



Protecting and Patenting Tropical Plant Medicine

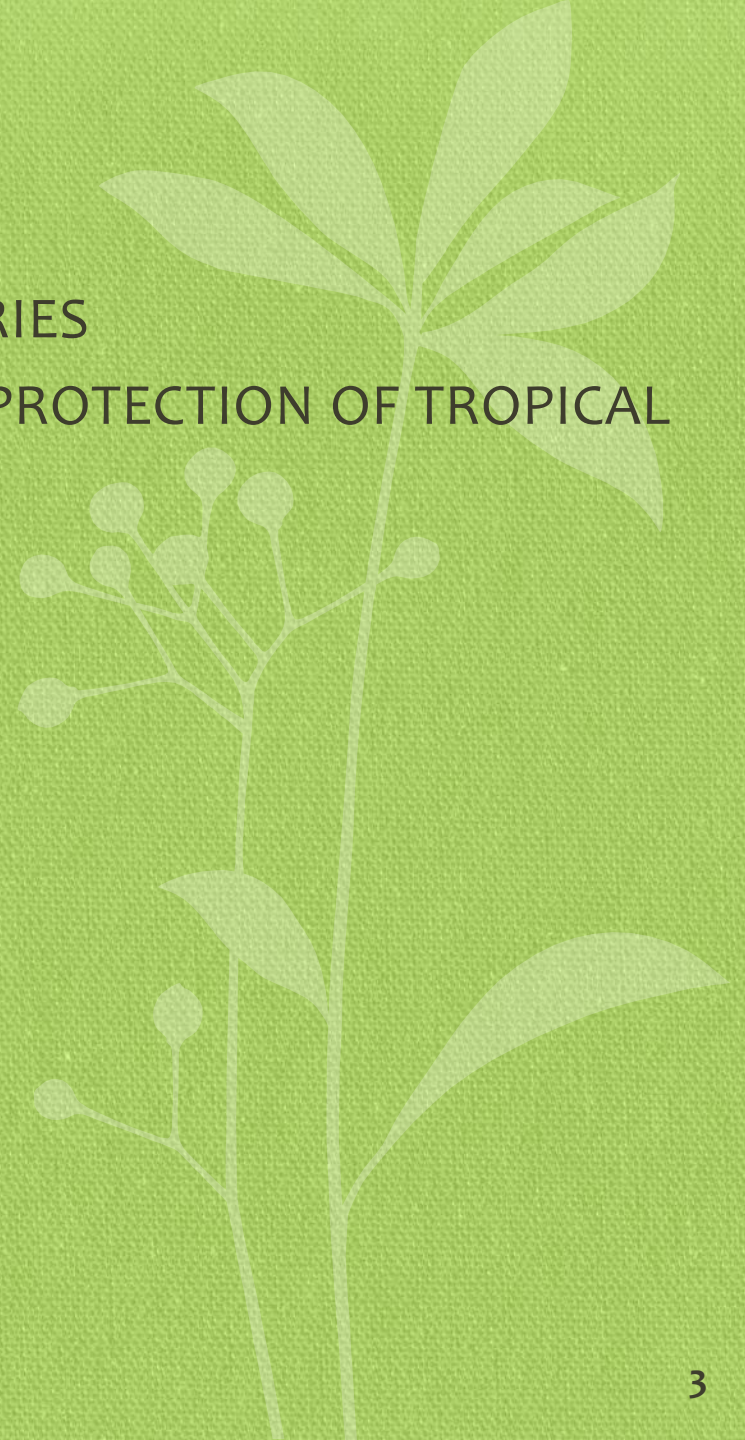
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WHAT ARE TROPICAL PLANT MEDICINES?

- Tropical plant medicines are part of traditional medicines.
“Traditional medicine has been defined as the knowledge and associated practices, whether explicable or inexplicable used in diagnosing, preventing or eliminating a physical, mental or social disease which may rely exclusively on past experience or observations handed down from generation to generation, verbally or in writing” (Elujoba *et al.*, 2005)

THE REASON FOR THE INTEREST IN TROPICAL PLANT MEDICINE

- It is becoming increasingly difficult to sustain the use of chemical compounds in the manufacture of drugs. (P. A Zakrzewski, 2002)
- This challenge has led multinational drug companies to use Tropical Plants. Thus, these companies continue to send their agents to biodiversity rich countries to acquire medicinal plants.
- The tropics are endowed with several medicinal plants hence the need for countries in the tropics to protect their medicinal plants from Bioprospecting and eventually Bio piracy.

