Chapter 24: Western Intellectual Property Rights Regimes and Traditional Knowledge Protection Systems in Africa

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1 Introduction

Indigenous and traditional communities in Africa and elsewhere depend on the natural environment for their livelihood. Traditional Knowledge (TK) related to medicine, agriculture, fisheries and food preservation, among others, is an important tool for their survival. Due to, among other reasons, advancement in biotechnology, the value of TK and associated genetic resources has increased tremendously in the past few years. Such increase in value calls for concerted legal efforts for protection. Mindful of this, the international community is working on possible modalities for protecting TK. Organisations involved in TK protection include the World Intellectual Property Organisation (WIPO), the Convention on Biological Diversity (CBD), the Council for the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organisation (WTO) and the World Bank. The African Regional Intellectual Property Organisation (ARIPO) has, likewise, recently adopted a protocol for the protection of TK and expressions of folklore, the Swakopmund Protocol, named after the Namibian town where it was adopted.

These organisations by and large use the conventional or western intellectual property system as their point of departure for devising methods of protecting TK. However, the inherent differences between western intellectual property systems and traditional communities' perceptions still pose challenges to an effective protection of TK with the aim of benefitting their communities of origin. This chapter underscores some of these challenges and offers perspectives for a holistic approach that puts environmental protection and community welfare at the centre of the equilibrium as opposed to proprietary rights, whether collective or individual.

2 Defining Traditional Knowledge and Associated Genetic Resources

The World Intellectual Property Organisation describes Traditional Knowledge (TK) as[1]

> tradition-based literary, artistic or scientific works, performances, inventions, scientific discoveries, designs, marks, names and symbols; undisclosed information, and all other tradition-based

1 WIPO (2008:5).

> innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields.

TK is the totality of knowledge of local and indigenous communities that enable them to live in harmony with the environment while supporting their livelihood. It is traditional not because it is old but because it is "created, preserved, and disseminated in the cultural traditions of particular communities."[2] TK is time-tested, as it has enabled local and indigenous communities to interact with nature for centuries.

Genetic resources (GRs) or materials, on the other hand, are "any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity".[3] The CBD puts genetic resources in a larger box of "biological resources" which includes "genetic resources, organisms or parts thereof, populations or any other biotic component of ecosystems with actual or potential use or value for humanity".[4] The phrase "with actual or potential value" signifies the fact that some GRs may not be of known economic value at the time of collection. Joseph Straus observes that GRs have a double legal nature due to the fact that:[5]

> *[A]sphenotypes* i.e. individual plants and animals, they traditionally constitute private (tangible) goods; as *genotypes*, i.e. information embodied in the genetic constitution of micro-organism, plant or plant species, they *a priori* conform to the definition of public good.

Although the practice has been to discuss TK and GRs as one and the same, opinions differ on the matter. Some commentators are of the opinion that TK is not necessarily manifested in GRs and that not all GRs embody TK of local and indigenous communities.[6] Another school of thought holds that TK and GRs are inseparable, and that any legal instrument for protection must appreciate their inseparable nature.[7] Not only are the above differing views on the nexus between TK and GRs difficult to reconcile, but also widened by a lack of recognition of local and indigenous communities as true holders of TK and GRs.[8] Moreover, conventional intellectual property rights, particularly patents, have been used as a tool to misappropriate TK, much to the detriment of

2 Singhal (2008:732).
3 Article 2 CBD.
4 Article 1 CBD.
5 Straus (2000:144); emphasis original.
6 According to this view, the CBD's use of the term 'potential value' of GRs signifies that the importance of some GR is yet to be discovered by conventional scientists and is also unknown to local and indigenous communities.
7 This view is preferred by local and indigenous peoples whose philosophy of life evolves around a holistic world and interconnected life to them is a continuous journey of exploration.
8 As will be explained later, customary laws and protocols of local and indigenous communities can provide useful guidance on ownership of TK and GR.

local and indigenous communities.[9] The Ayahuasca,[10] Neem[11] and Hoodia[12] speak loud and clear on biopiracy, as will be explained in the next section.

3 Biopiracy

There is no commonly agreed definition of biopiracy. According to Dutfield[13]

> biopiracy has emerged as a term to describe the ways that corporations from the developed world claim ownership of, free ride on, or otherwise take unfair advantage of, the genetic resources and traditional knowledge and technologies of developing countries.

Biopiracy can be described as illegal and unethical bioprospecting. In the context used here, bioprospecting is the "search for useful biological materials in micro-organisms, plants, fungi, animals and humans".[14] As with other tangible properties, unauthorised access to genetic resources for the purposes of prospecting passes the test of misappropriation or theft. This is the crux of concerns of developing countries.

