global protection is being afforded intellectual property (IP) rights[6] on the premise that they are indispensable in the development of technology and increased varieties in traded products.[7] The precise scope of IP recognition and protection has however remained a source of continued debate as well as international negotiation. The debate has generally been between the developing countries on the one hand and the developed countries on the other. The reasons for their being on opposite sides may not be too hard to find. International negotiations in the area of IP protection have resulted in the implementation of the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) in 1995.[8] This Agreement introduced IP rules into the multilateral trading system for the first time[9] and also introduced global minimum IP protection standards.[10] TRIPS, however, fails to recognise TK as one of the entities it protects,[11] and as a result, developing countries have criticised TRIPS

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negotiations (which commenced in 2001), and remains the longest Ministerial Conference of the WTO ever yet held. See *www.wto.org* (accessed on 23 February 2011).

5 For instance, the main objective of the WIPO activities in respect of TK under the WIPO Program and Budget for 1998-1999 (under which the Fact Finding Mission on Needs and Expectations of IP and TK was conducted) was 'to identify and explore the IP needs and expectations of new beneficiaries, including the holders of indigenous knowledge and innovations, in order to promote the contribution of the IP system to their social, cultural and economic development' (Main Program 11, Program and Budget 1998-1999). See generally WIPO 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders' (2001) WIPO Report on Fact-Finding Missions on IP and TK (1998-1999) available at *http://www.wipo.int/tk/en/tk/ffm/report/final/pdf/part1.pdf*. (accessed on 17 September 2010). WIPO has further established an Intergovernmental Committee on IP and Genetic Resources, Traditional Knowledge and Folklore (IGC) which has been in serious negotiations on the future protection of TK. These negotiations have however been at an *impasse* since July 2009. See Dutfield G & Suthersanen U *Global Intellectual Property Law* (2008) 342-43. Significantly however, the members have just concluded preparations for text based negotiations for an international instrument on the protection of TK, folklore and GRs. See Saez C & New W 'WIPO Members Tee Up Negotiation on Traditional Knowledge, Cultural Expressions' *Intellectual Property Watch* 13 May 2011.

6 'IP' refers to property rights in creations of the mind, such as, inventions, industrial designs, literary and artistic works, symbols, and names and images. For more on the legal scope and nature of IP, see generally The Convention establishing the World Intellectual Property Organisation (WIPO), 1967 available at *http://www.wipo.int/tk/en/* (accessed on 17 September 2010). The protection of 'Intellectual Property Rights' was first incorporated into the international trading system in 1995, through the WTO's TRIPS Agreement. See note 4 above. See also Arewa O 'TRIPS and Traditional Knowledge: Local Communities, Local Knowledge, and Global Intellectual Property Frameworks' (2006) 10 *Marquette Intellectual Property Law Review*156 – 163.

7 See generally The World Trade Organization (WTO) *Understanding the WTO* 5 Ed. (2008).

8 See Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments – Results of the Uruguay Round, 33 I.L.M 1125, 1197 (1994).

9 The WTO *Understanding the WTO* (note 7 above).

10 Arewa O (note 6 above).

11 For a detailed analysis of the scope of protection offered under the TRIPS agreement see generally Correa C (ed) *Research Handbook on the Interpretation and Enforcement of Intellectual Property under WTO Rules: Intellectual Property in the WTO* Vol.2 (2010). Not only did TRIPS fail to recognise TK, it is further seen by developing countries as a catalyst, promoting the piracy of TK. See Dutfield G 'TRIPS-Related Aspects of Traditional Knowledge' (2001) 33 *Case W. Res. J. Int'l L.* 233.

as contributing to the piracy of indigenous/traditional intellectual wealth.[12] These objections and reservations have, in the years of operation of the TRIPS agreement, generated new waves of international arguments and negotiations,[13] which have in turn given rise to alternative IP protection concepts.[14] A major theme in these negotiations on alternative concepts has been whether it is more appropriate to afford TK defensive and/or positive protection though multilateral instruments.[15] This theme has gained growing international prominence with the recognition that TK is making an increasing input in modern industries, such as pharmaceuticals, botanical medicines, cosmetics, toiletries, agriculture and biological pesticides.[16] The established role TK plays in resource management, environmental conservation (and sustainable use) has given the discussions added significance.[17]

Biodiversity, which has generated much TK, has for a long time remained in a state of unchecked accelerated decline,[18] with species facing extinction at 1000 times the natural

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[12] Developing countries have argued extensively that the provision of Article 27(3) b of the TRIPS Agreement, which fails to mandate disclosure of origin for patent applications, as well as entrench principles of prior informed consent (PIC) in its text, contributes directly to the incidence of biopiracy.

[13] Especially in the less '*industry-friendly*' forums of environmental and biodiversity protection. See Ullrich H *Traditional Knowledge, Biodiversity, Benefit-Sharing and the Patent System: Romantics v. Economics?* European University Institute Working Paper LAW No. 2005/07 (2005).

[14] Ullrich H (note 13 above).

[15] '...Positive protection refers to holders of TK acquiring IPRs or any other right provided by a legal mechanism created to protect TK and interests of TK holders. It recognises the rights of TK holders and enables them to enforce their rights through IPRs or through *sui generis* systems. Defensive protection means protection through legal or other means to prevent misappropriation or unauthorised use and claims to cultural expressions, knowledge associated with specific practices, products derived from TK and enclosing the TK that is in public domain through patents and other IPRs...in reality, the dividing line between them is thin...' See Srinivas K 'Traditional Knowledge and Intellectual Property Rights: A Note on Issues, Some Solutions and Some Suggestions' (2008) 3 *Asian Journal of WTO and International Health Law and Policy* 86 – 87. According to Dutfield G 'Legal and Economic Aspects of Traditional Knowledge' (2004), defensive protection measures include disclosure of origin proposals, compilation of TK databases as prior art etc., while positive protection measures include sui generis regimes, compensatory liability regimes etc. See also proposals for a misappropriation regime in Correa C. 'Traditional Knowledge and Intellectual Property: Issues and Options Surrounding the Protection of Traditional Knowledge' (2001) *Quaker United Nations Office Discussion Paper* 18.

[16] Dutfield G & Suthersanen U (note 5 above) 327 – 353. The authors however emphasize that this view is often absolutely expressed by proponents of greater protection for TK, and may be contrasted sharply with the views of those who feel that the role of TK is largely being overstated merely for sentimental purposes. For more on these conflicting views, see Ullrich H (note 13 above).

[17] An important product of WIPO's efforts has been the establishment of an Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). This was at the 25th session of WIPO's General Assembly in 2000. See Dutfield G & Suthersanen U (note 5 above) 342. The IGC is currently undertaking text-based negotiations with the objective of reaching agreement on a text of an international legal instrument (or instruments) which will ensure the effective protection of TK, traditional cultural expressions/folklore and GRs. See WIPO 'Intergovernmental Committee' available at *http://www.wipo.int/tk/en/igc/* (accessed on 25 May, 2011).

[18] Current observations reflect a rapidly declining biodiversity, with a quarter of the world's plant varieties threatened with extinction, a vertebrate population reduced by a third in the last 30 years and a continued alarming rate of forest fragmentation and degradation, all driven by anthropogenic effects. See Harrop S

rate.[19] This alarming trend has aroused the interest of stakeholders in many fields cutting across IP,[20] international trade, environmental and biodiversity conservation, human rights, access to GRs and sharing of the benefits arising from their use, as well as the protection of TK associated with the use of GRs. The CBD was established in 1992 with the aim of putting an end to the uncontrolled depletion of biodiversity,[21] but the decline has persisted. The continued decline is arguably due to the combined effect of the huge commercial interests of multinationals and research institutions of the North,[22] and the weak (and sometimes non-existent) domestic legislation in host countries.[23] This continued decline is the consequence of a global dilemma – a protracted conflict of two necessary ideals; promoting global economic development, while yet simultaneously conserving the local biological and cultural diversity of biodiversity rich communities.[24] This depletion of biodiversity has had a huge impact on host rural communities[25] because of the extent to which these communities are dependent on their immediate environments for survival.[26] Their indigenous methods of

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'Living in Harmony with Nature? Outcomes of the 2010 Nagoya Conference of the Convention on Biological Diversity' (2011) 23 *Journal of Environmental Law* 117 – 128.

19 International Centre for Trade and Sustainable Development 'Navigating Nagoya: Will CBD COP 10 Deliver an ABS Protocol?'(2010) *Environment and Natural Resources Programme* Vol. 4 No. 3 Oct. 2010 available at *http://ictsd.org/i/environment/87194/* (accessed on 28 January 2011).

20 This is especially with regard to the patent system.

21 The Convention on Biological Diversity (CBD) was signed at the Earth Summit in Rio de Janeiro, Brazil in 1992 and entered into force on 29th December 1993. It is the first global agreement to cover all aspects of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of GRs.

22 Unlike the 'South' which is often used to describe the biodiversity-rich developing countries, most of which are located in the tropics and the Southern Hemisphere, the 'North' is used to describe the technology-rich industrialized countries which are located primarily in the temperate zones of the Northern Hemisphere. These geographical realities have led to the general designation of the developed world as the 'North' and the developing world as the 'South'. See McManis C 'Intellectual Property, Genetic Resources and Traditional Knowledge Protection: Thinking Globally, Acting Locally' (2003 – 2004) 11 *Cardozo J. Int'l & Comp. L.* 548; see also McManis C 'The Interface between International Intellectual Property and Environmental Protection: Biodiversity and Biotechnology', (1998) 76 *Wash. U. L. Quarterly* 255; see also Downes DR, 'How Intellectual Property Could be a Tool to Protect Traditional Knowledge', (2000) 25 *Colum. J. Environment'l L.* 257- 264.

23 This point has been hugely debated as the CBD and other international agreements (e.g TRIPS) have hitherto failed to oblige users of biodiversity to comply with domestic laws of the providing countries with respect to access and benefit sharing (ABS) with host communities. Many developing countries have wholly placed the blame of biodiversity depletion on the alleged *bio*piratical tendencies of the industrialised nations.

24 McManis C 'Intellectual Property, Genetic Resources and Traditional Knowledge Protection' (note 22 above) 547.

25 This term which is used to refer to biodiversity rich communities in the South, whose traditional knowledge and biodiversity form inputs for research institutes and Trans National Corporations (TNCs) of the North.

26 According to recent research, forty percent of the world's economy depends directly or indirectly on biological resources. The rural poor have also been shown to depend on biological resources for up to ninety percent of their daily needs, with the natural goods and services provided by biodiversity being a key source of food, water, shelter, incomes and livelihoods for billions of people globally. See generally International Centre for Trade and Sustainable Development 'Navigating Nagoya: Will CBD COP 10 Deliver an ABS

interaction with their environment for survival and livelihood, have in many instances saved research institutes and multinationals time and money, by providing pointers which have enabled them (multinationals) explore the potential in GRs which otherwise would have remained undiscovered.[27]

Countries of the South, in whose communities the largest concentration of biodiversity is found, have generated much debate surrounding its use and exploitation. A recurring theme of the debate has been the fair and equitable sharing of benefits arising from the use and exploitation of their biodiversity. Debate has extended to the protection of the TK of indigenous and local communities (ILCs) where the biodiversity rich areas are found. The TK, which constitutes the intellectual wealth of these ILCs, is often associated with the sustainable use of biodiversity and its components.[28] It is this indigenous knowledge that is so closely linked to biodiversity and its components that is referred to in this mini-thesis as 'traditional knowledge associated with genetic resources' (TK*a*GRs). The increasing calls for the protection of this TK*a*GRs are also direct results of allegations of bioprospecting and biopiracy[29] levelled by the biodiversity rich countries of the South against multinationals and research institutes from the North.

Protocol?'(2010) *Environment and Natural Resources Programme Vol. 4 No. 3 Oct. 2010* available at *http://ictsd.org/i/environment/87194/* (accessed on 28 January 2011).

27 The concept of 'discovery' is used here loosely as this is one of the huge points of discourse in the traditional knowledge debate. Though such TK of such GRs may have been in existence for thousands of years, the 'discovery' by the research institutes who are able to scientifically analyse the components is often the point from which it is taken off the public domain through patent rights etc. The South maintains that such 'discoveries' are not new, and should therefore not be patented without regard to the TK through which they are sourced. See the example of the Hoodia Cactus of the San of Southern Africa at Avril H 2010 "*South Still Battling to Stop North's Biopiracy*" available at *http://ipsnews.net/news.asp?idnews=52743* (accessed on 28 September 2010).

28 See for instance, Par. 22 of the Preamble to the Nagoya Protocol (2011).

29 Terms like '*Biopiracy*' and '*Bioprospecting*' have been described as terms of convenience, which were coined as responses to attacks from countries of the North on the piracy of intellectual wealth by countries of the South. Owing to wide use, they have gained international recognition and acceptance. Bioprospecting is defined as "the exploration of biodiversity for commercially valuable genetic resources and biochemicals". Reid W, Laird S, Meyer C, Games R, Sittenfeld A, Janzen D, Gollin M & Juma C (eds) *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development.* World Resources Institute (1993). Usually, what makes this a sensitive debate, is the failure of most bioprospectors to fully disclose their intent from the onset, with a view to obtaining the *prior informed consent* of the host communities. 'Biopiracy' was coined by Pat Mooney of the Canadian Rural Advancement Foundation International (RAFI) as part of a counterattack strategy on behalf of developing countries that had been accused by developed countries of condoning/ supporting 'intellectual piracy', but who felt they were hardly as piratical as corporations which acquire resources and TK from developing countries, use them in their research and development programs and acquire patents and other IP rights all without compensating the provider countries and communities. See Dutfield 'TRIPS-Related Aspects of TK' (note 11 above). Biopiracy is discussed more fully by Shiva V 'Bioprospecting as Sophisticated Biopiracy' in Burrows (ed.) *The Catch: Perspectives in Benefit Sharing* (2005).

ILCs' have in their quest for survival within their hostile environments, generated bodies of indigenous skills and methods of interaction with, and management of their environments. The indigenous skills developed by these communities, centres largely on the management and use of their biodiversity. Such biodiversity-related skills generally manifest themselves in the areas of agricultural practices, medical/herbal practices and even environmental management. These bodies of knowledge form major parts of the scope of TK*a*GR, which in itself remains a significant aspect of TK itself. This research focuses on the protection of those aspects of TK associated with the use and conservation of biodiversity. Protection has largely been pursued within the Access and Benefit Sharing (ABS) regime, IP and the multilateral trading system. Today, the most prominent calls are for TK protection through a *sui generis* system.[30]

Consensus has not been reached on what TK actually means,[31] but for purposes of this research, it may be defined as a,

> '[B]ody of knowledge built by a group of people through generations [of] living [together] in close contact with nature, including systems of classification, sets of empirical observations about the local environment and systems of self management that govern resource use'.[32]

This knowledge is increasingly being seen as an intellectual heritage to which indigenous people have a right of which ought to be protected.[33]

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[30] See Dutfield G & Suthersanen U (note 5 above) 345 – 353.

[31] See Srinivas K (note 15 above) 83 where he argues that there is no concise definition of TK, but rather definitions exist based on the importance given to various aspects and that 'defining TK and establishing its scope has been a debate without any consensus.' (83-84). See also Dutfield G 'TRIPS-Related Aspects of TK' (note 11 above) 239 – 243 where the definitional dilemma was similarly acknowledged and the term was rather subjected to a description. Interestingly, the WIPO also observes that 'one of the complicating factors of any discussion on TK is not so much the lack of options for appropriate terminology, but rather the diverse meanings and connotations associated with the existing options.' See WIPO Report on Fact-Finding Missions (note 5 above) 21. See also Munzer S & Raustiala K 'The Uneasy Case for Intellectual Property Rights in Traditional Knowledge' (2010) 27 *Cardozo Arts & Ent. L. J.* 48 where in adopting a working definition, the authors argue that the term 'TK' may be used in both descriptive and normative senses: descriptively, the terms apply to understanding or skill. Normatively they apply to a variety of intellectual property that is, or ought to be protected under domestic and international law.

[32] Johnson M 'Research on Traditional Environmental Knowledge: Its Development and its Role', in Johnson M (ed) *'Lore: Capturing Traditional Environmental Knowledge'* (1992) 3, 3–4.

[33] See for instance Articles 11, 19, 24, 29 and 31 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) adopted by General Assembly Resolution 61/295 on 13 September 2007. Available at *http://www.un.org/esa/socdev/unpfii/en/drip.html* (accessed on 31 January 2011). Even though negotiations on the global front tend to reflect this wide belief, caution must be exercised in assuming that this is the universal view. Rather, in public discourse this view is held mainly by proponents of TK protection. Several are still opposed to this view of protection for TK though, owing to fears of the effect of such protection on the public domain. Specifically, the fact that TK is largely undefined with an ever-increasing span of coverage could be counterproductive to the entire body of progressive innovation and invention, and

Many doubted the prospects of success when the Parties to the CBD decided to negotiate an international regime to fulfil the Convention's goals,[34] especially with regard to ABS in GRs as well as the protection of the knowledge associated with GRs. The failed Climate Change Conference in Copenhagen[35] and stalled WTO and WIPO negotiations on the subject caused many to remain sceptical as to the possibility of any agreement being reached in Japan. The breakthrough in Nagoya therefore, represented more than a mere diplomatic exercise: it highlighted a commitment by 193 nations to take positive steps to protect biodiversity. By the same token, they committed themselves to the protection of the TK*a*GR through the fulfilment of the third objective of the CBD.[36] In many ways the Nagoya Protocol represents a victory for the biodiverse nations of the South, and more importantly, the ILCs who are holders of TK. It similarly offers an opportunity for countries of the South to maximise the commercial potential inherent in their TK of their biodiversity for their socio-economic and sustainable development.

ultimately on the public domain.' See Ullrich H (note 13 above) 29 – 30. A solution often proffered in this regard by 'sympathetic' antagonists of TK protection is the concept of the '*domaine public payant*. see Carneiro da Cunha M '*The Role of UNESCO in the Defence of Traditional Knowledge'* an online resource paper available at *http://www.folklife.si.edu/resources/unesco/dacunha.htm* (accessed on 16 February 2011). See also UNESCO, WIPO 'Committee of Non-Governmental Experts on the Domaine Public Payant; Analysis of Replies to the Survey of Existing Provisions for the Application of the System of 'Domaine Public Payant' in National Legislation' (UNESCO/WIPO/DPP/CE/I/2 (1982) Available at *http://unesdoc.unesco.org/images/0004/000480/048044EB.pdf* (accessed on 16 February 2011).

[34] The word 'Convention' is also employed in the course of this research to refer to the Convention on Biological Diversity (CBD).

[35] The United Nations Climate Change Conference, Copenhagen 2009, held between the 7 and 19 December 2009 and was hosted by the Government of Denmark. Significantly, the expectations surrounding the conference were high owing to the sensitivity of the issues in focus as well as the unprecedented participation by 120 heads of States and governments. It however failed to achieve its set out target and this resulted in the loss of confidence by many observers with regard to the will of global leaders to address the serious environmental issues facing the earth. See generally 'The United Nations Climate Change Conference in Copenhagen, 7-19 December 2009' available at *http://unfccc.int/meetings/cop_15/items/5257.php* (Accessed on 08 May 2011).

[36] See Article 1 of the CBD, available at *http://www.cbd.int/convention/text/* (Accessed last on 28th January 2011). Further see the preamble to the Nagoya Protocol. Annexe 1 of the COP 10 Decision X/1 at *http://www.cbd.int/decision/cop/?id=12267* (last visited on the 31st January 2010) . Benefit sharing may be best explained by the provisions as well as the stated objectives of the CBD. The third objective of the Convention on Biological Diversity provides for "*the fair and equitable sharing of the benefits arising out of the utilization of genetic resources…*" The Convention, in its article 15, sets out principles and obligations of Parties related to this objective, on the basis of prior informed consent and mutually agreed terms. The Convention establishes that a person or institution seeking access to the genetic material of a biological resource in a foreign country should seek the prior informed consent of the country in which the resource is located. Moreover, the person or institution must also negotiate and agree on the terms and conditions of access and use of this resource. This includes the sharing of benefits arising from the use of this resource, with relevant authorities in the provider country, in order to obtain permission to access the genetic resource and to use it. See CBD Access and Benefit Sharing (ABS) at *www.cbd.int/abs-factsheet-general-en.[1]pdf* (visited on 8 September 2010). The Nagoya Protocol is built on this objective.

The first step in accessing the gains of the Nagoya Protocol with respect to TK, is for individual Parties to the Protocol, to properly set out informed legislation governing the protection of TK associated with the exploitation of the biodiversity that falls within their territories.[37] This legislation should incorporate comprehensive domestic measures for the equitable sharing of benefits with host communities[38] as well as a clearly defined prior informed consent (PIC) strategy for accessing biodiversity and associated TK.

1.2 AIMS AND OBJECTIVES OF THE RESEARCH

This mini-thesis seeks to examine the protection of TK in the light of the framework offered by the Nagoya Protocol. It identifies the limitations, possibilities and prospects for the implementation of the Protocol in African countries through an examination of the country legislation of Ethiopia, Uganda and Kenya; also, the 'African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources' (AML) is examined. It aims to make input into the needed improvements required in domestic legislation, to effectively translate the gains of the Protocol into developmental realities in indigenous biodiversity rich communities of Africa.

1.3 PROBLEM STATEMENT

In the contest for the wealth that may be derived from the commercialization of nature's biodiversity, multinationals as well as research and academic institutions of the North are

[37] This is in line with the recognition of the rights of States over the biodiversity falling within their territories, including their rights to make laws governing same. See Par. 3 of the Preamble to the Nagoya Protocol, Par. 4 Preamble to the Convention on Biological Diversity. With regard to the need for adequate legislation by Parties to the Protocol, see for instance, articles 5, 6, 7 and 8 of the Nagoya Protocol which deal with Fair and Equitable Benefit Sharing, Access to Genetic Resources, Access to Traditional Knowledge Associated with Genetic Resources, and Special Legislative considerations respectively. Importantly from the highlighted Articles, the obligations of users of genetic resources, which are by no means limited to these Articles only, are only enforceable in accordance with the provisions of the domestic legislation and policy regulations of the providing countries. The onus is therefore on the biodiversity rich communities to set out informed legislation to govern the areas covered by the Protocol, in a bid to actualise the maximum gains of the Protocol. See Secretariat of the Convention on Biological Diversity *'Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity; Text and Annex* (2011) 1.

[38] Morgera E & Tsioumani E '*The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods'* Traditional Knowledge Bulletin (Topical Issues Series) United Nations University, Institute of Advanced Studies October 2010, where the authors identified two fundamental aspects of benefit sharing for the successful implementation of the objectives of the CBD *viz* the *inter-state* benefit sharing agreements and the *State-community* benefit sharing arrangements. Both are of utmost importance in protecting indigenous communities and must be taken care of through domestic legislation.

increasingly seeking access to the GRs embedded in the biodiversity of the South.[39] Such host communities have in exchange for tokens (in some instances nothing) offered leads through their TK for the commercial exploitation of their natural wealth by these profit making institutions and corporations. This has led to greater poverty among the poor ILCs with a corresponding wealth boost among the rich countries of the North. This exploitation is made possible by the combined effects of the weak internal legislative frameworks of these exploited regions as well as the ineffectiveness of the existing intergovernmental and multilateral agreements in place. Some of the questions that arise in the circumstances are; will an effective internal regulatory framework, coupled with a favourable multilateral one, provide biodiversity rich countries (and their ILCs) with equitable economic and sustainable developmental benefits that correspond with those of manufacturers and researchers? Will these efforts culminate in global technological advancement and institutionalised TK systems, optimum and sustainable environmental (including biodiversity) use, and increased consumer variety choice and satisfaction?

Against this backdrop and in the light of the recent adoption of the Nagoya Protocol, this research seeks to specifically answer the following question;

> *Can the recent adoption of the Nagoya Protocol be viewed as an appropriate multilateral solution to the exploitation of the traditional knowledge of host local and indigenous communities in biodiverse regions of Africa, and to what extent can domestic legislation help in achieving the Protocol's objectives?*

1.4. SIGNIFICANCE OF THE RESEARCH

i. This research draws its significance from the increasing global fears of inadequate protection for indigenous communities and their knowledge.[40] Many biodiverse countries in Africa still retain weak laws on access to GRs and sharing of benefits, as well as protection of the TK*a*GR. An effective multilateral protocol in place may therefore in itself not be sufficient to guarantee ILCs the developmental benefits of sharing agreements. The

[39] Host Traditional Communities refer to the communities which could be said to be the actual owners of the exploited traditional knowledge and who actually play host to the biodiversity, the subject of the exploitation. It is often argued that even where appropriate benefit sharing agreements are reached, many Host Traditional Communities still are unable to access the proceeds of the compensation as the governments of several nations of the South fail to develop internal benefit sharing policies to address such eventualities. Host Traditional Communities it should be pointed out are the most affected in cases of exploitation.

[40] See generally Burrows B. "(ed)" *The Catch: Perspectives in Benefit Sharing*. The Edmonds Institute, Washington (2005).

governments of biodiverse countries bear a huge responsibility to formulate comprehensive legislation on access and sharing of benefits as well as protection of TK.

ii. The next Conference of the Parties to the Nagoya Protocol (COP), scheduled to hold in 2012 in India,[41] may be crucial to attaining the Protocol's objectives. In preparation for the COP, the 'Open-ended Ad Hoc Intergovernmental Committee for the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity' (The Nagoya Intergovernmental Committee) has been set up to address the capacity needs of developing countries.[42] It is hoped that this research's findings will contribute to the submissions of Africa's developing countries at such preliminary implementation discussions of the Nagoya Intergovernmental Committee scheduled for June 2011 and April 2012.

iii. The protracted WTO and the WIPO and other multilateral agency negotiations on benefit sharing and TK protection, have led to increased calls for global coherence among the various organisations.[43] It is hoped that the recommendations arising from this research will contribute to the search for greater multilateral coherence.

iv. It is hoped that the research will contribute to the call for ensuring that the biodiverse countries obtain a fair share of the growing contribution of TK to the global market. Various reports from the United Nations Conference on Trade and Development (UNCTAD) and the General Agreement on Trade and Tariffs (GATT),[44] as far back as 1991, indicated that a large percentage of drug products in the highly industrialized countries were derived directly

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41 See COP 10 Decision X/46 at *http://www.cbd.int/decision/cop/?id=12312* (accessed on 31st January, 2011).

42 See COP 10 Decision X/1(7), (10), (17) and Annexe II at *http://www.cbd.int/decision/cop/?id=12312* (accessed on 31st January, 2011).

43 Paragraph 20 of the preamble to the Nagoya Protocol provides that parties to the Protocol recognize; '...that international instruments related to access and benefit-sharing should be mutually supportive with a view to achieving the objectives of the Convention.' See also Article 4 of the Nagoya Protocol which provides for the relationship of the Protocol with other multilateral instruments. Efforts at the WTO have also progressed significantly in seeking a harmony between the TRIPS and the CBD. See the World Trade Organisation Council for Trade-Related Aspects of Intellectual Property Rights '*Review of Provisions of Article 27.3(b): Summary of Issues Raised and Points Made*. IP/C/W/369/Rev.1 (9 March 2006). There is an increased recognition that efforts at the multilateral level require an increasing coordination and coherence for the gains of individual instruments to be achieved.

44 The General Agreement on Tariffs and Trade (GATT) 1947 was originally merely an agreement in its years of operation, but it began to function like an international organisation, with a secretariat and staff to administer its provisions among contracting parties. It also released reports, an example of which is being alluded to here.

from higher tropical plants, most of which grow in equatorial countries.[45] The global market for plant based drugs is growing every year.[46] In 1990, an attempt to establish the contribution of TK to modern industry and agriculture, found that the estimated market value of plant-based medicines sold in Organisation for Economic Co-operation and Development (OECD) countries[47] was US$ 61 billion.[48] More recent reports indicate a world drug market estimated at more than US$320 billion dollars a year, with approximately 40 percent of the medicines originating directly or indirectly from natural sources.[49] It is further estimated that 85 percent of the world population rely on plants for the cure of their diseases.[50] Today, many pharmaceutical companies are likely to have used TK leads in their product development,[51] while very few indigenous communities can lay claim to a substantial portion of benefits accruing from the exploitation of their TK and biodiversity.

In conclusion, it is hoped that the research into the protection of TK in African communities will have a bearing on the actualisation of developmental needs of those biodiverse societies.

1.5 METHODOLOGY OF THE RESEARCH

The aims of this research have been fulfilled by:

i. A detailed theoretical and library-based review of the history, nature and significance of the Nagoya Protocol,[52] using relevant literature and jurisprudence from international and national sources.

ii. Analysis of relevant international and regional benefit sharing laws: assessing their relevance and adequacy, and their interplay with relevant national laws, policies and practices

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45 Addae-Mensah I 'Plant Biodiversity, Herbal medicine, Intellectual Property Rights and Industrially Developing Countries: Socio-Economic, Ethical and Legal Implications." (1991) at *http://www.crvp.org/book/Series02/II-5/chapter_vii.htm* (Accessed on 28 September 2010).

46 Addae-Mensah I (note 45 above).

47 The mission of the OECD is to promote policies that will improve the economic and social well-being of people around the world. It is a forum of countries committed to democracy and the market economy, providing a setting to compare policy experiences, seeking answers to common problems, identifying good practices, and co-ordinating domestic and international policies of its members. Most OECD members are high income economies with a high Human Development Index and are regarded as developed countries. See generally 'About the Organisation for Economic Co-operation and Development (OECD)' Available at *http://www.oecd.org/pages/0,3417,en_36734052_36734103_1_1_1_1_1,00.html* (accessed on 8 May 2011).

48 Dutfield G. *Legal and Economic Aspects of TK* (note 15 above).

49 Fontes Faria, H. 'Biodiversity Experiences with Access and Benefit Sharing' Paper presented at the Second Regional Workshop of the UNCTAD Project on Strengthening Research and Policy-Making Capacity on Trade and Environment in developing Countries, Havana Cuba, 2000.

50 Fontes Faria, H. (note 49 above).

51 Dutfield G *Legal and Economic Aspects of TK* (note 15 above).

52 See Chapter 3 below.

with regard to the protection of TK in Africa. The African Model Law enjoys priority consideration, and the law and practice of the protection of TK*a*GR in Ethiopia, Uganda and Kenya are also examined.[53]

iii. Identification of the limitations and problems in protecting TK through benefit sharing agreements, and making proposals for establishing a more effective and efficient regime for the protection of biodiversity and TK, within and across African countries' borders.[54]

1.6 CHAPTER OUTLINE

This thesis is comprised of five chapters.

Chapter one has introduced the mini-thesis.

Chapter two contextualises the concepts which are central to this thesis, in depth.

Chapter three traces the history of the global negotiations on benefit sharing and protection of TK, identifying the steps leading to the Nagoya Protocol and critically examines the Nagoya Protocol's framework for the protection of TK.

Chapter four analyses aspects of the African Model Law and the national legislation of Ethiopia, Uganda and Kenya dealing with the protection of TK and sharing of benefits associated with biodiversity.

Chapter five draws conclusions and makes a series of recommendations based on the research findings.

[53] See Chapter 4 below.
[54] See Chapter 5 below.

2.0 CHAPTER TWO:

The Protection of Traditional Knowledge: Some Major Concepts and Considerations

2.1 INTRODUCTION

Chapter one has attempted to lay out a general framework for and situate this mini-thesis within the global discussions on the subject.

This chapter, which consists of three major parts, examines some of the definitional questions surrounding the major terms and concepts central to an understanding of the context of this mini-thesis. It also examines the nature and concept of traditional knowledge (TK), and looks at the current protection offered to the TK of indigenous and local communities (ILCs) both regionally (within Africa) and globally.

Part one examines the preliminary concepts. Part two conducts an inquiry into the nature of TK (particularly its biodiversity-related characteristics) as well as the arguments for and against its (TK's) protection. Part three outlines the current global and regional protection of TK within and under various international instruments.

2.1.0 PART ONE

In the discussion on TK protection, the concepts of biopiracy, prior informed consent (PIC) biodiversity, and access and benefit sharing (ABS) recur. Biopiracy is often viewed as the major challenge faced by biodiverse developing countries, PIC is seen as a crucial element for any lasting solution to this problem, biodiversity is viewed as an integral part of the TK of the ILCs, and ABS is argued to be a solution which benefits all. The precise degree of ABS between the TK providers and the TK users has remained at the heart of ongoing debates. These concepts are discussed below for two major reasons: first, the focus of this mini-thesis being on traditional knowledge associated with genetic resources (TK*a*GR), these concepts are crucial in the ongoing debate within this field; second, the extended meanings many of these concepts bear necessitate a contextualisation of the definitions.

2.1.1 BIOPIRACY AND BIOPROSPECTING

Biopiracy has been defined as the misappropriation of biodiversity related aspects of the TK of ILCs for the purpose of seeking exclusive patent ownership over the knowledge.[55] This is the main way in which corporations from the developed world exploit the genetic resources (GRs) and TK of developing countries.[56] 'Biopirates' are therefore individuals or companies accused of one or both of the following acts; (a) misappropriation of GRs or TK through the patent system; or (b) unauthorised collection of GRS or TK for commercial ends.[57]

The term biopiracy reflects a perceived injustice in the use of GRs and TK in sectors like food and medicines, as well as the resulting harm done to the interests of developing nations and host communities.[58] Not only are their material interests affected, but also their spiritual

[55] See Garcia J 'Fighting Biopiracy: The Legislative Protection of Traditional Knowledge' (2007) 18 *Berkeley La Raza L. J*. 9 -10. The author identifies (i) bioprospecting, (ii) the discovery of unknown properties in known plants and organisms, and (iii) the exploitation of TK as three forms in which biopiracy manifests, in ascending order.

