## Contending Issues of Intellectual Property Rights Protection and Indigenous Knowledge of Pharmacology in Africa South of the Sahara

by

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#### **Abstract**

Indigenous knowledge is beginning to gain greater recognition in global discourse. The inability of western science to address the myriad of illnesses facing mankind has extended the search for solutions into indigenous knowledge system, which was previously dismissed as unreliable, and sometimes as mere superstitious. More and more western companies are beginning to explore and patent indigenous knowledge of medicinal plants, roots, barks, nuts and seeds that are held by local communities. In Africa specifically, Western pharmaceutical companies are in a race to patent Africa's indigenous pharmacology, but without making the benefits accruable to African indigenous communities and medicine men. The medications made from the indigenous knowledge of Africa's medicinal plants are marketed globally; the huge profits generated from such sales are almost wholly retained by western businesses. This paper explores the continued and increasing patenting and profiting from Africa's indigenous pharmacopeia by western businesses. It calls for increased involvement of governments, civil society groups, concerned citizens and institutions in the protection of Africa's indigenous pharmacology, under a suitable framework.

#### Introduction

Indigenous knowledge is the foundation for community development across much of the non-Western world. In several important sectors, indigenous knowledge has held local communities together for centuries and provided the necessary tools for sustenance and growth. The World Bank acknowledges that, "significant contributions to global knowledge have originated from indigenous people, for instance in medicine and veterinary medicine with their intimate understanding of their environments" (World Bank, 2013). In Africa, due to the low penetration of technology in the field of medicine (WHO, 2012), much of the population still patronize, in full or in part, traditional medical practitioners. What this means is that Africa's indigenous pharmacopeia is still very much intact and active. On the other hand, the efficacy of indigenous herbal medicine in Africa has caught the attention of researchers, western based pharmaceutical companies and global big businesses. The "discovery" patenting and marketing of the anti-obesity drug, the *hoodia gordini* used by South African Kung ethnic group to keep hunger at bay during hunting expeditions is a case in point. Several years after it was originally exported out of South Africa for research, Pfizer has made tens of millions of dollars in profits (Konadu 2007). This paper shall draw from numerous examples of such exploration of Africa's indigenous pharmaceuticals for profit by western interests, to discuss the issue of intellectual property rights protection in relation to the continent's wealth of indigenous knowledge. The work argues that the existing intellectual property law system is insufficient for the protection of Africa's indigenous pharmacology. This is because they are founded on notions of individual or private property ownership, which are alien to indigenous African people, and therefore, cannot accommodate the dynamics of indigenous pharmacology. It calls for a radical transformation of the existing global intellectual property rights order, in order to protect the interests of Africa's indigenous pharmacology.

## The Nature of Intellectual Property Rights

Intellectual Property entails the commodification of the proceeds of the intellect and its subsequent incorporation into a legally recognised, independent and tradable object (Capling 2002). It encompasses knowledge, original thoughts and ideas, 'sounds and symbols, words and music, text and designs, formulae and blueprints' (Capling 2002, 79). The concept of intellectual property suggests that, 'ideas and knowledge can be parcelled into separable and transferable knowledge objects, which enjoy similar characteristics to material property' (May 2000, 47). Intellectual Property Rights (IPR) connotes a loose cluster of legal doctrines that regulate the utilization of Intellectual Property in the industrial, scientific, literacy and artistic fields.

The major reason advanced for IPR is to protect the rights of inventors to benefit economically from their efforts; and to provide them and other members of the public with the monetary motivation and empowerment to engage in further research. IPR is traditionally divided into Copyright, Patent, Trademarks or Industrial designs, Trade Secrets and Geographical indication.

#### **Indigenous Knowledge**

Indigenous knowledge is the variant of knowledge that is generated, and which resides within a given a given locality. It is the outcome of generations of working with and understanding one's environment to produce the best possible processes for addressing specific challenges. Indigenous knowledge has been defined as the unique, traditional, local knowledge existing within and developed around specific conditions of women and men indigenous to a particular geographic area" (Warren, 1991). The World Bank notes that indigenous knowledge is "developed and adapted continuously to gradually changing environments and passed down from generation to generation and closely interwoven with people's cultural values" (2013).

Scholars in trying to understudy indigenous knowledge tend to descend into a comparison with western knowledge. Evaluating indigenous knowledge in comparison to western science, according to Oguamanam, presupposes an, 'overarching comparator in the form of universal reason or science, which is ontologically privileged' (Oguamanam 2006, 4). Such comparison places western science at a vintage point as the superior form of knowledge, which other forms must seek to measure up to. The need for comparison between Western and indigenous knowledge is not necessary since there is in existence, a baseline of universal reason in every culture, "enforced by shared human economic need and cognitive processes although, activated and expressed in different cultural contexts." (Oguamanam 2006,15).