An act that can be labelled biopiracy therefore involves any or a combination of the following:

- Unauthorised acquisition of biological resources;
- the unauthorised use of TK associated with genetic resources for profit;
- obtaining intellectual property rights, especially patents for an "invention" based on traditional knowledge.

The following cases, documented by the African Centre for Biosafety are illustrative:[15]

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9 It is submitted that intellectual property law regime should rather do the opposite that is offer innovative ways of protection. It is with this legitimate expectation that local and indigenous communities look up to WIPO for intervention and assistance against, among other things, biopiracy.

10 The *Banisteriopsis caapi* is a medicinal plant that has been used by Ayahuasca in Latin America for centuries. In early 1980s an American researcher 'discovered' its usefulness and was issued with US Patent No 5751 issues in June 1986. As a result of collective efforts by civil societies and individuals, this patent was revoked in 1999 but later upheld.

11 The Neem tree *Azadirachta indica* is native to India and has been used by local and indigenous Indian communities for a long time. It has medicinal, spiritual and economic value. As with the Ayahuasca, the knowledge of the usefulness of the tree was used to 'work on' a discovery that led to an invention and subsequent grant of a patent by the European Patent Office EPO in 1994. This patent was however revoked in 2000 for lack of novelty.

12 For many years, the indigenous San of Southern Africa used Hoodia as a hunger suppressant. This traditional use was noted by a Dutch anthropologist in 1937. In 1995 the South African Council for Scientific and Industrial Research (CSIR) obtained a patent for Hoodia's appetite suppressing element Based on this knowledge, a team of researchers patented this knowledge in the United Kingdom and later licensed it to Pfizer, an American pharmaceutical company.

13 Dutfield (2004:1).

14 Polski (2005:543).

15 The African Centre for Biosafety (ACB) is a non-profit organisation, based in Johannesburg, South Africa. According to its website "It provides authoritative, credible, relevant and current

Swiss researchers are staking claims to drugs from *Cussonia zimmermannii*, a tree found in Tanzania, Kenya, Uganda, Mozambique, and other countries in east and southern Africa. According to the European research group, the *Cussonia zimmermannii* extracts are active on the human central nervous system's GABA(A) receptor and therefore may be of use in treating a variety of diseases, including epilepsy and mental disorders such as anxiety. The claim that *Cussonia zimmermannii* can be used to treat nervous system disorders will come as no surprise to Africans familiar with the tree's medicinal uses. In fact, even the Swiss 'inventors' concede that Kenyan researchers noted in 1986 that the plant is traditionally used to treat mental illness and that in 1964 an article on ethnobotany noted its traditional use in treating epilepsy. In addition, parts of the tree are used to treat other conditions including fever and postpartum bleeding. On what basis then, do the Swiss institutions claim their candidate drug is novel and inventive? Judging by the patent application, they seem to believe that by isolating and describing a chemical found in *Cussonia zimmermannii,* they have made an invention.

Source: African Centre for Biosafety (ACB) Pirating African heritage: A Brief Note by the African Centre for Biosafety (2009).

Agriculture and healthcare giant multinational Bayer, based in Germany, has staked a claim to the use of any extract from any plant of the *Vernonia* genus in Madagascar for "improving the skin status". In addition to claiming all *Vernonia* from Madagascar, Bayer's patent application makes specific claim to eight Vernonia species. The patent claim further focuses on the shrub species *Vernonia appendiculata*, commonly known as 'ambiaty', a plant which is endemic to the island. There are ample citations that document important traditional uses of the 'ambiaty' plant in Madagascar. Directly related to the alleged novelty of Bayer's patent claims is 'ambiaty's' documented traditional use in wound healing and in herbal steam baths – in both cases traditional uses that obviously relate to skin care and health. It has also been used traditionally in products such as dyes. Yet Bayer's patent application makes no reference to these and other traditional uses of 'ambiaty'.

Source: African Centre for Biosafety (ACB) Pirating African heritage: A Brief Note by the African Centre for Biosafety (2009).

Biopiracy appears to be on the increase, fuelled by new developments in biotechnology and the desire by pharmaceutical companies to be at the cutting edge as far as research and development (R&D) is concerned. It appears also that many of the organisations involved in, or suspected of conducting biopiracy, are aware of their obligations under international law including abiding by ethical research standards and obtaining

information, research and policy analysis in issues pertaining to genetic engineering, biosafety and biopiracy in Africa." See http://www.biosafetyafrica.net/index.html/, accessed 21 November 2010.

necessary permits from concerned Government agencies. This knowledge notwithstanding, both big and small companies do not seem to care about these obligations while operating in developing countries. This calls for concerted efforts at the international level, not only in enacting laws, but also in cooperation and capacity-building programmes. At the moment, only a few cases of 'foul play' by pharmaceutical companies are discovered and subsequently made public. There are many cases which go undiscovered, and the concerned companies reap where they have not sown. Could it be that the problem lies in the current international legal regime for intellectual property rights (IPR) governance? The next section aims to explore this.