[56] See Dutfield G 'Protecting the Rights of Indigenous Peoples: Can Prior Informed Consent Help?' in Wynberg R, Schroeder D and Chennells R (eds) *Indigenous Peoples, Consent and Benefit Sharing: Lessons from the San-Hoodia Case* (2009) 56.

[57] See Dutfield G (note 56 above) 57. He further explains that the existing difficulty in the delineation of the concept of biopiracy is closely tied to the concept falling within both the spheres of law and morality, as well as the difficulty in determining unfair exploitation as against legitimate exploitation.

[58] Srinivas K 'Traditional Knowledge and Intellectual Property Rights: A Note on Issues, Some Solutions and Some Suggestions' (2008) 3 *Asian Journal of WTO and International Health Law and Policy* 90.

and non-commercial values.[59] The Edmonds Institute and McGown[60] agreed on the following in attempting a working definition of biopiracy;

> 'Where there is access to or acquisition of biodiversity (and/or related TK) without PIC, including PIC about benefit sharing, on the part(s) of those whose biodiversity (or TK) has been 'accessed' or 'acquired', there is biopiracy -- i.e., theft.'[61]

Two hypothetical cases of biopiracy are considered to further illustrate this definition;

> *MegaPharmCorp* in collaboration with the University of the North, seek a new treatment for sickle cell anaemia. They send researchers to a remote rain forest where the inhabitants suffer an unusually low incidence of the disease. After many interviews with local residents, they identify an enzyme in a variety of squash cultivated by them which seems responsible for the low rate of the condition. The researchers return home, isolate the gene that codes for the enzyme and mass produce a successful and valuable patented drug. The company never compensates any of the local residents.
>
> *MegaAgriCorp* is developing a smut-resistant strain of corn and sends researchers around the world to identify varieties of plants worth studying. In the highlands of Congo, they interview farmers who for hundreds of years have maintained a strain with significant smut-resistant characteristics. The researchers acquire several of the plants and embark on a successful cross-breeding program when they return home. The information acquired during the interviews saves them thousands of research hours. They do not share any of the profits earned from sales of their new patented hybrid seed with the Congolese farmers.[62]

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59 Srinivas K (note 58 above) 89. Carvalho has suggested the use of the term *biosquatting* as against biopiracy due to the observable contribution of inadequate domestic legislation to allegations of TK theft in ILCs. See Carvalho N 'From the Shaman's Hut to the Patent Office: A road under Construction' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and TK* (2007) 246. Carvalho's view is that, biopiracy generally relates to the unwarranted private claiming of TK that could be deemed in the public domain as well as the unauthorised claiming of TK that is in control of indigenous peoples and local communities. With a view to embracing further accuracy in the concept, he reckons that the acts often complained of are not actually always illegal *per se*. Rather, many of the acts benefit from loopholes in the provider laws. He therefore calls for a term which relates more to the principle of good faith and identifies the term 'squatting' - which means 'settling on public land in order to acquire title to the land', or 'entering upon lands, not claiming in good faith the right to do so...' – as a more accurate description of the misappropriation of biological wealth of indigenous communities which in some cases though not illegal, may be deemed unfair. Just as *cybersquatting*, indicates the misappropriation of third parties' brands and names over the internet, Carvalho suggests the use of *biosquatting* for illegitimate practices relating to GRs and TK. (270-271).

60 The Edmonds Institute and the African Centre for Biosafety commissioned Jay McGown, reputed to be one of the world's leading biopirate hunters and researchers, to conduct research on the incidence of biopiracy in Africa. See the full report in Burrows B (ed) 'Out of Africa: Mysteries of Access and Benefit Sharing' A Report by Jay McGown (2006). Available at *http://www.edmonds-institute.org/outofafrica.pdf* (Accessed on 22 April 2011).

61 See Burrows B (ed) (note 60 above).

62 These two examples were slightly modified and have simply been adapted for use here. The originals are found in Heald P 'The Rhetoric of Biopiracy' (2003) 11 *Cardozo J. Int'l & Comp. L.* 520-521.

These examples reflect some of the major challenges faced by ILCs. These hypothetical cases reflect the reality of many allegations of biopiracy all over the world, particularly in Africa. Some common examples of biopiracy allegations recorded in Africa[63], include Bayer's patent application in 1995 for the manufacture of Glucobay, a drug that treats type II diabetes, based on a bacteria strain originating from Lake Ruiru in Kenya;[64] Merck's 1996 patent on an anti-fungal identified in the Namibian giraffe dung;[65] 'Biotech's' 1999 patent on seeds from the ginger family that Congolese traditional healers have been using for ages to treat impotence;[66] the marketing rights to the *hoodia gordonii*, which was sold to the UK based Phytopharm, and later on to drug maker Pfizer, to develop a weight-loss product based on the knowledge of the San who have used the plant as an appetite suppressant in the Kalahari desert in South Africa for generations.[67] These occurrences brought little or no benefits to the regions from which the TK and GRs were obtained.[68]

Bioprospecting is defined as the exploration of biodiversity for commercially valuable GRs and biochemicals,[69] or the process of searching for, and extracting potential compounds which have commercial value from biological resources (BRs).[70] ILCs play an important role in bioprospecting: their TK offers leads to prospective bioprospectors.[71] The initial contact bioprospecting makes, often forms the foundation for research carried out on GRs for the development of drugs, cosmetics and so forth. Bioprospecting, though often argued to be harmless, is under increasing pressure, to conform to the pre-requirements of PIC of ILCs; the providers of the knowledge and resources.

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63 They cut across the use of GRs and TK for medicines, cosmetics, and agricultural products. See Burrows B (ed) (note 60 above).

64 See Avril H 2010 'South Still Battling to Stop North's Biopiracy' at *http://ipsnews.net/news.asp?idnews=52743* (Accessed on 28 September 2010).

65 See Avril H 2010 (note 64 above).

66 See Avril H 2010 (note 64 above).

67 See Avril H 2010 (note 64 above). Notably, after years of campaigning, a deal was however struck according to which the San would receive royalties estimated at 0.003 percent of retail sales from the portion accruing to the South Africa Council for Scientific and Industrial Research (CSIR).

68 Other pertinent examples in which Africa has claimed a misappropriation of her TK and GRs include patents on *brazzeine*, a protein 500 times sweeter than sugar from a plant in Gabon; *teff*, the grain used in Ethiopia's flat 'injera' bread; *thaumatin*, a natural sweetener from a plant in West Africa; the *African soap berry* and the *kunde zulu cowpea*, genetic material from the West African cocoa plant. See 'Focus on Biopiracy in Africa', Science in Africa. Africa's First Online Science Magazine (September 2002). Available at *http://www.scienceinafrica.co.za/2002/september/biopiracy.htm* (accessed on 28 September 2010).

69 See Shiva V 'Bioprospecting as Sophisticated Biopiracy' in Burrows B (ed) *Perspectives in Benefit Sharing* (2004) 15.

70 Reji J 'International Regime on Access and Benefit Sharing: Where Are We Now? (2010) 12 *Asian Biotechnology and Development Review* No.3 77.

71 See Reji J (note 70 above) 77.

2.1.2 PRIOR INFORMED CONSENT

'Informed consent', whose origins lie in medical practice,[72] is based upon the common law principle that any party entering into an agreement with legal consequences must be capable of understanding the implications of the transaction.[73] Informed consent has three basic implications in relation to TK: the TK providers must have been given all the information relevant to the activity for which the consent is sought, in their native language; the TK holders must understand and agree in writing to the carrying out of the activity for which the consent is sought; the TK holders must understand that they have a right to revoke their consent.[74]

The expression 'PIC' arrived with the CBD,[75] Article 15(5) stating that 'access to genetic resources shall be subject to prior informed consent of the contracting party providing such resources, unless otherwise determined by that party.' The Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation (Bonn Guidelines),[76] as well as the Nagoya Protocol,[77] elaborate on this provision. PIC has been defined as;

> '...consent to an activity that is given after receiving full disclosure regarding the reasons for the activity, the specific procedures the activity would entail, the potential risks involved, and the full implications that can realistically be foreseen. Prior informed consent implies the right to stop the activity from proceeding and for it to be halted if it is already underway...'[78]

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[72] See Dutfield G (note 56 above) 57. This view is further supported by Rosenthal J where he points out that 'Historically, PIC has been used to ensure that medical research subjects understand the risks of potential harm they may be exposed to in participating in a clinical research project...' See Rosenthal J 'Politics, Culture and Governance in the Development of Prior Informed Consent and Negotiated Agreements with Indigenous Communities' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 375.

[73] See Lewis W and Ramani V 'Ethics and Practice in Ethnobiology: Analysis of the International Cooperative Biodiversity Group Project in Peru' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 420.

[74] This is as provided for in the explanatory note to the National Innovation Foundation, Ahmedabad. See Gupta A 'The Conundrum of Creativity, Compensation and Conservation in India: How Intellectual Property Rights Help Grass-Root Innovators and Traditional Knowledge Holders? In McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 346.

[75] The 'informed consent' principle had however earlier found its way into international environmental law through the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal: Dutfield G (note 56 above) 57.

[76] The overall PIC strategy of the CBD is set out in IV.24 – IV.40 of the Bonn Guidelines.

[77] See Articles 6 and 7 of the Nagoya Protocol, which mandate the principles of PIC to form the foundation of access to GRs and TK*a*GRs respectively.

[78] Dutfield G (note 56 above) 60 argues that both the extraction of biogenetic material from lands occupied by traditional communities as well as the acquisition of knowledge from a person or people must be preceded by PIC and that requests for consent of the following should be accompanied by full disclosure in writing in the local language.'

PIC is a golden thread running through attempts to protect indigenous peoples from exploitation, and curb biopiracy. It implies that in all situations where an indigenous people or a local community is involved in a TK related transaction,[79] there must be a full consultation and complete exchange of information, leading to a full and explicit consent *prior* to any appropriation of information.[80] PIC consequently seeks to empower provider countries and communities in determining activities associated with their biodiversity and knowledge.[81]

Closely linked to PIC, is 'mutually agreed terms' (MAT). The CBD provides that access to GRs shall be subject to the principles of PIC, and that where such consent is granted, access shall be on MATs.[82] MATs are agreements reached between the providers of GRs (and/or TK) and users, on the conditions of access to and use of the resources (and knowledge), and the benefits to be shared between both parties.[83] MATs are distinguished from PIC on the basis that they are negotiated at every single step of the appropriation process, and do not require prior consent, but rather, consensus within a reasonable time.[84]

[79] It must be noted though that such consent is not limited to TK but also involves GRs. See Lewis W & Ramani V (note 73 above) 419.

[80] See Lewis W and Ramani V (note 73 above) 419.

[81] The Bonn Guidelines outlines an overall strategy on PIC, setting out the basic principles. They were adopted by Decision VI/24 of the Conference of the Parties in Hague 2002. The Guidelines are intended to assist parties in developing an access and benefit sharing strategy, and action plan, and in identifying the steps involved in the process of obtaining access to GRs and sharing of benefits. See Ullrich H 'Traditional Knowledge, Biodiversity, Benefit-Sharing and the Patent System' (2005) EUI Working Paper LAW No. 2005/07 16. The Bonn Guidelines set out that the basic principles of a PIC system include; Legal certainty and clarity: access to GRs should be facilitated at minimum cost; Restrictions on access to GRs should be transparent, based on legal grounds and not run counter to the objectives of the CBD; Consent of the relevant competent national authority (ies) in the provider country (see IV.26 of the Bonn Guidelines). It also sets out the following elements of the system, which according to IV.27 of the Bonn Guidelines, may include: competent authority (ies) granting or providing for evidence of PIC; timing and deadlines; specification of use; procedures for obtaining PIC; mechanism for consultation of relevant stakeholders; and process.

[82] See Article 15(4) of the CBD (1992).

[83] See CBD: ABS *Introduction to Access and Benefit Sharing* 3 Available at *http://www.cbd.int/abs/infokit/all-files-en.pdf* (accessed on 15 April 2011). See also Article 15(7) of the CBD (1992). MATs are negotiated with respect to various uses of the GRs including taxonomy, collection, research and commercialisation. See IV.42(d) and (e) of the Bonn Guidelines.

[84] See IV.41 – IV.43 of the Bonn Guidelines for the basic requirements for MATs. Significantly, IV.42(f) of the Bonn Guidelines, while establishing the basic principles and requirements for the development of MATs simply provides with respect to the timing that 'mutually agreed terms should be negotiated efficiently and within a reasonable period of time'.

2.1.3 BIODIVERSITY AND GENETIC RESOURCES

Biodiversity is a contracted form of biological diversity.[85] Etymologically, 'bio' denotes life, while 'diversity' denotes variety.[86] Biodiversity, therefore, describes the vast variety of species of life on earth.[87] It is a controversial term in the realm of conservation of natural or GRs.[88] The CBD defines it as the

> '...variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.[89]

Technically, it encompasses all species of plants, animals and micro-organisms and the variations between them,[90] and the ecosystems of which they form a part.[91] It (biodiversity) occurs at three levels[92] *viz*; the genetic level,[93] the species level,[94] and the ecosystem level.[95]

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[85] The contracted form of biological diversity – biodiversity – was first coined by Rosen W in 1985 while planning the 1986 Forum on Biological Diversity organised by the National Research Council. It was however first published in 1988 as the title of a book reflecting the Forum's proceedings, by entomologist E Wilson. See World Wide Fund for Nature (WWF) 'What is Biodiversity' available at *http://wwf.panda.org/about_our_earth/biodiversity/what_is_biodiversity/* (accessed on 10 March 2011). The forum's follow up book - Wilson E (ed) BioDiversity (1986) - paved the way for the common acceptance and wide usage of the contracted word and concept.

[86] Breazeale V 'Introduction: A Perspective on Sustainable Pathways toward Preservation of Biodiversity' (2010) 10 Issue 3 *Sustainable Development Law and Policy* 2.

[87] Breazeale V (note 86 above) 2.

[88] Allem A 'The Terms Genetic Resource, Biological Resource, and Biodiversity Examined' (2000) 20 *The Environmentalist* 338. This is the due to the difficulty in identifying a precise scope for the definition of the concept, coupled with the resultant multiplicity of definitions of the concept. It has been subjected to varying definitions based on interests of those by whom it is being defined.

[89] See Article 2, CBD. Other definitions that have been provided include biodiversity as the '...variety and variability of living organisms and the ecological complexes in which they occur' (WWF 1995), or '...the number and variety of living organisms on the planet...defined in terms of genes, species and ecosystems.' (UNEP 1996). See Allem A (note 88 above) 338.

[90] The definition as used under the CBD, the Bonn Guidelines as well as the Nagoya Protocol however specifically excludes human genetic variations.

[91] Ecosystems are where species live. The health, size, and nature of intact ecosystems directly affect their biodiversity. See Breazeale V (note 86 above) 2.

[92] See World Trade Organisation Protection of Biodiversity and TK: The Indian Experience WT/CTE/W/156: IP/C/W/198 (14 July 2000) (WTO Protection of Biodiversity and TK: The Indian Experience (2000)) being the submission by the Government of India to the Committee on Trade and Environment, and Council for Trade Related Aspects of Intellectual Property Rights par 1 available at *http://www.twnside.org.sg/title/cteindia.htm* (accessed on 27 February 2011).

[93] Genetic diversity describes genetic variations existing within a population of species. See WTO: the Indian experience (note 92 above). Scientific research in the form of biotechnology has enabled researchers to develop genetic combinations through transgenic efforts to assist farmers in combating crop diseases, increase productivity, enhance taste and look of crops, promote longevity of crops and even grow crops outside their naturally occurring climatic regions. See Singh R, Chand D and Tyagi V 'Introduction of Transgenic Plants – Procedures' National Bureau of Plant Genetic Resources, New Delhi. Available at *http://www.moef.nic.in/divisions/csurv/biosafety/Gef2/T5/20%20Dr.%20R%20V%20Singh_Introduction%20of%20transgenic%20plant_procedures.pdf* (accessed on 12 March 2011).

[94] Species diversity refers generally to the number and kinds of living organisms within a population, community or ecosystem. See WTO: The Indian Experience (note 92 above).

Recent research though has added a fourth; molecular diversity.[96] These levels are otherwise referred to as the *components* of biodiversity. Biodiversity is measured in terms of biomes, ecosystems, species and genetic variety.[97]

GRs, which fall under the general umbrella of 'biological resources,' (BRs)[98] are defined as genetic material[99] of actual or potential value.[100] They are living components of plant, animal or microorganism species that possess functional units of heredity. There is no simple way to place a finite price on the value of GRs or the TK associated with its use; neither can the potential benefits that may possibly arise from access to a country's GRs be accurately determined.[101] Access to, and the gains from the exploitation of, these GRs embedded in the biodiversity of communities and its associated knowledge, lies at the heart of the concept of access and benefit sharing (ABS).[102] GRs are often mentioned in the analysis of biodiversity

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95 The ecosystem level broadly encapsulates the variety of habitats, biological communities and ecological processes that occur in such habitats. It involves the variety of forests, deserts, grasslands, aquatic ecosystems etc. occurring within an area. See WTO: The Indian Experience (note 92 above) as well as Allem A (note 88 above) 335.

96 These were the results of a research concluded in 2003 by Professor Anthony Campbell of the Cardiff University UK and the Darwin Centre Pembrokeshire. He went on to identify a fourth level of biodiversity; the molecular diversity which he describes as the richness of molecules found in life. See Campbell A 'Save those Molecules! Molecular Biodiversity and Life' (2003) 40 *Journal of Applied Ecology* 194.

97 See Biodiversity Support Programme 'African Biodiversity: Foundation for the Future - A Framework for Integrating Biodiversity Conservation and Sustainable Development' (1993) 10 available at *www.worldwildlife.org/bsp/publications/africa/issues_3/afbiodiv.pdf* (accessed on 22 April 2011).

98 See Article 2 of the CBD. It defines biological resources as including GRs, organisms or parts thereof, populations or any other biotic component of ecosystems with actual or potential use or value for humanity.

99 Genetic material is defined by the CBD to mean any material of plant, animal, microbial or other origin containing functional units of heredity. See Article 2, CBD.

100 See Article 2 CBD. Furthermore, Par 1 of the preamble to the CBD recognises biodiversity as possessing high intrinsic value and identifies the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic value of its components (including GRs). See par. 1 Preamble to the CBD.

101 See UNEP Background paper on Capacity Building for Access and Benefit Sharing of Genetic Resources for the International Workshop on Access to Genetic Resources, TK and Intellectual Property, for the Group of Likeminded Megabiodiversity Countries at Urubamba Valley, Cusco, Peru on 27 – 29 Nov. 2002. Available at *http://www.pnuma.org/deramb/Background%20paper%20on%20capacity%20building%20for%20access%20and%20benefit%20sharing%20of%20genetic%20resources.pdf* (accessed on 10 March 2011).

102 As the CBD points out, '[t]here are significant potential benefits to be gained by accessing GRs and making use of them. They provide a crucial source of information to better understand the natural world and can be used to develop a wide range of products and services for human benefit...our current understanding of GRs owes a great deal to the traditional knowledge of indigenous and local communities. This valuable knowledge has been built up and handed down over generations. It is essential that the value of traditional knowledge is understood and valued appropriately by those who use it, and that the rights of indigenous and local communities (ILCs) are considered during negotiations over access and use of genetic resources. Failing to do this can put the knowledge, the resources and the communities at risk.' See the CBD: ABS *Introduction to Access and Benefit Sharing* 2 Available at *http://www.cbd.int/abs/infokit/all-files-en.pdf* (accessed on 15 April 2011).

as they remain the major source of potential wealth for biodiversity rich communities, and manufacturing organisations.[103]

It is worth mentioning that there is an uneven distribution of the world's biological diversity,[104] with a major concentration in the South. The location of biodiversity has been attributed to factors such as climate, altitude, soils as well as the presence of other species within the ecosystem. Biodiversity increases as one moves towards the equator and decreases as one moves towards the poles.[105] Most industrialized countries are located in biodiversity-poor regions in the North, whilst most developing countries are found in biodiversity-rich regions within the tropics. This characteristic distribution of developed and developing nations has led to the general use of the terms North and South in describing these groups of nations.[106] The concentration of biodiversity in poor countries of the South makes this research sensitive. Of utmost importance here is the fact that biodiversity has been on a steady decline, a decline that has been attributed to human activities principally.[107]

This research focuses on biodiversity to the extent that the protection of TK under the Nagoya Protocol promotes the livelihood and cultural integrity of biodiversity rich communities. The emphasis is, therefore, not on the conservation of biodiversity *stricto sensu*, but rather on the protection of TK related to biodiversity and its role in the conservation of that biodiversity.[108]

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[103] Biodiversity is often viewed by the local communities as possessing intrinsic value as well as high use value, while commercial interests view it as possessing no value in itself. They see it merely as forming a raw material for the production of commodities and profit maximisation. It is through these final products that the value of biodiversity is determined. See Shiva V 'Protecting our Biological and Intellectual Heritage in the Age of Biopiracy' (1996) *New Delhi: Research Foundation for Science, Technology and Natural Resource Policy* 1-30.

[104] Mudiwa M 'Global Commons: The Case of Indigenous Knowledge, Intellectual Property Rights and Biodiversity' available at *http://www.ibcperu.org/doc/isis/5281.pdf* (accessed on 26 February 2011) iv.

[105] Mudiwa M (note 104 above) iv.

[106] Mudiwa M (note 104 above) iv.

[107] Breazeale V (note 86 above) 2, argues that the major human threats to biodiversity are: invasive species that out-compete and cause extinction of native species; climate change due to increased carbon dioxide in the atmosphere; results of industrialization; habitat change or destruction; over exploitation of ecosystems; and nutrient loading and pollution from nitrogen and phosphorus fertilizers. The IUCN states: 'Loss of biodiversity – the variety of animals, plants, their habitats and their genes – on which so much of life depends, is one of the world's most pressing crises. It is estimated that the current species extinction rate is between 1000 and 10, 000 times higher than it would naturally be. The main drivers for this loss are converting natural areas to farming and urban development, introducing invasive alien species, polluting or over exploiting resources including water and soils and harvesting wild plants and animals at unsustainable levels.' See IUCN 'About the Biodiversity Crisis' available at *http://www.iucn.org/what/tpas/biodiversity/* (accessed on 1 April 2011).

[108] The protection of TK has been identified as key to the conservation of and sustainable use of biodiversity, the eradication of poverty as well as the overall sustenance of the environment. See par. 7 of the Preamble to

2.1.4 ACCESS AND BENEFIT SHARING (ABS)

The fair and equitable sharing of benefits arising from this access,[109] is another core CBD[110] and Nagoya Protocol[111] concept; the issue of access to GRs and the associated TK, and the distribution of benefits arising from such access, has often been broadly termed the ABS regime. It highlights two crucial opposing primary interests of the countries of the North and the South. While the countries of the North are more interested in securing freer access to GRs in the countries of the South,[112] the developing biodiverse countries of the South are more interested in establishing a framework for the sharing of benefits arising from the commercialisation of GRs and TK accessed from within their territories. Both access and benefit sharing are indispensable to attaining the objectives of the CBD and promoting economic development both for providers and users of GRs and TK. Benefit sharing is the action of giving a portion of advantages or profits derived from the use of GRs or TK to resource providers.[113] The African Model Law (AML) defines it as the sharing of whatever accrues from the use of BRs, community knowledge (CK), technologies, innovations or practices.[114]

Benefit sharing has grown in prominence as well as controversy[115] since the adoption of the CBD which excludes human GRs.[116] Benefits fall in one of three categories; public, long

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the Nagoya Protocol. See also Harrop S 'Living in Harmony with Nature'? Outcomes of the 2010 Nagoya Conference of the Convention on Biological Diversity' (2011) 23 *Journal of Environmental Law* 117.

[109] In North – South talks and debates, it is often regarded to as the Access and Benefit Sharing Regime (ABS) and has gained increased prominence since the adoption of the CBD (owing largely to the sovereignty rights accorded countries for the first time over their genetic resources).

[110] The third objective of Article 1 of the CBD is: '...the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources...including by appropriate access to genetic resources and by appropriate transfer of relevant technologies...'

[111] See the preamble to the Nagoya Protocol where the Parties to the Protocol emphasised that the fair and equitable sharing of benefits arising from the utilisation of GRs is one of the three core objectives of the Convention, and further recognised that the Protocol pursues the implementation of this objective within the Convention. See Par 2 of the Preamble '*Nagoya Protocol; Text and Annex'* (2011).

[112] This is mostly with respect to the activities of transnational corporations (TNCs), research institutes, pharmaceutical corporations, academic outfits etc. in the manufacture and research of drugs, cosmetics, and agricultural products.

[113] See Schroeder D 'Benefit Sharing: It's Time for a Definition' (2007) 33 *Journal of Medical Ethics* 206.

[114] See Section 1 of the African Model Legislation for the protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources (AML).

[115] The general international community seems to be pushing for an institutionalisation of the concept as seen in the efforts of multilateral negotiations, as well as NGO's and several governments, however, some authors have totally expressed a lack of confidence in the concept; see generally for instance, Sharma D 'Selling Biodiversity: Benefit Sharing is a Dead Concept' in Burrows B (ed) *The Catch: Perspectives in Benefit Sharing* (2005) 1, Ribeiro S 'The Traps of 'Benefit Sharing' in Burrows B (ed) *The Catch: Perspectives in Benefit Sharing* (2005) 37. Yet others have for differing reasons queried the need of any benefit sharing regime at all. See generally 'Chen J 'There's No Such Thing as Biopiracy...And it's a Good Thing Too'

term and short term, each of which may be monetary or non-monetary,[117] and direct or indirect.[118] Benefit sharing may be justified on ethical lines,[119] but its justification is mainly drawn from the CBD.[120] The World Summit on Sustainable Development (WSSD) agreed that the destruction of biodiversity would continue unless the custodians of the natural wealth [ILCs] benefit from its conservation; this has made the sustenance of GRs central to the search for a lasting solution to the fair and equitable sharing of benefits arising from the use of GRs and TK*a*GRs.[121] The global impacts of protecting biodiversity, food security, ecosystem balance, and global health among others,[122] are regarded as justifying an adequate benefit sharing framework.

The present international regime on ABS, made up of the CBD, the Bonne guidelines and the Nagoya Protocol,[123] was negotiated due to arguments from megadiverse countries that the lack of clear international rules on access and benefit sharing would prompt them to restrict access to GRs for researchers, business and private investment.[124] Arriving at a fair, equitable and *enforceable* formula has however remained the bone of contention in North – South talks.[125]

(2006) 37 *McGeorge Law Review* 1. Ribeiro (above) quotes a sceptic Quechua activist, Alejandro Argumedo to the effect that;

> '*...benefit sharing is like waking up in the middle of the night to find your house being robbed. On the way to the door, the thieves tell you not to worry because they promise to give you a share of whatever profit they make selling what used to belong to you.'*

[116] See CBD COP 2 Decision II/11 (2). Available at *http://www.cbd.int/decision/cop/?id=7084* (Accessed on 8 May 2011).

[117] See Appendix II to the Bonn Guidelines (2002). See also Article 5.4 Nagoya Protocol (2011) and the Annex to the Protocol.

[118] See Miller J 'Impact of the Convention on Biological Diversity: The Lessons of Ten Years of Experience with Models for Equitable Sharing of Benefits' in McManis C *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 60.

[119] See Schroeder D (note 113 above) 206.

[120] See Article 15(1) CBD.

[121] See Schroeder D (note 113 above) 207.

[122] See Schroeder D (note 113 above) 207.

[123] Morgera E & Tsioumani E 'The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods' *Traditional Knowledge Bulletin* (Topical Issues Series) United Nations University, Institute of Advanced Studies October 2010 3, point out that benefit sharing is also relevant in the context of other international instruments. Prompted by developments in the CBD, several other international instruments and processes have resorted to this concept particularly in the areas of intellectual property, health and climate change.

[124] See Kamau E, Fedder B & Winter G 'The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?' (2010) 6/3 *Law Environment and Development Journal* 249.

[125] Schroeder explains that the merits of the CBD with respect to benefit sharing have largely been undermined by its inability to offer a global mechanism for enforcement. The enforcement was left largely to individual states, a situation which has over the years proved unsatisfactory. Efforts at an indirect enforcement of obligations under the CBD have manifested in countries like India suggesting that a benefit-sharing checklist

2.1.5 CONCLUSION

Research on the protection of TK must take into account the issues surrounding ILCs. Their basic way of life, and what are sometimes termed 'crude methods' of interaction with their environments have resulted in traditional innovations and ideas. Most ILCs are located in biodiversity rich regions and their established ways of interaction with their environments, biodiversity and her components (including GRs) form an inseparable part of the lives of ILCs. The need to protect biodiversity from continued decline is, therefore, an indirect need to protect TK, as a result of their identified interconnectedness and inseparability. Indeed, the legislation of some countries refer to GRs as the 'tangible aspect of TK'.

In a world in which national and multilateral instruments are increasingly protecting the IP rights of knowledge holders, concerns have arisen as to the protection of the traditional lifestyles and innovations of ILCs. The South has been unable to effectively match the level of protection offered IP rights in the North, which has resulted in the South being accused of piracy by manufacturers from the North.

The South has responded to the North's allegations of piracy with the concepts of bioprospecting and biopiracy, because manufacturers have failed to acknowledge or compensate these ILCs with a share of the profits gained through the commercialisation of the products linked to the leads obtained from ILCs, as well as the resources and innovations accessed from these ILCs. There is a tussle within the ABS regime, between the countries of the North demanding increased access to TK*a*GRs and GRs, and those of the South demanding greater certainty and enforceability of a share of benefits.

PIC, one of the main mechanisms developed to address the protection of TK, aims to give ILCs and knowledge holders an informed say in determining initial and continued access to their TK and GRs. PIC also assists ILCs develop informed MATs with respect to all the phases of the access to TK and sharing of benefits.

The concepts discussed form the basis of the inquiry into the nature of TK which follows.

be included in the TRIPs Agreement to bridge the gap between the two agreements. This has been strongly opposed by industrialised nations. See Schroeder D (note 113 above) 207.

2.2.0 PART TWO

'Indigenous peoples and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices...'[126]

The discussions in this section of this chapter seek to answer two primary questions: What is TK? Is it really necessary to protect TK?

2.2.1 TRADITIONAL KNOWLEDGE

The terms 'TK', 'indigenous knowledge', or even sometimes 'local knowledge' are often used interchangeably.[127] There is a subconscious assumption that a type of knowledge exists which is radically different from ordinary knowledge.[128] TK is often presented as antique, barbaric, static, inferior, crude and even sometimes, non-innovative.[129] These negative connotations have been refuted by many authors.[130] TK by its very nature has proven extremely difficult to define,[131] and retains hazy boundaries which leave its precise scope

[126] See Principle 22 Rio Declaration on Environment and Development. Available at *http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163* (accessed on 22 March 2011).

[127] See Dutfield G 'Promoting Local Innovation as a Development Strategy' Innovations Case Discussion: The Honey Bee Network (2006) Innovations 70. The author points out that the fact that the terms are sometimes used interchangeably does not imply that there are no differences in the strict definitions of the terms. Strictly speaking, Indigenous knowledge is a subset of TK and both form a part of heritage. See Quinn M 'Protection for Indigenous Knowledge: An International Law Analysis' (2002) 14 *St. Thomas L. Rev.* 287 292. See also WIPO 'Intellectual Property Needs and Expectations of TK Holders' (2001) WIPO Report on Fact-Finding Missions on Intellectual Property and TK (1998 – 1999) Available at *http://www.wipo.int/TK/en/TK/ffm/report/final/pdf/part1.pdf* (accessed on 17 September 2010), where expressions of folklore and indigenous knowledge are described as subsets of TK. In another analysis, it is argued that though all indigenous knowledge may be termed as being TK, not all TK qualifies to be termed indigenous knowledge. See Mugabe J, Kameri-Mbote P and Mutta D 'Traditional Knowledge, Genetic Resources and Intellectual Property Protection: Towards a New International Regime' (2001) *International Environmental Law Research Centre Working Paper 2001* - 5, a background paper prepared for the African Group in the WIPO's Committee on TK and Folklore, 2001. Available at *http://www.ielrc.org/content/w0105.pdf* (accessed on 15 March 2011).

[128] Dutfield G 'Why Traditional Knowledge is Important in Drug Discovery' (2010) *Future Science Ltd 10.4155/FMC.10.210.*

[129] Arewa O 'TRIPS and TK: Local Communities, Local Knowledge, and Global Intellectual Property Frameworks' (2006) 10 *Marq. Intell. Prop. L. Rev.* 164. See also Mudiwa M (note 104 above) xi.

[130] See Gervias D 'TK and Intellectual Property: A TRIPS Compatible Approach' (2005) *Michigan State Law Review* 140 where innovation is identified as a major quality of TK in stark contrast to widely held opinions to the contrary. In response however to claims particularly of antiquity and a static nature of TK with particular reference to the use of the term 'traditional', Russel Barsh like other authors who disagree with this position observes that; '...what is traditional about TK is not its antiquity but the way it is acquired and used. In other words, the social process of learning and sharing knowledge, which is unique to each indigenous culture, lies at the very heart of its 'traditionality.' Much of this knowledge is actually quite new...' See Dutfield G 'TRIPS-Related Aspects of TK' (2001) 33 *Case W. Res. J. Int'l L.* 242. See also Carvalho N (note 59 above) 243.