What exists between Western form of knowledge and traditional knowledge is a marked difference in approach that gives each a distinguishing identity. The distinction must not be equated with superiority and therefore, does not justify the exclusive appropriation of validity to Western knowledge system. These differences are philosophical in nature, arising from the differences in socio-cultural processes and worldviews. Some of these differences are enumerated (Oguamanam 2006, 16).

• The transmission of Indigenous knowledge is mostly orally based, that is, through folklores and legends, or through imitation and demonstrations. Western knowledge transmits knowledge mostly through writing.

- Indigenous knowledge is gained by observing and participating in simulations, real life experiences and trial and error. Western knowledge is taught and imbibed in abstraction.
- Indigenous knowledge views the world as interrelated; it does not necessarily subordinate all other life forms to mankind as they are all interrelated and interdependent parts of one ecosystem. Modern western science views mankind as superior to nature and 'authorized' to exploit it maximally.
- Indigenous knowledge is integrative and holistic in nature, rooted in a culture of kinship between the natural and supernatural. Western science is 'reductionist and fragmentary, reducing and delineating boundaries to the extent that every relationship is treated as a distinct whole' (Oguamanam 2006, 16).
- Indigenous knowledge values intuition, emphasizes emotional involvement and subjective certainty in perception. Western science thrives on logic and analysis abstracted from the observer. It relies on the replication of measurement to determine results.
- Indigenous knowledge is based on a long period of close interactions with the natural environment and phenomena. Western knowledge thrives on the mathematical and quantitative.
- Indigenous knowledge is based on performance knowledge; data is generated according to the demands of the moment. Western science limits data collection to a select group of experts and results are in most cases anticipated (Oguamanam 2006, 16).

## **Indigenous Knowledge and Intellectual Property Rights**

Indigenous knowledge does not feature in the present global Intellectual Property Rights (IPR) system. The existing global IPR regulatory mechanism is based on Western description of knowledge, and its conceptions of individual intellectual property ownership. According to Adam Moore, 'at the most practical level the subject matter of intellectual property is largely codified in Anglo-American copyright, patent, and trade secrets law, as well as moral rights granted to authors and inventors within the continental Europe doctrine' (Moore 1997, 2). Moore argues that, although these systems of property encompass much of what is thought to count as intellectual property, they do not in reality take cognizance of the entire landscape of what intellectual property truly signifies, which includes indigenous knowledge.

Liberal Eurocentric conceptions, upon which modern intellectual property rights laws are based, maintains that individuals have a right to private property, in order to encourage economic exploitation by the holder of the rights. In response, intellectual property rights were created to enable the individual gains monetarily from the proceeds of his intellect (De Almeida, 1995).

The proponents of this viewpoint contend that innovation and inventions can only be encouraged by rewarding creativity. The indigenous African point of view differs radically from the Western conceptualization. For local communities, rights are a means of maintaining and developing group identity rather than pursuing private economic benefit, IPRs are, therefore, communal in nature (Halewood, 1997). Any utilization of indigenous heritage must be collectively authorized by the representatives of the community, for the benefit of all, and must be well within what is culturally acceptable.

## **Indigenous Pharmacology in Africa**

Indigenous pharmacology is found among all communities. It consists of the medicinal knowledge of plants, roots, barks, animal products, and other naturally occurring substances, together with the knowledge of its application in the treatment of diseases. According to Baer, it is a feature found among all human societies;

All human societies have a pharmacopoeia consisting of a wide variety of materials, including plants, animals (including fish, insects and reptiles), rocks and minerals, waters (salt and fresh, surface and subterranean), earths and sands, and fossils, as well as manufactured items. An estimated 25% to 50% of the pharmacopoeia of indigenous peoples has been demonstrated to be empirically effective by biomedical criteria; various biomedical drugs, including quinine and digitalis, were originally derived from indigenous peoples (Baer et al. 2003, 10).

In the case of indigenous African medicine, there are limitless numbers of illnesses to which the treatment most often prescribed is natural, that is, based on plant or animal extracts. The Yoruba treat deafness with an herbal ear drop. Other common diseases such as colds, fevers, and childhood convulsions are treated with specific herbal remedies (Baronov 2008, 130). In southwest Tanzania, constipation is treated with select herbal purges, and enema and eye infection treated with sap from a particular tree. The Bambari have potent herbs for the treatment of measles while the Shona of Zimbabwe have several common herbs for alleviating of symptoms associated with scurvy (Baronov 2008, 130). The list is endless.<sup>1</sup>

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<sup>1.</sup> Some of the relevant literature addressing herbal remedies in Africa include: Odebiyi and Togonu-Bickersteth (1987), Onyioha (1977), Paarup-Laursen (1989), Sofowora (1982), Frankenberg and Leeson, (1976).