4 Western Intellectual Property Regime versus Community Rights

The main challenge hampering protection of TK, both at the national and international level, is the concept of *communal* as opposed to *individual* property rights, entrenched in Western IP law.[16] This line of reasoning puts TK into the public domain and therefore as free for the taking. This approach has been strongly criticised as being against social justice. Davis illustrates this, using two hypothetical cases:[17]

> It happens that the chemical compound that constitutes Thermo's cold cure actually occurs naturally in the leaf of a tree which is indigenous to India. The leaf has been used in India for many centuries as a cold cure. Aware of this fact, Thermo has analysed the chemical make-up of the leaf and reconstituted it in its laboratories. Susan visits Chile and overhears a "folk song" which is widely sung in the villages, although no one is sure of its origins. Susan returns to England, translates and arranges the song, which becomes a best seller…. an intellectual property regime which rewards Thermo and Susan, with patent and copyright respectively, but provides no mechanism for rewarding the villagers of India and Chile.

The second difficulty lies in the way indigenous and traditional communities look at life as a connected whole. According to former UN Special Rapporteur for Indigenous Affairs, Irene Daes, subdividing the heritage of indigenous people into legal categories such as "cultural", "artistic" or "intellectual" would be inappropriate.[18] As indicated earlier, the international community has been working hard – for over two decades now – to find better ways of protecting cultural resources of indigenous people.[19] So far, the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) of the World Intellectual Property Organization (WIPO) has generated a number of useful documents, state-of-the-art-research,

16 An exception to this general rule is Geographical Indications (GIs). See Blakeney (2001).
17 Davis (2003:8).
18 Daes (1993); Gupta (2005).
19 In 1981, for example, the *World Intellectual Property Organisation* (WIPO) and the *United Nations Educational, Scientific and Cultural Organisation* (UNESCO) adopted a model law on folklore. For a detailed historical account cf. O' Connor (2000:677).

and conference reports on various aspects of Traditional Knowledge (TK).[20] According to the new mandate passed by member states in 2009, the committee should come up with a legal instrument (or instruments) for protecting TK and Traditional Cultural Expressions (TCEs).[21] In the meantime, the secretariat of the Convention on Biological Diversity and the United Nations Food and Agriculture Organisation (FAO) continues to deliberate on improving ways of protecting TK and GR.[22] The two have, at different times, come up with the concepts of access and benefit sharing (ABS) and farmers rights, respectively. Both of these attempt to recognise rights of communities to their TK and associated GR as will be explained in the next two sections.

5 The Convention on Biological Diversity: A New Era for GR Governance?

> [M]ost of us in developing countries find it difficult to accept the notion that biodiversity should [flow freely to industrialised countries] while the flow of biological products from the industrial countries is patented, expensive and considered the private property of the firms that produce them. This asymmetry […] is unjust.[23]

The Convention on Biological Diversity (CBD)[24] was adopted under the auspices of the United Nations Environment Programme (UNEP) and opened for signatures in Rio de Janeiro, Brazil, in 1992.[25] The aim of this convention is[26]

> to promote the conservation of biodiversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of such resources, including appropriate resources and transfer of relevant technologies.

The most relevant articles for the purposes of this chapter are Article 8(j) on protection of TK and Article 15 on access and benefit sharing.[27] These articles sum up the main IPR related work of the CBD, namely protecting the traditional knowledge of indigenous communities and advocating for disclosure of origin (Disclosure of Origin of

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20 Some documents are available at http://www.wipo.int/meetings/en/doc, accessed 25 October 2010.

21 The mandate reads in part "(a) The committee will, during the next budgetary biennium (2010/2011), and without prejudice to the work pursued in other fora, continue its work and 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 GRs, TK and TCEs", available at http://www.ip-watch.org/weblog/wp-content/uploads/2009/10/wipo-ga-decision-on-tk-1-october-2009.pdf, accessed 13 November 2010.

22 Ibid.

23 Ally Hassan Mwinyi, Former President of the United Republic of Tanzania; UN Doc. A/CONF. 151/26/Rev.

24 CBD (1992).

25 As of November 2010, 188 states had ratified this agreement. See *Secretariat of the Convention on Biological Diversity, Parties to the Convention on Biological Diversity*, available at http://www.biodiv.org/world/parties.asp, accessed 13 November 2010.