[131] See Srinivas K (note 58 above) 83.

unclearly delineated.[132] There is no universally accepted definition of TK;[133] this section attempts to examine a few definitions, before identifying its basic characteristics and finally adopting an operational definition for the research.[134]

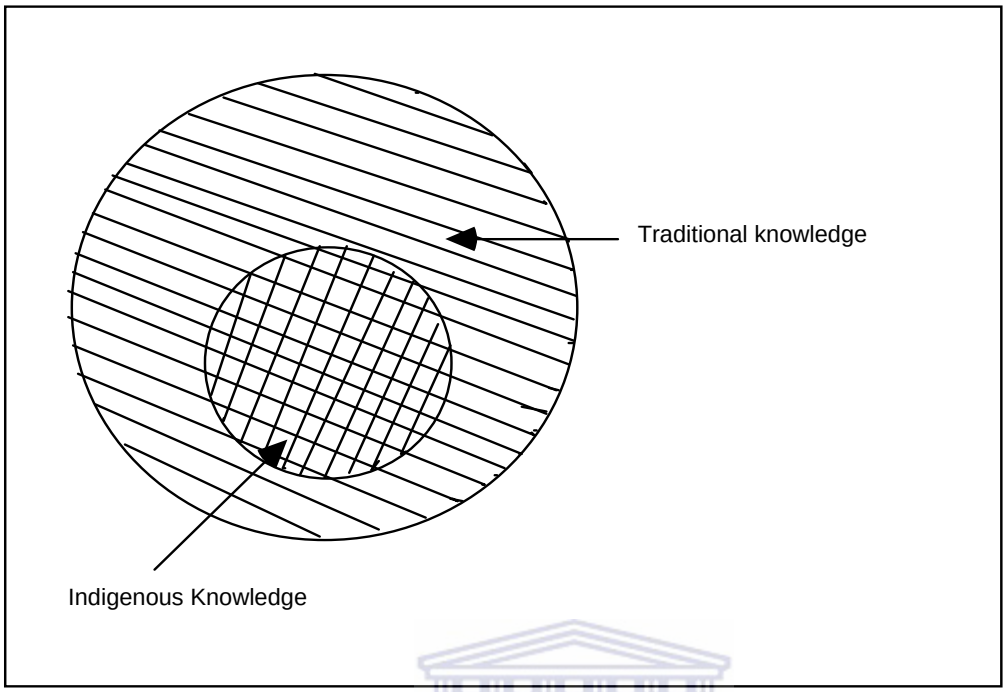
One definition is that TK is an 'understanding or skill which is typically possessed by indigenous peoples and whose existence typically predates colonial contact (typically with the West), that relates to medical remedies, plant and animal products, technologies and cultural expressions.'[135] Unlike Indigenous knowledge which is defined as

> 'that knowledge which is held by people who identify themselves as indigenous of a place based on a combination of cultural distinctiveness and prior territorial occupancy relative to a more recently arrived population with its own distinct and subsequently dominant culture',[136]

TK may be regarded as that 'knowledge which is held by members of a distinct culture and/or sometimes acquired by means of inquiry peculiar to that culture and concerning the culture itself or the local environment in which it exists'.[137] The distinctions indicate that indigenous knowledge is necessarily TK, even though TK is not necessarily indigenous.[138] This is represented in Figure 1 shown below.

[132] See generally Ullrich H (note 81 above).
[133] According to the WIPO this is due to the 'highly diverse and dynamic nature of TK.' See WIPO 'Intellectual Property Needs and Expectations of TK Holders' (note 127 above).
[134] What an operational definition of TK requires is the designation of its essential elements, and not an exhaustive description of its concept which might prove an impossible elusive task. See Carvalho N (note 59 above) 243.
[135] Munzer S & Raustiala K The Uneasy Case for Intellectual Property Rights in Traditional Knowledge (2009) 27 *Cardozo Arts & Entertainment Law Journal* 48.
[136] See Mugabe J, Kameri-Mbote P & Mutta D (note 127 above).
[137] See Mugabe J, Kameri-Mbote P & Mutta D (note 127 above).
[138] See Mugabe J 'Intellectual Property Protection and Traditional Knowledge: An Exploration in International Policy Discourse' 3 Available at *www.wipo.int/tk/en/hr/paneldiscussion/papers/word/mugabe.doc* (accessed on 21 April 2011).

Figure 1: Traditional knowledge system[139]



TK is the totality of all knowledge and practices, whether implicit or explicit used in the management of socio-economic and ecological facets of life.[140]

International and regional organisations have also offered definitions of the phenomenon. WIPO regards TK as:

> 'The content or substance of knowledge resulting from intellectual activity in a traditional context and includes the know-how, skills, innovation, practices and learning that forms part of TK systems and knowledge embodying traditional lifestyles or indigenous and local communities or contained in codified knowledge systems passed between generations'.[141]

The Swakopmund Protocol,[142] of the African Regional Intellectual Property Organisation (ARIPO) defines TK as;

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[139] See Mugabe J (note 138 above).

[140] See Mugabe J (note 138 above). According to the UNEP, this knowledge 'can be contrasted with cosmopolitan knowledge, which is drawn from global experience and combines 'western' scientific discoveries, economic preferences and philosophies with those of other widespread cultures.' See UNEP/CBD/COP/3/Inf. 33. 9.

[141] See WIPO 'Intellectual Property Needs and Expectations of TK Holders' (note 127 above). The different definitions of TK, even from the same organisation, lays further strength to the arguments of authors who stress that TK is defined in accordance with the importance and emphasis placed on various aspects of the definition, as well as the use for which the definition is required. See Srinivas K (note 58 above) 83.

[142] The Swakopmund Protocol on the Protection of TK and Expressions of Folklore within the Framework of the African Regional Intellectual Property Organization (ARIPO) was adopted on 9 August, 2010 in

> '...any knowledge originating from a local or traditional community that is the result of intellectual activity and insight in a traditional context, including know-how, skills, innovations, practices and learning, where the knowledge is embodied in the traditional lifestyle of a community, or contained in the codified knowledge systems passed on from one generation to another...'[143]

The Swakopmund Protocol states that the term (TK) is not limited to a specific technical field, but may be extended to include agricultural, environmental or medical knowledge, and knowledge associated with GRs.[144]

Anthropologist Martha Johnson's widely acclaimed definition provides the definition which is closest to the understanding of the term as employed in this thesis:

> '...a body of knowledge built by a group of people through generations living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self management that governs resource use...'[145]

The WIPO has pointed out that there is no need for a complete and authoritative definition of TK in order to develop a legal system for its protection.[146] WIPO recommends the approach employed in the drafting of many other pieces of legislation, which tend to avoid the definition of the contentious subject altogether. The legislation should emphasise the

Swakopmund, Namibia by the Diplomatic Conference of ARIPO. It represents a significant regional follow up to the prior efforts of the Diplomatic Conference of ARIPO which had previously adopted the Legal Instrument for the Protection of TK and Expressions of Folklore at the Eleventh Session of the ARIPO Council of Ministers in Maseru, in the Kingdom of Lesotho in November 2007. See African Regional Intellectual Property Organisation (ARIPO) 'Swakopmund Protocol on the Protection of TK and Expressions of Folklore' (2010) (hereafter Swakopmund Protocol), available at *http://old.cbd.int/doc/measures/abs/msr-abs-aripo-en.pdf* (accessed on 20 February 2011).

143 See Section 2.1 ARIPO Swakopmund Protocol (2010). The definition keeps the boundaries of its scope largely undefined. This has continued to be a drawback to calls for increased protection of TK. The precise scope of TK changes with every discovery. The combined reading of the definition of TK under section 2.1 and Section 2.2 of the Protocol seems to increase the haziness surrounding the precise scope of the term under the Protocol by further empowering Contracting Parties with the choice to specify the terms falling within their definition of TK. So what is regarded as TK in one Party may not be classified as TK by another. This wide open-ended and flexible definitional approach is identified by some authors as being the sensible approach, owing to the practical impossibility of sufficiently exhausting the entirety of TK's scope (See for instance CBD 'Development of Elements of Sui Generis Systems for the Protection of TK, Innovations and Practices to Identify Priority Elements' (2007) UNEP/CBD/WG8J/5/6 (20 September 2007) where the three dimensions of TKs scope; the cultural, temporal and spatial aspects, are identified). See also Srinivas K (note 58 above) 84.

144 See Section 2.1 ARIPO Swakopmund Protocol (2010).

145 See Johnson M 'Research on Traditional Environmental Knowledge: Its Development and Its Role in Johnson M (ed) *Lore: Capturing Traditional Environmental Knowledge* (1992) 3 7-8.

146 See Carvalho N (note 59 above) 243.

identification of the basic characteristics or elements of the principal subject matter instead.[147]

This thesis focuses on traditional biodiversity-related knowledge and therefore, the basic characteristics of TK as they relate to biodiversity are now examined.

2.2.2 CHARACTERISTICS OF TRADITIONAL KNOWLEDGE

TK's basic characteristics may largely be explained by means of interpretation of its nomenclature. 'Traditional' is defined as '...belonging to, consisting in, or of the nature of tradition; handed down by or derived from tradition'.[148] The word; 'Tradition' is defined as

> '...that which is handed down; a statement, belief, or practice transmitted (esp. orally) from generation to generation...a long established and generally accepted custom or method of procedure, having almost the force of a law...the body (or any one) of the experiences and usages of any branch or school of art/literature, handed down by predecessors and generally followed'[149]

'Knowledge' on the other hand is defined as '...information, intelligence, notice, intimation',[150] 'Information and skills acquired through experiences or education...awareness or familiarity gained by experience.'[151]

The combined reading of these dictionary interpretations of the concept leads to the general conclusion that TK is tradition-based knowledge handed down or transmitted (orally) from generation to generation;[152] a product of age-long experience, generationally improved

[147] For example, most patent laws do not define 'inventions'. They merely identify basic mandatory characteristics that inventions must meet in order to be patentable. So also in Trademark Law, no piece of legislation on trademarks attempts to define what a sign is. Lawmakers have simply established that distinctive signs should be registrable as trademarks. See Carvalho N (note 59 above) 243.

[148] Simpson J & Weiner E (prep) *The Oxford English Dictionary* Vol. XVIII 2 ed. (1989) 354.

[149] Simpson J & Weiner E (prep) (note 148 above) 354.

[150] Simpson J & Weiner E (prep) *The Oxford English Dictionary* Vol. VIII 2 ed. (1989) 518.

[151] Pearsall J (ed) *The Concise Oxford Dictionary* 10 ed. (1999).

[152] With regard to the generational transmission of TK, Martha Johnson (note 145 above) 7-8 observes that in contradistinction to western scientific knowledge, TK: is recorded and transmitted orally; is learned through observation and hands-on experience; is based on the understanding that the elements of matter have a life force; does not view human life as superior to other animate and inanimate elements but that all life-forms have kinship and are interdependent; is holistic rather than reductionist; is intuitive rather than analytical; is based on data collected by resource users themselves rather than specialised group of researchers; is based on diachronic rather than synchronic data; is rooted in a social context that sees the world in terms of social and spiritual relations between all life forms and; derives its explanations of environmental phenomena from cumulative, collective and often spiritual experiences.

upon;[153] a collectively owned heritage as against an individually owned right;[154] an adaptive invention generated for survival;[155] and a largely unwritten body of instruction and belief.[156] TK falls into two main categories.[157]

a. The knowledge itself. ideas developed by traditional communities and indigenous peoples in a traditional and informal way as a response to the needs imposed by their physical and cultural environments, described as TK '*stricto sensu*'.[158]

b. Expressions of folklore or expressions of traditional culture, or musical expressions, or expressions by actions or performances etc.

The two categories combine under a single umbrella, TK '*lato sensu'*.[159] This thesis focuses on TK *stricto sensu*, with an emphasis on its biodiversity related aspects, within the context offered by the Nagoya Protocol.[160] This categorisation may be referred to as traditional biodiversity-related knowledge.[161]

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[153] See Quinn M (note 127 above) 292. See also Dutfield G 'Legal and Economic Aspects of TK' (2004) 500 where the author discredits the view often widely held indicating that TK is antique, void of innovation and lacking in creativity. Rather TK is described as being progressive, highly innovative and involving a continuous reformation of knowledge handed down to meet up with the adaptive requirements of the present environmental realities by indigenous communities. '...In short, knowledge held and generated within "traditional societies" can be new as well as old...TK has been adaptive because adaptation is the key to survival in precarious environments...while TK is handed down from one generation to another, this does not mean that what each generation inherits is what it passes on...TK develops incrementally with each generation adding to the stock of knowledge' 501. See also Srinivas K (note 58 above) 84.

[154] Despite general acknowledgement that a major limitation in the quest for increased protection for TK lies in its nature of collective ownership; see Garcia J (note 55 above) 7. See also Gervias D (note 130 above) 140; many authors are quick to point out that it amounts to a *fallacy of hasty generalisation* to conclude in the stroke of one breath that all TK is communally owned. See Dutfield G & Suthersanen U *Global Intellectual Property Law* (2008) where the authors stated '...the idea that traditional property rights are always collective or communal in nature while notions of Western property are inherently individualist is an inaccurate cliché...' Significantly, several communities have well defined and established customary law practices which regulate intellectual property rights. These are often similar, albeit not as developed as western intellectual property systems.

[155] WIPO Secretariat Consolidated Survey of Intellectual Property Protection of TK, TK and Folklore (2003) Report delivered to the Intergovernmental Committee on Intellectual Property and Genetic Resources, WIPO/GRTKF/IC/5/7 (July 7-15, 2003) described the concept of TK as; - 'Ideas developed by traditional communities and indigenous people, in a traditional and informal way, as a response to the needs imposed by their physical and cultural environments...' – A definition which emphasizes in clearer terms the strong relationship between indigenous communities and their environments; their TK and their quest for survival.

[156] See Srinivas K (note 58 above) 84.

[157] See Carvalho N (note 59 above) 243.

[158] See Carvalho N (note 59 above) 243.

[159] See Carvalho N (note 59 above) 243. See also Srinivas K (note 58 above) 84 where the author in analysing the categorisations of TK however, couches the broad classifications as Traditional Cultural Expressions (TCE's) and TK relating to medicines, plant GRs, crafts, etc.

[160] Specifically, Article 3 of the Nagoya Protocol defines the TK to which the Protocol applies as being that which is associated with GRs within the scope of Article 15 of the CBD. The scope offered by Article 15 of the CBD may be conceptualised as referring to TK associated with GRs held by Contracting Parties which are either countries of origin of such resources or in valid acquisition of the GRs according to the

The four basic elements of TK *stricto sensu* are[162]

i. It is generally created through an incremental collective process, with knowledge-growth arising from experimentation and experience built by a community over the years. This reference to the community does not imply ownership by the community, but rather authorship. Individuals within the community may still retain ownership over such knowledge rights.[163]

ii. TK is created informally through a process of trial and error.

iii. TK is holistic:[164] its spiritual and practical elements integrate the community with its environment. TK can thus be said to be inseparable from the environment and ways of life, cultural values, spiritual values, and customary legal systems of the indigenous communities which hold it.[165]

iv. TK is a means of cultural identification, reflecting a practical skill or method that bears a strong tie with the culture and values of the community.

Now that the nature and concept of TK has been explored, the justification for and arguments against the protection of TK will be examined.

Convention. The term Traditional Biodiversity-Related Knowledge as employed in this research is therefore used within the context offered by this framework.

[161] The concept of traditional biodiversity-related knowledge, as a term, employed within this thesis derives from a study of the work of Eliana Torelly de Carvalho, who conceptualised the term 'traditional biodiversity-related knowledge' in explaining a form of traditional knowledge, which is the subject of attack, protection, as well as negotiations in talks related to biodiversity and indigenous peoples. See Carvalho E 'Protection of Traditional Biodiversity-Related Knowledge: Analysis of Proposals for the Adoption of a Sui-Generis System' (2003) 11 *Missouri Environmental Law and Policy Review* 38. This though is not to suggest ET de Carvalho as being the original proponent of the term, as this term has enjoyed prior use by other authors and organisations.
Overwalle G 'Holder and User Perspectives in the Traditional Knowledge Debate: A European View' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 357, is of the view that TK categorisation is under two broad headings; tangible and intangible components. The tangible components are the GRs, the intangible aspects are subdivided into Traditional Medical knowledge (TMK), Traditional Ecological Knowledge (TEK) and Traditional Agricultural Knowledge (TAK). See also McManis C 'Biodiversity, Biotechnology and Traditional Knowledge Protection: Law, Science and Practice' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 4, who, by contrast identified two categories of TK related to GRs; TAK and TMK.

[162] See Carvalho N (note 59 above) 243.

[163] See McManis C (note 161 above) 4. A community for this purpose must be identified as a separate group (this may be developed using criteria of lingua, ethnicity/religion or a combination of all) which mandatorily maintains a close relationship with its geographical environment (its biodiversity). See Carvalho N (note 59 above) 243.

[164] See Andriantsiferana R "Traditional Knowledge Protection in the African Region' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 318.

[165] This implies that it is vital to sustain not merely the knowledge but the social and physical environment of which it forms an integral part. See WIPO *Intellectual Property and Traditional Knowledge* Booklet No2 dealing with Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions/Folklore. Publication no. 920(E). Also available at *http://www.wipo.int*.

2.2.3 JUSTIFICATION FOR THE PROTECTION OF TRADITIONAL KNOWLEDGE

Meaningful protection of TK necessitates huge global and national financial commitments. It will also require a major paradigm shift in the global legal and policy systems. Objectors to TK protection have argued that TK protection will place a financial burden on society which may not be commensurate with the economic value of TK.[166] Heald explains that the absence of traditional arguments to justify the expansion of intellectual property rights to include TK demonstrates the limited grass roots support for TK protection among legal scholars.[167] The present challenge, for proponents of TK protection, therefore lies in the pressing need for clearly established justifications for the protection of TK.

The following possible justifications for the protection of TK, especially that relate to biodiversity, have been identified.

2.2.3.1 The Conservation of Biodiversity and the Environment.

The steady decline in biodiversity has led policy makers to seek possible solutions to the dilemma of protecting the environment for the future generations, while guaranteeing its optimal use for the present generation's needs. Research has revealed a history, dating back countless thousands of years, of biological harmony between indigenous peoples and their environment.[168] This benign balance of communal interaction with nature was grounded in use, spirituality and long term survival.[169] In recognition of this history, the Parties to the Nagoya Protocol have emphasised the importance of TK for 'the conservation of biological diversity and the sustainable use of its components'.[170] The holistic nature of traditional knowledge associated with genetic resources (TK*a*GR) is a major possible justification for the protection of TK. A regime which respects and protects TK will likely provide the much sought after solution to the conservation of biodiversity.[171] Efforts to protect TK in this light

[166] This point was identified as a possible criticism against the protection of TK. See Carvalho N (note 59 above) 245.
[167] See Heald P (note 62 above) 522.
[168] See Wiersema A 'Sharing Common Ground: A Cautionary Tale on the Rights of Indigenous Peoples and the Protection of Biological Diversity' in Picolotti R & Taillant J (eds) *Linking Human Rights and Environment* (2003).
[169] See Wiersema A (note 168 above). This was reflective of a total communal integration with nature. Spiritual beliefs, community survival, as well as dependence on nature for food and medicines, meant that the destruction of biodiversity was a destruction of ILCs whose survival was tied to same.
[170] See Par. 22 of the Preamble to the Nagoya Protocol.
[171] See Par. 22 of the Preamble to the Nagoya Protocol, where the Parties to the Protocol *inter-alia* noted the interrelationship and inseparable nature of GRs and TK for ILCs.

may therefore be justified on a wider global need; the sustenance of the environment for the future.[172]

2.2.3.2 The Protection of the Rights of Indigenous Peoples

The Declaration on the Rights of Indigenous Peoples[173] provides that the rights recognised within the Declaration constitute the minimum standards for the survival, dignity as well as well being of the indigenous peoples of the world.[174] The majority of the earth's biodiversity occurs in regions inhabited by indigenous peoples. The Declaration proclaimed that ILCs have the right to maintain, control, protect and develop their TK and the IP over such knowledge including that relating to GRs, the knowledge of fauna and flora.[175] A major contribution of the declaration is that it places an obligation upon States to take effective measures to partner with indigenous peoples in protecting these rights.[176] This justification is found within a variety of international instruments.[177]

[172] The concept of sustainable development was first developed by the Brundtland Committee. As far back as 1987 when its report was submitted to the UN General Assembly, the role of traditional communities and their knowledge in the attainment of the goals of sustainable development were clearly identified. See generally World Commission on Environment and Development (WCED) *Our Common Future* (1987) (hereafter WCED *Our Common Future*) Available at *http://www.un-documents.net/ocf-06.htm#I* (accessed on 22 February 2011). In a more recent global context, the attainment of the Millennium Development Goals (MDGs) may clearly be linked again to the respect of traditional knowledge. This is most especially with regard to the attainment of Goals 1 and 7, which are to eradicate extreme poverty and hunger; and to ensure environmental sustainability respectively. See WIPO 'Millennium Development Goal 1' available at *http://www.wipo.int/ip-development/en/agenda/millennium_goals/millennium_goal1.html* (accessed on 22 March 2011).

[173] Adopted by General Assembly Resolution 61/295 on 13 September 2007, Available at *http://www.un.org/esa/socdev/unpfii/en/drip.html* (accessed on 22 March 2011).

[174] See Article 43 of the UNDRIP.

[175] See Article 31(1) of the UNDRIP. See also Par. 11 of the preamble to the UNDRIP, which *recognized* the direct relationship that the respect for indigenous knowledge, cultures and traditional practices bears with the sustainable and equitable development and proper management of the environment. Furthermore, interestingly, Article 25 of the UNDRIP recognises the right of indigenous peoples to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or occupied and used lands, territories, waters and coastal seas and other resources, and to uphold their responsibilities to future generations in this regard. Obviously, the emphasis is on the right of indigenous peoples to take the lead in the sustainable use of the biodiversity falling within their territories. See Article 29 (1) of the UNDRIP.

[176] See Article 31(2) of the UNDRIP.

[177] Principle 22 of the Rio Declaration on Environment and Development for instance states, that 'Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.' See UN Doc. A/CONF.151/26 (June 13, 1992) available at *http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm* (accessed on 22 March 2011). See also Amiott J 'Investigating the CBD's Protection for Traditional Knowledge' (2003) 11 *Missouri Environmental Law and Policy Review* 3.

2.2.3.3 The Improvement of the Livelihoods of Traditional Communities and Host Countries.

The potential benefits to the knowledge holders (both individuals and communities, and by extension host countries), are at the heart of calls for the protection of TK. TK is of immense value in itself to indigenous communities because of their dependence on it for practically all facets of their livelihoods, health and general well being.[178] The majority of the communities and countries holding TK*a*GR are poor,[179] and it is widely believed that the protection of TK could drastically improve the lives of TK holders and communities,[180] because TK has economic value.[181] TK is a basic input, both as an intellectual resource and also as a product resource to the manufacturers.[182] More cases of market success are being recorded with end-products bearing significant TK footprints. Calls for sharing of benefits arising from the use of TK[183] are based on the hope that such may contribute to the sustainable development of countries of origin in general and eventually to the improved livelihoods of ILCs traditionally holding the resources and associated knowledge.[184] From the experience of the San of Southern Africa, such knowledge protection could result in socio-economic developments for the local provider communities.[185] Such protection could also result in huge commercial advancements for economies of host countries.[186]

[178] Dutfield G & Suthersanen U (note 154 above) 329.
[179] Dutfield G & Suthersanen U (note 154 above) 329.
[180] This may sound ironical on the surface. Protection of TK which hasn't in itself succeeded in helping local communities out of poverty? Protection should not be seen as restricting its use, but a wider interpretation it must be noted involves a recognition, a respect for and an adequate compensation of TK holders in case of the use of their TK, and an overall integration of TK into the global intellectual property system. This involves some of the value added being shared to indigenous societies.
[181] Dutfield G & Suthersanen U (note 154 above) 329.
[182] Dutfield G and Suthersanen U (note 154 above) 329.
[183] Note that this is not the only form of protection of TK. It merely forms a possible compensatory measure within the defensive ambit, specifically for the protection of TK from exploitation and non-recognition.
[184] See Morgera E & Tsioumani E (note 123 above) 3.
[185] The San people have lived in the Kalahari Desert in South Africa for thousands of years. They have used the bitter flesh of the Hoodia plant (*hoodia gordonii*) for centuries to block feelings of hunger and give them energy when hunting or on long trips across their inhospitable land. This practice was brought to the attention of the South African Council for Scientific and Industrial Research (CSIR), based in Pretoria, which began to take an interest in the properties of the Hoodia in the 1960's. The research of the CSIR resulted in certain components of the Hoodia (called "P57") being isolated and their potential as appetite-suppressants and anti-obesity ingredients being identified. The aftermath of several agreements concluded with some Pharmaceutical Corporations of the North with respect to the plant, without the knowledge of the San or any recognition given them for their contribution to the discoveries, gave rise to series of calls for compensation for the biopiracy. The breakthrough resulting in the benefit sharing agreement with the CSIR represented a huge positive development with regard to this present justification. According to the WIPO, *the development of this Hoodia-derived product has had several important consequences for the San. It has resulted in the 100,000-strong San population organizing and setting up the San Hoodia Benefit Sharing Trust, which will ensure that the monies received are used for "the general development and training of the San community*' The immediate plans on receipt of the monies by the San include buying land, building

2.2.3.4 The Promotion of, and Reward for Local Innovation.

One of the main underlying motivations for the development of IP law has been the promotion of innovation.[187] This is premised on the recognition that knowledge creation is a sequential and cumulative process where, though the merits of new contributions are derived from prior insights, discoveries and inventions, they deserve protection.[188] Protection therefore is justified for TK on the basis that it has made numerous contributions, and forms the foundation of some global inventive chains.

The second aspect of this justification is that protection is a mechanism for stimulating further innovation among local peoples. This notion has been seriously contested by antagonists of TK protection;[189] however, experience has shown that the protection of TK may also offer some further innovation incentives to local communities and peoples.[190] Gupta argues that protection in itself for TK will not necessarily make societies innovative,[191]

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clinics and investing in education and development projects by the San. See WIPO 'Case Study: Hoodia Plant' (January 2008). Available at; *http://www.wipo.int/export/sites/www/academy/en/ipacademies/educational_materials/cs1_hoodia.pdf* (accessed on 22 March 2011). (emphasis mine) See also generally, Wynberg R, Schroeder D & Chennells R (ed) *Indigenous Peoples, Consent and Benefit Sharing: Lessons from the San Hoodia Case* (2009).

[186] Dutfield G & Suthersanen U (note 154 above) 331. The learned authors however stress a note of caution in over estimating the possible impact of TK protection on developing country economies, as such must not be viewed as the final solution to prosperity of such countries. Its possible role in economic development however remains undeniable.

[187] Patents are on average, the most highly valued form of IP. IP systems generally provide that for an invention to be patentable, it must fulfil the three criteria of being new, of being capable of industrial application, and of being a result of inventive activity. See Article 27 of the TRIPS Agreement. See also Correa C *Intellectual Property Rights, the WTO and Developing Countries: The TRIPS Agreement and Policy Options* (2000) 38.

[188] See Ullrich H (note 81 above) 29. Scotchmer S 'Standing on the Shoulders of Giants: Protecting Cumulative Innovators' in Scotchmer S (ed) *Innovation and Incentives* (2004) 132, argues that: '...if the next innovation could not be invented without the first, *then the social value of the first innovation includes at least part of the incremental social value provided by the second.* If the first innovation merely reduces the cost of achieving the second, then the cost reduction is part of the social value provided by the first. If the first innovation accelerates development of the second then the social value includes the value of getting the second innovation sooner. The problem introduced for incentive mechanism is to make sure that earlier innovators are compensated for their contributions, while ensuring that later innovators also have an incentive to invest.' (emphasis mine). Prior TK innovation, upon which so many present western advancements are built, has, however, remained largely uncompensated. This has been attributed to the weak link between IP systems and the local innovative processes taking place in developing countries. See Correa C (note 187 above) 39. From a point of foresight, the learned author observes *inter alia*; '...the patent system as an incentive to local innovations is unlikely to work...'.

[189] Opponents of TK protection have largely linked the development of TK as well as its evolutions to the quest for survival by indigenous communities. The dynamism of TK has been based on its evolving responses to needs imposed by the natural environments and as such, according to opponents of this regime, a new mechanism for the protection of TK would not have the dynamic efficiency of promoting the creation of new TK. See Carvalho N (note 59 above) 245.

[190] See Gupta A (note 74 above) 327.

[191] See Gupta A (note 74 above) 327. This view expressed by Gupta is further observed by Correa albeit with reference to the general domestic innovation pattern of developing countries in the light of the expansion of the intellectual property regime. As he points out, 'most developing countries are unlikely to substantially

however, he points out that the recognition and reward, even in non-monetary forms can be a great motivator that spurs creativity.[192]

2.2.3.5 The Promotion of the Integration and Utilisation of Diverse Knowledge Systems for Sustainable Global Development.

TK is valuable, largely scientific,[193] and does not constitute an inferior form of knowledge. The suspicion and mistrust of TK has led to an unfortunate trend: holders of TK engaging in secrecy to protect their art.[194] This unfortunately results in the loss of such practices which ultimately pass on with the holder of the knowledge when he or she passes on: a loss not only to the local communities, but the global community. It is possible that solutions to global challenges, which probably had been found, are once again buried. Though this may seem a speculative basis for justifying TK protection, the efforts of countries like India in documenting and recording TK provides a practical example of its importance. India in 1999 established the National Innovation Foundation (NIF),[195] one of its goals being the strengthening of research and development linkages between excellence in formal and informal knowledge systems so as to create a knowledge network.[196] This effort has been a huge success.[197] It has underscored the significance of the building of a global knowledge network as a fundamental justification for the protection of TK.

improve their innovative performance just on the basis of an expanded...intellectual property regime'. See Correa C (note 187 above) 38.

192 See Gupta A (note 74 above) 331-332.

193 See Gupta A (note 74 above) 335.

194 See Alvarez Nunez R 'Intellectual Property and the Protection of Traditional Knowledge, Genetic Resources and Folklore: The Peruvian Experience' (2008) 12 *Max Planck Yearbook of United Nations Law* 520.

195 See Gupta A (note 74 above) 327. Dutfield G & Suthersanen U (note 154 above) 331, describe this as the greatest official commitment of any government to harnessing traditional technologies into modern systems for sustainable development.

196 The other goals of the NIF are; To help India become an inventive and creative society and a global leader in sustainable technologies; To ensure evolution an diffusion of green grassroots innovations in a time-bound and mission-oriented manner; To support scouting, spawning, sustaining and scaling up of grassroots green innovations and link innovation, enterprises and investments; To promote wider social awareness and possible commercial and non-commercial applications of innovations. See Dutfield G & Suthersanen U (note 154 above) 331.

197 See Gupta A (note 74 above) 327.

2.2.3.6 The Prevention of Biopiracy

The concept of biopiracy developed as a response to allegations or perceptions of 'theft' of indigenous peoples' knowledge and resources without compensation,[198] and has remained at the heart of the calls for the protection of TK. Srinivas argues that it is the experiences in fighting biopiracy that have actually revealed the lapses in the IP system.[199] From the point of this thesis, such lapses include the failure of the IP system to recognise TK as a unique form of knowledge, which though in many instances does not meet up with the standard patentability criteria,[200] especially due to its communal nature and trans-generational evolution, is yet worthy of being protected.

2.2.4 OBJECTIONS TO THE PROTECTION OF TRADITIONAL KNOWLEDGE

The several objections raised to TK protection, some of which are outlined below, are not necessarily borne out of bad faith.[201]

The fear of further depleting the public domain is a sensitive aspect of the TK protection debate. TK is presumed to be in the public domain, encouraging the idea that no one is harmed and no rules are broken when research institutions and corporations use it freely.[202] The public domain indicates the wealth of 'unprotected' knowledge available to the public for unhindered commercial exploitation at any given point in time. Its dynamics have been explained via the patent system as;

> '...from the permanent flow of knowledge, a segment may be carved out in view of the particular new use to which the inventor has brought the knowledge, but that after a while, that piece of knowledge must fall back into *generally available knowledge* so as to contribute to the accumulation of human knowledge and to form part of the basis from which, by competition for inventions, new ideas may be developed for uses.'[203]

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[198] It is often viewed as a third world counter attack to western allegations of piracy. See generally Arewa O 'Piracy, Biopiracy and Borrowing: Culture, Cultural Heritage and the Globalisation of Intellectual Property' (March 2006) *Case Research Paper Series in Legal Studies*; Working Paper 04-19.

[199] This is especially with reference to the patent system, Srinivas K (note 58 above) 90.

[200] See Article 27 of the TRIPS which states, '...patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are *new*, involve an inventive step and are capable of industrial application...' Many objectors to the protection of TK contend that TK relates to publicly available knowledge which cannot be classified as 'new' for the purposes of securing patent rights.

[201] See Dutfield G & Suthersanen U (note 154 above) 335.

[202] According to Alvarez Nunez R (note 194 above) 497, this must however be seen as being false.