The distinctive efficiency of the African indigenous herbal remedies have attracted Western pharmaceutical companies whose exploitative inclination lead them to patent several of the age-old remedies as their own intellectual property. Baronov asserts that 'this robbery is based on an ongoing relation of exploitation between Africa and the West, as well as biomedicine's proclivity to treat medical care as comprised of discrete elements that exists outside a holistic framework' (Baronov 2008, 137).

Contrary to the Western view of indigenous African medicine as primordial and ancient, stuck on age-old medical beliefs and practices without making progress, Africa's pluralistic indigenous medical systems are 'dynamic, evolving medical systems which combine a wide variety of traditions, values, and cultural influences' (Baronov 2008, 18). Western medicine has often been credited with 'fortifying the African body' and 'civilizing' his mind and spirit through the introduction of 'modern scientific principles to supplant primitive superstition and witchcraft' (Baronov 2008, 1). It has been argued that 'alongside the Bible and the gunship, it was the syringe that greatly hastened Europe's global ascendancy. Western biomedicine was touted as the superior form of medical practice by the missionaries and later colonialists' (Baronov 2008, 18). Western medicine proved to be a powerful tool in the hands of the colonialists, as it was used to denigrate indigenous concepts of health and healing and their practices. However, the past two decades have seen a dramatic rise in diseases that Western scientists have been unable to effectively address within the much acclaimed scientific processes, using laboratory created synthetic compounds. Globalization of information and the concomitant reports of cures to similar diseases by indigenous communities have set the scientists scouring through hitherto unknown areas in search of naturally occurring compounds for the treatment of diseases. Upon making their find within these indigenous communities, the Western based pharmaceutical and research interests rush to establish patent over them, granting them the sole global access to the development, marketing and profiteering of such. To a few examples we turn.

#### The South African Hoodia Gordinii

One of the most widely celebrated cases of unauthorized and exploitative transfer of indigenous pharmacology is the case of the obesity management drug, the *hoodia gordini*. Known to the Kung ethnic group found in the Kalahari as *Xhoba*, the cactus like plant has been chewed by the hunting men of the nation to keep hunger at bay before embarking on day long expedition. Pfizer, through the British based Phytopharm, was the first to secure the global development and marketing license of this herb renamed P57(Konadu 2007). Phytopharm was quick to place six patents on the plant, covering 'the use of the plant, its active molecules, derivatives and mode of action' (Konadu 2007, 60).

Claiming that the Kung ethnic group was extinct, Phytopharm had licensed the rights to Hoodia from the South African Council for Scientific and Industrial Research (CSIR). Tens of millions of dollars in licensing fees and royalty had changed hands between all three parties, before The South African San Council became involved. The South African San Council sued the CSIR - the South African institute, credited with 'identifying' the appetite suppressing ingredient in Hoodia during research into indigenous plants in 1996 - for infringing on the ancient knowledge of the indigenous peoples.

The suit was settled in a manner that deceitfully presented the Sans or Kung peoples as winners in the exploitation of their ancient knowledge. The CSIR will pay the San peoples 8 per cent of the 'milestone payments made by its licensee, UK-based Phytopharm, during the drug's clinical development over the next few years (Marshall 2003). At the completion of drug development, it was agreed that Pfizer will have to pay 6 per cent royalties on the marketing of the drugs' (Marshall 2003, 1) In a National Geographic article, the chairman of the San Council, Petrus Vaalboi was quoted as saying that 'we are thankful that the traditional knowledge of our forefathers is acknowledged by this important agreement, and that we are making it known to the world. As San leaders we are determined to protect all aspects of our heritage' (Marshall 2003, 1) It remains to be known what minuscule percentage of the royalties will reach the Sans indigenous peoples from the multi-billion dollar weight loss drug.

Unfortunately, the *Hoodia gordini* exposes the complicity of African governments in the dispossession of the indigenous people's pharmacology. It had to take a Western styled, South African establishment the CSIR, to 'identify' what the natives were using for the estimated 40,000 years of their existence in that part of the world. The 'identification' is akin to the acclaimed 'discovery' of the source of the Niger River by Mungo Park or the Congo River by Henry Morton Stanley. The African proverb captures this situation succinctly; in the tale of the hunt, the exploits of the lion is hardly mentioned, it is the hunter who tells the tale and naturally magnifies his deeds. The Sans ethnic group have found their knowledge caged within the pre-existing structure of knowledge parcelling and sale, a system that owes its existence to capitalist exploitation that fleeces the worker of his dignity and hands it over to some established elites. The gradual, but steady demise of the traditional publishing industry mirrors this disillusionment with the exploitative capitalist regime, where the owner of the knowledge is paid stipends in the form of royalty, while the publishing magnate declares profits in billions of dollars annually.