26 See Article 2.

27 These and related articles point to the Conventions' third objective namely "The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources."

Genetic Resources and Traditional Knowledge/DOO) by applicants for intellectual property rights.[28] According to Article 8(j) each contracting party shall, as far as possible and appropriate and[29]

> subject to its national legislation, respect, preserve, and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity. They should also 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.

It should be noted, however, that although the CBD contains general provisions, as opposed to specific, normative terms, the above article has been criticised for lack of incentive for implementation. The article, it has been argued, "does not talk of protection of knowledge but merely calls upon parties to respect, preserve and maintain that knowledge".[30] The phrase is especially problematic in countries still embracing "fortress conservation" where local communities' presence in protected areas is seen as a nuisance rather than an opportunity to foster and protect TK.[31]

On GR, the Convention seeks to "facilitate deal making" between technologically-rich countries in the north and technologically-poor but biodiversity-rich countries in the south. Ideally, this deal would allow "industrialised countries to support the transfer of proprietary technologies to developing states as a *quid pro quo* for access".[32] Achieving this goal, however, has never been easy, due to among other reasons, the defensive nature of developing countries when it comes to intellectual property related issues.[33] The concept of Access and Benefit Sharing (ABS) was born out of these attempts.[34] ABS is a complex resource utilisation issue, requiring an interdisciplinary approach not only in the legislation, but also the implementation process. According to Young:[35]

> ABS is in some ways 'unique', particularly in its merger of very new concepts of commercial law and science with the goals of conservation, sustainable use and equity. New legal concepts and tools are needed, as well as new uses of existing tools. Legal innovation, however, is not an easy process.

According to the CBD, ABS agreements must be based on prior informed consent (PIC) and equitable sharing of benefits. To facilitate this exercise, the Sixth

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28 Helfer (2004:29).
29 See Article 8j.
30 Mugabe (1998:9).
31 As will be seen later in this chapter delinking human-nature interaction is sometimes detrimental to the ecosystems aimed to be protected.
32 Helfer (2004:28).
33 The fact that GR were free for the taking for many years may help explain such resistance by industrialised countries as will be explained in part three below.
34 ABS is just one of several initiatives that seek to implement the third mandate of the CBD namely "equitable sharing of benefit arising out of the utilisation of genetic resources".
35 Young (2004:2).

Conference of Parties (COP) to the CBD[36] adopted the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising Out of their Utilisation (Bonn Guidelines).[37] As mentioned before, the aim of bioprospecting is to obtain useful bio-chemicals in genetic resources in particular or biological materials in general. For inventions based on GR obtained in developing countries, the Bonn Guidelines invite states to encourage the disclosure of the country of origin of genetic resources in applications for intellectual property rights, in order to prevent issuance of "bad patents" on "pseudo-inventions" or biopiracy.[38] Due to the fact that the Bonn Guidelines are not binding legal rules, cases of biopiracy and unregulated access to genetic resources have been on the increase. At the time of writing this paper, members to the 10th COP to the CBD had adopted the Nagoya Protocol on ABS whose provisions, unlike those of the Bonn Guidelines, will be binding on all members after they have been signed into force.[39] While it can be said that commendable efforts have been made internationally under the CBD regime concerning ABS, many issues remain unresolved on TK and genetic resources for food and agriculture.

6 Intellectual Property in Plant Genetic Resources for Food and Agriculture and TK

Plant genetic resources for food and agriculture (PGRFA) refers to "the genetic resources or material of actual or potential value for human and agriculture that are contained in plants".[40] PGRFA have been described as "building blocks" for breeders and traditional farmers alike "in improving crops and introducing new traits into those crops such as drought or pest resistance".[41]The use of such building blocks to improve productivity and maintain useful characteristics of crops is not a new phenomenon. Since mankind moved from hunting and gathering to agriculture, the quest for better and improved crops has been a constant. Quoting from Genesis, Tritton argues that the practice is evident from biblical times, although "the methodology described therein reveals a more Lamarckian (i.e. teleological) than Darwinian, approach to the

36 Meeting in The Hague 7-19 April 2002.
37 CBD (2002).
38 With regards to preventing patents based on TK, India has established a digital database of traditional knowledge searchable in several languages that has been approved by both the *European Patent Office* (EPO) and the *United States Patent and Trademark Office* (USPTO).
39 According to the wildlife trade monitoring network TRAFFIC: "For the first time, the new ABS regime will provide an internationally binding framework, applying for example to private sector enterprises actively bio-prospecting for pharmaceutical, medicinal, biochemical, aromatic and food resources;" available at http://www.traffic.org/home/2010/10/29/a-ray-of-light-from-the-land-of-the-rising-sun.html, accessed 5 February 2022.
40 Moore / Tymowski (2005:2).
41 Ibid.