[203] See Ullrich H (note 81 above) 29.

Generally available knowledge is thus what is often deemed to be the public domain; available knowledge which may be accessed freely without seeking permission, and to which no protection attaches.[204]

Knowledge is generally unavailable to the public prior to its discovery/invention, and immediately consequent upon its discovery as a reward for its discovery/invention: in this case, because of the exclusive rights to commercialise the knowledge for a specified period which IP law grants a discoverer or inventor as a reward for its discovery or invention in accordance with IP principles. Upon expiry of the period during which the person holds exclusive rights, the knowledge falls back into the public domain.[205] It is generally agreed that a larger public domain best serves global interests.[206] The sensitivity attaching to the withdrawal of knowledge from the public domain, has led many to object to the protection of TK: the large undefined scope of TK has strengthened the objectors' position.[207]

TK protection has also been described as having an overall disincentive effect.[208] Many pharmaceutical companies have indicated that they really have little or no interest in the rigorous nature of bioprospecting and the antecedent risks of nature research,[209] especially in the light of new developments in alternative drug discovery strategies.[210] A complex legal regime for the protection of TK has been identified as a possible disincentive to activities of

[204] See Standford University Libraries *Copyright and Fair Use* (2010). Ch. 8 An overview available at *http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview/chapter8/* (Accessed on 22 April 2011).

[205] The fundamental principle of the taking off of knowledge from the public domain as a reward for such knowledge holders is premised on the incentive effect such has on further innovation in society. It is further with a view to harnessing all discoveries for further development. It is believed that such an incentive of initial exclusivity over the rights of knowledge for the knowledge holder, with an eventual view to making such knowledge freely accessible by all remains one of the greatest ways of stimulating innovation (by adequately compensating the knowledge holder) on the one hand, and further giving the society full benefits arising from such knowledge/discovery upon the expiration of the exclusive rights.

[206] See Dutfield G & Suthersanen U (note 154 above) 335. It for instance, reduces the costs of essential products accruing from the use of the knowledge, increases opportunities for greater options from knowledge products etc.

[207] Dutfield G & Suthersanen U (note 154 above) 336. Ullrich H (note 81 above) 30, in addressing this issue, and warning against the further depletion of the public domain through TK protection, argues that '...not only does the definition of both traditional knowledge and of indigenous peoples or local communities to whom it may be attributed remain vague, but the attribution itself is indefinite. The same or similar knowledge may exist elsewhere, and it may be truly public, namely propagated by non-initiated persons, or mixed with other public knowledge. In addition, traditional knowledge in the various developing countries is of a rather different quality, it is not easily separable from more or less trivial know how or from routine craftsmanship, and it cannot properly and legitimately be distinguished from similarly inherited knowledge existing in various parts of developed countries'

[208] Dutfield G & Suthersanen U (note 154 above) 336.

[209] Dutfield G & Suthersanen U (note 154 above) 337, describe this as 'Jungle Pharmacy'.

[210] Dutfield G & Suthersanen U (note 154 above) 336.

multinationals and research institutions among indigenous communities. [211] Proponents of this view argue that this could possibly lead to a 'knowledge' loss, as well as a possible economic benefit loss to the ILCs and the global community. Leaving TK 'unprotected', according to this view, is an incentive for multinationals to commit huge resources into the much needed research for global solutions affecting all.

[211] Dutfield G & Suthersanen U (note 154 above) 337.

2.3.0 PART THREE:

A SUMMARY OF THE CURRENT GLOBAL FRAMEWORK FOR THE PROTECTION OF TRADITIONAL KNOWLEDGE

This section of the chapter attempts to offer an insight into the present state of affairs in the global discourse on TK protection by highlighting major international bodies whose scope of activities encompass this theme, as well as legal instruments. Some aspects of TK protection are examined below under the headings of environmental protection; health; trade and development; food and agriculture; indigenous rights, and IP.

2.3.1 TK AND THE ENVIRONMENT/ BIODIVERSITY

2.3.1.1 The Convention on Biological Diversity

The CBD which entered into force in 1992 has contributed significantly to the protection of TK.[212] It has led directly to several biodiverse countries enacting legislation for the protection of TK. Carvalho observes that the protection of TK under the CBD is not a separate objective but rather an ancillary to the regulation of access to GRs.[213] The major provision of the CBD relating to TK protection is Article 8(j) which requires parties to;

> respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices.

Another significant provision of the CBD dealing with the protection of TK is Article 10(c) which requires that the customary use of biological resources (BRs) in accordance with traditional cultural practices be protected and encouraged.[214] The CBD also provides that information concerning TK and technologies be included among the information to be

[212] It has often been described as a *soft natured hard law*, due to its use of forceful and pointed language in determining obligations of parties, while yet failing to accompany same with stiff direct repercussions in events of breach. See Harrop S (note 108 above) 117.

[213] In making his argument, Carvalho goes on to highlight the fact that owing to the ancillary nature of the provisions on TK protection within the CBD, the provisions are couched in non-mandatory language. They therefore form a mere recommendation to the parties. He further identifies a lapse as being that the scope of the CBD merely covers such TK associated with biodiversity which are relevant for its conservation and sustainable use – this evidently does not encapsulate all forms of TK associated with biodiversity. See Carvalho N (note 59 above) 262.

[214] See Andriantsiferana R (note 164 above) 319.

exchanged and where feasible, repatriated.[215] Technical cooperation between contracting parties is also provided for, including cooperation regarding indigenous and traditional technologies.[216] The CBDs operative framework[217] has played a significant role in the search for legal solutions to the protection of TK.[218] The CBDs Conference of Parties (COP) and Working Groups have contributed to the actualisation of the TK protection aims of the CBD by *inter alia*, negotiating and adopting implementation instruments such as the Bonn Guidelines as well as the recently adopted Nagoya Protocol.

2.3.1.2 The United Nations Convention to Combat Desertification (UNCCD)

This Convention has done much to protect TK, even though its overriding objective is the prevention of desertification.[219] Article 16(g) provides for the exchange of information on TK among parties while yet ensuring adequate protection for such TK, and providing appropriate equitable returns to local populations from the benefits it yields.[220] With regard to scientific and technical cooperation, the Parties obliged themselves to support research activities which protect, integrate, enhance and validate TK, and also ensure that the owners of the knowledge benefit directly from any commercial utilization of it or from any technological development derived from that knowledge.[221] The Parties also, with a view to protecting and promoting the use of traditional technology (knowledge),[222] undertake to make inventories of such knowledge,[223] ensure that such knowledge is adequately protected and benefits from its commercial utilisation equitably shared with local host communities.[224] Article 18(2) also

[215] See Article 17(2) CBD.
[216] See Article 18(4) CBD.
[217] This refers to the Conference of the Parties (COP) as well as the various Working Committees established to fulfil the aims of the Convention.
[218] Dutfield G & Suthersanen U (note 154 above) argue that within the CBD, international negotiations that deal with legal solutions to TK protection have considered *inter alia* the following – National and international sui generis regimes; Legally and non-legally binding instruments and agreements including contracts, guidelines and codes of conduct; Specific protection measures such as TK databases and disclosure of origin of GRs and associated TK in patent applications; Principles such as PIC and respect for customary law; and the incorporation of TK protection provisions in the international regime on access and benefit sharing.
[219] Article 2(1) of the United Nations Convention to Combat Desertification (hereafter UNCCD) provides that the objective of the Convention is '...to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas'. See United Nations Convention to Combat Desertification. Available at *http://www.unccd.int/main.php* (accessed on 22 March 2011).
[220] See Article 16(g) UNCCD.
[221] See Article 17(c) UNCCD.
[222] See Article 18(2) UNCCD.
[223] See Article 18(2)(a) UNCCD.
[224] See Article 18(2)(b) UNCCD.

recognises the importance of such equitable sharing where such knowledge forms the foundation of further technological innovation. The parties further undertake to actively support the improvement and dissemination of such TK[225] and facilitate, as appropriate, its adaptation and integration into modern technology.[226]

2.3.1.3 The United Nations Environment Programme

UNEP has, since its establishment in 1972, developed a strategy incorporating indigenous people and recognising the need for the protection of TK in the attainment of its environmental conservation objectives. Its contributions include the Rio Declaration[227] as well as the recommendations as contained in Agenda 21[228] which emphasised the recognition of TK. The foundation principle of the 2000 Malmö Ministerial Declaration is the importance of the respect for cultural diversity[229] as well as TK Protection in global efforts to combat environmental degradation.[230]

2.3.2. TK AND HEALTH

The WHOs efforts in protecting TK stem from its recognition of the growing importance of TK in the attainment of the goal of primary healthcare, specifically through traditional medical knowledge (TMK).[231] This topic has been addressed since 1976 by the WHO

[225] See Article 18(2)(c) UNCCD.
[226] See Article 18(2)(d) UNCCD.
[227] See Principle 22 Rio Declaration on Environment and Development. available at *http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163* (accessed on 22 March 2011).
[228] Agenda 21 emphasises the recognition of TK, indigenous peoples and participatory rights. There is however a limited direct reference to the protection of TK. See 26.1, 26.2, 26.3, 26.4, 26.5, 26.6 Agenda 21. 'Recognising and Strengthening the Role of Indigenous People and their Communities'. Available at *http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=52&ArticleID=74&l=en* (accessed on 22 March 2011).
[229] Cultural diversity is the expression of multiple forms of adaptation, characterized by history, ethnic origin, language, spirituality, knowledge, technology, creativity, artistic expression and ethical values, which together form the common patrimony of humanity. See United Nations Environment Programme: Environment for Development. (Indigenous Peoples) Available at *http://www.unep.org/indigenous/About/index.asp* (accessed on 22 March 2011).
[230] See Par. 6 of the Preamble to the Malmö Ministerial Declaration 2000. (*Adopted by the Global Ministerial Environment Forum – at the Sixth Special Session of the Governing Council of the United Nations Environment Programme at its Fifth plenary meeting 31 May 2000*). Ministers of Environment and heads of delegation met in Malmö, Sweden from 29 to 31 May 2000, on the occasion of the First Global Ministerial Environment Forum, held in pursuance of United Nations General Assembly resolution 53/242 of 28 July 1999 to enable the world's environment ministers review important and emerging environmental issues and to chart the course for the future. Available at *http://www.unep.org/malmo/malmo_ministerial.htm* (accessed on 22 March 2011).
[231] See specifically VII.7 of the 1978 Primary Health Care Declaration of Alma Ata, (This was at the International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978) which

Traditional Medicine Team, as well as through the development of the WHO Traditional Medicine Strategy.[232]

2.3.3. TK AND TRADE

The TRIPS Agreement makes the WTO a major participant in the global discourse on TK protection. TRIPS is silent on TK,[233] but as far back as 1999, the review of Article 27.3(b) of the Agreement by the TRIPS Council raised the tricky question of;

> '...how to deal with the commercial use of traditional knowledge and genetic material by those other than the communities or countries where these originate, especially when these are the subject of patent applications...'[234]

The 2001 Doha Declaration[235] made it clear that the TRIPS Council should cover the relationship between the TRIPS Agreement and the CBD as well as the protection of TK and folklore,[236] under the review of Article 27.3(b), or the whole of the TRIPS Agreement under Article 71.1. There have been major arguments regarding the disclosure of sources or origins of GRs and TK for the purposes of patent applications. There have also been calls to make proof of PIC and disclosure of information on benefit sharing mandatory.[237]

The role of TRIPS is an extremely sensitive issue in the TK protection debate as it has been viewed as a mechanism that has facilitated TK violations. Several developing countries have alleged that the negotiations were conducted among the developed countries and merely presented to them for ratification. [238] Some have argued that the WTO is not the appropriate

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incorporates traditional (medical) practitioners in the primary health care strategy. Available at *http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf* (accessed on 22 March 2011).

232 WIPO 'Intellectual Property and Traditional Knowledge' (note 165 above) 13.

233 Dutfield G & Suthersanen U (note 154 above).

234 See TRIPS**:** Reviews, Article 27.3(B) and Related Issues: Background and the Current Situation. Available at *http://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm* (accessed on 22 March 2011).

235 This was the official resolution by members of the WTO at the end of the Fourth Ministerial Conference in Doha, Qatar November 2001. This Declaration was adopted on 14 November 2001. See WT/MIN (01)/DEC/1, available at *http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm* (accessed on 22 March 2011).

236 See Paragraph 19 of the Doha Ministerial Declaration.

237 See TRIPS**:** Reviews, Article 27.3(B) and Related Issues: Background and the Current Situation. Available at *http://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm* (accessed on 22 March 2011).

238 These allegations have largely been centred on what has been described as the *green room* factor in the negotiations. The *green room* connotes a reference to a form of negotiations in which the negotiations are taken off the general table and agreed on by a significant few in the 'green room', and later presented to the majority for ratification and comments. Several developing countries contended that African countries were excluded from the green room in the course of the negotiation of the TRIPS agreement.

forum for remedies for TK protection,[239] but there are two reasons for the increasing pressure on the WTO. First, the desire to bring the protection of TK within an enforceable framework such as that offered by the WTO dispute settlement system;[240] and second, as a response to the controversies surrounding the WTOs TRIPS Agreement in aiding biopiracy.

The United Nations Conference on Trade and Development (UNCTAD) as well as the United Nations Development Programme (UNDP) are other bodies that are involved in efforts to protect TK, and which pursue cardinal objectives within the scope of trade and development.

2.3.4. TK AND FOOD/AGRICULTURE.

The Conference of the Food and Agriculture Organisation in 2001, adopted the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) also known as the FAO International Treaty 2001.[241] This Treaty was negotiated with the understanding that it would operate in harmony with the CBD and consequently, it shares similar overall objectives with the CBD.[242] It arose as a binding replacement to the non-binding International Undertaking on Plant Genetic Resources (IUPGR).[243] TK protection is a major component of traditional agricultural knowledge (TAK) at the ITPGRFA. The Treaty was established, and aims, to recognise the contribution of farmers to global crop diversity and also to ensure that benefits from the use of genetic materials are shared with the countries from which they were originated.[244] The major effort of the treaty in protecting TAK has been the institutionalisation of the 'Farmers' Rights' in Part III of the Treaty.'[245] The Treaty also

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[239] See for instance Dutfield G & Suthersanen U (note 162 above) 345. See also 'The 'triplets'; Article 27.3(B), Biodiversity And Traditional Knowledge' Available at *http://www.wto.org/english/news_e/news11_e/trip_01mar11_e.htm* (accessed on 22 March 2011) where some Members of the WTO have objected to the WTO dispute mechanism being used as a tool to enforce the Nagoya Protocol.

[240] See WTO 'The Understanding on Rules and Procedures Governing the Settlement of Disputes Annex 2' in *The Legal Texts; The Results of the Uruguay Round of Multilateral Trade Negotiations* (2002).

[241] See McManis C (note 161 above).

[242] See McManis C (note 161 above). This is primarily in the areas of promoting the conservation, the sustainable use and the equitable sharing of benefits arising out of the use of plant GRs and its associated TK.

[243] In 1993, the FAO Conference decided to renegotiate the International Undertaking as a binding international instrument in harmony with the CBD and for the realisation of Farmers' Rights. This resulted in the ITPGRFA in 2001. Available at *www.fao.org* (accessed on 24 March 2011).

[244] See FAO 'The International Treaty on Plant Genetic Resources for Food and Agriculture; Farmers Rights' Available at *http://www.itpgrfa.net/International/content/farmers-rights* (accessed on 3 April 2011).

[245] Article 9 of the ITPGRFA defines 'Farmers' Rights' as,

> '…rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in centres of origin/diversity. These rights are vested in the international community, as trustee for present and future generations of

mandates contracting parties to develop legislation and measures to protect farmers' rights specifically with regard to TK relevant to plant GRs.[246]

2.3.5. TK AND INDIGENOUS RIGHTS

The UN Declaration on Indigenous Rights which was adopted in 2007 has emerged as a key component in the global framework for TK protection. Several of its provisions express in strong mandatory language the need for the protection of TK. It recognises that the respect for indigenous knowledge, cultures and traditional practices contribute to the sustainable and equitable development and proper management of the environment.[247] The Declaration states,

> Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expression...In conjunction with indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.[248]

TK is holistic and bears a significant relationship to the environment and lands of TK holders. The Declaration stresses the need for the protection of lands of indigenous peoples.[249] The Declaration also has recourse to PIC principles in determining access to lands, knowledge and traditions of indigenous peoples.

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farmers, for the purpose of ensuring full benefits to farmers, and supporting the continuation of their contributions'

The FAO Conference first recognised Farmers' rights in 1989 and in 1991 agreed that Farmers' Rights would be implemented through an international fund for plant GRs. Unlike 'Breeders Rights' which are vested in the individual owner, 'Farmers' Rights' are vested in the international community. See generally Brush S 'The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007) 297 307. See also WIPO 'Intellectual Property and Traditional Knowledge' (note 165 above) 14. See also FAO 'The International Treaty on Plant Genetic Resources for Food and Agriculture; Farmers Rights' Available at *http://www.itpgrfa.net/International/content/farmers-rights* (accessed on 3 April 2011).

[246] See Article 9.2(a) ITPGRFA. For the other specific aspects of the mandate, see Article 9.2(b) and (c) ITPGRFA.

[247] See Par. 11 of the Preamble to the UNDRIP (2007).

[248] See Article 31 of the UNDRIP (2007).

[249] See Par. 11 of the Preamble to the UNDRIP (2007).

2.3.6. TK AND INTELLECTUAL PROPERTY

2.3.6.1 The World Intellectual Property Organisation (WIPO)

WIPO was established in 1970[250] with a mandate to promote the protection of IP rights worldwide and extend the benefits of the international IP system to all member States.[251] Though WIPO has worked on the protection of traditional cultural expressions (TCEs) since the 1960s, its work on TK and GRs began in 1998.[252] The 25th session of the WIPO General Assembly in 2000 decided to establish an Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). The IGCs new mandate, adopted unanimously in 2009, by the General Assembly of WIPO, enjoins it to undertake 'text-based negotiations' with the 'objective of reaching agreement on a text of an international legal instrument (or instruments) which will ensure the effective protection of TK, traditional cultural expressions (TCEs)/folklore and GRs.'[253] The last session of the IGC (May 9 to 13, 2011) examined a draft text of articles for the protection of TK. This text was developed by experts who met during the Second Intersessional Working Group (IWG 2).[254] This body has been considering ways to improve the availability of TK and publications describing TK to patent examiners.[255]

2.3.6.2 Regional Intellectual Property Organisations in Africa

This research focuses on the African region therefore one has to look at the regional organisations that are concerned with the protection of TK.

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[250] The historical development of the WIPO however backdates to the 1883 Paris Convention. This was followed by the Berne Convention in 1886. Further developments arose with the Madrid Agreement (1891), the BIRPI (1893) and the Hague Agreement (1925). The WIPO agreement was thereon signed in 1967 and WIPO was formally established in 1970. It is pertinent to however point out that the activities prior to the formal establishment of the WIPO are still recorded and viewed as part of the WIPO, albeit under a different nomenclature. Today, the WIPO still administers these treaties. See WIPO *Summaries of Conventions, Treaties and Agreements Administered by WIPO* (2009) publication no. 442(E) 6-7 also available at *www.wipo.int*.

[251] WIPO 'Intellectual Property and Traditional Knowledge' (note 165 above) 14.

[252] See Part 1 Par 3(a), 'Submission of Information by the World Intellectual Property Organization' to the Executive Secretary of the CBD for the First meeting of the Intergovernmental Committee for the Nagoya Protocol (ICNP-1) scheduled for the 6 – 10 June 2011. Submission available at *http://www.cbd.int/abs/doc/protocol/icnp-1/wipo-en.pdf* (accessed on 8 April 2011).

[253] See Dutfield G & Suthersanen U (note 154 above) 342.

[254] It met from February 21 to 25, 2011. See Goffe M 'Recent developments in the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore' (2011) Vol. 1 No. 1 *Queen Mary Journal of Intellectual Property*, 90–98. Available at *http://e-elgar.metapress.com/content/m126925l22880007/fulltext.pdf* (Accessed on 8 April 2011).

[255] See Dutfield G & Suthersanen U (note 154 above) 342.

Protection of TK in Africa is traceable to the early 1960's when in 1962 the French speaking countries created the Office Africain et Malgache de la propriete Intellectuelle (OAMPI).[256] This organisation has evolved overtime and is presently referred to as the Organisation Africaine De La Propriete Intellectuelle (OAPI). It is currently comprised of 16 members.[257]

The African Intellectual Property Organisation (ARIPO) was established for the protection of IP rights within the English speaking region. ARIPO currently has 17 member states.[258] ARIPO recently adopted the 'Swakopmund Protocol on the Protection of TK and Expressions of Folklore' for the protection of TK among contracting states. This Protocol which is expected to assist member states to develop adequate national legislation for the protection of TK,[259] was signed by nine states.[260] It consists of a detailed set of guidelines for the recognition of access to, and sharing of benefits arising from the use of TK among contracting party states. The Protocol aims to 'protect creations derived from the exploitation of TK in ARIPO member states against misappropriation and illicit use through bio-piracy'.

The 'African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources' (the AML), which was negotiated on the platform of the OAU, will be discussed in chapter four. The AML addresses broader issues than those canvassed in the regional instruments, and also has a wider territorial application. It was formally adopted in 2000 and recommended for use, within Africa, in the development of legislation for the protection of TK associated with biological resources (BRs). Its template remains central to discussions on the framework for TK protection in Africa.

[256] Andriantsiferana R (note 164 above) 317. This agreement was revised in 1977 to become OAPI (Organisation Africaine de la Propriete Intellectuelle) and subsequently in 1999 to implement the TRIPS Agreement (OAPI Contact, 2002). It has 16 signatories.

[257] These are Benin, Burkina Faso, Cameroun, Republique Centrafricaine, Congo Brazzaville, Cote d'Ivoire, Gabon, Guinea, Guinea Bissau, Guinea Equitoriale, Mali, Mauritania, Niger, Senegal, Tchad and Togo. See OAPI at *http://www.oapi.int/* (accessed on 10 April 2011).

[258] These are Botswana, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Seirra Leone, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. See ARIPO: Member States. Available at *http://www.aripo.org/index.php?option=com_content&view=section&id=11&Itemid=74* (accessed on 10 April 2011).

[259] See ARIPO 'Traditional Knowledge: Implementation of ARIPO's Mandate on the Protection of Genetic Resources, Traditional Knowledge and Expressions of Folklore' Available at *http://www.aripo.org/index.php?option=com_content&view=article&id=16&Itemid=68* (accessed on 10 April 2011).

[260] These original signatories were Botswana, Ghana, Kenya, Lesotho, Liberia, Mozambique, Namibia, Zambia, and Zimbabwe. The remaining eight states will have to accede to the Protocol.

2.4. CONCLUSION

Part one of this chapter examined some crucial concepts in relation to TK protection. These concepts; biopiracy and bioprospecting; PIC; biodiversity and GRs; and ABS have been shown to be central in the discussions relating to TK protection.

Part two of the chapter examined the nature and characteristics of TK, distinguishing it from other forms of knowledge, and offering an insight into its major definitional dilemma. As this mini-thesis deals with the protection of TK, the justifications surrounding the calls for the protection of TK as well as the objections to its protection were subsequently examined. It was emphasised that objections to TK protection are not necessarily borne out of bad faith but rather are indications of the need to clearly outline the objectives and justifications for its protection. The latter section of part two looked at some international instruments under various themes dealing with the protection of TK, under various themes, as aspects of the current global policy framework for the protection of TK.

A major conclusion in this respect is that the protection of TK is not confined to any singular or particular area of human existence, but rather has systemic implications on various aspects of life including health, environment, IP, food and agriculture, human rights and even trade and development. Though these do not represent an exhaustive list, the thematic approach was used to depict the recognition of the importance of TK in all spheres of life.

Chapter three contributes to answering the research question by tracing the history of the Nagoya Protocol, and analysing its provisions within the TK protection framework.

3.0 CHAPTER THREE:

The Protection of Traditional Knowledge under the Nagoya Protocol

3.1 INTRODUCTION

This chapter traces the development of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation (the Nagoya Protocol) and analyses its TK-related provisions.

The Nagoya Protocol is one of the instruments that seeks to provide legal certainty regarding access and benefit sharing (ABS) for the use and conservation of biodiversity. Traditional knowledge (TK) is inseparable from the environment, and there is a large concentration of TK holders in biodiversity rich regions, therefore, the Nagoya Protocol has been negotiated with clear regard for TK protection and the protection of indigenous people's rights. There are two strands by which the history of the protocol is examined; the historical evolution of the subject matter of the Protocol, and the progress of the actual negotiations which led to the adoption of the Protocol.

The chapter has three parts. The first part provides an overview of the Protocol; its objectives and the major justifications for its negotiation. Part two examines the dual strands of the Protocol's history (outlined above). The third part examines the Protocol critically, from the perspectives of Access, Benefit Sharing, Compliance, and Capacity development.

3.1.0 PART ONE.

3.1.1 THE NAGOYA PROTOCOL

The Nagoya Protocol[261] is a follow up instrument negotiated to further implement the provisions of the Convention on Biological Diversity (CBD).[262] Prior to the Nagoya Protocol, the CBD had negotiated 2 major agreements; the Cartagena Protocol on Biosafety,[263] and the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation (Bonn Guidelines).[264] The Nagoya Protocol builds on these developments, and purports to offer a sustainable solution to ABS with regard to genetic resources (GRs) and their associated TK.

The Nagoya Protocol is in harmony with the Bonn Guidelines,[265] and aims to advance the CBD's third objective[266] by providing greater legal certainty and transparency for both providers and users of GRs.[267] Its holistic package contributes to the conservation and sustainable use of biological diversity and her components, through appropriate: access to GRs, transfer of technologies, respect for rights of such resource holders as well as technology providers, and funding.[268] The Secretariat of the CBD proposes that;

> 'By promoting the use of genetic resources and associated traditional knowledge, and by strengthening the opportunities for fair and equitable sharing of benefits from their use, the (Nagoya) Protocol will

[261] See CBD *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity; Text and Annex* (2011) 1. (hereafter Nagoya Protocol; Text and Annex).

[262] This was at the United Nations Conference on Environment and Development (the Rio Earth Summit), held in Rio de Janeiro in 1992.

[263] The *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. It was adopted on 29 January 2000 and entered into force on 11 September 2003. See CBD 'The Cartagena Protocol on Biosafety' available at *http://bch.cbd.int/protocol/* (accessed on 29 March 2011).

[264] See CBD 'Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation' (2002) Available at *www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf*.

[265] See Goffe M 'Recent developments in the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore' (2011) Vol. 1 No. 1 *Queen Mary Journal of Intellectual Property*, 97. Available at *http://e-elgar.metapress.com/content/m126925l22880007/fulltext.pdf* (Accessed on 8 April 2011).

[266] The third objective of the Convention as provided for in Article 1 of the CBD involves 'the fair and equitable sharing of the benefits arising from the utilisation of genetic resources'. See Article 1 CBD. See also Par. 2 of the Preamble to the Nagoya Protocol which recalls the third objective of the Convention, while yet recognising that the Protocol pursues the implementation of this objective within the Protocol.

[267] See CBD *Nagoya Protocol: Text and Annex* (note 261 above) 1. See also Par. 9 of the Preamble to the Nagoya Protocol.

[268] Article 1, CBD (2010).

> create incentives to conserve biological diversity, sustainably use its components and further enhance the contribution of biological diversity to sustainable development and human well-being'.[269]

Overall, the Nagoya Protocol pursues the attainment of Article 1's collective objectives.[270] The third objective is, however, its specific thrust, on the understanding that objective three is a key element of measures to realise the two preceding objectives.[271]

The Nagoya Protocol was adopted by the Conference of the Parties (COP)[272] to the CBD on 29 October 2010 in Nagoya, Japan.[273] It applies to GRs that are covered by the CBD, and to the benefits arising from their utilisation.[274] It also covers TK associated with GRs (TK*a*GRs) that are covered by the CBD and the benefits arising from its utilisation.[275] It addresses TK*a*GRs with provisions on access, benefit-sharing, capacity building and compliance.[276]

3.1.2 JUSTIFICATION FOR THE NAGOYA PROTOCOL

The Protocol was negotiated against the backdrop of calls from biodiversity rich developing countries to put an end to the increasing incidences of biopiracy. GRs were initially viewed as the common heritage of mankind,[277] but with the advent of the CBD, sovereignty over GRs was placed in the providing State.[278] This however failed to address the incidences of biopiracy completely, a major problem being that the economic liberalisation and opening up of borders, especially in the wake of the WTO disciplines on freer trade, led to an increase in

[269] See CBD *Nagoya Protocol: Text and Annex* (note 261 above) 1. (Brackets mine).
[270] See Article 1 CBD which provides for the first two objectives of the protocol as being the conservation of biological diversity; and the sustainable use of its components.
[271] See Kamau E, Fedder B and Winter G 'The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and What are the Implications for Provider and User Countries and the Scientific Community?', (2010) 6/3 *Law, Environment and Development Journal* 249 available at *http://www.lead-journal.org/content/10246.pdf* (accessed on 20 March 2010).
[272] See Article 28.2 of the CBD which provides that the Protocols shall be adopted at a meeting of the Conference of the Parties (COP), a body established under Article 23 of the CBD. The COP is the Convention's governing body. It meets every two years, or as needed, to review progress in the implementation of the Convention. It also is mandated to adopt programmes of work, to achieve its objectives, and provide policy guidance. See CBD 'Convention Bodies' available at *http://www.cbd.int/convention/bodies.shtml* (accessed on 30 March 2011).
[273] See 'The Nagoya Protocol on Access and Benefit Sharing' available at *http://www.cbd.int/abs/* (accessed on 28 March 2011). It was thereon opened for signature on 2 February 2011 and is expected to come into force 90 days after it receives a 50th ratification. See Articles 32 and 33 of the Nagoya Protocol.
[274] See Article 3 of the Nagoya Protocol.
[275] See Article 3 of the Nagoya Protocol.
[276] See *Nagoya Protocol: Text and Annex* (note 261 above) 1.
[277] See Srinivas K 'TK and Intellectual Property Rights: A Note on Issues, Some Solutions and Some Suggestions' (2008) 3 *Asian Journal of WTO and International Health Law and Policy* 89.
[278] See par. 4 of the Preamble to the CBD. See also Articles 3 and 4 of the CBD.

the trans-boundary movement of GRs.[279] National laws to check biopiracy could not check piracy in foreign jurisdictions. Reji[280] argues that this unfortunate state of affairs was further compounded by such factors as;

i. Differences in the patentability criteria. Significantly, not all countries for instance recognised oral forms of prior art in considering patent applications.[281]
ii. The difficulty in offering an exhaustive definition of what constituted biopiratical acts. This lack of a clear definition, posed a difficulty in identifying biopiratical acts from the onset.
iii. The high costs of challenging patents and policing biopiracy vigilantly which many developing countries were unable to meet
iv. Sometimes language differences made tracing patents an onerous and virtually impossible task.[282]

This was the backdrop to developing countries' demand for an international regime for ensuring that access to GRs or TK is made subject to PIC and on mutually agreed terms (MATs). They also wanted to ensure that supplier countries obtain a fair and equitable share of benefits of the use of the GRs originating within their territories.[283]

[279] Reji J 'International Regime on Access and Benefit Sharing: Where Are We Now?' (2010) 12 *Asian Biotechnology and Development Review* 80.
[280] Reji J (note 279 above) 80.
[281] This resulted in patents been secured on undocumented TK practices which were largely already in the public domain. He offers an example of India's efforts in compiling a database of TK practices which proved to be of immense benefit to the indigenous peoples in India in protecting them from such forms of exploitation. See Reji J (note 279 above) 80.
[282] In countries like Japan for instance, the Patent Office keeps its records in Japanese. This has made it difficult for foreign countries to keep track with the patent applications as well as grants in such countries as against countries which maintain their records in internationally recognised languages like English, French and Spanish.
[283] See Reji J (note 279 above) 80.

3.2.0 PART TWO

3.2.1 THE ROAD TO NAGOYA

International negotiations, leading up to the Nagoya Protocol, may best be traced in two strands: the development of the global ABS regime,[284] and the major events that led directly to the adoption of the Protocol.

How did benefit sharing come about? Though the term benefit sharing is often utilised in the context of ABS and the 3rd objective of the CBD,[285] it has been in existence before the adoption of the CBD.[286] The 1987 Brundtland Commission Report[287] to the General Assembly of the United Nations, titled 'Our Common Future',[288] appears to contain the first known international reference to the issue of benefit sharing.[289] The Brundtland Commission Report identified the growing disparities in the distribution of wealth accruing from the use of GRs. It also highlighted the handicaps most developing countries face in conserving them; a dearth of scientific skills, institutional capacity, and necessary funds.[290] The Commission observed that this was the position in spite of developing countries recognising the need to safeguard their threatened species.[291] It therefore called on developed countries to partner

[284] This is accountable to the fact that Access and Benefit Sharing forms the central objective of the Protocol as provided for in Article 1 of the Protocol.

[285] See Morgera E & Tsioumani E '*The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods*' Traditional Knowledge Bulletin (Topical Issues Series) United Nations University, Institute of Advanced Studies October 2010, 2.

[286] Morgera E, Tsioumani E (note 285 above) 2. This view is also supported by Peria E 'Benefit-Sharing from the Use of Genetic Resources: Real Myths or Mythical Realities?' in Burrows B (ed) *The Catch: Perspectives in Benefit Sharing* (2005) 166.