## Type II Diabetes Management Drug from Kenya

According to a research conducted by the Edmonds Institute, the major medication used globally for the management of blood sugar levels for Type II diabetics is traceable to Kenya's Lake Ruiriu. Known as Precose in the US and Canada and Glucobay in Europe and the rest of the world, the drug is marketed by the German pharmaceutical conglomerate, Bayer. Initially patented in 1995 as *Actinoplanes sp or* the bacteria strain called SE 50, the global marketing of the drug as Acarbose, commenced in 2000. 'In 2004, Bayer sales of Acarbose totalled 278 million Euro (US 379 million, as of 31 Dec 204)' (McGown 2006) . There is no evidence of a benefit-sharing arrangement or Memorandum of Understanding for drug development, between the Government of Kenya and Bayer (McGown 2006).

## **North African Diabetic Drug**

US patent 6,350,478 (issued 26 February 2002) is another case of state supported theft of Africa's pharmacology. The patent was granted to Phytopharm plc Cambridge, UK, for the utilization of extracts of *Artemisia judaica*, a medicinal plant with North African origins (McGown 2006). The case of the *Artemisia judaica* is more of an exception because, for the most part, when pharmaceutical companies want to patent "stolen" plants from Africa, they would often claim that the use for which they are filing for patent is "new" and different from the "old " way it is used by the indigenous people. Hardly do the pharmaceutical companies accept that there is nothing new about their inventions, because the admission of such would almost always result in the denial of patent, since there is nothing novel about the 'invention' (McGown 2006). For *Artemisia judaica*, however, Phytopharm expressly admits the fact that it is not bringing any new invention into the world by stating in the applications for patent that " *Artemisia judaica is used in Libyan traditional medicine as an infusion for the treatment of "wasting disease", almost certainly diabetes mellitus.*" Despite this admission of theft, the US Patent Office granted patent of this drug to Phytopharm (McGown 2006).

## **Cure for Impotence from Congo Brazzaville**

In Congo Brazzavillle, *Aframomum stipulatum* an already indigenously documented herbal remedy for impotence has been patented by Biotech, a Canadian pharmaceutical company. Biotech is building the strengths of its newly "discovered" medication, called "Biovigora" on the much publicized side effects of the bestselling Viagra. Biotech as reported in *New York Times* claims that 'Biovigora is not a chemical medication...[it] was used (and still is used) centuries ago by certain African tribes without unfavourable side effects' (Berenson 2005).

Hoping to carve a niche for its product in the US \$2.5 billion impotency drug market, Biotech further resorts to demeaning stereotypes of Africans by writing in the same New York Times articles that.

For centuries, the men of some tribes in Africa were recognized by the surrounding tribesmen for their particularly high vitality and their sexual capacities. Up till now, older men married and had children with considerable younger women. For unfound reasons, they remained sexually active all their life... research led to a remarkable discovery: the performance of those men was the result of Aframomum, a rare spice that grows in Africa...(Berenson 2005).

An open claim of the use of *Aframonum* for centuries by some groups in Africa should have been enough for the patent application to be denied Biotech, but here, the complicity of the Western based intellectual property regulatory mechanisms are made manifest. A 24 capsule bottle of "Biovigora" retails for about \$30.00 and Biotech does not even acknowledge the Congolese community from where the plant was taken from, talk more of involving them in the patenting process.

#### **Antibiotics from West African Snails**

A German research agency, Max Planck Institut fur Kohlenforschung filed for global patent for a strain of antibiotic found in large West African snails. The patent suggests that preliminary investigation into the compounds excreted by the snails show positive response to the treatment of several infections, including methicillin-resistant Staphylococcus aureus (MRSA) strains, 'a cause of hospital-acquired infections and a growing problem worldwide' (McGown 2006). The researchers got the information from interacting with some scientists who hail from the West African region where the snails are found. These scientists informed Max Planck that their communities have used the giant snails for treatment of several infections. Max Planck followed up this conversation with a trip to the continent and the patenting of the compound (McGown 2006).

#### **Addiction Cure from West and Central Africa**

Iboga, (*Tabernanthe iboga*) is a plant that has been utilized as stimulant for centuries in Central and West Africa. It is used to ensure alertness during hunting expeditions, and in large doses, it induces hallucination and is used for spiritual purposes during initiation rites. More recently, Iboga has found its way to the West as a substance addiction breaking drug.

Since 1985, several pharmaceutical companies have patented various compounds found in the plant extract. One of the more recent patent applications (2005) are by Myriad Genetics and leading United States biomedical research institute, Washington University (McGowan 2006).