introduction of certain desired traits".[42] For many years, PGRFA were freely exchanged between and among farmers and communities in different regions. This exchange reached a climax during the 19th century's Columbian Exchange. This term refers to the exchange of biological resources between Europe, Africa and the Americas since the so-called discovery of the 'New World' by Christopher Columbus.[43]

There is no doubt that developed countries benefited immensely from this free-for-all, hence their desire for a continuation of this *status quo.* This "wish list", however, is difficult if not impossible to achieve because Western countries want stronger IPRs for 'elite parental lines' and little or no IPR protection at all on cultivars or landraces. This approach fails to appreciate traditional knowledge of indigenous and local farmers throughout the world, whose hard work has produced and protected PGRFAs. Linking the historical plunder with the on-going expansive nature of IPRs, many commentators think that IPRs in living things are a new form of colonialism and way of looting natural resources from developing countries. The following newspaper extract from Kenya summarises this sentiment:[44]

> Slavery, colonialism, plunder, cheap labour, brain drain (…) and now bio-piracy. Nothing has changed much in Africa-Europe ties for centuries. Africa continues to oil the wheels of industry in the West. The latest example is the ongoing debate over the kikoi, a name (kikoy) that a British firm wants to patent in the UK. Other cases have involved the kiondo and an enzyme used to give jeans a faded look. In 1992, American company Genencor International discovered commercially useful organisms in several lakes in the Rift Valley. The organisms are now being used to manufacture enzymes, which, among other properties, give jeans cloth a faded look. The company has reportedly made huge profits yet the Kenyan Government says it has not benefited from the venture.

6.1 The International Undertaking on Plant Genetic Resources

The first attempt to regulate the exchange of PGRFA at the international level led to the adoption of the International Undertaking on Plant Genetic Resources (hereafter "undertaking") by the FAO Conference in November 1983 under Resolution 8/83.[45] The undertaking was based on the then universally accepted principle that plant genetic resources were "a heritage of mankind and consequently should be available without restriction".[46] Apparently, many developing countries were unhappy with the underlying idea that PGRFA should be available unreservedly. In 1989 the undertaking was revised to provide for 'farmers rights' defined as the rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly in their centres of origin/diversity. These rights

42 Tritton (2002:420).
43 Tyler (1996).
44 Gatonye (2007:13).
45 FAO (1983).
46 Ibid. See Article 2.

are vested in the international community as trustee for present and future generations of farmers, for the purpose of "ensuring full benefits to farmers, and supporting the continuation, as well as attainment of the overall purpose of international undertaking".[47] The interpretation of the revised undertaking required that farmers from developing countries be sufficiently rewarded for the use of PGRFA by developed countries, and that an International Gene Fund be established for this purpose.

Although the international undertaking was not meant to be a binding instrument of international law, the definition above has influenced subsequent international, regional and national laws with the bearing on farmers' rights. In many cases, justification for the right is both historical and futuristic. Historical as it recognises past contribution and futuristic as it recognises even those contributions yet to be made.

6.2 The TRIPS Agreement and UPOV

The coming into force of the World Trade Organisation (WTO) Agreement on Trade Related Aspects of Intellectual Property (TRIPS) on 1 January 1995 took IPR in plants to a higher level. According to this agreement, member states to the WTO "shall provide protection of plant varieties either by patents or an effective *sui generis* system or a combination thereof".[48] Although the agreement neither defines *sui generis* nor lays down criteria for an effective one, the International Union for the Protection of New Varieties of Plants (UPOV) is widely regarded as a *sui generis* system. UPOV was adopted in 1961 by a group of western European countries because of pressure from the private sector, which argued that the lack of intellectual property rights in this field threatened their development. It is noteworthy, however, that UPOV is taken to be a lesser-evil-approach by countries that are not comfortable with patenting life forms.[49]

6.3 Historical Backdrop

Although IPR in plants now form part and parcel of not only international IP law but also international trade, the road to this acceptance was never an easy one. It is in the USA and in Europe, where these rights are more grounded and from whose inspiration (and influence) developing countries enact their laws on plant variety protection.[50] In the 19th century, it was widely accepted that natural powers and the forces of nature

47 FAO (1983).
48 TRIPS Article 27.3(b).
49 See generally Laltaika (2007).
50 Ibid.

could not be patented. In 1852, the US Supreme Court in the case of *Le Roy v Tatham*[51] held that[52]

> a principle in the abstract, is a fundamental truth; an original cause, a motive; these can not be patented; and no one could claim in either of them an exclusive right. Nor can an elusive right exist to a new power, should one be discovered to those already known.