[287] Formally referred to as the World Commission on Environment and Development (WCED), the Brundtland Commission was established by the United Nations General Assembly in 1983. It is often referred to informally by the name of its Chair, Mrs Gro Harlem Brundtland – the former Prime Minister of Norway. Its final report was presented on 27 April 1987 to the UN General Assembly. For the full report see World Commission on Environment and Development (WCED) *Our Common Future* (1987) (hereafter WCED *Our Common Future*) Available at *http://www.un-documents.net/ocf-06.htm#I* (last accessed on 22 February 2011).

[288] See WCED *Our Common Future* (note 287 above).

[289] Peria E (note 286 above) 163. The Commission is most fondly remembered for conceptualising the principle of sustainable development, which it defined. In the Commission's words, sustainable development may be described as '...development that meets the needs of the present without compromising the ability of future generations to meet their own needs...' See WCED *Our Common Future* (note 287 above) 43.

[290] Peria E (note 286 above) 163.

[291] 'Many of the nations with the least capacity for managing living resources are those richest in species; the tropics, which contain at least two-thirds of all species and a still greater proportion of threatened species, roughly coincide with the area generally referred to as the Third World. *Many developing nations recognize the need to safeguard threatened species but lack the scientific skills, institutional capacities, and funds necessary for conservation. Industrial nations seeking to reap some of the economic benefits of genetic resources should support the efforts of Third World nations to conserve species; they should also seek ways to help tropical nations and particularly the rural people most directly involved with these species realize*

developing countries in achieving this objective. The 'International Action for National Species Plan', in the Report recommended that 'developing countries must be ensured an *equitable* share of the economic profit from the use of genes for commercial purposes.'[292] The principles of state sovereignty over natural resources occurring within their territory, was not firmly established at the time the Report was presented.[293] Plant GRs were considered a part of the common heritage of human kind to which no country could claim exclusive rights.[294] Benefit sharing was popularised through the CBD, which for the first time recognised the sovereignty of nations over their GRs,[295] and placed it within a legal framework.[296]

A golden thread running through the Brundtland Report, of utmost importance to this research, is the issue of origins and ownership of GRs.[297] The report was written within a dispensation that saw GRs as global assets, which needed to be exploited freely and conserved to address global needs, with little or no regard to the origins of such resources.[298] Though the Commission Report did not refer specifically to TK, or its protection, it recognised the role played by host countries, within whose borders the resources are found,

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some of the economic benefits of these resources...Developing countries must be ensured an equitable share of the economic profit from the use of genes for commercial purposes' (italics mine) WCED *Our Common Future* (note 287 above). Pars. 38, 51.

[292] See WCED *Our Common Future* (note 287 above) Par. 51.

[293] Srinivas argues that in the 60s and 70s, there was a debate in the UN and elsewhere on the 'Common Heritage of Mankind' and the 'National Sovereignty over Natural Resources.' Though the UN General Assembly recognised the idea of National Sovereignty over natural resources, the principles was only firmly established in international law for the first time in 1992, with the adoption of the CBD. See Srinivas K (note 277 above) 89.

[294] In explaining the common heritage regime, Brush points out that 'common heritage refers to the treatment of genetic resources as belonging to the public domain and not owned or otherwise monopolised by a single group or interest'. Brush maintains that, reference to crop genetic resources as a common heritage appeared in the 1980's in association with the establishment of the Commission of Plant Genetic Resources at the Food and Agricultural Organisation of the United Nations (FAO Commission) and the launching of the International Undertaking of Plant Genetic Resources. The 1983 conference establishing the FAO Commission and International Undertaking affirmed a resolution stating that 'Plant genetic resources are a heritage of mankind and consequently should be available without restriction'. See Brush S 'The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge' in McManis C (ed) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2007). 298 – 299. See also Srinivas K (note 277 above) 89.

[295] See Par. 4 of the preamble to the Convention. See also Article 15(1) of the CBD.

[296] See Article 1 of the CBD.

[297] The CBD had dealt with this but it remained one of the pressing issues being discussed at the TRIPS Council, because TRIPS had failed to specify disclosure obligations for patent applications.

[298] See for instance the assertion in par. 48, that 'Species and their genetic resources - *whatever their origins* - plainly supply benefits to all human beings...' (Italics mine). It went on to give examples of genetic resources which are utilised globally in spite of their sources of origin. Par. 48 – 49. The warning signs on global depletion of GRs were probably first noticed here, and in par. 50, the committee went on to predict that probably the earth's species will be soon become assets to be conserved for the entire human race. See WCED *Our Common Future* (note 287 above) Par. 48 – 50. See also Srinivas K (note 277 above) 89.

and the need to compensate them through equitable sharing of benefits.[299] It also recognised the need, as a matter of priority, to establish a Convention to ensure the conservation of species.[300]

The Report established a foundation for the negotiations which culminated in the CBD. In response to the global depletion of GRs and biodiversity, and the threat posed to future generations by the loss of biodiversity, the United Nations Environment Programme (UNEP) convened an 'Ad Hoc Working Group of Experts on Biological Diversity' in November 1988[301] to explore the need for an international convention on biological diversity.[302] Soon thereafter, in May 1989, it established the 'Ad Hoc Working Group of Technical and Legal Experts' to prepare an international legal instrument for the conservation and sustainable use of biological diversity.[303] The experts were to take into account 'the need to share costs and benefits between developed and developing countries' as well as 'ways and means to support innovation by local people'.[304] By February 1991, the Ad Hoc Working Group had become known as the 'Intergovernmental Negotiating Committee'. Its work culminated on 22 May 1992 with the Nairobi Conference for the Adoption of the Agreed Text of the Convention on

[299] Benefit sharing as espoused by the Commission was utilised in the light of its role in attaining the Commission's major conceptual discovery; the issue of sustainable development. It (benefit sharing) was recommended among others as a major factor to be considered in achieving sustainable development. Par. 60 specifically states *inter alia*;

> '...any such arrangement(for the financial structure of the Convention)...must not only seek to ensure the conservation of genetic resources for all people, but assure that the nations that possess many of these resources obtain an equitable share of the benefits and earnings derived from their development...this would greatly encourage the conservation of species…' (brackets mine).

[300] The Commission reported that; 'Governments should investigate the prospect of agreeing to a 'Species Convention', similar in spirit and scope to the Law of the Sea Treaty and other international conventions reflecting principles of 'universal resources'. A Species Convention...should articulate the concept of species and genetic variability as a common heritage… Collective responsibility for the common heritage would not mean collective international rights to particular resources within nations…but it would mean that individual nations would no longer be left to rely on their own isolated efforts to protect species within their borders… Any such arrangement...must not only seek to ensure the conservation of genetic resources for all people, but assure that the nations that possess many of these resources obtain an equitable share of the benefits and earnings derived from their development...this would greatly encourage the conservation of species…' WCED Our Common Future (note 287 above) Paras. 58 – 60.

[301] See CBD 'History of the Convention' available at *http://www.cbd.int/history/* (Accessed on 22 February 2011). The relationship between economic development and environmental degradation was first placed on the international agenda in 1972, at the UN Conference on the Human Environment, held in Stockholm. It was after this Conference that Governments set up the United Nations Environment Programme (UNEP), which today continues to act as a global catalyst for action to protect the environment. See United Nations Department of Public Information 'Earth Summit; United Nations Conference on Environment and Development, 1992 (23 May 1997). (hereafter UNDPI 'Earth Summit') Available at *http://www.un.org/geninfo/bp/envirp2.html* (Accessed on 30 March 2011) .

[302] See CBD 'History of the Convention' (note 301 above).

[303] See CBD 'History of the Convention' (note 301 above).

[304] See CBD 'History of the Convention' (note 301 above).

Biological Diversity, which was presented for signing at the Rio Earth Summit later in the year.[305]

In a separate, concurrent development, upon consideration of the 1987 Brundtland report, the United Nations General Assembly called for the UN Conference on Environment and Development (UNCED), the Rio Earth Summit.[306] The Brundtland exposition on sustainable development resulted in the primary goal of the Summit being to come to an understanding of 'development' that would support socio-economic growth and at the same time prevent the continued deterioration of the environment.[307] It was also geared at laying a foundation for a global partnership between the developing and the more industrialized countries, based on mutual needs and common interests that would ensure a healthy future for the planet.[308] The adopted text of the Convention was opened on 5 June 1992 and remained open for signature until 4 June 1993,[309] by which time it had received 168 signatures.[310] The Convention entered into force on 29 December 1993, which was 90 days after the 50th country had ratified it.[311] The road to Nagoya starts with the CBD because Nagoya is a Protocol to the CBD and the objectives and provisions of the Protocol are only fully understood in connection with the provisions of and against the background of the CBD.

3.2.2 ACCESS AND BENEFIT SHARING (ABS) WITHIN THE CBD

The CBD was a dramatic step forward in the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of GRs.[312] The CBD emphasised the role of associated TK to the actualisation of the goals of the Convention.[313] The CBD is the first legal instrument to recognise the sovereignty of nations over their GRs[314] and it also formally introduced the concept of benefit sharing

[305] See CBD 'History of the Convention' (note 301 above).
[306] This conference was held between the 3-14 June 1992 in Rio de Janeiro, Brazil. It is informally referred to as the Rio Earth Summit, 1992. It held 20 years after the first global environmental conference in Stockholm, Sweden in 1972, to help Governments rethink economic development and find ways to halt the destruction of irreplaceable natural resources and pollution of the planet. See UNDPI 'Earth Summit' (note 312 above).
[307] See UNDPI 'Earth Summit' (note 301 above).
[308] See UNDPI 'Earth Summit' (note 301 above).
[309] See Article 33 of the CBD.
[310] See UNDPI 'Earth Summit' (note 301 above).
[311] See Articles 34 and 36 of the CBD.
[312] See Article 1 CBD.
[313] See Par. 12 of the Preamble to the CBD. See also Article 8(j) of the CBD.
[314] See Article 15.1 CBD. See also Egziabher TBG 'Benefit Sharing' in Burrows B (ed) *The Catch: Perspectives in Benefit Sharing* (2005) 221-222. This view though has often been argued, reflecting the fact that international law had already provided prior to the Convention that states have sovereignty over their

within the international framework for the exploitation and conservation of biodiversity.[315] The CBD also recognised the rights of ILCs to have their TK, innovations and practices which prove relevant for the conservation, exploitation and sustainable use of biological diversity, legally respected.[316] This was necessary, as many, especially industrialised countries, viewed the introduction of the CBD, as an attempt to restrict hitherto unhindered access to GRs. This was not the rationale, but rather, the CBD was prompted by the need to respect as well as equitably share the benefits accruing from the use of the GRs with the host communities. The CBD has been explained by some authors as a product of compromises. Notably, in exchange for continued access to GRs, developing countries were accorded sovereign rights over the GRs found within their jurisdictions.

The CBD outlined a general framework on ABS, leaving the development of specific rules, protocols and decisions for its implementation to the COP for progressive negotiations:[317] it *guaranteed* no major differences to the ABS regime, but rather provided a platform for negotiations on the implementation of its objectives. The failure of the CBD to make any significant impact on the ABS regime may also be explained in terms of its nature, which has been described as an example of a 'hard' international law characterised by a 'soft' nature.[318]

natural resources. As Birhanu explains, although the CBD remains the first binding multilateral regime to specifically affirm the principle of sovereignty of states over their own GRs as against the widely held understanding that the genetic resources could be accessed freely as they were the common heritage of mankind, the principle of sovereignty of nations over their natural resources had already been affirmed by international law long before the entry into force of the CBD. Thus, according to the author, it may be argued that in the narrow context of GRs, the CBD merely changed the understanding that, 'despite the established sovereignty of states over their natural resources under international law, genetic resources still remained the 'common heritage of mankind'', by clearly identifying them as property of the providing states. See Birhanu FM 'Challenges and Prospects of Implementing the Access and Benefit Sharing Regime of the Convention on Biological Diversity in Africa: The Case of Ethiopia' (2010) *Springer Science + Business Media B.V.* 251 also available at *http://www.springerlink.com/content/c3893726127p1290/fulltext.pdf* (accessed 22 February 2011).

315 See Birhanu FM (note 314 above).

316 See Article 8(j) CBD which provides *inter alia* that 'Each contracting party shall...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...and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices' See Egziabher TBG (note 314 above) 222.

317 See Birhanu FM (note 314 above).

318 This has been attributed to its strict natured provisions which use mandatory language to describe obligations of Parties, yet fail to accompany such mandatory obligations with requisite enforcement measures in case of breaches. See Harrop S "'Living in Harmony with Nature'? Outcomes of the 2010 Nagoya Conference of the Convention on Biological Diversity" (2011) 23 *Journal of Environmental Law* 117 – 128.

Though the CBD was adopted in 1992, and entered into force at the end of 1993, it was not until 1999 that efforts to put her provisions to operation began in earnest.[319]

3.2.3 SUBSEQUENT DEVELOPMENTS WITHIN THE CBD

In order to assist parties and stakeholders with a solution to biopiracy while yet promoting access and the sharing of benefits, the fifth meeting of the COP to the CBD (COP5)[320] established the Ad Hoc Open-ended Working Group on Access and Benefit-Sharing (WG-ABS).[321] The WG-ABS was given the mandate to develop guidelines and other approaches for access to and sharing of benefits from the use of biodiversity for submission at the sixth meeting of the COP.[322] This mandate was in furtherance of the foundation laid by the fourth COP,[323] where a 'Panel of Experts on Access and Benefit-Sharing' was established to clarify principles and concepts related to ABS.[324] The work of the WG-ABS was to be carried out in close coordination with the 'Working Group on Article 8(j) and Related Provisions'[325]. The result of these efforts was the Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising out of Their Utilisation (the Bonn Guidelines),

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[319] Secretariat of the CBD *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation* (2002). iii.

[320] The Fifth Meeting of the COP to the CBD was held in *Nairobi, Kenya* from the 15 - 26 May 2000. Available at *http://www.cbd.int/decisions/* (Accessed on 2 April 2011).

[321] See COP 5 Decision V/26 (A.11) Available at *http://www.cbd.int/decisions/cop/?m=cop-05* (accessed on 30 March 2011).

[322] See COP 5 Decision V/26 (A.11). Available at *http://www.cbd.int/decisions/cop/?m=cop-05* (accessed on 30 March 2011).

[323] The Fourth Meeting of the COP to the CBD was held in *Bratislava, Slovakia* from the 4 - 15 May 1998. The full decisions of the Parties are available at *http://www.cbd.int/decisions/* (Accessed on 2 April, 2011).

[324] See COP 4 Decision IV/8 (3). The COP decided to establish a regionally balanced panel of experts with the following specific mandate:

> '...to draw upon all relevant sources, including legislative, policy and administrative measures, best practices and case-studies on access to genetic resources and benefit-sharing arising from the use of those genetic resources...in the development of a common understanding of basic concepts and to explore all options for access and benefit-sharing on mutually agreed terms including principles, guidelines, and codes of conduct of best practices for access and benefit-sharing arrangements.'

The Panel discussed issues such as prior-informed consent, mutually agreed terms, benefit-sharing, capacity-building and stakeholder involvement in access and benefit sharing processes. See Decision IV/8 of COP 4, available at *http://www.cbd.int/decision/cop/?id=7131* (accessed on 30 March 2011).

[325] By Article 8(j) of the CBD, the Parties commit themselves to respect, preserve and maintain the knowledge, practices and innovations of indigenous peoples relevant for the conservation of biological diversity, promote their wider application and ensure an equitable sharing of the benefits arising from the use of such knowledge. It is on the basis of this that a Working Group on Article 8(j) and related provisions was established in 1998 by the COP 4 as one of the bodies of the Convention. See COP 4 Decision IV.9 (1) – (9). At its fifth meeting in 2000, the COP further adopted a programme of work to implement the commitments of Article 8 (j) of the Convention and to enhance the role and involvement of ILCs in the achievement of the objectives of the Convention. See also generally CBD 'Working Group on Article 8(j)' Available at *http://www.cbd.int/convention/wg8j.shtml* (Accessed on 2 April 2011). Significantly therefore the protection of TK in line with the Convention's objectives was given a pride of place in the subsequent negotiations.

which was adopted at the sixth meeting of the COP in 2002 held in the Hague.[326] Despite its adoption, some environmental NGO's at the time expressed fears, pointing out that the adoption of the Bonn Guidelines was no substitute for legally binding national instruments.[327] The Bonn guidelines constituted a mere guide and in itself imposed no strict obligations on parties. In a practical sense, it was expected to be used when developing and drafting legislative, administrative, or policy measures on access and benefit-sharing and contracts among parties.[328] On the whole, the Bonn Guidelines played a major role in the development of provider measures, even though these measures did not achieve the envisaged success owing largely to the voluntary nature of the users' undertakings.[329]

The World Summit for Sustainable Development (WSSD) which was held in Johannesburg in 2002 was another significant milestone in the development of the Nagoya Protocol.[330] The WSSD called for the negotiation of an international regime within the framework of the Convention, to promote and safeguard the fair and equitable sharing of benefits arising from the utilisation of GRs, with a view to further advancing the third objective of the Convention.[331] This was in part a response to arguments of 'megadiverse' countries,[332]

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[326] See COP 6 Decision VI/24 A available at *http://www.cbd.int/decision/cop/?id=7198* (accessed on 22 February 2011). The Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising out of Their Utilisation was so named owing to the location of the intergovernmental meeting which held in Bonn, Germany in October 2001 and prepared the first draft of the agreement. The Bonn Guidelines are intended to guide users and providers of genetic resources inter alia in developing mechanisms and arrangements for ABS with the participation of relevant stakeholders and based on their prior informed consent and mutually agreed terms. See Kamau E, Fedder B & Winter G (note 271 above) 249.

[327] Tully S 'The Bonn Guidelines on Access to Genetic Resources and Benefit Sharing' (2003) 12 *Review of European Community and International Environmental Law (RECIEL)* 86. The International Indigenous Biodiversity Forum for instance, among others, objected to the draft, stating that, consistent with self determination, indigenous peoples should be duly recognised as rights holders and not merely stakeholders over genetic resources. 86.

[328] See Dutfield G & Suthersanen U *Global Intellectual Property Law* (2008).

[329] See Kamau E, Fedder B & Winter G (note 271 above) 249.

[330] Ten years after the 1992 Earth Summit in Rio, heads of states and governments, national delegates and leaders from NGO's, businesses and other major groups once again converged in Johannesburg (at the Sandton Convention Centre) for the Johannesburg Summit 2002 – popularly known as the World Summit on Sustainable Development (WSSD). This was with a view to focusing the world's attention and direct action toward meeting difficult challenges, including improving people's lives and conserving natural resources in the light of the growing global population; a situation which resulted in ever-increasing demands for food, water, shelter, sanitation, energy, health services and economic security. This Summit was held between the 26 August and 4 September 2002. Significantly, owing to the poor implementation of the Agenda 21 as adopted at the 1992 Earth Summit in Rio, which represented an unprecedented global plan of action for sustainable development, the Johannesburg Summit offered another opportunity for the world's leaders to adopt concrete steps and identify quantifiable targets for better implementing Agenda 21 adopted at the 1992 Earth Summit in Rio but poorly implemented. See UN 'Johannesburg Summit 2002' available at *http://www.un.org/jsummit/html/basic_info/basicinfo.html* (accessed on 20 March 2011).

[331] Paragraph 44 (o) of the Plan of Implementation adopted by the Summit called for action to 'negotiate within the framework of the Convention on Biological Diversity, bearing in mind the Bonn Guidelines, an

pointing out that they would be compelled to restrict access to GRs for researchers, business and private investments if there were no clear international rules on access to GRs. Towards

international regime to promote and safeguard the fair and equitable sharing of benefits arising out of the utilization of genetic resources'. Paragraph 44 (n) called for action to promote 'the wide implementation of and continued work by the Parties to the Convention on the Bonn Guidelines...as an input to assist the Parties when developing and drafting legislative, administrative or policy measures on access and benefit-sharing as well as contract and other arrangements under mutually agreed terms for access and benefit-sharing'. In March 2003, following the developments at the World Summit on Sustainable Development, the issue of an international regime on access and benefit-sharing was addressed as a distinct agenda item by the Inter-sessional meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010. The Inter-sessional meeting recommended that the Ad Hoc Open-ended Working Group on access and benefit-sharing consider the process, nature, scope, elements and modalities of such an international regime on access and benefit-sharing at its second meeting in December 2003 as specified in Decision VI/24 A.
The Inter-sessional meeting also invited Parties to provide information to the Executive Secretary on experience gained in the use of the Bonn Guidelines, taking into consideration information to be provided by Parties pursuant to decision VI/24 A. It also invited Parties, other Governments, indigenous and local communities and relevant organizations to provide their views on the process, nature, scope, elements and modalities of an international regime on access to genetic resources and benefit-sharing prior to the second meeting of the Ad Hoc Open-ended Working Group on Access and Benefit-sharing.

[332] A crucial factor in the fuller appreciation of the background to the calls for an international regime on ABS relates to the significant role played by the Like Minded Megadiverse Countries (LMMC) in this regard. The LMMC is a group of 17 countries which hold more than 70% of all biodiversity and 45% of the earth population (See Par. 3 of the Preamble to the Cancun Declaration of Like Minded Megadiverse Countries 2002. Available at *http://pe.biosafetyclearinghouse.net/actividades/2009/grouplmmc.pdf* (accessed on the 2 April 2011) (hereafter Cancun Declaration 2002)). These countries, which include 3 African representatives, are Bolivia, Brazil, China, Colombia, Costa Rica, Democratic Republic of Congo, Ecuador, India, Indonesia, Kenya, Madagascar, Malaysia, Mexico, Peru, Philippines, South Africa and Venezuela. The LMMC was established by the Cancun Declaration in February 2002, with 15 primary objectives. See Declaration 1(a) – (o). While recognising the importance of TK in biodiversity conservation (Par. 6 of the Preamble), as well as the limitations of the various existing international instruments to protect effectively the legitimate interests of the countries of origin of biodiversity (Par. 7 of the Preamble), the Group was established as a mechanism for consultation and cooperation for the promotion of interests and priorities related to the preservation and sustainable use of biodiversity (See Declaration 1). Among the objectives of the Group, the group significantly sought *inter alia* the creation of an international regime to effectively promote and safeguard the fair and equitable sharing of benefits arising from the use of biodiversity and its components. According to them, the regime which they sought should contemplate, inter alia, the following elements: certification of the legal provenance of biological materials, prior informed consent and mutually agreed terms for the transfer of genetic material, as requirements for the application and granting of patents, strictly in accordance with the conditions of access agreed by the countries of origin (Declaration 1 (h)). It also pursued through its objectives the development of a sui generis regime for the protection of traditional knowledge (Declaration 1(m)), the further integration of TK into the intellectual property rights system, with a view to earning greater recognition in patent request evaluations (Declaration 1(n)), and a renewed and better informed fight against biopiracy (Declaration 1(o)). This Declaration was made on the 18 February 2002, which was just about 6 months before the WSSD which held between 26 August 2002 and 4 September 2002. Notably, this was an independent move, premised on the fears that no substantial agreement may be made with regard to the international regime later that year. (See Peria E (note 286 above) 166.) Since the formation of the Group though, its tremendous impact has been felt in all areas of negotiations on biodiversity conservation and TK protection (see Par. 8 of the preamble to the Cancun Declaration). Significantly, the effect of the Declaration and the presence of the LMMC at the WSSD gave a greater platform to the calls by the developing biodiversity rich countries for an international regime on ABS. This group was extremely active at the WSSD in pushing forward the case of biodiversity rich countries especially with the need to negotiate an international regime. With the support of the G77, these efforts resulted in the decision to negotiate an international regime. (See Reji J (note 279 above) 80).The subsequent negotiations in the LMMC have resulted in the Cusco Declaration 2002 and Kuala Lumpur Plan of Action 2004. India in its capacity as the President of the Group further organized a meeting of the LMMCs in New Delhi in January 2005. The adopted New Delhi Declaration 2005 further served to sharpen the negotiating stance of the LMMCs in the context of the negotiations for the international regime on Access and Benefit Sharing.

the close of the Summit, the parties agreed to press for an international ABS system negotiated within the framework of the CBD and its Bonn Guidelines.[333]

CBD COP 7,[334] in response, mandated the WG-ABS to elaborate and negotiate together with the Working Group on Article 8(j), an international regime on access to GRs and the sharing of benefits arising from its utilisation.[335] This was to take into primary consideration the proper implementation of Article 15 and Article 8 (j) of the Convention.[336]

At the eighth meeting of the COP,[337] the WG-ABS was requested to continue the elaboration and negotiation of the international regime and instructed to complete its work at the earliest

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[333] See Par 42(o) 'Plan of Implementation of the World Summit on Sustainable Development', Johannesburg (2002).

[334] The Seventh Meeting of the Conference of the Parties to the Convention on Biological Diversity was held in *Kuala Lumpur, Malaysia* from the 9 - 20 February 2004.

[335] See COP 7 Decision VII/19 D.

[336] The Ad Hoc Open-ended Working Group on Access and Benefit-sharing met eleven times from 2005 to 2010 to negotiate an international regime on ABS. The Working Group held its third meeting in Bangkok, Thailand, from 14 to 18 February 2005 and its fourth meeting in Granada, Spain, from 30 January to 3 February 2006. At these meetings, the Working Group, *inter alia*, began negotiations for an international regime on access to GRs, in accordance with the Decision VII/19 D of the Conference of the Parties. Its fifth meeting was held in Montreal, Canada, from 8 to 12 October 2007, and its sixth meeting in Geneva, Switzerland, from 21 to 25 January 2008. In line with Decision VIII/4 of the eighth meeting of the Conference of the Parties, the Working Group continued the elaboration and negotiation of the international regime on access and benefit-sharing. At its eighth meeting, in Montreal, Canada, from 9 to 15 November 2009, the Working Group addressed the components of the International Regime related to TK associated with GRs, capacity-building, compliance, fair and equitable benefit-sharing, and access. For the first time, Parties agreed on a single negotiating text referred to as the '*Montreal Annex*' incorporating all the elements of the International Regime. Extensive progress was also made on the nature of the International Regime. At the ninth meeting of the Working Group in Cali, Colombia, from 22 to 28 March 2010, a draft Protocol was tabled by the Co-Chairs and accepted by Parties as a basis for further negotiations. *It is therefore often said that Cali is the birthplace of the Nagoya Protocol.* However, it was not possible to finalize the text at this session, and the Working Group therefore resumed the ninth meeting of the Working Group in order to complete its mandate. The first session of the resumed ninth meeting of the Working Group was held in Montreal, Canada, from 10 to 16 July 2010. Following a proposal by the Co-Chairs, the Working Group convened an Interregional Negotiating Group (ING) to continue negotiations of the draft Protocol. Though parties made significant progress in reaching a common understanding on core issues, such as the compliance, access, benefit-sharing including derivatives, as well as the relationship of the Protocol to other international instruments, the Working Group was unable to finalize the text and recognized that further work was needed in order to meet its objective of submitting a draft Protocol for adoption by the tenth Conference of the Parties. The Working Group therefore decided to reconvene the ING and that the ninth meeting of the Working Group would resume prior to COP-10, to endorse the work of the ING and forward recommendations to Parties. Following the recommendations from the Working Group, the ING resumed its work in Montreal, Canada, from 18 to 21 September 2010, and in Nagoya, Japan, from 13 to 15 October 2010. Significant progress in the negotiations of the draft Protocol was made during both ING meetings, but the group was not able to finalize the negotiating text. The second session of the resumed ninth meeting of the Working Group was held on 16 October 2010, in Nagoya, Japan, during which it endorsed the work of the ING and forwarded a draft Protocol on ABS for the consideration of Parties at COP-10. See generally 'The 'Background' to the Nagoya Protocol' available at *http://www.cbd.int/abs/background/* (accessed on 2 April 2011).

[337] The Eighth Meeting of the Conference of the Parties to the Convention on Biological Diversity was held in Curitiba, Brazil from 20 - 31 March 2006.

possible time before the tenth meeting of the Conference of the Parties, scheduled for 2010 in Japan.[338] This instruction was further reiterated at the ninth COP in Bonn, in May 2008.[339] In addition, the COP decided to establish three groups of technical and legal experts to assist the Working Group.[340]

The COP stressed the importance of effective ILC participation by encouraging Parties, Governments, international organizations and all relevant stakeholders to support the sufficient preparation and effective participation of ILCs in the progressive negotiations. The COP invited Parties, donors and other interested bodies to financially support ILCs to hold their own national and regional workshops.

At the tenth meeting of the Conference of the Parties, the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity* was adopted.[341] The Protocol aims to achieve its objectives by ensuring appropriate access to GRs, and appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components.[342] COP 10 also established an Ad Hoc Intergovernmental Committee (IGC) for the Nagoya Protocol as an interim governing body for the Nagoya Protocol with the responsibility of overseeing the functioning of the Protocol until the first meeting of the Parties to the Protocol, at which time it will cease to exist.[343]

Finally, reference must be made to the contributions of related instruments and organisations such as the TRIPS agreement of the WTO, the activities of the WIPO and also the role of the Plant Treaty.[344] These efforts are recognised by the Parties to the Protocol where they recognised the 'progress made by many intergovernmental forums in addressing access and benefit-sharing related issues.'[345] While adopting the Protocol, the Parties recognised that the international framework on ABS

[338] See COP 8 Decision VIII/4.
[339] The Ninth Meeting of the COP to the CBD was held from the 19 – 30 May 2008 in Bonn, Germany. See also Par. 2 COP 9 Decision IX/12.
[340] See COP 9 Decision IX/12.
[341] See Decision X/1. The Nagoya Protocol is contained in Annex 1 to the Decision X/1.
[342] See Article 1 of the Nagoya Protocol.
[343] See II of the COP 10 Decision X/1.
[344] See Par. 19 of the Preamble to the Nagoya Protocol
[345] See Par. 12 of the Preamble to COP 10 Decision X/1. See also Par. 18 of the Preamble to the Nagoya Protocol.

> '...is constituted of the Convention on Biological Diversity, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, as well as complementary instruments, including the International Treaty on Plant Genetic Resources for Food and Agriculture and the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization'[346]

3.2.4 CONCLUSION

The CBD has pursued the subsequent adoption of instruments within its framework with the aim of attaining its three objectives. The Bonn Guidelines and the Cartagena Protocol on Biosafety which preceded the Nagoya Protocol also sought to further this aim. The examination of the history of the Protocol has identified the major problems it was aimed at solving.

Flowing from the discussions in the chapter, it may be concluded that the negotiation of the Nagoya Protocol was a follow up to the Bonn Guidelines, geared primarily towards the issue of ABS concerning GRs and associated TK. The ABS provisions of the CBD and the Bonn Guidelines were extremely limited in the area of securing compliance from parties: this was a result of the soft-nature of the 'hard' obligations laid out in the CBD, and also, the voluntary nature of the Bonn guidelines. These instruments did not offer assistance to provider nations to effectively secure compliance with their legislation on ABS across their borders, a lacuna which led to an increase in incidences of biopiracy and bioprospecting, as well as an increase in the loss of biodiversity and GRs. Developing countries called for an international regime, capable of being enforced across borders, and which would also address finally the access to TK*a*GRs and the equitable sharing of benefits arising from its use. Through a process agreed on in 2002, and formally commenced in 2004, the Nagoya Protocol was eventually adopted in 2010.

The question which naturally follows is 'to what extent does the Nagoya Protocol offer a solution to the problems of TK holders, especially with respect to ABS obligations and the protection of their intellectual wealth?' The next part examines the provisions of the Protocol which relate to TK and its protection in an attempt to answer this question.

[346] See Par. 6 of the Preamble to COP 10 Decision X/1.

3.3.0 PART THREE

3.3.1 THE NAGOYA PROTOCOL AND TRADITIONAL KNOWLEDGE PROTECTION

ABS forms the basis for the two major issues dealt with in the Protocol; (i) the use of GRs and conservation of biodiversity; and (2) the use and protection of TK. Analysis of the provisions of the Nagoya Protocol is aimed at deciding whether they offer a sustainable solution to the protection of TK in countries of the South.[347] The examination shall be carried out under four main headings; Access, Benefit Sharing, Capacity Building and Compliance, as these headings have been identified as the major themes through which the negotiations for the protection of GRs and TK*a*GRs progressed, and effectively summarize the framework developed for the protection of TK under the Protocol. First one must however take an overview of the Protocol.

3.3.2 OVERVIEW OF THE NAGOYA PROTOCOL

The Nagoya Protocol has a 27-paragraph preamble, 36 substantive Articles and an Annex.[348] The preamble offers a context for interpretation of its Articles and Annex.[349] It refers to key provisions of the CBD which must be understood in order to gain a deeper understanding of the Protocol.[350] It also refers to other international agreements and treaties that relate directly to the issues dealt with in the Protocol.[351] In relation to TK*a*GRs and the fair sharing of the benefits from its use, the preamble recalls the relevance of Article 8(j) of the Convention[352] to

[347] Recall that it was on the insistence of the South that the Protocol was negotiated. The inquiry thus seeks to examine whether the implementation of the Protocol justifies their prior concerns.

[348] The singular annex of the protocol relates to the monetary and Non-monetary benefits which could form the basis of negotiations in benefit sharing agreements. See the CBD '*Nagoya Protocol:Text and Annex*' (note 261 above) 24.