Examples abound of numerous cases of 'theft' of Africa's pharmacology, thus. African scholarly journals focused on pharmacology have become the staple of Western based researchers. Scouring through The Journal of Pharmacy and Pharmacology for instance, a researcher from, say, Harvard University could spot a topic such as "Evaluation of antihistaminic activity of piper betel leaf in guinea pig". Picking interest in the topic, he invites the author to the United States for an all sponsored conference, requesting him to bring samples of the said leaf. The ecstatic, poorly paid, perhaps, never- before –travelled- out- of -Africa researcher jumps at such opportunity. At the host institution, he is "presented" with an option of co-publishing with his benefactor, in order to subject his plant to further research in the "highly equipped" laboratories of the West. In reality, his name will end up being appended as a part of the research team, and the patent is eventually often taken out in the name of the institution where the research was conducted. In some cases, the African researcher is made promises of royalties that often amount to a tiny, negligible fraction of the benefit accruable to the Western based researcher and his institute. This biopiracy, as it is often referred to when other biological products such as plants, seeds and genes are involved, is one of the greatest threats to Africa's richest asset, its biodiversity.

In some instances, some government based institutes such as the United States National Institute of Health (NIH) enter into 'agreements' with some agencies from African countries, such as the Nigerian Institute for Pharmaceutical Research and Development (NIPRD) for the 'exchange' of plant, human, and technological resources . These questionable 'agreements' are often 'negotiated' with African governments from a position of weakness and ignorance. The NIH agrees to build a state-of-the-art laboratory in the African country in question and train some staff, in exchange for plant resources and "co-researching" in African indigenous pharmacology. Often times, the African government lacks information as to the progress made with the 'donated' plant resources, or the patent status. What emerges at the end of this "agreement" is the appropriation of ownership to the western governments in question.

## **Protecting Africa's Indigenous Pharmacology**

There is need for an appropriate global intellectual property system to protect against the misappropriation of Africa's traditional knowledge by the West. Oguamanam (2004) argues that the present international system of IPR protection, especially the patent regime, benefits the 'western scientific or biomedical model,' and could be considered a threat to the continued existence and development of traditional medicine in Africa.

The holistic approach of indigenous medical heritage is in stark contrast with conventional biomedical and intellectual property regimes. Therefore, the yardsticks of the western scientific knowledge when used in protecting indigenous medical knowledge would result in what Oguamanam calls, "an alien standard of validation based on a narrow epistemic genre- western science" (Oguamanam 2006, 34). There is an urgent need for the adoption of culturally oriented and sensitive approach toward the protection of African indigenous pharmacology.

## African Pharmacology under the Existing IPR System

The trend in the international trading system is for developed countries to demand IPR protection on every molecule, plants, animals, rocks, soil and other inventions that originate from their territories. In reciprocity, African pharmacology ought to benefit from similar IPR protection extracted from developing countries within the international trading regime (May 2000).

However, owing to its Euro-centric foundations, the present IPR regime is incapable of accommodating the dynamics of Africa's indigenous pharmacology. According to Posey, 'it is difficult to classify indigenous knowledge innovations and practices into [similar] categories of intellectual property developed for use by commercial firms in an industrial and secular context' (Posey et al. 1993, 2). The is due to fact that the ties between indigenous religious, cultural, business, intellectual and physical property are not as distinct or mutually exclusive as is obtainable elsewhere. Existing intellectual property laws are biased in favour of individuals who claim ownership of rights in property works (Morolong 2007, 51). On the contrary, 'Indigenous people do not view their heritage in terms of property at all but in terms of community and individual responsibility. Possessing a song, story or medical knowledge carries with it certain responsibilities to show respect to, and maintain a reciprocal relationship with, the human beings, animal, plants and places with which the song, or medicine is connected' (Daes 1998, 308).

Some discourses in international IPR protection is gearing towards the proposition to regulate indigenous pharmacology under patent laws. Patents demand that three core requirements be met before being granted; it must be new, must involve an inventive step and must be applicable industrially (Capling 2002). Advocates for the inclusion of pharmacology under the domain of patents contend that medicinal practices and knowledge of herbal remedies can be patented (Morolong 2007, 55). However, when the requirements for obtaining patent is considered in full, it becomes evident that many traditional healing methods, although industrially applicable are not novel, but already available for public consumption in indigenous communities and are not new inventions. Further, certain pharmacological knowledge in the indigenous communities require secrecy and initiation into a particular group, of say, traditional healers for the information regarding it to be disclosed; in such instance, disclosing such information to the public for the purpose of patenting would amount to sabotaging the traditional values and core beliefs of a community, for economic interests.

## Africa's Pharmacology: Alternative Models of Protection

In this section, alternatives for the protection of Africa's indigenous pharmacology, outside of the existing IPR framework will be explored. Specifically, the domain public payant, documentation and *sui generis* (uniqueness in its own characteristics) options will be discussed.