As this judicial reasoning presupposes, the objection raised against intellectual property rights in plants was mainly that plants are a product of nature.[53] As a result of developments in plant genetic engineering and plant breeding, the US Congress in 1930 enacted the Plants Patents Act.[54] This Act provided patent protection only to asexually reproduced plants, i.e. those plants produced by propagating or grafting. In 1970, the Plant Variety Protection Act was enacted, widening the horizon of patentable plants to include asexually reproduced varieties. Another often-cited historical event leading to the consolidation of intellectual property rights in plants in general and patents in particular, is the US Supreme Court's ruling in the case of *Diamond v Chakrabaty* that "anything under the sun made by man is patentable".[55] The USA currently grants patents for plants and any other living thing, provided it involves human ingenuity.

In Europe, earliest (first generation) patent laws excluded all forms of life. However, this position was not always accepted. According to Greer:[56]

> Although continental legislators clearly had in mind only inventions in the field of inanimate techniques (in German: *tote Technik*) when drafting first generation Acts, the majority of the Belgian, German and Dutch legal doctrines dismissed the objection that inventions relating to living materials are not patentable.

This indirect opposition to the general position of the law continued, albeit with little progress. A major development was achieved in 1961, when western European countries, notably France, Belgium and Germany established a union for the convention of new plant varieties through what came to be known as the Convention on the Protection of New Varieties of Plants, better known by its French acronym UPOV.

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51 *Le Roy v Tatham* 55 US (14 How) 156 (1852).

52 Ibid:175.

53 Note that this reasoning was challenged in 1939 in the famous case of *Dennis v Pitner* 106 F. 2d 142, 7th Circ 1939. In this case, a patent was sought for the discovery of an effective insecticide from the root of a plant found in South America. The court observed inter alia that "[i]t is true that an old substance with newly discovered qualities possessed those qualities before the discovery was made. But it is a refinement of distinction both illogical and unjustifiable, and destructive of a laudable object of the statute to award a patent to one who puts an ingredient A with old ingredients B and produces a cure for ailment C; and deny patent protection to one who discovers that a simple and unadulterated or unmodified root herb or a chemical has ingredients or health-giving qualities, hitherto unknown and unforeseen."

54 Plants Patents Act of 1930. The purpose of this Act was to "afford agriculture, so far as practicable, the same opportunity to participate in the benefits of the patents system as has been given industry".

55 *Diamond v Chakrabaty* 447 US 303, at 309, 100 S. Ct 2207 at 2207, 206 USPQ 193 (1980).

56 Van Overwalle (1999:143).

6.4 The Pinch of IPR to Farmers

The pinch of these 'intruding rights' is not only felt in developing countries but also in industrialised and other developed countries. The Canadian case of *Monsanto v Percy Schmeise* provides a good illustration.[57] In this case, the court issued an injunction restraining a traditional farmer from planting seed retained from the plaintiff's canola crops. The prohibition extended to[58]

> any seed saved from plants which are known or ought to be known to be Roundup tolerant, and from selling or otherwise depriving the plaintiffs of their exclusive right to use plants which the defendants know or ought to know are Roundup tolerant, or using the seeds from such plants.

As if the legal barriers are not enough, increasing conflicts of interest have led to the development of the 'terminator technology'. This technology prevents farmers from harvesting seeds from crops they have grown using genetically engineered seeds, thereby forcing them to buy more of the original seed each planting season. According to Kieff [59]

> [t]erminator technology can also be thought of as the agricultural equivalent of copy protection technology in the software industry. Such terminator and copy protection technologies are each a form of self-help that can be used as an alternative to legal protection in a way that is likely to be more costly than legal protection.

In a world where many people, especially in developing countries, are starving, it is imperative to rethink IPR regimes, which on the face of it do more harm than good to the poor farmers and the environment.[60]

7 African Approach

Although many African countries retain colonial elements in their laws, making them almost wholly Western, the concept of community rights is not alien to the African legal regime. In 1980, an African anthropologist and human rights activist, Asmaron Legesse, deliberated on how the Universal Declaration of Human Rights (UDHR) would have looked like if drafted by Africans.[61] According to Legesse:[62]

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57 *Monsanto v Percy Schmeise* [2001] F.C. 256, available at http://decisions.fct-Cf.gc.ca/fct/2001/2001fct256.html, accessed 15 November 2010.