[349] The Vienna Convention on the Law of Treaties provides that the preamble to a treaty must be construed as forming a part of the treaty. See Article 31(2) United Nations 'Vienna Convention on the Law of Treaties 1969' (2005) *UN Treaty Series, Vol. 1155* p331. The Nagoya Protocol, by the general rules of interpretation of the Vienna Convention forms an appendage to the CBD. See Article 31 (2)(a) Vienna Convention. It must therefore be read as a part of the CBD. Though it therefore constitutes a separate instrument in its own self, in a wider perspective, it forms a part of the CBD and should therefore be interpreted within the context of the CBD. See Article 31 (3)(a) Vienna Convention.

[350] See direct references for instance made in Par. 2 (which refers to Article 3 of the Convention), Par. 4 (which refers to Article 15 of the Convention), Par. 5 (which refers to Articles 16 and 19 of the Convention), and Par. 21 (which refers to Article 8(j) of the Convention).

[351] Examples of these include the International Health Regulations (2005) of the WHO (Par. 17), the International Treaty on Plant Genetic Resources for Food and Agriculture (Par. 19), the UN Declaration on the Rights of Indigenous Peoples (Par. 26), and Par. 18 which in a blanket fashion, acknowledges '...ongoing work in other international forums relating to access and benefit sharing'.

[352] Article 8(j) of the CBD provides 'each party shall, as far as possible and as appropriate...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 and

the attainment of the objectives of the Protocol.[353] The role TK plays in the conservation and sustainable use of biodiversity is similarly acknowledged.[354] The diversity of circumstances in which TK associated with GRs (TK*a*GRs) is held or owned by ILCs is also recognised.[355] ILCs themselves are invested with the right to determine ownership of the TK within their communities.[356] Finally, the preamble recognises the peculiar nature of TK, as an interwoven aspect of the cultural heritage of ILCs,[357] by recognising that such knowledge may be held orally, in writing or in other cultural forms.[358]

3.3.3 THE PROTECTION OF TRADITIONAL KNOWLEDGE

The Protocol seeks to fulfil the third objective of the CBD; the sharing of benefits arising from the use of GRs;[359] this is referred to in the preamble.[360]

The CBD's objectives as stated in Article 1 may be summarised as –

i. The *conservation* of biodiversity
ii. The *use* of its components in a sustainable way
iii. The *sharing* of benefits arising from the use of GRs in a fair and equitable way.

The Nagoya Protocol defines its objective to be –

> '...the fair and equitable *sharing* of the benefits arising from the utilisation of genetic resources...thereby contributing to the *conservation* of biodiversity and the sustainable *use* of its components'.[361] (Italics mine).

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biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge innovations and practices.

353 See Par. 21 of the Preamble to the Nagoya Protocol.

354 This, the preamble points out is due to the inseparable nature of TK and genetic resources for indigenous communities. See Par. 22 of the Preamble to the Nagoya Protocol.

355 See Par. 23 of the Preamble to the Nagoya Protocol.

356 See Par. 24 of the Preamble to the Protocol. This Paragraph must however be construed in close connection with Pars. 26 and 27 which respectively refer to the UN Declaration on the rights of Indigenous peoples and on the other hand affirm that nothing in the Protocol shall be construed as diminishing or extinguishing these existing rights of indigenous and local communities.

357 According to the United Nations study on the protection of cultural heritage, 'The heritage of indigenous peoples has a collective character and is comprised of all objects, sites and knowledge including languages, the nature or use of which has been transmitted from generation to generation, and which is regarded as pertaining to a particular people or its territory of traditional natural use. The heritage of indigenous peoples also includes objects, sites, knowledge and literary or artistic creation of that people which may be created or rediscovered in the future based upon their heritage.' See Erica-Irene D 'Final Report on the Protection of the Heritage of Indigenous Peoples' 12 UN Doc E/CN.4/Sub.2/26 (1995).

358 See par. 25 of the Preamble to the Nagoya Protocol. See also Harding S 'Defining Traditional Knowledge – Lessons From Cultural Property' (2004) 11 *Cardozo J. Int'l & Comp. L.* 511.

359 See Article 1 of the CBD.

360 See Par. 2 of the Preamble to the Nagoya Protocol.

These objectives as spelt out in the Convention and the Protocol respectively, employ three similar operative words, which may be summed as the ***conservation*** and ***use*** of biodiversity and its components, as well as the ***sharing*** of benefits from the utilisation of GRs. In achieving this, the Protocol recognises 5 important considerations; appropriate access to GRs;[362]appropriate transfer of relevant technologies;[363] the recognition of rights over GRs; the recognition of rights to technologies; and, appropriate funding.

TK is not mentioned in the objective of the Protocol. How then does TK protection constitute a central theme of discourse in relation to the Protocol? With respect to its scope and sphere of application,[364] the Protocol provides for two main components; GRs within the scope of Article 15 of the CBD; and TK associated with GRs within the scope of the CBD.

Article 15 deals with *access* to GRs which are provided by contracting parties that are countries of origin of such resources or by parties which have acquired the resources in accordance with the provisions of the Convention.[365] The emphasis on the providers of the GRs rather than the users[366] is important, as the ultimate obligations the Protocol impose lie with each contracting party that is a 'country providing genetic resources'. The 'country providing GRs' is explained to mean the country supplying GRs collected from *in-situ* sources,[367] including populations of both wild and domesticated species, or taken from *ex-situ* sources[368] which may or may not have originated in that country.[369] The scope of the GRs is therefore restricted under the Protocol, by its origins and not by its nature. Notably, human GRs are specifically excluded from the scope of the Protocol.[370]

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[361] See Article 1 of the Nagoya Protocol.
[362] See also Article 15 CBD.
[363] See also Article 16 CBD.
[364] See Article 3 of the Nagoya Protocol.
[365] See Article 15(3) of the CBD.
[366] In other words, in response to the depletion of biodiversity as well as the accusations by several poor biodiversity-rich countries of the South of exploitation of their genetic resources and TK by industrialised countries of the North, the Parties to the Protocol have placed the ultimate obligation in reversing this trend in the hands of the countries providing these resources.
[367] Though '*In-situ sources*' is nowhere defined specifically in the Convention, the scope of *In situ sources* may be inferred from the explanation given to *In-situ* conditions. In this light, *In-situ sources* relate essentially to sources in which genetic resources exist within ecosystems and natural habitats and in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties. See Article 2 CBD see also Article 8 of the CBD.
[368] See Article 9 of the CBD.
[369] See Article 2 of the CBD.
[370] See I.5 of COP 10 Decision X/1.

The scope of TK protection is related to 'TK associated with GRs' within the meaning of the Convention; i.e. all TK within the scope of the meaning of TK as defined in the Convention which is associated with GRs. Article 8(j)[371] forms the basis of measuring the scope. This interpretation is supported by the mandate given by the COP to the WG – ABS, '...to elaborate and negotiate an international regime on access to genetic resources and benefit-sharing with the aim of adopting an instrument\instruments to effectively implement the provisions in Article 15 and Article 8(j) of the Convention and the three objectives of the Convention'.[372] Significantly, since Article 15 is specifically mentioned in relation to the access to GRs, Article 8(j) which forms the basis of TK protection under the CBD, can be said to offer the basis for the scope with respect to TK as stated by the Parties to the Protocol. The Canadian representatives in recommending their view on 'associated traditional knowledge' describe it as;

> '...knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity that are;
>
> i. Associated with an in-situ genetic resource; and
>
> ii. Not in the public domain'[373]

The Protocol applies both to the protection of the knowledge and to the sharing of the benefits arising from the utilisation of such knowledge.

Various provisions relating to the protection of TK under the Protocol are now examined, under four headings - access, benefit sharing, compliance and capacity building.

3.3.3.1 Access to Traditional Knowledge

Article 7 provides for access to TK under the Protocol. It provides;

> 'In accordance with domestic law, each party shall take measures, as appropriate, with the aim of ensuring that traditional knowledge associated with genetic resources that is held by indigenous and

[371] Article 8(j) provides *inter alia* that each contracting party shall respect, maintain and preserve knowledge and innovations of traditional peoples embodying traditional lifestyles which are relevant for the conservation and sustainable use of biodiversity, promote the wider application of such knowledge and encourage the equitable sharing of benefits arising from such knowledge. The scope offered by this paragraph relates broadly to all forms of TK relevant for the sustainable use of biodiversity.

[372] See COP 7 Decision VII/19 D.

[373] See CBD UNEP/CBD/WG-ABS/8/3 'Collation of Operative Text Submitted by Parties, Governments, International Organisations, Indigenous and Local Communities and Relevant Stakeholders with Respect to Nature, Traditional Knowledge Associated with Genetic Resources and Capacity-Building' (September 9 2009) available at *http://www.cbd.int/doc/meetings/abs/abswg-08/official/abswg-08-03-en.pdf* (Accessed on 5 April 2011).

> local communities is *accessed* with the prior and informed consent or approval and involvement of these indigenous and local communities, and that mutually agreed terms have been established.'

Three key points are worth noting. First, measures regulating access to TK in biodiversity rich countries must be subject to an existing domestic law, underscoring the importance of well-informed legislation governing access to TK in developing countries. Indigenous representatives viewed this point with disaffection; they would have preferred such measures to be '*in accordance with customary laws'*, arguing that not all national laws take into consideration the unique customs, practices and livelihoods of TK holders.[374] The final text of the Protocol in probable response to this mandates Parties to take the ILCs' customary laws, community protocols and procedures with regard to TK, into consideration while implementing obligations under the Protocol.[375] Specifically Parties are mandated to '*endeavour to support, as appropriate*'[376] the development of community protocols in relation to access to TK associated with genetic resources (TK*a*GRs).[377] Such community protocols where developed, will, on the understanding of Article 12.1 of the Protocol, contribute to developing the national laws and thereby promote TK holders' interests at the national level.

Secondly, the obtaining of prior informed consent (PIC) from, as well as establishing of mutually agreed terms (MAT) with ILCs, are made prerequisites for access to the TK*a*GR. To achieve this, the protocol directs each Party to designate a National Focal Point (NFP) on ABS.[378] This NFP is expected to provide information to applicants who seek access to TK*a*GR with respect to the procedures for obtaining PIC of ILCs and establishing MATs.[379] This NFP shall be responsible for liaison with the Secretariat of the CBD.[380] The phrase '*where possible*' waters down the PIC requirement because it does not specify the instances

[374] See Reji J (note 279 above) 79. See also See Saez C 'Final Lap for Talks on Global Biodiversity Benefit-Sharing Protocol' (October 2010) *Intellectual Property Watch* Vol.7 No.10. 1. Available at *http://www.ip-watch.org/user/newsletter* (accessed on 4 April 2011).

[375] See Article 12.1 Nagoya Protocol.

[376] The use of such language is manifestly seen through the text of the protocol and is largely attributed to the extent of compromises in the course of negotiations. Such language has the effect of further reducing the potency of such binding obligations.

[377] See Article 12.3(a) Nagoya Protocol.

[378] See Article 13 Nagoya Protocol.

[379] See Article 13.1(b) of the Nagoya Protocol. This Article provides that the National Focal Point shall make available to 'applicants seeking access to traditional knowledge associated with genetic resources, where possible, information on procedures for obtaining prior informed consent or approval and involvement, as appropriate, of indigenous and local communities and establishing mutually agreed terms including benefit sharing'.

[380] See Article 13.1 Nagoya Protocol.

in which such PIC will not be possible.[381] Another significant creation of the Protocol is its provision for the designation of a competent national authority (CNA), which is expected to be responsible for advising prospective users of TK on applicable procedures and requirements for obtaining this PIC.[382] The CNA is also responsible for granting access, or in the alternative issuing written evidence that access requirements have been met.[383] The CNA is central with respect to the proper implementation of the Protocol's access requirements.[384] The Protocol lays down strict procedures to ensure that both users and providers of such TK are fully informed of all the obligations with respect to access required or expected of them.[385] Parties are expected to notify the Secretariat of such CNA's and NFP's no later than the date of its (the Nagoya Protocol's) entry into force, as well as any changes whatsoever to the contact information or responsibilities of these designated authorities.[386] Such information is then made accessible to all Parties to the Protocol through the ABS Clearing House.[387]

Thirdly, Article 7 makes the participation of the TK holders (communities) in developing access obligations a priority. For instance, Article 12 provides that in developing national laws on ABS, Parties must take local communities' customary laws into consideration.[388] It also mandates Parties to establish mechanisms, through which the effective participation of concerned ILCs can be secured, and for informing potential TK users of their obligations for access to such knowledge.[389] The Protocol, with regard to obtaining PIC and establishing MATs, mandates the NFP to provide information where possible to applicants seeking access

[381] From the Protocol though, this peculiar circumstance of situations in which obtaining PIC from communities is impossible is mentioned elsewhere, yet with no clear definition of situations which may be said to fall in such a category. Notably for instance, Article 10 provides for parties to consider a global multilateral benefit-sharing mechanism to address the fair and equitable sharing of benefits associated with the use of TK*a*GRs in situations such as trans-boundary situations, or in those situations in which it is not possible to grant or obtain PIC.

[382] See Article 13.2 Nagoya Protocol.

[383] See Article 13.2 Nagoya Protocol.

[384] Importantly, Parties may decide to combine the functions of the CNA and the NFP in one single entity (see Article 13.3 Nagoya Protocol).

[385] See Kamau E, Fedder B & Winter G (note 271 above) 250.

[386] See Article 13.4 Nagoya Protocol.

[387] This initiative is established by Article 14 of the Protocol as part of the clearing house mechanism provided for under Article 18 par. 3 of the CBD. This clearing house mechanism as provided for under Art. 18 par. 3 is specifically geared at promoting and facilitating technical and scientific cooperation. Such information to be made accessible by the Access and Benefit Sharing House includes information on legislative, administrative and policy measures on access and benefit sharing, information on the NFP and CNA, permits or their equivalents issued at the time of access as evidence of the decision to grant PIC and of the establishment of MATs.

[388] Article 12.1 Nagoya Protocol.

[389] Article 12.2 Nagoya Protocol. This mechanism shall also include the dissemination of information regarding such measures as made available through the Access and Benefit Sharing clearing house, provided for under Article 14 of the Protocol.

to TK*a*GRs on the procedure for obtaining the involvement of ILCs.[390] Trans-boundary cooperation, with the participation of the indigenous groups involved, in instances where the same TK*a*GRs is shared by one or more ILCs in several Parties is also provided for in the Protocol.[391] This is a very significant point as a result of the manner in which TK evolves; communities which possess similar GRs may have developed similar knowledge as to their (GRs) use. This provision prevents users circumventing the requirements imposed by one provider Party with regard to the exploitation of such TK, by resorting to another territory sharing similar TK practices, having less stringent conditions.[392]

In summing up access, the Protocol provides that in developing ABS legislation, Parties, especially developing countries, are mandated to create conditions to promote research which contribute to conservation and sustainable use of biodiversity.[393] This includes, though is not limited to, simplified measures on access to TK and GRs for *non-commercial* research purposes. Such measures must, however, provide for the possibility of a change of intent of such research.[394] This provision may therefore be viewed as a positive step of the Protocol to protecting the TK of ILCs. The Protocol stipulates that States in which the knowledge is to be utilised have a corresponding duty to implement such administrative or legal measures to ensure that TK used within their territories has been accessed in full compliance with the regulatory measures instituted in the countries of origin.[395]

[390] Article 13.1(b) Nagoya Protocol.

[391] Article 11 Nagoya Protocol.

[392] According to Reji J (note 279 above) 88, Genetic resources may spread across a geographical area which consists of many countries. An example cited is that of the similar diverse GRs contained within the Mesoamerican region from Mexico to Columbia. The region consists of more than 15 countries. The poor regulation as well as cooperation among countries within the region enables buyers to substitute one country with fewer restrictions on access with another. In this light for instance, when Brazil began to strictly regulate its access policies, American Bio Industry Alliance (ABIA) commented that, 'this has all but shut down both academic and commercial research in Brazil in favour of better operating environments in neighbouring states: Scientists say the rules are so stringent and overzealously enforced...reducing research to a crawl and driving many scientists to move their research to Ecuador, Bolivia and Peru.'.

[393] See Article 8(a) Nagoya Protocol.

[394] This change in intent would necessarily include circumstances in which the research is sought to be commercialised. The ABS laws should create avenues/provisions for such a transition in intent to be actualised.

[395] See Article 16.1 of the Protocol which deals with compliance obligations. It specifically directs each Party to take appropriate, effective and proportionate legislative, administrative or policy measures to ensure that such is provided for.

The Protocol emphasises that Parties should as far as possible desist from acts which restrict the customary access to the use and exchange of GRs and associated TK within and amongst ILCs.[396]

3.3.3.2 Sharing of Benefits from the Use of Traditional Knowledge

A number of the earlier mentioned points under section '3.3.3.1' above apply to benefit sharing, but the foundation of this theme is laid out within the preamble[397] and developed in the Protocol;

> 'Each Party shall take legislative, administrative or policy measures, as appropriate, in order that the benefits arising from the utilisation of traditional knowledge associated with genetic resources are shared in a fair and equitable way with indigenous and local communities holding such knowledge. Such sharing shall be on mutually agreed terms.'[398]
>
> 'In implementing their obligations under this Protocol, Parties shall in accordance with domestic law take into consideration indigenous and local communities' customary laws, community protocols and procedures, as applicable with respect to traditional knowledge associated with genetic resources.'[399]

A combined reading of these provisions indicates the benefit sharing regime envisaged. Article 5 to some extent reflects Morgera and Tsioumani's distinction between inter-State benefit sharing and State-to-community benefit sharing.[400] The overall obligations of the Protocol suggest that the introductory phrase of Article 5 will necessarily encompass measures regulating inter-State benefit sharing, as well as State to community benefit sharing. The Protocol envisages both monetary and non-monetary benefits[401] and repeats practically verbatim the understanding of benefits under the Bonn guidelines.[402]

The Protocol makes it obligatory for Parties to take legal measures to ensure that benefits are shared equitably.[403] A providing party bears the onus of establishing measures which not only protect the local communities from exploitation by other Parties, but also from the domestic government, institutions and users too. The measures must also take into account the sharing

[396] Article 12.4 of the Protocol.
[397] Par. 21 of the Preamble to the Protocol provides that the Parties to the Protocol '...recall the relevance of Article 8(j) of the Convention as it relates to traditional knowledge associated with genetic resources and the fair and equitable sharing of benefits arising from the utilisation of such knowledge...'.
[398] Article 5.5 Nagoya Protocol.
[399] Article 12.1 Nagoya Protocol.
[400] Morgera E & Tsioumani E (note 285 above).
[401] See 1(a)-(j) and 2(a)-(q) of the Annexe to the Protocol.
[402] See 1(a)-(j) and 2(a)-(q) Appendix II to the Bonn Guidelines.
[403] See Article 5.5 Nagoya Protocol.

of benefits between local users and the providing communities. Unlike the access requirements, benefit-sharing measures may be laws, regulations, administrative directives *or* mere policy statements. The measures must take full account of the customary laws and protocols of indigenous communities.[404] The Protocol also directs parties to endeavour to support ILCs in developing community protocols for the fair and equitable sharing of benefits arising from the utilisation of their TK,[405] minimum requirements for MATs to secure the fair and equitable sharing of benefits arising from the use of TK,[406] as well as model contractual clauses for benefit sharing arising from the utilisation of TK*a*GR.[407] These provisions reflect the emphasis placed by the Parties on capacity building for local communities who hold TK, to ensure that they are adequately equipped to reap the full benefits. Legal certainty and clarity of developed terms are ensured by the parties being expected to make available all such legislative, administrative and or policy regulations on benefit sharing to the ABS Clearing House.[408]

Another key element relates to the development of MATs. A distinction can be drawn here between the concept as used in relation to access, as opposed to its use in relation to benefit sharing, even though the same underlying principle may be said to apply in both situations. Article 7 (dealing with access) presupposes that such terms are established prior to access, along with PIC while Article 5 places the obligation at the point of sharing of benefits, which could be after access. The importance of this distinction is to establish that the negotiation of MATs may arise both at the point of access and at the point of benefit sharing within a singular application for the use of TK*a*GRs. Even where the both sets of MATs are negotiated prior to access, the terms must be negotiated separately as they serve two distinct purposes. The NFP, as discussed earlier, is mandated to provide information on procedures available for establishing MATs including benefit sharing.[409] The Protocol encourages the development and use of model contractual clauses for developing and establishing MATs.[410]
To address the fair and equitable sharing of benefits derived from the utilisation of TK*a*GRs for which it is impossible to grant or obtain PIC, or for such TK which occurs in trans-

[404] See Article 12.1 Nagoya Protocol.
[405] See Article 12.3 (a) Nagoya Protocol.
[406] See Article 12.3 (b) Nagoya Protocol.
[407] See Article 12.3 (c) Nagoya Protocol.
[408] See Article 14.2 (a) Nagoya Protocol.
[409] See Article 13.1 (b) Nagoya Protocol.
[410] See Article 19.1 Nagoya Protocol. Parties are enjoined to promote as appropriate the development of both sectoral and cross-sectoral model contractual clauses for MATs.

boundary situations,[411] the Protocol calls Parties to consider the need and modalities for a Global Multilateral Benefit-Sharing Mechanism.[412] Such benefits accruing from this mechanism are specifically to be directed at the conservation of biological diversity and the sustainable use of its components globally.

3.3.3.3 Compliance

The Protocol provides a more stringent set of compliance rules aimed at ensuring that its measures are binding and enforceable. It provides for Parties to adopt compliance measures to ensure that TK*a*GRs used in their jurisdiction have been accessed in accordance with the domestic laws or regulatory requirements of the other Party in whose jurisdiction the TK owners are situated.[413] Such measures are further to be complemented by appropriate, effective and proportionate measures to address non-compliance.[414] It is noteworthy that there is a 'burden shift' in this respect to the 'user' Parties of TK to establish measures to protect TK owners. It must, however, be observed that all measures in this respect by the 'user' Parties are still based on the domestic regulations as laid down by the 'TK providing Party'. This is significant as it clearly reiterates the importance of comprehensive, clear and informed legislation by the providing Party.[415] In cases of alleged violations of regulatory or legal benefit sharing requirements of the 'providing state', the Protocol enjoins Parties to cooperate '*as far as possible and as appropriate'*.[416]

Article 18 of the Protocol provides remedies in the case of breach of MATs.[417] It directs Parties to encourage users and holders of TK*a*GRs to include dispute resolution provisions in

[411] In providing an insight into 'trans-boundary situations', Article 11 of the Protocol which provides for cooperation in trans-boundary situations, offers an insight into trans-boundary situations where it describes such situations as being 'where the same traditional knowledge associated with genetic resources is shared by one or more indigenous and local communities in several parties...'. See Article 11.2 Nagoya Protocol.

[412] See Article 10 Nagoya Protocol.

[413] See Article 16.1 Nagoya Protocol. This provision significantly calls on detailed measures by the Party in whose jurisdiction the knowledge is to be utilised in ensuring that such knowledge has been accessed in accordance with PIC, indigenous participation, and firmly established MAT, all in accordance with the domestic regulations of the other Party in whose jurisdiction the indigenous communities are located.

[414] See Article 16.2 Nagoya Protocol.

[415] In further buttressing this point, the heading of Article 16 reads, 'Compliance with Domestic Legislation or Regulatory Requirements on Access and Benefit Sharing for Traditional Knowledge Associated with Genetic Resources'. This implies that the compliance mechanism of the protocol is geared at ensuring compliance with the domestic regulation of the providing Party.

[416] See Article 16.3 Nagoya Protocol.

[417] See Article 18 Nagoya Protocol.

the MATs.[418] Parties are, however, directed to ensure that their legal systems provide opportunities for the Parties to seek justice in cases of disputes arising from MATs.[419] The Protocol mandates the Parties to adopt measures to promote accessibility to justice as well as to facilitate the cross-jurisdictional enforceability of judgments and awards.[420] It should, however, be observed that the CBDs dispute settlement procedure[421] extends to any Protocol negotiated within the purview of the Convention, except where the Protocol concerned provides otherwise.[422] The Nagoya Protocol recognises the Convention's mechanism but stipulates that its procedures and mechanisms shall be 'separate from and without prejudice to the dispute settlement procedures and mechanisms under Article 27 of the Convention'.[423] The Parties undertake in Article 30, that at their first meeting[424] they shall 'consider and approve cooperative procedures and institutional mechanisms to promote compliance with the provisions of this protocol and to address cases of non-compliance.'

3.3.3.4 Capacity Building

The Nagoya Protocol recognises that effective protection of TK requires capacity development of ILCs who hold TK, and provides for it. Capacity development under the Protocol, is directed primarily at developing country Parties especially the least developed countries (especially the small island developing states among them), and the Parties with economies in transition. [425]

The capacity building is channelled along two main lines. First, Parties are enjoined to cooperate in the capacity building, development of human resources and institutional

[418] Such provisions on dispute resolution should include the jurisdiction to which they plan to subject such dispute resolution process; the applicable laws; and/or options for alternative dispute resolution such as mediation or arbitration. See Article 18.1(a)-(c).
[419] See Article 18.2 Nagoya Protocol.
[420] See Article 18.3 Nagoya Protocol.
[421] See Article 27 of the CBD.
[422] See Article 27.5 of the CBD.
[423] See Article 30 Nagoya Protocol.
[424] This first meeting of the Parties to the Protocol is scheduled to hold simultaneously with the COP 11 in India (2012), which is the first COP meeting after the entry into force of the Protocol (see Article 26.6 Nagoya Protocol). Significantly, the COP shall serve as the meeting of the Parties to the Protocol (Article 26.1 Nagoya Protocol). Though Parties to the Convention that are not Parties to the Protocol may participate as observers at such meetings, decisions may only be taken by Parties to the Protocol (Article 26.2 Nagoya Protocol). Furthermore, the rules of procedure governing the COP apply *mutatis mutandis* to the meeting of the Parties to the Protocol (Article 26.5). All preparations for this meeting, as well as preliminary decisions are undertaken by the Intergovernmental Committee as created under II.7 of the Decision adopting the Protocol (COP 10 Decision X/1). This Committee shall cease to exist at the commencement of the COP serving as the meeting of the Parties to the Protocol. (See II.8 COP 10 Decision X/1).
[425] Article 22.1, 22.2 & 22.3 of the Nagoya Protocol.

capacities.[426] Secondly, the Protocol recognises the need to provide the financial means to effect the capacity building.[427] The Decision adopting the Nagoya Protocol[428] also pursues capacity development by establishing an Open-ended Ad Hoc Intergovernmental Committee (the Intergovernmental Committee),[429] which already has an approved work plan with a huge focus on capacity building for developing and least developed states.[430]

Capacity Building under the Protocol in relation to TK protection may be viewed in the following key areas; Capacity to implement and comply with the obligations of the Protocol; Capacity to negotiate MATs; and capacity to develop, implement and enforce domestic legislative, administrative or policy measures on access and benefit sharing.[431]

The Protocol emphasises developing measures to increase the capacity of relevant ABS stakeholders.[432] Such measures are extended to include ILCs with an emphasis on women in such communities.[433] Developing countries and LDCs are expected to identify their capacity needs and priorities through national capacity self-assessments that give priority preference to the capacity needs of ILCs.[434] Technology transfer, as well as infrastructure and technical capacity to make such technology transfer sustainable, is also identified as a measure which may be included in actualising the aims of capacity development.[435] Article 23 calls on Parties to specifically cooperate and collaborate in technical and scientific research with respect to Articles 16 and 18 of the Protocol which, deal with compliance with regulatory requirements for TK*a*GRs, and compliance with MATs.[436] The capacity building goals are expected to be actualised through cooperation among the Parties with a major emphasis on the involvement of indigenous peoples.[437]

[426] Article 22.1 Nagoya Protocol. See also The Protocol in this context further provides for Parties in this context to facilitate *inter alia* the involvement of ILCs.
[427] Article 22.2 Nagoya Protocol.
[428] See COP 10 Decision X/1.
[429] See II.7 of COP 10 Decision X/1.
[430] See Annex II to COP 10 Decision X/1.
[431] See Article 22.4(a)-(c) Nagoya Protocol.
[432] Article 22.5(i) Nagoya Protocol.
[433] Article 22.5(j) of the Protocol.
[434] Article 22.1 Nagoya Protocol.
[435] Article 22.5 (g). Nagoya Protocol.
[436] See 3.3.3.3 above.
[437] Article 22.1 Nagoya Protocol.

3.3.4 CONCLUSION

This chapter has traced the development of the Nagoya Protocol and also examined its provisions which relate to TK protection. The direct focus of the Protocol is the fulfilment of the third objective of the CBD and Article 8(j) determines the scope for the definition of TK under the Protocol. The Nagoya Protocol's holistic approach to TK protection spans from the period 'prior to access' of the TK, and terminates on the equitable sharing of benefits. Four key areas were emphasised as they reveal the extent of the protection of TK under the Protocol; access, benefit sharing, compliance and capacity building.

The Protocol secures Community rights with respect to access, by stipulating that domestic legislation must take into account the customary laws and procedures of ILCs. It also ensures clarity and certainty of terms through the NFPs and the CNAs, and stresses that the obtaining of PIC and the development of MATs are mandatory. The Protocol also emphasises on an increased ILC participation in the processes leading up to access. The Protocol stresses on the co-operation among parties.

The Protocol deals with both inter-state as well as state-community aspects of benefit sharing, in an effort to ensure that the actual owners of TK*a*GRs benefit. It provides clarity and certainty regarding some ABS terminology. The Protocol directs parties to develop benefit sharing measures which take full account of the customary laws and protocols of ILCs and, it sets a basis for a 'Global Multilateral Benefit Sharing Mechanism' to address situations of TK occurring in trans-boundary situations.

The Protocol attempts to ensure compliance with the measures and frameworks which it anticipates its provisions will lead provider and user parties to generate. The most significant aspect of the Protocol's contribution to compliance is its emphasis on cooperative efforts among parties: this addresses one of the primary justifications for negotiating an international agreement - the inability of provider states to ensure compliance with their ABS measures outside their borders. The Protocol mandates both providers and users to enact legislation which ensures compliance with the laws of the providing party, and addresses situations of non-compliance.

Finally, this chapter has examined the Protocol's efforts to protect TK by capacity building provisions. There are two major categories; the efforts at building up institutional capacity in provider countries to assist in the implementation of the Protocol, and the efforts at offering

financial assistance to parties in need to do so. The creation of the Intergovernmental Committee is an attempt to ensure that the specific capacity building needs which the countries themselves have identified, are addressed as soon as possible. Capacity building under the Protocol is viewed both at the national and the community level.

In addition to these efforts at TK protection, providing nations are still responsible for ensuring the effective implementation of the Protocol. The providing nations must develop comprehensive informed legislation, as indicated with regard to all the four themes discussed: this is the principal obligation placed on provider states. Community protocols and laws are to be taken into account by provider countries in drafting such regulatory measures on ABS. This is an important step in addressing the fears of indigenous communities and TK holders, that the domestic legislation of provider countries may not necessarily reflect the traditions or values of providing communities.

The Protocol's primary benefits are: it improves on the clarity and certainty with respect to access to TK; addresses some of the root causes of biopiracy through co-operation measures among both user and provider states; increases the recognition and participation of ILCs in ABS; and offers greater opportunities to ILCs and provider countries to benefit from capacity building measures, as well as participate more effectively in the entire ABS process.

The next chapter examines the state of legislative development in Africa.

4.0 CHAPTER FOUR:

Access to Traditional Knowledge, and the Sharing of Benefits Arising from Its Use in Africa

4.1 INTRODUCTION

The protection of TK in Africa is now examined. One of the primary obligations of the Nagoya Protocol for providing parties is the development of adequate domestic legislation in the key areas of access, benefit sharing, and compliance.[438] These aspects of the Ethiopian, Ugandan and Kenyan legal systems are examined. Capacity building under the Protocol is pursued through cooperation among parties, with an emphasis on assisting provider countries in the development of adequate legislation in those three areas.[439]

Ethiopia was chosen as a primary model for this review because (i) its government has expended considerable effort into implementing regulations for the protection of TK, (ii) it has played a key role in the preparation of the draft 'African Model Legislation for the Protection of the Rights of Local Communities, Farmers, and Breeders, and for the Regulation of Access to Biological Resources' (hereafter African Model Law or AML). This model law for the protection of TK in Africa is also examined in this chapter.[440] Uganda and Kenya are examined because they also have significant biodiversity wealth, and have expended considerable national efforts in regulating access and sharing of benefits (ABS).

The AML provides a legislative model for African States, especially with regard to the protection of TK associated with GRs (TK*a*GRs).[441] In 2000, all African States formally endorsed and recommended use of the AML.[442] Despite this, a 2005 study revealed that

[438] See Articles 5.5, 7, 8, and 16 of the Nagoya Protocol. See also Sections 3.3.3.1, 3.3.3.2, and 3.3.3.3.

[439] See Section 3.3.3.4 above.

[440] See Section 4.2.1 below.

[441] See Garforth K, Noriega I, Medaglia J, Nnadozie K & Nemoga G *Overview of the National and Regional Implementation of Access to Genetic Resources and Benefit-Sharing Measures* (2005) 26 3ed. Centre for International Sustainable Development Law (CISDL). Significantly the terminology employed in the African Model Law slightly differs from that used under the Nagoya Protocol. In attempting to draw parallels though, TK is accorded a communal meaning as Community Knowledge (CK), while genetic resources are viewed within the larger scope of biological resources. Though differences exist in the strict definition of these terms (especially as CK refers to a collectively held TK, and genetic resources merely form a part of biological resources), for the sake of this research, they shall be viewed as alternatives. The point must be made though that this use of terms implies a wider scope in the African Model Law than under the Protocol.