#### **Domain Public Payant**

Some scholars have argued that the doctrine of Domain Public Payant provides the best possible option for the protection of folklore as indigenous knowledge in Africa South of the Sahara (WIPO 2001). The doctrine of Domain Public Payant provides for the payment of royalties for works that have entered the public domain. This entails a payment of set fees to the state or community for works with unidentifiable authors, but which can be traced to a geographical location (Thomas & Nyamnjoh 2007). Proponents contend that the Domain Public Payant system would ensure that indigenous pharmacology already in the public domain would generate revenue for the communities who are its traditional custodians and could assist in ensuring that some form of monetary compensation accrues to indigenous communities for the public utilization of their work.

The disadvantage inherent in the Domain Public Payant is that it creates the impression that indigenous pharmacology is cheaply available for general and unrestricted use. This conception is at risk of subjecting indigenous pharmacology to bastardization as 'he who pays the piper, dictates the tune.'

Moreover, as the said compensation is most likely to be made to the national or state authorities for onward disbursement, there is the possibility that the funds would be diverted for some other use or even into private hands, considering the level of corruption prevalent in several African countries. The compensation might not get to the desired targets who are the indigenous peoples and is likely not to be channelled to the development of their communities.

#### **Documentation of Pharmacological Knowledge**

The documentation and recording of pharmacology in Africa South of the Sahara has been suggested as a means of determining their legality and fashioning laws that would guide their protection (Kiggundu, 2007). In India, the Society for Research Initiatives for Sustainable Technologies in partnership with members of indigenous communities have developed databases of indigenous knowledge and innovations.

The major disadvantage of documentation of Africa's indigenous pharmacology is that it could turn around to sabotage the interests of indigenous communities by making the knowledge more accessible and available to 'poachers.' Essentially, the creating of databases to document indigenous pharmacology raises the risk of a 'prepackaged' and 'ready-to-use' knowledge for economic exploitation of indigenous communities (Kiggundu 2007). Moreover, several communities in Africa South of the Sahara are of the view that ethnographers might collude with traditional rulers or even scholars-in-charge, to leak the collated information. It is also possible that the indigenous folklores being collated might be misrepresented as a result of lack of cultural understanding on the part of ethnographers and informants. At the end of the collation process, even, the communities might not have easy access to the documented materials due to low literacy level, thereby undermining the essence of the documentation and recording

#### The Sui Generis Approach

The most serious step towards a genuine and independent protection of indigenous pharmacology in Africa is the suggestion that a *sui generis* model of IPR be put in place, specifically formulated to protect indigenous knowledge. A *sui generis* system is a system of its own kind, designed to address the needs and concerns of a specific issue. According to Michael Halewood, '*sui generis* protections' as it applies to indigenous knowledge connotes a system of legal protection that has similar knowledge foundations to IPR laws, but differs in unique ways in order to be able to protect the new subject-matters of the indigenous 'ecological knowledge' of the people (Oguamanam 2007, 215).

Sui generis may not and should not be based on existing or mainstream intellectual property regimes; and does not owe its legitimacy or acceptance on the existing western model of IPR protection already in place. Nobles asserts that a *sui generis* for Africa South of the Sahara does not have to be legally recognized nor referenced to the norms of 'the dominant western or formal legal systems, as opposed to indigenous customary norms or protocols' (Noble 2007, 339). Thus, he contends that, 'unique localized approaches to transcultural protection and use arrangements can be achieved-without IPR laws per se' (Noble 2007, 343).

# The Convention on Biodiversity and the Trade-Related Aspects of Intellectual Property Rights

The Convention on Biodiversity (CBD) list as its objectives; the promotion of indigenous knowledge systems; the conservation and sustainable use of biological diversity; and the fair and equitable distribution of profits from the economic exploitation of genetic resources. One fundamental requirement for actualization of the CBD mandate is the respect, preservation and maintenance of the knowledge and practices of indigenous communities regarding the sustainable use of biological diversity. To fulfil this mandate, the governing body of the CBD established a Working Group on Article 8j of the convention which deals with indigenous knowledge. Articles 8j of the CBD creates a wide leverage for parties to devise regimes for the protection of indigenous knowledge forms. Article 16(5) specifically sanctions intellectual property and other provisions that contemplate other mechanisms for the protection of indigenous knowledge and acknowledges that mainstream intellectual property rights do not adequately protect indigenous knowledge forms. The CBD seeks to manipulate the existing regimes or create new categories of rights to cater for indigenous knowledge. The Working Group is considering among other related issues, the different non-intellectual property rights approaches to the preservation of indigenous knowledge systems including pharmacology. The group is also working with WIPO on the possibility of fashioning a model of IPR to cover indigenous knowledge.

Further, Trade-Related Aspects of Intellectual Property Rights (TRIPs) agreement, under the 2001 Doha declaration of the 4<sup>th</sup> WTO Ministerial Meeting endorsed a coordinated approach to appraising the protection of indigenous pharmacology under the TRIPs agreement. The TRIPs council was mandated at the Doha rounds to formulate new ways of protecting indigenous pharmacology within the existing IPR regime. Article 27 of the TRIPs agreement provides for a patent or an "effective 'sui generis' protection, or a combination of both in relation to plant varieties; the article however did not elaborate on the term 'sui generis.'