58 Ibid.

59 Kieff (2002:317).

60 Surely, genetic resources should not be put on the same scale as computer software. Even though we may romanticise the magic of biotechnology, the truth still remains that mankind cannot make genes. Our ingenuity is limited to the level of using DNA methods to 'improve' characteristics.

61 As we know, the UDHR was negotiated and adopted while the entire African continent was under colonial domination.

62 Legesse (1980:52).

> If Africans were the sole authors of the Universal Declaration of Human Rights, they might have ranked the rights of communities above those of individuals, and they might have used a cultural idiom fundamentally different from the language in which the ideas are now formulated.

Two years later, this contention is proved by the African Charter on Human and Peoples Rights (Banjul Charter), which fully recognises group rights.[63] Indeed not all human rights scholars are fully content with the approach adopted by the Banjul Charter, and its formal recognition of group or community rights. It is imperative to note that group rights are not a one-size-fits-all concept. To understand the parameters of group rights, McCamant advises that the concept[64]

> works best where there exist clearly defined ethnic communities who carry on life separate from the wider society. These groups exist most prominently in areas where large scale production and trade have not yet brought about economic integration.

We now turn to specific agreements that seek to protect TK of communities in Africa.

7.1 The OAU Model Legislation on the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources

The Organisation of African Unity (OAU) Model Legislation on the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources (OAU model law), was endorsed by Heads of State of the Organisation of African Unity (now African Union/AU) in July 1998.[65]The law underscores the value of traditional knowledge for biodiversity conservation and food security on the continent and the potential effects of IPRs in agriculture. Article 9 of this law provides explicitly that:[66]

> (1) Patents over life forms and biological processes are not recognised and cannot be applied for.
>
> (2) The collector (of GRs) shall, therefore, not apply for patents over life forms and biological processes under this legislation or under any other legislation relevant to the regulation of access and use of a biological resource, community innovation, practice, knowledge and technology, and the protection of rights therein.

While scholars continue to debate whether or not such prohibition is in conformity with the TRIPS Agreement, it is submitted that the issue here should be to try to relieve farmers of the burden created by IPR which by and large steal from their reserve without any compensation. The African Model law may seem too radical and against biotechnological inventions but still there should be ways to strike a balance. When it

63 Howard (1986).
64 McCamant (1981:542).
65 OAU / AU (1998).
66 Ibid: see Article 9.

comes to PGRFA, the human right to food should override recouping R&D expenses, as it is often times contended. It is proposed that the concept of farmers' rights be taken seriously for the benefit of not only farmers but also as a stimulant for protection of landraces.

7.2 The Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore

It was a commendable initiative to protect TK in Africa by a diplomatic conference, convened at the coastal Namibian town of Swakopmund, with the Protocol on the Protection of Traditional Knowledge and Expressions of Folklore within the Framework of the African Regional Intellectual Property Organisation (ARIPO).[67] The Protocol recognises[68]

> the intrinsic value of traditional knowledge, traditional cultures and folklore, including their social, cultural, spiritual, economic, intellectual, scientific, ecological, agricultural, medical, technological, commercial and educational value.

It defines traditional knowledge as[69]

> 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.

While the protocol recognises the holistic approach to life as perceived by indigenous and local communities as discussed above[70] and considers communities as holders of TK, it commits a greatly errs by entitling individuals within such communities with "ownership" of TK. Section 6 provides:[71]

> The owners of the rights shall be the holders of traditional knowledge, namely the local and traditional communities, and recognised individuals within such communities, who create, preserve and transmit knowledge in a traditional and intergenerational context in accordance with the provisions of Section 4.

Debates are raging around the incompatibility of individual rights within local and indigenous communities. In Australia, an Aborigine artist is reported to have told a court of law:[72]

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67 ARIPO (2010).
68 Ibid: see Preamble.
69 Ibid: see Article 2.1 (ix).
70 Article 1.2 provides "This Protocol shall not be interpreted as limiting or tending to define the very diverse holistic conceptions of: (a) traditional knowledge; or (b) cultural and artistic expressions, in the traditional context".
71 Ibid.
72 *Milpurrurru and Others v Indofurn Pty Ltd and Others* [1996] AUIndigLawRpr 20. For a commentary on the case see Blakeney (1995).

> As an artist, while I may own copyright under Western law, under Aboriginal law, I must not use an image or story in such a way as to undermine the rights of all the other Yolngu.

There are many instances, however, where Western-oriented laws introduce individual rights in indigenous communities in order to 'modernise' them and the aftermath has more often than not been catastrophic, demonstrated for instance by the results of the introduction of individual land rights in pastoralist lands in Kenya.[73] It is advised therefore that this particular aspect of TK protection be taken seriously to avoid importing problems, which were the reason for the slow-paced investigation for alternative methods of protection in the first place.