[442] The Ministerial Council, comprising all African Governments, recommended that 'African States pass legislation based on the draft law, that they negotiate a Convention in order to create a regional instrument to coordinate action, and that they develop a common African negotiating position...' See Intellectual Property

insofar as the implementation of the AML was concerned, African States were at four different stages;[443] a situation which has, however, changed in many respects.[444] The AML however remains a yard stick for the African position with respect to ABS and the protection of TK.

This chapter has two major parts. Part one examines the existing measures in Ethiopia. The measures in Uganda and Kenya are also examined as part of a broader African overview. Part two examines the major provisions of the AML relating to the protection of TK*a*GRs. It carries out this examination on the hypothesis that the framework conceptualised by the AML represents a general position for TK protection in Africa.

in Africa 'African Union/ Organisation of African Unity' Available at *http://knowledge.cta.int/en/Dossiers/S-T-Issues-in-Perspective/Intellectual-property/Links/IP-in-Africa* (Accessed on 22 April 2011).

[443] The first category involved those which had existing legislation compliant with both the TRIPS and the CBD, and were only just beginning to consider the enactment of ABS legislation. In this regard, though many African countries had indicated a preference for the AML, many remained under external pressure not to conform to it. The second involved countries that had already enacted national legislation incorporating components of the AML (Such as Egypt Namibia and Zimbabwe). The third involved countries like Ethiopia and Nigeria which had drafted legislation on the lines of the AML but were yet to enact it, and finally, most francophone African countries were in preference of the requirements of the Bangui Accord of the African Intellectual Property Organisation (OAPI). The Bangui Agreement created the OAPI. Its latest revision in February 1999 has offered further incorporated provisions on New Plant varieties. It is in this light that many francophone countries are drafting their laws on access and benefit sharing accordingly. See the text of the Agreement at IP Regional Treaties: Bangui Agreement (OAPI). Available at *http://www.wipo.int/wipolex/en/other_treaties/text.jsp?doc_id=132885&file_id=181145* (Accessed on 21 April 2011). With respect to all the categories and the full report, see Garforth K et al (note 455 above) 27.

[444] For instance, many more countries, including Ethiopia, have enacted legislation in line with the AML.

4.1.0 PART ONE

Ethiopia is an example of a country that has both well-developed ABS legislation, and rich biodiversity. Ethiopia's role in the development of the AML, as well as its efforts in implementing TK protection legislation, makes it a prime example of Africa's current position with respect to TK protection. Uganda and Kenya are similarly well placed.

4.1.1 Ethiopia

Ethiopia has long been a central figure on the African continent. Its pan-Africanist foreign policy, developed in the 1960s, was crucial in the quest for African unity at a time when the continent was stratified into two major ideological blocs.[445] Ethiopia's contribution to African unity has resulted in the AU and several other major organisations situating their headquarters within its jurisdiction.

Ethiopia's political leadership in Africa has been complemented by its biodiversity wealth, both in relation to African and the globe. It is listed at the forefront among generically rich nations of the world.[446] The World Conservation Monitoring Centre of the United Nations' Environment Programme (UNEP - WCMC)[447] also designates Ethiopia as a 'Group I Country': This category includes the 25 most biodiverse countries in the world based on species' richness and endemism.[448]

[445] These were the Casablanca and the Monrovia blocs respectively. Ethiopia was formerly aligned to the League of Nations, however due to the disappointment in the time of need (especially in the 1935 invasion of Ethiopia), Ethiopia's foreign minister (Ketema Yifru) came up with the proposal, which was later approved by Emperor Haile Selassie, for a panafricanist foreign policy. This singular factor it must be noted, proved crucial in the establishment of the OAU and more importantly in the situating of major headquarters including that of the AU in Addis Ababa, Ethiopia. See generally Ketema M 'The Creation of the OAU' available at *http://www.oau-creation.com/creation_of_the_oau_1.htm* (accessed on 20 April 2011).

[446] Vavilov, the famous explorer and plant collector, identified Ethiopia as one of the richest genetic centres of the World.
See The CBD Clearing House Mechanism of Ethiopia; Institute of Biodiversity Conservation 'Biodiversity of Ethiopia' Available at *http://www.biodiv.be/ethiopia/biodiversity/biodiversity-ethiopia* (Accessed on 14 April 2011). See also Fikremarkos M & Imeru T 'Ethiopia's Experience in Access to Genetic Resources and Benefit Sharing: The Hope for Economic Benefits and the Risks for Research and Innovation' 7 A publication of the Access to Knowledge Research Series of the Information Society Project of the Yale Law School. Available at *http://yaleisp.org/publications/a2kresearch/* (accessed on 14 April 2011).

[447] The UNEP World Conservation Monitoring Centre (UNEP-WCMC) is a collaboration between the United Nations Environment Programme, and WCMC 2000, a UK-based charity. Its efforts are geared primarily towards the synthesis, analysis and dissemination of global biodiversity knowledge, with a view to providing authoritative, strategic and timely information for conventions, countries, organizations and companies for use in the development and implementation of their policies and decisions. See UNEP-WCMC available at *http://www.unep-wcmc-apps.org/aboutWCMC/* (Accessed on 20 April 2011).

[448] See Fikremarkos M & Imeru T (note 446 above).

The adoption of the CBD in 1992[449] created a need for a national legislation on ABS within Ethiopia to comply with CBD obligations.[450] Efforts to protect TK commenced in earnest in 1998 with the enactment of the Institute of Biodiversity Conservation and Research Establishment Proclamation (IBCR Proclamation),[451] which established the Institute of Biodiversity Conservation and Research (IBCR).[452] Its duty was the study of the TK of ILCs which relate to the conservation, use and improvement of biological resources (BRs). The IBCR Proclamation did not, however, contain the main elements of an ABS regulation as envisaged by the CBD.[453]

Ethiopia enacted Proclamation No. 482/2006 on Access to Genetic Resources and Community Knowledge, and Community Rights (Hereafter 2006 Proclamation) which remedied the lack of ABS regulation, and created a more comprehensive framework for TK protection.[454] The 2006 Proclamation is modelled largely after the AML.[455] The 2006 Proclamation uses the term 'CK'[456] to describe the traditional conservation and use of GRs. The 2006 Proclamation applies in cases of access to GRs found in both *in situ* and *ex situ* conditions, and to the access and use of such associated CK.[457] It, however, specifically excludes the customary use and exchange of GRs and CK by and among Ethiopian local communities from its scope.[458] The 2006 Proclamation is the central regulatory provision for the protection of TK within Ethiopia.

[449] Ethiopia officially signed the Convention on Biological Diversity (CBD) on 10 June 1992 at the Rio Conference. This was ratified on 5 April 1994, at which time Ethiopia officially became a party to the CBD. See CBD 'List of Parties' available at *http://www.cbd.int/convention/parties/list/?tab=0* (Accessed on 15 April 2011).

[450] The Ethiopian Government outlined a policy framework on access to GRs and Benefit Sharing.This Policy was outlined through the 1997 Environmental Policy of Ethiopia, as well as the 1998 National Policy on Biodiversity Conservation and Research. See Fikremarkos M & Imeru T (note 446 above).

[451] See Proclamation No. 120/1998: A Proclamation to Provide for the Establishment of the Institute of Biodiversity Conservation and Research. (Hereafter Proclamation No. 120/1998) Available at *http://www.cbd.int/doc/measures/abs/msr-abs-et-en.pdf* (accessed on 12 April 2011).

[452] See Article 3.1 of Proclamation No. 120/1998. Its primary objective is to ensure the appropriate conservation, research, development and sustainable use of the country's biodiversity. See Article 5 of Proclamation No. 120/1998.

[453] See Fikremarkos M & Imeru T (note 446 above).

[454] The *Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation*, Proclamation No. 482/2006. (2006 Proclamation).

[455] See Par. 4 of the preamble to the 2006 Proclamation.

[456] Article 2.14 of the 2006 Proclamation defines community knowledge to mean 'knowledge, practices, innovations or technologies created or developed over generations by local communities on the conservation and use of genetic resources.'

[457] See Article 4.1 of the 2006 Proclamation.

[458] See Article 4.2(a) of the 2006 Proclamation. See also Article 8.2 which points out that 'No legal restriction shall be placed on the traditional system of local communities on the use and exchange of genetic resources and community knowledge'.

The 2006 Proclamation is also examined under three major themes - access, benefit sharing and compliance.

4.1.1.1 Access to Traditional Knowledge under the Ethiopian Law

Access to CK may be granted to a natural person or a legal person.[459] An individual seeking access must first obtain a written access permit from the Institute of Biodiversity Conservation (IBC).[460] This permit is subject to the PIC of the concerned community.[461] Foreign applicants must present a letter from the competent authority of their National State or State of domicile assuring that it (the competent authority) shall uphold and enforce access obligations of the applicant.[462] A person granted permission must access the CK in the presence of the personnel of the IBC.[463] PIC is ensured through a set of rights which ILCs are accorded to regulate access to their CK.[464] The strict access requirements allow for exceptions.[465] The 2006 Proclamation demands that access agreements provide evidence of PIC, set conditions for access and, elaborate on the benefits to be shared.[466] Consequently, the description of the CK permitted to be accessed, or that associated with the GR to be accessed;[467] the locality from which the CK is to be collected; the institution with which the

[459] See Access and Benefit Sharing: The ABS Capacity Initiative Development for Africa 'Ethiopia: Prior Informed Consent' available at *http://www.abs-africa.info/249.html?&L=0* (Accessed on 15 April 2011).

[460] See Article 11.1 of the 2006 Proclamation. See also Article 14.1 which requires such an applicant to submit an application in writing to the IBC. Notably, the IBCR was re-designated IBC under the 2006 Proclamation.

[461] See Article 12.2 of the 2006 Proclamation. See also Article 14.3 which requires the Institute to facilitate such negotiations with local communities in securing their prior informed consent.

[462] See Article 12.4 of the 2006 Proclamation.

[463] See Article 12.5 of the 2006 Proclamation. The IBC may also designate another institute in its stead.

[464] See Access and Benefit Sharing: The ABS Capacity Initiative Development for Africa 'Ethiopia: Prior Informed Consent' available at *http://www.abs-africa.info/249.html?&L=0* (Accessed on 15 April 2011). See also Article 7.1 of the 2006 Proclamation for the rights conferred on local communities *vis a vis* their community TK. Some of these include: The right to give PIC for access to their community knowledge; the right to refuse consent when they believe that the intended access will be detrimental to the integrity of their cultural or natural heritages; the right to withdraw or place restriction on the PIC they have given for access to their community knowledge where they find out that such consent is likely to be detrimental to their socio-economic life or their natural or cultural heritages.
The 2006 Proclamation, stipulates that the granting of a permit to access genetic resources shall not be construed as constituting permission to access the community knowledge associated therewith and vice versa. See Article 11.2 of the 2006 Proclamation.

[465] Examples of which include special access permits being issued in cases involving research institutes, seeking access for the purpose of development and academic research activities, to be undertaken within Ethiopia: see Article 15.1 of the 2006 Proclamation.

[466] See Article 14.2 of the 2006 Proclamation.

[467] Recall Article 11.2 of the 2006 Proclamation which precludes applicants from extending the access to GRs to the associated CK, and vice versa.

description of CK accessed shall be deposited; as well as the intended use of the CK,[468] among other relevant information, are to be specified in the access agreement.

4.1.1.2 Benefit Sharing under the Ethiopian Law

The Proclamation recognises the right of ILCs to share in the benefits accruing from the use of their knowledge,[469] however, the 2006 Proclamation is largely silent on the regulation of sharing of benefits. It provides that the sharing of benefits between the State and the community with respect to CK shall be in fair and equitable terms.[470] The structure of sharing of benefits arising from the use of CK is determined on a case by case basis.[471] The 2006 Proclamation, gives concerned communities the right to receive 50% of all monetary benefits arising from the utilisation of their GRs,[472] the balance of which is to be used for the conservation of biodiversity and the *promotion* of CK.[473] Benefits shared under the 2006 Proclamation may be both monetary and non-monetary and may take the form of license fees, upfront payments, milestone payments, royalties, research funding, joint ownerships of intellectual property, employment opportunities, communal trainings and so forth.[474] The benefits to be shared from the knowledge accessed must be specifically laid out in the access agreement.[475] The IBC is the custodian of benefits; it collects the benefits, and passes them on to the beneficiaries.[476]

4.1.1.3 Compliance Measures under the Ethiopian Law

The 2006 Proclamation requires a foreign applicant for access to CK associated with GRs to present a letter from the competent authority of his national state, or that of his domicile assuring that it shall uphold and enforce the access obligations of the applicant.[477] This unique requirement endeavours to transfer, or at least share, the responsibility of enforcing ABS agreements with a foreign competent authority where the applicant is a foreigner who

[468] See Article 14 of the 2006 Proclamation.
[469] See Article 9.1 of the 2006 Proclamation.
[470] See Article 12.3 of the 2006 Proclamation.
[471] See Article 18.1 of the 2006 Proclamation.
[472] See Article 9.2 of the 2006 Proclamation.
[473] See Article 18.2 of the 2006 Proclamation.
[474] See Article 19 of the 2006 Proclamation.
[475] See Article 16.10 of the 2006 Proclamation.
[476] See Article 27.2 of the 2006 Proclamation.
[477] See Article 12.4 of the 2006 Proclamation.

has no assets or personnel in Ethiopia.[478] The Article 21 compliance measures empower the IBC to alter or limit any access permit to CK where access is seen to pose a threat to genetic erosion, environmental sustenance or violates the cultural values of communities.[479] The IBC may also terminate an access agreement and prohibit access to CK where an applicant has failed to comply with the terms of the access agreement or of the Proclamation.[480] Additional compliance measures are adumbrated under the obligations imposed upon the applicant;[481] these often promote accountability. The IBC's duty to ensure compliance includes a duty to follow-up the execution of access agreements through inspection, receipt of progress reports and employment of other mechanisms it may deem necessary.[482] Finally, the Proclamation 2006 makes it a criminal offence, in addition to providing for civil liability, for anyone to access CK without obtaining permission from the Institute.[483]

4.1.1.4 Conclusion

The 2006 Proclamation does not specify a designated CNA for ABS matters,[484] but from its functions and the nature of its role,[485] it is clear that the contemplated CNA is the IBC. Its main functions include supervising access agreements,[486] sensitizing and disseminating information on the access obligations,[487] as well as issuing directives and performing such other activities necessary to successfully implement the Proclamation.[488] It must function in harmony with the Ministry of Agriculture and Development,[489] the Kebele Administration and Regional bodies,[490] Customs offices,[491] Mail Service Institutions,[492] and Quarantine

[478] See Access and Benefit Sharing: The ABS Capacity Initiative Development for Africa 'Ethiopia: Compliance Mechanisms' available at *http://www.abs-africa.info/252.html?&L=0* (Accessed on 15 April 2011).
[479] See Article 21.1 of the 2006 Proclamation.
[480] See Article 21.2 of the 2006 Proclamation.
[481] See Article 17 of the 2006 Proclamation.
[482] See Article 20 of the 2006 Proclamation.
[483] See Article 35.1 of the 2006 Proclamation, which stipulates that such criminal sanctions shall, depending on the circumstances, involve a 'rigorous imprisonment of not less than three years and a fine of not less than ten thousand and not exceeding thirty-thousand Birr'.
[484] See Access and Benefit Sharing: The ABS Capacity Initiative Development for Africa 'Ethiopia: Compliance Mechanisms' available at *http://www.abs-africa.info/252.html?&L=0* (Accessed on 15 April 2011).
[485] See generally Article 27 of the 2006 Proclamation which provides for the major powers and duties of the IBC.
[486] See Article 27.1 of the 2006 Proclamation. It is further charged with the responsibility of drafting model access agreements. See Article 27.3 of the 2006 Proclamation.
[487] See Articles 27.4 & 27.5 of the 2006 Proclamation.
[488] See Article 27.7 of the 2006 Proclamation
[489] See Article 26 of the 2006 Proclamation.
[490] See Article 29 of the 2006 Proclamation. The Derg (Ethiopia's communist military junta) in July 1975 issued Proclamation No. 47 which established *Kebeles*, otherwise known as the Urban Dwellers' Associations.

Control Institutions.[493] These other bodies are, with respect to the 2006 Proclamation, primarily concerned with the access to the use of GRs. The IBCs major cooperative effort in relation to the protection of CK is with the concerned local community itself.

The most recent development with regard to the protection of CK associated with GRs in Ethiopia is the recently passed Regulation No. 169/2009.[494] This regulation provides a stronger enforcement mechanism for the provisions of the Proclamation 2006 without setting new rules and principles. A study concluded in 2006 observed that the Proclamation 2006 in itself offers little by way of a legal tool to enforce and protect the CK rights of these ILCs but rather requires the further development of laws to implement these provisions.[495] Regulation 169/2009 falls in that category.

4.1.2 A BROADER AFRICAN OVERVIEW

This part of the chapter examines the legislative developments with respect to ABS in two other biodiverse African countries, Uganda and Kenya, which have made efforts to protect TK and whose experiences offer further insight into Africa's current needs. Kenya's current legislation makes it unsuitable for examination under the main themes used for the Ethiopian and Ugandan analyses, and it is included to represent biodiverse jurisdictions that need to make further legislative efforts to protect TK.

They were initially responsible only for the collection of rent, the establishment of local judicial tribunals, and the provision of basic health, education and other social services in their neighbourhoods. Kebele powers have since however been expanded to include the collection of local taxes and the registration of houses, residents, births, deaths, and marriages and more recently, with the Derg's issuance of Proclamation No. 25 in 1981, Kebele's have been granted extended powers and a more elaborate administrative structure. They are often used administratively in Ethiopia in securing compliance at the grassroots. See US Library of Congress 'Kebeles'. Available at *http://countrystudies.us/ethiopia/117.htm* (accessed on 20 May 2011).

491 See Article 30 of the 2006 Proclamation.

492 See Article 31 of the 2006 Proclamation.

493 See Article 32 of the 2006 Proclamation.

494 Access to Genetic Resources and Community Knowledge and Community Rights Council of Minister Regulation, Regulation No. 169/2009.

495 See R Feyissa 'Farmers' Rights in Ethiopia: A Case Study' Background Study 5 (2006) The Fridtjof Nansen Institute Report 7/2006 at 7. Available at *http://www.fni.no/doc&pdf/FNI-R0706.pdf* (Accessed on 7 May 2011).

4.1.3 UGANDA

Uganda is one of the 'key biodiversity' countries because ecosystems critical to the conservation of globally-important biological diversity lie within its borders.[496] One of Uganda's key TK and GR protecting measures is the 2005 National Environment (Access to Genetic Resources and Benefit Sharing) Regulations.[497] In 2007, it adopted the National Guidelines for accessing GRs and benefit sharing (hereafter GAGRBSU),[498] which has the overall objective of providing arrangements and procedures 'for accessing biological and genetic resources of Uganda, their products and derivatives for scientific research, commercial and any other purposes connected therewith, and to ensure equitable sharing of the ensuing benefits in accordance with the National [...] Environment Regulations 2005.'[499]

The guidelines are divided into six parts, and start by laying out the international legislative background[500] as well as the national legislative background[501] within which the Guidelines operate. Uganda is party to the following international agreements: the CBD,[502] the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The national legislation includes the Constitution of Uganda, which provides support for treaties such as the CBD, the Bonn Guidelines, the AML, CITES, 'and laws relating to access and benefit sharing, including those relating to traditional knowledge'.[503]

The National Environment Regulations 2005 was developed with a primary focus on prescribing procedures for access to Uganda's GRs,[504] while the Patents Act Cap. 216 was

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[496] See Tetra Tech Ard 'Uganda: Conserve Biodiversity for Sustainable Development (COBS)' Available at *http://www.ardinc.com/ard/us/projects/uganda-conserve-biodiversity-for-sustainable-development-cobs.html* (accessed on 10 May 2011).

[497] The National Environment (Access to Genetic Resources and Benefit Sharing) Regulations, 2005 entered into force 18 March 2005.

[498] The Guidelines for Accessing Genetic Resources and Benefit-Sharing in Uganda (GAGRBSU) were adopted 1 June 2007.

[499] See National Environment Management Authority & Ministry of Water and Environment 'Guidelines for Accessing Genetic Resources and Benefit Sharing in Uganda' (2007) 4. Available at *http://www.cbd.int/doc/measures/abs/msr-abs-ug2-en.pdf* (Accessed on 22 April 2011).

[500] See Article 1.3 of the Guidelines for Accessing Genetic Resources and Benefit Sharing in Uganda (GAGRBSU) 2007.

[501] See Article 1.4 GAGRBSU 2007.

[502] See Article 1.3 GAGRBSU 2007. As pointed out in the guidelines, Uganda signed and ratified the CBD on June 12 1992 and September 8 1993 respectively.

[503] See Article 1.4 GAGRBSU 2007.

[504] See Article 8 (c) of the National Environment Regulations 2005.

enacted, to guide GR applicants, in their quest for ownership of the proprietary interests in the GRs accessed and obtained from Uganda.[505]

The protective framework for TK under GAGRBSU is now examined.

4.1.3.1 Access to Traditional Knowledge under the Ugandan Law

Article 3.5 GAGRBSU stresses the centrality of PIC to any form of access to indigenous knowledge which includes TK. Uganda gives holders of TK 'the right to be asked and to be informed about requests from other parties to access their knowledge, and to extend or refuse their approval for such access.'[506] The Uganda National Council for Science and Technology (UNCST) is designated the competent authority,[507] charged with the regulation of access to traditional knowledge associated with genetic resources (TK*a*GRs). Access is only possible with an access permit,[508] which shall not be issued to an applicant who has not obtained the required PIC from the TK holders.[509] An applicant must provide a detailed description of the TK including its uses and the possible risks which may arise from the access, a detailed description of the method of access anticipated, the probable future use of such TK*a*GRs, and most importantly, the description of all known information on the TK from an oral or written source related to the TK*a*GR concerned.[510]

A noteworthy provision requires the UNCST to maintain a national reference file, 'where local communities and other interested parties' and TK holders may deposit records of TK*a*GRs.[511] This is not mandatory because the TK holders alone have exclusive rights over their TK, and making a deposit involves a wilful surrendering of the TK to the UNCST. The UNCST uses these records as a basis for decisions concerning the terms of access contracts. Where the right of access is not properly obtained, IP rights relating to products from or processes relating to the TK*a*GRs shall not be recognised.[512] The Ugandan Guidelines interestingly observes that any TK*a*GR 'may be owned by the community, even if only one single member of the community holds the knowledge.'[513]

[505] See Article 1.4 GAGRBSU 2007.
[506] See Article 3.5 GAGRBSU 2007.
[507] See Article 1.1 GAGRBSU 2007.
[508] See Articles 3.5 & 4.2 GAGRBSU 2007.
[509] See Article 3.5 GAGRBSU 2007.
[510] See Article 4.2 GAGRBSU 2007.
[511] See Article 3.5 GAGRBSU 2007.
[512] See Article 3.5 GAGRBSU 2007.
[513] See Article 3.5 GAGRBSU 2007.

4.1.3.2 Benefit Sharing under the Ugandan Law

GAGRBSU recognises and protects 'the rights of local communities and indigenous populations to benefit from their traditional knowledge collectively', and to receive compensation for their roles in conserving GRs occurring in Uganda. Under GAGRBSU, the sharing must be fair, and must also be agreed to by all parties.[514] Possible benefits include; payments in money, goods, services and intellectual property (IP) rights.[515] TK holders must be actively involved in the benefits negotiations which must be carried out 'on the basis of a full disclosure of potential benefits and risks arising from the use of the resources'.[516] GAGRBSU states that benefit sharing arrangements must not interfere negatively with TK systems and practices of indigenous peoples. Communities which create, develop or preserve TK*a*GRs, are also protected by GAGRBSU as it grants them the right, to have the origins of their TK disclosed whenever access is granted; to prevent unauthorised third parties from using or carrying out tests or investigations relating to their TK*a*GR; to prevent unauthorised third parties from disclosing information that constitutes or incorporates their TK*a*GRs; and to derive profits from the economic exploitation by third parties of their TK*a*GRs.[517]

4.1.3.3 Compliance under the Ugandan Law.

Part II of the GAGRBSU, assigns the National Environment Management Authority (NEMA) the role of supervising and monitoring all activities in the field of environmental management;[518] policy formulation, creation of awareness, capacity building, and ensuring compliance with all environmental policy and legal requirements in Uganda.[519] The UNCST, which works in conjunction with NEMA to ensure compliance, is specifically assigned the responsibility of supervising and controlling compliance with contractual conditions and provisions, and establishing such monitoring and evaluation mechanisms as it deems necessary.[520] UNCST protects the IP rights of TK holders through patent laws.[521] In ensuring that the rights of TK holders are adequately secured, it is responsible for issuing access permits, as well as amending, suspending, nullifying or terminating access permits in keeping

[514] See Article 5 GAGRBSU 2007.
[515] See Article 3.5 GAGRBSU 2007.
[516] See Article 3.5 GAGRBSU 2007.
[517] See Article 3.5 GAGRBSU 2007.
[518] See Article 2.2.1 GAGRBSU 2007.
[519] See Article 2.2.1 GAGRBSU 2007.
[520] See Article 2.2.2 GAGRBSU 2007.
[521] See Article 2.2.2 GAGRBSU 2007.

with the terms of those contracts.[522] Lead Agencies review applications and act in an advisory capacity to the UNCST with respect to the granting of access to TK, and are responsible for verifying compliance with consent requirements.[523]

4.1.4 KENYA

Kenya and 16 other countries, members of the Like Minded Megadiverse Countries (LMMC), collectively hold more than 70% of all global biodiversity.[524] Kenya is a party to the CBD, the WTO, the WIPO as well as a signatory to the AML. The Constitution of Kenya obliges the State to protect the indigenous knowledge relating to biodiversity and the GRs of communities,[525] as well as encourage the participation of ILCs in the management, protection and conservation of the environment.[526] Despite these, the Kenyan legal framework for the protection of TK has remained largely inadequate in addressing the issues of TK protection through the ABS.[527]

The Kenyan government enacted the 1999 Environmental Management and Coordination Act (EMCA),[528] which establishes the National Environment Management Authority (NEMA).[529] The Act provides for the NEMA to issue guidelines and prescribe measures for the sustainable management and utilisation of GRs of Kenya for the benefit of the people of Kenya.[530] The guidelines are expected to specify access requirements to GRs, the sharing of benefits from the use of GRs, as well as other matters that NEMA considers necessary for the better management of the GRs of Kenya.[531] In 2006, the Environmental Management and

[522] See Article 2.2.2 GAGRBSU 2007.
[523] See Article 2.2.3 GAGRBSU 2007.
[524] See Par. 3 of the Preamble to the Cancun Declaration of Like Minded Megadiverse Countries 2002. Available at *http://pe.biosafetyclearinghouse.net/actividades/2009/grouplmmc.pdf* (accessed on 2 April 2011).
[525] See Section 69(1)(c) of the Constitution of Kenya.
[526] See section 69(1)(d) of the Constitution of Kenya.
[527] See WIPO/GRTKF/IC/16/INF/25 'Submission of Kenya: The National Policy on Traditional Knowledge, Genetic Resources and Traditional Cultural Expressions, July 2009' 6.
[528] The Environmental Management and Coordination Act No. 8 of 1999 (hereafter EMCA), with a commencement date of 14 January 2000.
[529] See Section 7 EMCA.
[530] See Section 53(1) EMCA.
[531] See Section 53(2) EMCA. In 2006, NEMA set up a task force for the development of laws for the protection of TK, GRs and folklore within Kenya: see Kenya Gazette Notice No. 1415 of 2006. A policy was developed in July 2009 and presented to the sixteenth session of the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (May 3 to 7, 2010). See WIPO/GRTKF/IC/16/INF/25 'Submission of Kenya' (note 527 above).

Coordination Regulation[532] was promulgated. These regulations provide a detailed regulatory framework for the access to, as well as protection and conservation of GRs. The regulations are not explicit on the protection of TK, focusing primarily on GRs. GRs and TK are, however, intertwined and the regulations consistently refers to the 'intangible components' of GRs – defined as '...any information held by persons that is associated with or regarding genetic resources within the jurisdiction of Kenya'.[533] This incorporates TK, though the provision does not limit the category of 'intangible components' of GRs to TK alone; it may include, for instance, scientific knowledge, or privileged information held with respect to GRs within Kenya. The lack of clarity in principles governing the regulation of TK led to the development of the Kenyan National Policy on Traditional Knowledge, Genetic Resources and Traditional Cultural Expressions in 2009. This Policy framework was developed to specifically address the combined effect of the accelerating trends in technological development; the integration of the world economic, ecological, cultural, trading and information systems; and the growing relevance of IP to these areas of activity.[534] In full recognition of the communal framework for TK as embraced in the AML, it seeks to develop a system of TK protection which: documents and preserves TK created in the past; contributes to the promotion and dissemination of innovations where such are based on the continuing use of tradition; and preserves existing TK as an indispensable and powerful tool for fostering continuous creativity to contribute to national development.[535]

The Kenyan situation highlights the pressing need in Africa to develop legislation in the areas of access, benefit sharing and compliance with respect to TK*a*GRs for the effective implementation of the Protocol.

4.1.5 CONCLUSION

This part of the chapter has examined the legal regulation of TK protection in some biodiverse African states on the basis of the same themes employed in examining TK protection under the Nagoya Protocol, with the exclusion of capacity building. Due to the fact that the laws of the different countries have varying emphases and represent differing

[532] Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations,(EMCR) 2006.
[533] See Section 2 EMCR 2006.
[534] See WIPO/GRTKF/IC/16/INF/25 'Submission of Kenya' (note 527 above).
[535] See WIPO/GRTKF/IC/16/INF/25 'Submission of Kenya' (note 527 above).

states of development, the thematic analysis was not applied consistently, and even where applied, varying emphases on different themes emerged.

In general terms therefore, close attention must be paid to the unique situations of each African country in assessing the importance of the implementation of the Protocol therein. The major need of African countries remains the development of well-rounded legislation.

In search of well-rounded legislation, many African countries have sought guidance from the AML. This is in keeping with the AMLs purpose; providing a guide and tool to assist African countries develop their legislation, and, as such, reflects the African common position. It is for this reason that part two of this chapter details the framework offered TK protection under the AML. It, however, commences with a look into the history of the AML with a view to establishing why it may be seen as the most appropriate template for an analysis of the TK protection regime in Africa.

4.2.0 PART TWO

4.2.1 THE AFRICAN MODEL LAW: A HISTORICAL BACKGROUND

The 'African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources' (African Model Law or AML) was negotiated to ensure the conservation, evaluation and sustainable use of *biological* resources (BRs), as well as their associated knowledge and related technologies, in order to maintain and improve their diversity as a means of sustaining all life support systems.[536]

Negotiated under the auspices of the Organisation of African Unity (OAU),[537] it was the result of initiatives of the Scientific, Technical and Research Commission of the OAU (OAU/STRC), the Ethiopian Environmental Protection Authority (EEPA) and the Institute for Sustainable Development in Ethiopia (ISD).[538]

The enactment of the AML arose as a result of the OAU identifying the need to address the problem of control, conservation and use of Africa's BRs. In 1997 an OAU/STRC workshop in Nairobi,[539] recommended (i) the drafting of a model law on the protection of indigenous knowledge on medicinal plants,[540] (ii) the establishment of a working group of experts to deliberate on, coordinate and harmonise existing national policies on medicinal plants and put in place a common policy on the sustainable use of medicinal plants;[541] (iii) that the OAU/STRC assist African countries to ensure regional and sub-regional coordination and cooperation in drafting of policies on ownership, access, use and conservation of medicinal

[536] See Part I of the AML. The AML has been described as the best effort possible under the prevailing African circumstance to give meaning to the Protection of the rights of local communities and the regulation of access to their BRs. See Adeniji K 'The African Union and the African Model Law' 7 available online at *http://www.eli.org/pdf/africa/adeniji.pdf* (accessed on 13 April 2011).

[537] The OAU was established on 25 May 1963 with 32 Heads of State and Government signing its Charter. It subsequently grew to 53 members. Though the OAU has given birth to the AU (A move borne out of a desire to expedite the process of economic and political integration in the continent), the Model Law retains its relevance and status as a piece of legislation representing the mind of the African Continent on biological resources and associated knowledge. See generally, the Department of International Relations and Cooperation South Africa 'OAU/AU' available at *http://www.dfa.gov.za/foreign/Multilateral/africa/oau.htm* (accessed on 21 April 2011). See also African Union 'AU in a Nutshell' Available at *http://www.au.int/en/about/nutshell* (accessed on 21 April 2011).

[538] See Ekpere J *OAU's Model Law: The Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources: An Explanatory Booklet* (2000). 8 Available at *http://www.grain.org/brl_files/oau-booklet.pdf* (accessed on 13 April 2011).

[539] See Ekpere J (note 538 above) 8.

[540] See Ekpere J (note 538 above) 8.