Clearly, the Western world realizes the imperative for instituting a *sui generis* approach to protect indigenous pharmacology, although it has not vigorously pursued this path. The reason is not far-fetched, private pharmaceutical interests, known for their lobbying and intimidating prowess have blocked several attempts to radically overhaul the present system of IPR protection of Africa's indigenous pharmacology. The onus lies on African leadership, institutions such as the African Union, Africa based human rights and civil society organizations, writers, intellectuals, and other concerned interests to step up to the challenge and advocate for change in the on-going frantic theft of Africa's greatest asset.

#### Conclusion

Africa's indigenous pharmacology cannot be successfully managed under the existing global IPR system. The distinct nature of indigenous knowledge and the communal approach it embodies, makes it difficult to be assessed with Western scientific measurements. Indigenous knowledge has been in existence for centuries, and in several cases, much older than Western science. Its efficacy in bringing about and maintaining healing is widely attested to and orally documented by its custodians.

Global IPR regulation is rooted on the Eurocentric individualistic conceptions that vests man with ultimate power over nature and its proceeds. Eurocentric discourse perceives the aim of patent laws to be the encouragement and reward of individual creativity. Economic exploitation of intellectual property is, therefore, necessary to ensure a reward on time, capital and other investments. On the contrary, Africa's indigenous world-view prioritizes the interests of the community as a whole over those of the individual. Ownership of pharmacology in indigenous culture is a collective rather than individual responsibility. The direct consequence of the difference in worldview that exist between existing IPR and indigenous pharmacology knowledge culminates in the insufficiency of patents to adequately protect the rights of indigenous communities, a situation that encourages further exploitation by the Western capitalist interests.

New legal alternatives are to be considered to protect indigenous pharmacology, in order to stem the tide of 'illegal' patenting and economic exploitation by the West. This work recommends a *sui generis* approach that provides for the nature of indigenous intellectual property to be defined in accordance to the cultural values of the indigenous communities. Unlike the IPR regime that provides a shelf life for inventions, the *sui generis* provision should recognize the timeless nature of Africa South of the Sahara in indigenous pharmacology and should be devoid of the provisions for originality and material form, which the global IPR regime upholds.

The provisions, to be generated from within Africa, and under a regional framework would, among others ensure that the issue of Africa South of the Sahara in pharmacological exploitation for economic benefits by Western producers is comprehensively addressed. Most importantly, a *sui generis* approach recognizes indigenous pharmacology in Africa South of the Sahara as a new legal concept with a previously unacknowledged rationale, which needs to be granted an exclusive platform of protection, based on its unique attributes.

#### References

Amir, S. (2003). World Poverty, Pauperization & Capital Accumulation. *Monthly Review* 55, 5.

Baronov, D. (2008). The African Transformation of Western Medicine and the Dynamics of Global Cultural Exchange. Temple University Press: Philadelphia.

Bellman C, Dutfield G. & Melendez-Ortiz, R. (2003). *Trading in Knowledge; Development Perspectives on TRIPS, Trade and Sustainability*. London: Earthscan.

Boulet, P. (2000). Patent protection in Kenya and Uganda, MSF a discussion paper, "Improving access to essential medicines in East-Africa – Patent and prices in global economy, Nairobi, 15-16 June, 2000.

Brush, S. & Stabinsky, D. (1966). *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights*. Washington, DC: Island Press.

Capling, A. (2002). Intellectual Property. In Drahos, P. and Mayne, R (Ed.) *Global Intellectual Property Rights: Knowledge Access and Development* (pp. 70-92). Palgrave Macmillan; Hampshire & New York.

Capling, A. (1999). Intellectual Property. In Hocking, B. and McGuire, s. *Trade Politics; International, Domestic and Regional Perspectives* (pp.79 -95). London: Routledge.

Cullet, P. (2002). Plant Variety Protection in Africa: Towards; Compliance with the TRIPS Agreement. *Journal of African Law*, 45, 97-122.

De Almeida, A. (1995). 'The Political Economy of Intellectual Property Protection', *International Journal of Technology Management*, 10, 200-.221.

Drahos, P. (1996). A Philosophy of Intellectual Property. London: Dartmouth

Githaiga, J. (1998). Intellectual property Law and the Protection of Indigenous Folklore and Knowledge. *Murdoch University Electronic Journal of Law*, 5, pp111-128.

Halpern, S. Shipley, D and Abrams, H (1992) (Ed.) *Copyright: Cases and Materials* (St. Paul, Minnesota: West Publishing.

Halewood, M. (1999). Indigenous Knowledge in International Law: A Preface to *Sui Generis* Intellectual Property Protection." *McGill Law Journal*, 44, pp 155-171.