8 The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefit Arising from their Utilisation: Too Little, Too Late?

Shortly after the publication of the first edition of this book, the 10th Conference of the Parties (CoP) to the convention on biological diversity (CBD) meeting in the city of Nagoya, Japan, adopted the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefit Arising from their Utilisation. The Protocol, though yet to come into force, has awakened a sense of hope and enthusiasm among civil society activists and communities. As a brief update to the previous edition of this chapter, this section explores the main sections of the protocol and asks whether, coming 17 years after the coming into force of the Convention on Biological Diversity, the protocol is not too little, too late.

8.1 Overview of the Protocol

The objective of the Protocol is a verbatim repeat of the third objective of the CBD, namely "conservation of biological diversity and the sustainable use of its components."[74] With regard to access, the Protocol requires provider states to provide for "legal certainty, clarity and transparency" as well as "fair and non-arbitrary rules and procedures" on access to genetic resources. On Benefit Sharing, the Protocol obliges member states to take legislative, administrative, or policy measures to ensure that benefits arising from the utilisation of genetic resources as well as subsequent application and commercialisation are shared fairly and equitably with the providing party.[75]

73 Rutten (1992).
74 Nagoya Protocol 2010: Article 1.
75 Ibid: Articles 5.1 and 5.5.

8.2 Does the Protocol Make a Difference?

When it comes to local and indigenous communities who are custodians of traditional knowledge and associated genetic resources, the Protocol does not seem to make any difference. It retains the same powers of governments to designate "competent authorities" and generally assert their "sovereignty to natural resources" as provided by the CBD.

8.3 Too Little, Too Late?

As this paper has shown, many cases of biopiracy have already taken place in Africa. The Protocol, although it contains commendable provisions for ABS, does not address cases prior to its coming into force. It remains to be seen whether by addressing the future, the past is capable of taking care of itself.

9 The Need for a Paradigm Shift

For Africa to effectively protect TK, it must not only put local and indigenous communities at the centre, but also tap into their know-how to enhance conservation. However, most African legal dispensations for conservation of natural resources lack this essential component for modern conservation. The origin of these laws and policies, which exclude people from nature in the context of conservation, can be traced back to colonial times.[76] Due to this 'colonial hangover effect', many if not most policy makers in Africa and other developing countries take the conservation of biological resources to be synonymous with the eviction of local communities from such lands. Although it is undeniable that human activities contribute greatly to the destruction of the environment and ecosystems, not all human activities are incompatible with conservation. Sometimes, de-linking the human-nature interaction is detrimental to ecosystems and the environment at large.[77] Many are the times also that those entrusted with the task of conservation turn out to be the reason for inefficiency much to the dismay of local communities. A Maasai elder, evicted by the Government of Tanzania from the Ngorongoro crater, summarises such dismay:[78]

> I was born in Engitati in Ngorongoro Crater where I spent my youth. I remember the rhino. They were so many. They outnumbered the buffalo. They were everywhere. We rarely killed the rhino and when we did it was because they threatened us in some way. We have lived in the Crater together with wild animals, listening to the lions roar. Then we were moved to where we are

76 Kameri-Mbote (2004).
77 Sharma (2000:32).
78 Majamba (2006:8).

> now. When I look at the Crater I feel a dead sadness. Once control of the Crater was given to someone else, the rhinos started to disappear. Now they have almost gone. Is this what they call conservation?

When it comes to farmers, eviction is less common but there are no deliberate efforts to support their inventiveness as already discussed above. Our intellectual property laws reward inventors, breeders and other entrepreneurs, while punishing the local peasant with frequent change of policies and skyrocketing prices of agricultural produce. A paradigm shift is necessary among policy makers in Africa to understand the important attachment that local communities have to their lands as well as the value of traditional knowledge in agriculture and associated genetic resources, including landraces. The argument that was advanced here is that Government authorities should avoid implementing policies which destroy communal structures.

10 Concluding Remarks

Law is more than just rules written on a piece of paper, and/or debated by legislative authorities, parliaments or international organisations. Using aspects of customary law to protect TK/TCEs will make such laws more meaningful to indigenous and local communities. Customary law is an aggregate of culture, history and spirituality of the local and indigenous communities. Without such recognition, it is doubtful if current initiatives to protect TK/TCEs will ever be successful. The old adage 'the magic of ownership turns sand into gold' is especially true if applied to communal ownership of traditional knowledge and associated genetic resources in Africa.