[541] See Ekpere J (note 538 above) 8.

plants; and (iv) the encouraging of members to recognise the urgent need to study the implication of the TRIPS on Africa's bio-resource heritage.[542]

These recommendations became the foundation of the African Common Position. African government negotiators, scientists and non-governmental organisations, had however also been working independently of the STRC to develop a common negotiating position at various biodiversity-related forums.[543] The common position was discussed at the 1999 OAU Council of Ministers in Algiers[544] and was reflected in Kenya's July 1999 communication to the WTO on behalf of the African Group.[545] A meeting of these groups, in Addis Ababa in April 1998, which had contributed to the Common Position, discussed a draft law on Community Rights and Access to Biological Resources was discussed and adopted as a draft model law for Africa.[546] This model legislation was subsequently endorsed at the 68th Ordinary Session of the Council of Ministers of the OAU in 1998, held in Ouagadougou, Burkina Faso.[547]

The importance of the AML is the African common position it represents with respect to the protection of TK associated with GRs.[548] Many African States have drafted their national laws in accordance with the AML, or simply adopted its provisions in constructing theirs.

[542] See Ekpere J (note 538 above) 8.

[543] See Adeniji K (note 536 above) 3. These biodiversity-related efforts at the international level were then merged with the efforts of the OAU/STRC: see Ekpere J (note 538 above) 9.

[544] The 35th Assembly of the Heads of States and Government, in Algiers Algeria from 12 – 14 July 1999.

[545] The Unified Position advocates the harmonisation of TRIPS and the CBD, and calls for a *sui generis* system for the protection of new plant varieties which should include protection for the rights of countries and their indigenous knowledge, innovations, technologies and practices. See Ekpere J (note 538 above) 9.

[546] This draft model law it must be noted was originally developed by the EEPA, assisted by the Third World Network (TWN) and the ISD. See Ekpere J (note 538 above) 9.

[547] This was held from 1 – 6 June 1998. The Council of Ministers requested AU members to initiate a process of negotiation to formulate and adopt an African Convention on Biological Diversity, emphasising conditions for access to biological resources and protection of community rights, as well as develop an African common position to safeguard the sovereign rights of Member States and the vital interests of their local communities and forge alliance with other countries of the south on the review of TRIPs in 1999. See Adeniji K (note 536 above) 3.

[548] Adeniji K (note 536 above) 4, argues that the two major outcomes of the African Union initiative in the area of developing a legislation for the protection of local communities, farmers and breeders, as well as regulate access to genetic resources were: the development of the Model legislation to assist the AU members formulate their national legislation; the development of the African Common Position, which calls for a sui generis system of new plant variety protection systems that protect the right of the local community and its indigenous knowledge, farmers, fishermen, their innovations, technologies and practices, and requests that TRIPs be harmonised with the CBD.

4.2.2 THE PROTECTION OF TRADITIONAL KNOWLEDGE WITHIN THE FRAMEWORK OF THE AFRICAN MODEL LAW.

The AML has eight parts,[549] each addressing a specific area. Its 9-paragraph preamble aligns it with the international framework of the CBD, and the AML recognises the sovereignty of nations over their BRs.[550] The rights of local communities over their BRs, TK and local technologies are recognised as collective rights which take precedence over individual rights.[551] It is also noteworthy that the term TK hardly occurs in the text of the AML; instead, the term Community Knowledge (CK) is used, which is defined in harmony with the definition of TK as employed in the course of the research. [552] The choice of the term CK, may be connected to the preamble's assertion that the knowledge of local communities by its collective nature 'take[s] precedence over rights based on private interests.'[553] The AML does not affect the traditional systems of access to, use of, and exchange of knowledge and technologies among ILCs,[554] keeping the historical traditions of TK exchange among ILCs intact.

In a manner similar to the examination of the Nagoya Protocol in Chapter 3 above, the AML is examined with reference to its provisions on access to CK, sharing of benefits arising from its use, as well as compliance. The AML, despite its reference in the preamble to the promotion and encouragement of capacity building as one of its objectives,[555] offers no specific reference to efforts at capacity building especially in the light of CK associated with GRs.

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[549] Part I lays out the Objectives, Part II offers the definitions and scope, Part III; Access to Biological Resources, Part IV; Community Rights, Part V; Farmers' Rights, Part VI; Plant Breeders' Rights, Part VII; Institutional Arrangements, Part VIII; Enabling Provisions.

[550] See Par 1 of the Preamble to the AML. Biological resources are defined to include genetic resources, organisms or parts thereof, populations, or any other component of ecosystems themselves, with actual or potential use or value for humanity.

[551] See Par. 2 of the Preamble to the AML.

[552] Article 1 of the AML defines CK to mean, '...the accumulated knowledge that is vital for conservation and sustainable use of biological resources and/or which is of socio-economic value, and which has been developed over the years in indigenous/local communities'.

[553] See par. 2 of the Preamble to the AML. Such 'private interests' it is suggested, need not refer to industrialised interests, but could also refer to the interests of individual traditional knowledge holders over the rights of the community. Essentially therefore, the African position places TK as a communal knowledge and heritage.

[554] See Article 2.2(ii) of the AML. Also see Article 2.3 which offers a significant proviso to the provisions of Article 2.2 *viz*; '...the provisions shall not apply to any person or persons not living in the traditional and customary way of life relevant to the conservation and sustainable use of biological resources.' Further see Article 21. Article 2.2(ii) may be juxtaposed with the provision of the Article 12.4 of the Nagoya Protocol which urges Parties as far as possible not to restrict the customary use and exchange of TK associated with GRs.

[555] See Part I.f of the AML

4.2.2.1 Access to Community Knowledge under the African Model Law

Similar to the requirements of the Nagoya Protocol, under the AML, access to CK of local communities is subject to an application for the necessary prior informed consent (PIC) and a written permit.[556] Applications are to be directed to the National Competent Authority (NCA)[557] unless the national legislation expressly provides otherwise.[558] Applicants are expected to provide their names,[559] and a full description of the innovation, practice or knowledge associated with BRs to which is sought.[560] The NCA may request further information not specified in the AML which it deems necessary.[561] The AML vests the NCA with final authority for granting access,[562] in the form of an access permit.[563] A permit may only be granted upon the *written* PIC of the local communities involved,[564] the absence of which renders such access invalid.[565] An access permit may take one of three forms; an academic research permit, a commercial research permit, or a commercial exploitation permit.[566] The AML specifies in detail the particulars required for an agreement authorising access.[567] Applicants for access to CK associated with BRs are required to undertake not to transfer the knowledge to any third party without the authorization of the NCA and the ILCs,[568] nor to apply for any form of IP rights over the knowledge without the PIC of the original providers.[569] The AML requires the applicant to provide for the sharing of benefits[570] and to undertake to contribute economically to the efforts of the host State and communities

[556] See Article 3.1 of the AML.
[557] The National Competent Authority (NCA) is established by Article 57 of the AML. Closely related to the Competent National Authority (CNA) under the Nagoya Protocol, the NCA is described as the entity authorised by the state to supervise and watch over the implementation of one or more of the components of the present law. See Article 1 of the AML. Its duties are spelt out in Article 58 of the AML.
[558] See Article 3.3 of the AML.
[559] See Article 4.1(i) of the AML.
[560] See Article 4.1(xi) of the AML.
[561] See Article 4.2 of the AML.
[562] See Article 7.1 of the AML. It must be read together with Article 5 which provides for the PIC of the NCA as well as the local communities before any access may be granted. The NCA is obliged to consult with the local communities to ascertain that their PIC has been secured. See Article 5.3 of the AML. Finally, see Article 10 of the AML which authorises the NCA to grant approvals for access, and mandates the NCA to ensure that all requirements of the Model law have been fulfilled.
[563] See Articles 7.1 and 7.2 of the AML. This Permit shall be granted through a signed written agreement between the NCA and the local communities on the one hand and the applicant on the other. (7.2)
[564] See Article 5.1(ii) of the AML.
[565] See Article 5.2 of the AML. See also 7.3 of the AML.
[566] See Article 13.1 of the AML. According to the Law, only one of such may be issued to an applicant in connection with a particular resource at any given point in time. See 13.2 of the AML.
[567] See Article 8 of the AML.
[568] See Article 8.1(iv) of the AML.
[569] See Article 8.1(v) of the AML.
[570] See Article 8.1(vi) of the AML.

in maintaining the indigenous knowledge and innovations which the applicant seeks to utilise.[571] Recognising the unique circumstances under which academic and research institutions, public agencies and inter-governmental institutions seek access to BRs and the associated knowledge, the AML provides for a specialised procedure for granting them access. This special procedure, however, remains subject to the principles of PIC of the host ILCs.[572]

Part IV of the AML concerned primarily with Community rights, recognises rights of ILCs to their innovations, practices and knowledge, as well as the right to *collectively* benefit from same.[573] A remarkable aspect of the AML is that it recognises that these access rights and regulations are to be observed in accordance with the customary laws of the local communities concerned, whether or not such local laws are codified.[574] The AML provides specifically that communities have a right to refuse access to their innovations and knowledge,[575] and to withdraw consent or place restrictions on access where there is a threat to the integrity of their cultural heritage.[576] ILCs are, therefore, in full control of their intellectual property during all stages of the access process, guaranteeing ILCs' protection of their rights whether such knowledge or innovation is written, registered, published or not.[577]

4.2.2.2 Benefit Sharing under the African Model Law

The focus of the AML is on the protection of rights of ILCs and regulating the access to their BRs, but it recognises the role of, and provides for benefit sharing within its objectives.[578] The major provision dealing with benefit sharing, Article 12.2 provides;

> 'The State and the community or communities shall be entitled to a share of the earning derived from when any biological resource and/or knowledge collected generates, directly or indirectly, a product used in a production process.'

Article 12.2 sets three primary pre-conditions justifying the entitlement of the State and communities to any share of the benefits arising from its CK: The knowledge of the ILC must

[571] See Article 8.1(vii) of the AML.
[572] See generally Article 11.1-4 of the AML.
[573] See Articles 16(iii) and 16(iv) of the AML.
[574] See Article 17 of the AML.
[575] See Article 19 of the AML.
[576] See Article 20 of the AML.
[577] See Article 25.1-4 of the AML.
[578] See Part I (d) and (e) of the AML, dealing with the specific benefit-sharing aspects of the objectives of the Legislation.

have been collected; The 'collected knowledge' must directly or indirectly generate a product; and the generated product must be such as is used in a production process. These preconditions seem to constitute a difficult hurdle with respect to the benefit sharing requirements under the AML.

Benefit sharing under the AML is expressed in three main ways.

First, a signed agreement between the NCA and the local communities on the one hand, and the applicant on the other, is a precondition for an access permit. A major component of the agreement is a provision for the sharing of benefits[579] between the applicant and the State (represented by the NCA).[580]

Secondly, the AML recognises the importance of, and provides for, State-Community benefit sharing, making it a mandatory entitlement for both the State and the Community concerned, to receive a portion of the commercialisation of any knowledge associated with the use of BRs. The AML specifies that the ILC involved is entitled to a minimum of at least of 50% of the earnings from the use of the knowledge.[581]

Thirdly, the AML emphasises the development of women,[582] placing an obligation on the State to channel the benefits which accrue to the community in a manner which treats the men and women equitably.[583] The sharing must take place with the full participation and approval of the local community concerned.[584] The Nagoya protocol also recognises this. This is because within traditional communities, women are more closely linked with these BRs through their daily interaction with nature. The traditional lifestyle of several communities, however, places the women within a communal role which subsumes them under their male counterparts and renders their voices inaudible in the discourse on the protection of TK, and limits their participation in the sharing of community benefits. The increasing global recognition of this state of affairs has resulted in efforts to further integrate the women into the mainstream of decision making as well as benefit sharing.

[579] See Article 8.1(vi) of the AML.
[580] See Article 12.2 of the AML.
[581] See Article 22 of the AML. The rendering of this provision suggests that in the sharing of the benefits, the State is entitled to 50% of the benefits, with the remaining 50% belonging to the communities involved. In essence, the exact share of the communities involved will depend on how many communities are deemed holders of the knowledge involved as reflected through the parties on the Access permit.
[582] See Par 3 of the Preamble to the AML. See also Part I (e) of the AML.
[583] See Article 22 of the AML.
[584] See Article 22 of the AML.

4.2.2.3 Compliance under the African Model Law

Part VII of the AML is dedicated to the institutional arrangements for compliance.[585] These arrangements reflect the range of issues that the AML covers.[586] The AML establishes the NCA,[587] which is charged with creating a regulatory mechanism to ensure the effective protection of community IP rights.[588] The National Inter-Sectoral Co-ordination Body (NICB) is also established as a body to coordinate and follow up on the proper implementation of the AML.[589] The NICB is charged with ensuring strict compliance with the minimum conditions for agreements between users and collectors,[590] and to recommend policies and laws, including those on community rights, over innovations and knowledge.[591] It is also responsible for verifying compliance with local communities' PIC requirements,[592] and carrying out other functions that are necessary for the effective implementation of the AML. The Technical Advisory Body (TAB),[593] established to formulate policy options that promote the protection of community intellectual rights, supports the work of the NICB.[594] The AML attempts to make these bodies more effective by providing for local communities to establish databases on their knowledge and technologies through a scheme known as the National Information System,[595] an initiative similar to the widely respected Indian system.[596] This System under the AML is responsible for the compilation of information on piracy on community innovations, practices, knowledge and technologies and disseminating same to all relevant concerned bodies.[597] Finally, the AML mandates the States to establish appropriate

[585] See Part VII of the AML.
[586] The AML significantly deals with a wide range of issues including food security, state sovereignty, community rights, community rights and technology, participatory rights of local communities, PIC, benefit sharing, regulation of access to genetic resources. See Nnadozie K, Lettington R, Bruch C, Bass S & King S (eds) *African Perspectives on Genetic Resources: A Handbook on Laws, Policies and Institutions Governing Access and Benefit Sharing* (2003) Environmental Law Institute, Washington. 280-281.
[587] See Article 57 of the AML.
[588] See Article 58 (i) of the AML. See generally Article 58 of the AML for the duties of the NCA.
[589] See Article 59 of the AML.
[590] See Article 60 (i) of the AML.
[591] See Article 60 (iii) of the AML.
[592] See Article 60 (iii) of the AML.
[593] See Article 62 of the AML.
[594] See Article 63 (i) of the AML. See generally Article 63 of the AML for the full functions of the Technical Advisory Board (TAB).
[595] See Article 64 of the AML.
[596] See Section 2.2.3.5 above and footnote 196 thereto.
[597] See Article 65 (iii) of the AML.

agencies with the power to ensure compliance with the provisions of the AML.[598] The AML seeks to make its compliance strategies more effective by recognising the need for cross-border cooperation[599] within Africa and the international community.[600]

4.2.3 CONCLUSION

This part of the chapter traced the history of the AML and identified it as a prototype of the African situation. This is due to the general consensus among African nations as to the AML's standard as a guide for development of legislation for the protection of TK. The earlier analyses of the national legislation show that the measures in existence in African countries place differing emphases on the major themes addressed in the Protocol.

If one accepts that the AML reflects the African position, the question arises: does the AML provide a comprehensive framework for the protection of TK in Africa, in line with the obligations under the Protocol for providing parties?

The AML provides for an NCA, as envisaged under the Nagoya Protocol[601] for regulating access and in providing for community participation, requires the written PIC of the local communities prior to access. The AML's community participation provisions are, however, rendered slightly ambiguous by granting communities the subjective right to withdraw, or place restrictions on access granted where it is detrimental to their cultural heritage. This could be seen to undermine the Protocol's aim of maximum clarity of obligations for both users and providers of TK.

The AML, in addition to establishing various supervisory bodies, provides for States to establish appropriate agencies with the power to ensure compliance with its provisions.

The lofty provisions of the AML, though commendable, remain, like the Bonn guidelines, a mere guide to legislative development. African biodiverse countries must, as a matter of urgency, implement legislation, like Ethiopia and Uganda for the protection of TK. As long

[598] See Article 67.1 of the AML. The AML provides for measures such as warnings, fines, revocations of access permits, bans from further access to community knowledge to provide recourses for ensuring compliance: see Article 67.2 of the AML.
[599] See Article 67.4 of the AML.
[600] To this end, the law provides for such violations be reported by the NCA to the Secretariats of relevant international agreements and regional bodies as well as publicised in the national and international media. See Article 67.3 of the AML.
[601] See Section 3.3.3.1 above.

as obligations remain unclear and undefined, like the Kenyan situation, the benefits of the Protocol[602] cannot be realised.

[602] These benefits to provider countries may best be summed up in the light of the justification for the negotiation of the Protocol (see section 3.1.2 above): the global cooperation to address biopiracy, and ensure the compensation of provider nations and ILCs through clarity of terms, with respect to benefit sharing. Other benefits identifiable complement these. See generally sections 3.3.1 – 3.3.4 above.

5. 0 CHAPTER FIVE:

Conclusions

The preceding chapters have examined whether the Nagoya Protocol offers a solution to the exploitation of the traditional knowledge (TK) of host indigenous communities in biodiverse regions of Africa. Building on the introduction offered in chapter one, chapter two examined some concepts crucial to TK protection and explored the characteristics of TK. Chapter three traced the development of the Nagoya Protocol and examined its regulatory framework for the protection of traditional knowledge associated with genetic resources (TK*a*GRs). Chapter four presented an African perspective to the inquiry, examining the Ethiopian, Ugandan and Kenyan Laws, and also the African Model legislation (AML). This chapter sums up the discussions and makes recommendations on the content of the domestic laws.

5.1 The Interrelationship between the Nagoya Protocol and the African Model Law

The Nagoya Protocol and the AML are both designed to regulate the protection of TK, and stipulate prior informed consent (PIC) as a precondition for access to TK.[603] The PIC of indigenous and local communities (ILCs) under the two instruments must be obtained, but under the AML, it must be in writing.[604] The administration of obtaining PIC of ILCs is regulated by the competent authorities; the competent national authority (CNA) under the Protocol and the national competent authority (NCA) under the AML. The Protocol makes PIC subject to national legislation, and mandates parties to '*endeavour to support, as appropriate*' the development of community protocols to assist in the development of domestic legislation on the subject.[605] The Protocol seeks clarity of terms for both the users and the providers and therefore requires the national focal point (NFP)[606] to make available all information required for access, and obtaining PIC. Terms for access are clearer and the rights of users more clearly protected under the Protocol, as potential TK users are mandated to contact the NFP and the CNA. The AML requires users to obtain the PIC directly from the ILCs, and stipulates that the local laws of the ILCs must be followed irrespective of whether they are codified or not. The ILCs are also given a wide 'subjective' discretion to withdraw

[603] See Article 7 of the Nagoya Protocol and Article 3.1 of the AML. See also Sections 3.3.3.1 and 4.2.2.1 above respectively.
[604] See Article 5.1 (ii) of the AML. See also section 4.2.2.1 above.
[605] See Article 12.3 of the Nagoya Protocol. See also Section 3.3.3.1 above.
[606] See Section 3.3.3.1 above.

consent or place restrictions on access where their cultural heritage is being eroded. Therefore, with respect to access obligations, though both laws emphasise community participation, the Nagoya Protocol goes a step further in ensuring clarity of terms and obligations.

Importantly, the issue of State-community benefit sharing is accorded significance, in addition to the State-State benefit sharing, under both laws.[607] The Protocol again subjects benefit sharing to national legislation. Under the AML, benefits are shared between the TK user and the State where a product formed with such TK, is used for further production. The State is then obliged to share with the ILC(s) providing the knowledge, at least 50% of the benefits. It also recognises the need for benefits to be shared at the community level equally, especially with respect to gender.[608] The Protocol, though not going into such detail, provides for the providing parties to develop measures to adequately provide for the sharing of benefits, including the safeguard of the interests of ILCs. It also urges parties to cooperate in supporting ILCs develop community protocols for benefit sharing. The Protocol recognises that in some situations it may not be possible to obtain PIC, and that TK sometimes occurs across boundaries; it recommends parties to work out a Global Multilateral Benefit-Sharing Mechanism for this purpose.[609]

Compliance under the Protocol is made a cooperative effort, and parties are mandated to establish compliance mechanisms to ensure that users within their territories access TK in accordance with the domestic measures of the providing party. Parties are also mandated to facilitate the cross-jurisdictional enforceability of judgments and awards, in cases of breach.[610] Parties are further required to ensure that their legal systems provide opportunities for affected persons to seek justice. The AML pursues compliance through detailed institutional arrangements. In this regard, the NCA is expected to ensure the protection of the rights of ILCs, and is supported by bodies such as the National Inter-sectoral Coordination Body (NICB) and the Technical Advisory Body (TAB).[611] One of the remarkable features of the AML is that it provides for the creation of a National Information System, for the purpose of establishing a database of community knowledge, and ensuring the publication of acts of

[607] See Article 5 of the Nagoya Protocol and Article 12.2 of the AML.
[608] See Section 4.2.2.2 above.
[609] See Section 3.3.3.2 above.
[610] See Section 3.3.3.3 above.
[611] See Section 4.2.2.3 above.

biopiracy involving community knowledge. The AML provides for remedies such as fines, warnings and revocations in cases of breach.

The Protocol addresses the need for building up the capacity of Parties so as to ensure the actualisation of its provisions among developing states; this is important for Africa. Apart from seeking to assist African countries to implement and comply with the obligations of the Protocol, capacity building is also targeted in negotiating MATs, as well as developing, implementing and enforcing domestic legislative, administrative or policy measures on access and benefit sharing.[612] The AML is relatively silent on the issue of capacity building. Though it is mentioned in the Law, no specific capacity building obligations are placed on parties with respect to TK protection. This is an area which need be addressed under the AML and by extension, under domestic laws in Africa.

This comparison between the major provisions of the AML and the Nagoya Protocol is the foundation of the conclusion that though the AML in itself offers an excellent template for the protection of TK in Africa; its voluntary nature, and regional scope of operation results in it not dealing adequately with incidences of biopiracy and policing of TK. The Nagoya Protocol, though not perfect, particularly because of its use of 'weakened language' in stipulating some important obligations,[613] goes beyond the AML in several respects, in ensuring further clarity of terms and in binding all parties to ensure compliance with obligations on access and benefit sharing as laid out in the domestic legislation of provider countries. The Protocol, however, 'suspends' most of the obligations it creates, rendering them active only upon the enactment of domestic legislation. Africa's greatest need therefore, lies in the development of comprehensive legislation that the benefits of the Protocol may be actualised on the continent. The AML and the Protocol therefore may complement each other, in protecting TK in Africa: while the Protocol offers an international framework, its requirement for domestic legislation which addresses its major obligations, is largely met in the AML.

In conclusion therefore, within the scope of the Nagoya Protocol, the major challenges faced by the African biodiverse states are addressed, by binding parties to comply with domestic

[612] See Section 3.3.3.4 above.

[613] See for instance, Article 16.3, which requires parties to 'as far as possible and appropriate cooperate' in cases of violations of domestic regulations of the benefit sharing obligations of the providing state (Section 3.3.3.2 above). See also the use of similar language in Article 12.3(a) dealing with the requirement of developing community protocols on access. (Section 3.3.3.1 above) See also footnote 387 thereto.

laws, and clarifying the access and benefit sharing obligations. Chapter four, has shown that though some countries have made significant progress with respect to the protection of TK, it remains a cause of concern, that the ABS legislation which many have developed, fail to address TK protection. The AML offers a worthy template for Africa, of the comprehensive legislation which the Nagoya Protocol demands.

5.2 Africa and the Nagoya Protocol

The next section offers concluding recommendations which seek to answer the research question, which is

> *'Can the recent adoption of the Nagoya Protocol be viewed as an appropriate multilateral solution to the exploitation of the traditional knowledge of host local and indigenous communities in biodiverse regions of Africa and to what extent can domestic legislation help in achieving the Protocol's objectives?'*

From the standpoint of Africa, the research question has been addressed in two major parts; the external need and the internal need.

5.2.1 The External Need

The question *'Can the recent adoption of the Nagoya Protocol be viewed as an appropriate multilateral solution to the exploitation of the traditional knowledge of host local and indigenous communities in biodiverse regions of Africa...?'* describes what is now referred to as the 'external need'. This question centres on the extent to which the Nagoya Protocol addresses the external challenges which Africa faces with regard to TK protection; challenges which require a multilateral solution. The major challenge in this respect is the need for a framework promoting the extra-jurisdictional enforcement of provider countries' domestic measures.

The adoption of the Nagoya Protocol is a major breakthrough with respect to the protection of GRs as well as TK*a*GRs. The backdrop to the Nagoya Protocol was the incidence of biopiracy in biodiverse developing countries. A major argument of the biodiverse developing countries at the World Summit for Sustainable Development (WSSD) in 2002, was that despite the adoption of the CBD and the vesting of sovereignty over GRs in host provider

states, biopiracy had remained on the rise owing *inter alia* to the increased trans-boundary movement of GRs. National and regional laws were therefore rendered ineffective in policing acts of biopiracy.[614] The Nagoya Protocol sought to fill this void by means of a multilateral solution. The Protocol sought to provide the solution by ensuring clarity in the terms of access, benefit sharing and compliance, and encouraging parties to co-operate in order to build capacity.

The major limitations of the AML lie in its nature, as a *model* for the development of legislation in Africa, and like the Bonn guidelines, is merely voluntary. Consequently, despite its approval by all heads of states and governments in Africa, there is still a wide disparity in the nature of obligations within the legislative frameworks of various African countries. This reduces the potency of the unanimously held out 'African common position' with respect to the protection of TK. Another major limitation of the AML relates to its scope of influence; it is limited to the African region. This does not detract from the importance of provisions such as its insistence that users produce letters from their home governments undertaking compliance with the domestic legislation. The model legislation represents a common understanding among African leaders. Where an African country, e.g. Ethiopia therefore adopts the AML in the development of its national legislation, it will be much easier to subject fellow African countries to that legislation than it would be to subject foreign users. Therefore, efforts by a country, and even a continent, to guard its GRs and TK*a*GRs, are rendered futile where such legislation is not complied with. This limitation is what has been identified as the major reason for which the Nagoya Protocol's multilateral framework was negotiated.

The Nagoya Protocol addresses the external need because it is enforceable among all parties to the CBD,[615] even though Parties are required to individually sign up to the Protocol.[616] The Protocol specifically provides in Article 7 for all Parties (both providers and users), to take measures which ensure that TK*a*GRs is accessed only with the prior informed consent (PIC) of indigenous and local communities (ILCs) and on mutually agreed terms (MATs). It seeks to achieve this through the establishment of Competent National Authorities (CNAs) as well

[614] See Section 3.1.2 above.
[615] This involves 193 countries from round the world.
[616] As at the time of concluding this research, 21 countries have already signed up to the Protocol. See CBD 'Signatories to the Nagoya Protocol' Available at *http://www.cbd.int/abs/nagoya-protocol/signatories/* (accessed on 14 May 2011).

as National Focal Points (NFPs) to ensure that individual Party obligations on PICs and MATs are clearly defined and accessible.[617] Article 10 of the Protocol also provides for the Global Multilateral Benefit-sharing Mechanism to be worked out with respect to the sharing of benefits derived from the use of TK*a*GRs which occur in areas for which it is impossible to grant or obtain PIC. An important provision of the Nagoya Protocol, which addresses this 'external need' is Article 16, which provides for user parties to adopt compliance measures to ensure that the TK*a*GRs used in their jurisdiction has been accessed in accordance with the domestic laws of the Party in whose jurisdiction the TK holders are situated. In cases of violation, Parties are expected to cooperate '*as far as possible and as appropriate*'[618] in addressing such situations. The use of this language significantly reduces the potency of the obligation on Parties to cooperate in addressing non-compliance. In furtherance of meeting this external need, the Protocol finally offers substantive provisions addressing instances requiring dispute settlement.[619]

The Nagoya Protocol addresses directly the main external problem Africa faces with respect to the protection of TK by creating an international regime which recognises and enforces the legislative efforts of provider countries. All its provisions are therefore subject to the domestic legislation of the provider countries.

The need for domestic legislation is the internal need which is now examined.

5.2.2 The Internal Need

The second limb of the conclusion described as the 'internal need' arises from this part of the research question: *'...to what extent can domestic legislation help in achieving the Protocol's objectives?'*

The analysis of the 'external need' indicates that the global community has reached the point where it has realised that the benefits of the Nagoya Protocol are only 'activated' by the development of domestic legislation.

[617] See Section 3.3.3.1 above.
[618] See Section 3.3.3.3 above.
[619] See Section 3.3.3.3 above.

5.2.2.1 The Importance of Adequate Domestic Legislation

Now that the Nagoya Protocol has been adopted, Africa's most pressing need with respect to the protection of TK, is the need to develop comprehensive domestic legal frameworks to address the access to TK*a*GR as well as the sharing of benefits arising from its use. The promise the Nagoya Protocol holds can only be realised by the biodiverse African countries putting adequate legislation in place. Chapter four, has shown that many biodiverse African states have failed to develop comprehensive and clear TK protection measures.

The Nagoya Protocol makes it mandatory for users to comply with the existing measures in the provider country with respect to access, benefit sharing and compliance provisions in the area of TK protection. For this reason providing countries are directed to develop and establish frameworks governing the exploitation of TK in their territories. An important aspect of the need to establish comprehensive legislation is the need for such legislation to adequately take into account the peculiarities of the societies involved. This requires ILCs to be deeply involved in drafting the legislation. The absence of, or non-comprehensiveness of domestic legislation in provider countries, contributes to the exploitation of GRs and associated knowledge – *biosquatting* - ,[620] and thereby undermines the efforts of the international regime in protecting TK. All user countries' compliance measures are derived from the domestic legislation of the providing countries.

5.2.2.2 The Development of Domestic Legislation

The limitations African countries suffer from is recognised in the Protocol's capacity building provisions which the African countries must take advantage of in ensuring that community protocols are established, and that national laws are designed with maximal ILC participation. The participation of local communities is important as their peculiar nature is important in the drafting of legislation: the UN report, 'State of the World's Indigenous Peoples 2010' points out that the international property rights regime often fails to recognise indigenous customary law.[621] African countries must, therefore, not simply copy other legislation but rather develop

[620] See Section 2.1.1 and footnote 61 above.

[621] See UN ST/ESA/328 'State of the World's Indigenous Peoples' (2009) Available at *http://www.un.org/esa/socdev/unpfil/documents/SOWIP_web.pdf* (accessed on 12 May 2011). It goes on to explain that the IP rights regime used in western countries emphasises exclusivity and private ownership; an idea which contrast significantly with indigenous worldviews, whereby knowledge is created and owned collectively and the responsibility for the use and transfer of the knowledge is guided by traditional laws and customs. See also Intellectual Property Watch Monthly Edition, February 2010, Vol. 7, No. 2.

autochthonous legislation which addresses this peculiarity. The AML offers a good guide in this respect because it was negotiated purely with regard to the African needs, by African stakeholders. It is therefore largely representative of an African piece of legislation. The Decision adopting the Protocol provides for developing country members to identify their capacity development priorities and needs, especially in the area of capacity development, in developing ABS and compliance measures.[622] African countries had to identify and present them to the Intergovernmental Committee[623] for its first meeting with respect to the implementation of the Protocol in June 2011. The Protocol enjoins all Parties to offer technical assistance as well as institutional and financial support to developing countries.

5.2.2.3 The Content of Domestic Legislation

Finally, this paragraph simply identifies the areas as observable from the research which must be considered in drafting this comprehensive domestic legislation. The representatives of indigenous people raised a major objection to the use of the clause '*in accordance with domestic law'*, during the drafting of the Nagoya Protocol, arguing that domestic laws and regulations do not always take into account the customary law. They want domestic legislation to ensure that TK held by indigenous peoples is accessed in accordance with their customary law.[624] Consequently, African domestic laws must be drafted in full recognition and consultation with ILCs. Domestic laws must be channels through which the process of obtaining PIC and establishing MATs are clearly spelt out. The domestic laws should provide for the CNA as well as the NFP, thus ensuring clarity with respect to the authorities responsible for granting such access permission. Domestic legislation must balance the facilitation of access and benefit sharing. Much legislation tends to be overly restrictive with respect to access requirements. In line with the Protocol, this research shows that, facilitating access is important for the maximal utilisation of GRs as well as TK*a*GRs. Global interests and those of provider countries and ILCs are best served by access being complemented by adequate benefit sharing provisions.

The Ethiopian example reveals a flaw in policy development with respect to the sharing of benefits: there must be specific provisions such as the minimums provided for under the Proclamation, and with respect to the sharing of benefits between the user and the State on

[622] See Section 3.3.3.4 above.
[623] See Section 3.3.3.4 above.
[624] See Intellectual Property Watch, 26 October 2010.

the one hand and between the state and the community on the other. This latter part is extremely important to the fulfilment of the Protocol's goals. Unfortunately, though many African countries obtain benefits at the national level, these benefits many times do not get to the concerned ILCs. Domestic legislation must therefore address State-community sharing.

5.3 A Final Reflection

If there is expected to be any progress in sustainable development, and ILCs are to be rewarded and adequately compensated for their roles in biodiversity conservation and management; if biodiversity-rich communities are to be empowered to rise above the limitations of poverty through their natural intellectual endowment; if African countries are to rise economically through the benefits offered from GRs and their associated knowledge made possible by their strategic geographical locations; if the objectives of the Nagoya Protocol are to be attained, African policy makers and legislatures must rise to the challenge of meeting the 'internal need' of sound domestic legislation, to complement the solutions offered by the Protocol to the 'external need'. This they can only do by drafting adequate and sound legislation for regulating the access to, the sharing of benefits from the use of, and the compliance with the measures implemented to protect, traditional knowledge associated with genetic resources.

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