Jones, Akila. (2002). A Historical Analysis of Intellectual Property Rights. New York: Golden Press.

Kavishe, D. (2002). Presentation on Tanzania Technology and Related Policies for the SME Sector. University of Tanzania, September 22.

Kongolo, T. (2001). Towards a Balanced co-existence of Traditional Knowledge and Pharmaceuticals Protection in Africa," *Journal of World Trade*, 35, pp. 349-355.

Konadu, K. (2007) *Indigenous Medicine and Knowledge in African Society*. New York: Routledge.

Kiggundu, J. (2007). Intellectual Property Law ad the Protection of Indigenous Knowledge. In Mazonde, I & Thomas P. (2007). *Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century; Perspectives from Southern Africa (pp 26-47)*. Dakar: Codesria.

Kuruk P. (2006).Protecting Folklore under Modern Intellectual Property Regimes: A Reappraisal of the Tensions between Individual and Communal Rights in Africa and the United States. Retrieved November 16, 2007 www.wcl.american.edu/journal/lawrev/48/pdf/kuruk.pdf?rd=1

Masoga, M. A. (2007). Contesting Space and Time: Intellectual Property Rights and the Indigenous Knowledge Systems Research - A challenge. In Mazonde, I & Thomas P. Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century; Perspectives from Southern Africa. Dakar: Codesria

May, C. (2000). A Global Political Economy of Intellectual Property Rights: The New Enclosures, London: Routledge,

Mazonde, I & Thomas P. (2007). Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century; Perspectives from Southern Africa. Dakar: Codesria.

Mbiti, J.(1970). African Religions and Philosophy, London; Heinemann.

McGown, J. (2006). Out of Africa: Mysteries of Access and Benefit Sharing. *Edmonds Institute Report*. Washington DC.

Morolong, S. (2007). Protecting Folklore under Modern Intellectual Property Regimes: Limitations and Alternative Regimes for Protection. In Mazonde, I & Thomas P. (2007). Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century; Perspectives from Southern Africa (pp. 48-65). Dakar: Codesria

Moore, A. (1997). *Intellectual Property; Moral, Legal, and International Dilemmas* Oxford: Rowman & Littlefield Publishers

Nkigali, J. (1999). A Historical Survey of Intellectual Property in sub-Saharan Africa, New York: Waslow.

Noble, B. (2007) "Justice, transaction, translation: Blackfoot tipi transfers and WIPO's search for the facts of traditional knowledge and exchange." *American Anthropologist* (2007) 109 (2): 338-49.

Oguamanam C., (2006). International Law and Indigenous Knowledge; Intellectual Property, Plant Biodiversity, and Traditional Medicine. Toronto: University of Toronto Press.

Posey, D. (1996) Beyond Intellectual Property: Towards Traditional Resources for Indigenous peoples and Local Communities. Ottawa: IDRC.

Tshimanga Kongolo, 'Towards a More Balanced Co-existence of Traditional Knowledge and Pharmaceuticals protection in Africa', *Journal of World Trade*, 35, (2001) 349-355.

Thomas P. & Nyamnjoh F. (2007) Intellectual Property Challenges in Africa: Indigenous Knowledge Systems and the Fate of Connected Worlds. In Mazonde, I & Thomas P. (2007). *Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century; Perspectives from Southern Africa (pp. 12-26)*. Dakar: Codesria

Thebe, S. (1999) Protecting Traditional Medical Knowledge as Intellectual Property; *Lesotho Law Journal.* 12, pp. 74-93.

Valsala, K. (2002). "A study on the Protection of Expressions of Folklore' at http://www.wipo.int/tkl/en/studies/cultural/expressions/study/kutty.pdf

WIPO, 2003, 'Consolidated analysis of the legal protection of traditional cultural expressions', available at http://www/wipo.int/documents/en/meetings/2003/igc/doc/grtfk-1c-5-3.doc

World Bank. (2013, August 12). What is Indigenous Knowledge. Retrieved from World Bank: www.worldbank.org/afr/ik/basic.htm

World Health Organization (WHO) (2012) World Health Statistics 2012. http://www.who.int/gho/publications/world\_health\_statistics/2012/en/ Retrieved September 9, 2013.

#### **Useful Web Pages**

Text of the Convention on Biodiversity at www.cbd.int/convention/convention.shtml

WIPO Treaties and Provisions at www.wipo.int/treaties/en/general accessed 11/19/07 The legal text of TRIPS, available online at the WTO website; http://www.wto.org/english/docs\_e/legal\_e/legal\_e.htm#TRIPs

Intellectual Property Section 102, 1976 Copyright Act of the United States) http://cyber.law.harvard.edu/bridge/philosophy/ipphil.txt.htm - browsed 11/15/2007

http://news.nationalgeographic.com/news/2003/04/0416\_030416\_san1.html Accessed on April 28, 2011.