Source: Zakrzewski, P. a. (2002). Medicine Bioprospecting or Biopiracy ? The Pharmaceutical Industry' s Use of Indigenous Medicinal Plants as a Source of Potential Drug Candidates. *University of Toronto Medical Journal*, 79, 252–254

THE NEED TO PROTECT TROPICAL PLANT MEDICINE

- Equity;
- Promotion of use and development;
- Prevention of misappropriation and bio piracy;
- Preservation of the knowledge to continue traditional practices and culture; and
- Conservation of biodiversity systems.



THE NEED TO PROTECT PLANT MEDICINES AGAINST MISAPPROPRIATION

- An example of this is the Hoodia case: The Hoodia plant is an appetite suppressant used by the SAN people of the Southern African region to give them energy during their hunting expeditions.
- The Active ingredients were patented by the CSIR of South Africa without their Knowledge and Prior consent.
- The CSIR also had a license agreement with Phytopharm which was involved in patents and commercial development with the latter without any prior informed consent from the SAN Community.
- It was only after a publication in the Observer about the unfairness of the CSIR towards the SAN people, that the situation changed and the SAN people were given a share in the royalties from future potential sales.
- Source: Policy and Commercialization Frameworks for benefit Sharing, Trade and Use of Hoodia by Rachel Wynberg

This plant keeps him alive. Now its secret is 'stolen' to make us thin

Pharmaceutical firms stand accused of once again plundering ancient remedies to make a fortune, writes **Antony Barnett**

FOR THOUSANDS of years, African tribesmen have eaten the Hoodia cactus to stave off hunger and thirst on long hunting trips. The Kung bushmen who live around the Kalahari desert in southern Africa used to cut off a stem of the cactus about the size of a cucumber and munch on it over a couple of days. They ate together so they brought back what they caught and did not eat while hunting.

Now the Hoodia, which grows to 6ft-taller than the bushmen themselves – is the centre of a bio-piracy row. Campaigners say the cactus has attracted the interest of the Western drug industry, which exploits developing countries through the international patent system.

In April, when pharmaceutical giants are being accused of failing to provide affordable AIDS drugs in Africa, Phytopharm, a small firm in Cambridgeshire, said it had discovered a potential cure for obesity derived from an African plant. It emerged that the company had patented P57, the appetite-suppressing ingredient in the Hoodia, hoping it would become a slimming miracle. Phytopharm's scientists boasted it had found none of the side-effects of



Kung tribesmen, left, have used the Hoodia cactus, above, for generations to stave off hunger on hunting trips into the Kalahari desert. Its essential ingredient has now been patented by a British pharmaceutical firm, Phytopharm, which says its new slimming aid will have none of the side-effects of traditional treatments. Photographs by Tony Stone, NHPA and Corbis

Dixey believed had disappeared are having their annual gathering at a farm 45 miles north of Cape Town. One of the top items on the agenda is to plan their strategy against Phytopharm and Pfizer. They are angry, saying their ancient knowledge has been stolen, and are about to launch a challenge and demand compensation.

Roger Chennells is the lawyer for the bushmen, who number 100,000 across South Africa, Botswana, Namibia and Angola. He argued their case in 1999

white-owned farmland on the edge of the Kalahari.

Speaking to *The Observer*, Chennells said: 'They are very concerned. It feels like somebody has stolen their family silver and cashed it in for a huge profit. The bushmen do not object to anybody using their knowledge to produce a medicine, but they would have liked the drug companies to have spoken to them first and come to an agreement. 'I believe there is grounds for a legal

claim from medicines could transform their prospects.'

Dixey, who insisted he would now be happy to enter into talks with the bushmen community, said Phytopharm had been the first approached with the deal by the South African Council for Scientific and Industrial Research, which had been investigating the properties of the Hoodia cactus. It was the CSIR.

appropriate to do so before the drug had passed on the clinical tests and been finally approved,' he said. 'We did not want to raise their expectations with promises that could not be met.' Horak said the CSIR was committed to sharing financial benefits and had a track record

Rachel Wynberg of BioWatch said details of agreements are all confidential and we have no access to the Hoodia drug has the potential to be Africa's first blockbuster drug. It should have all been sorted out before the patent was awarded and not after.

Sandy Gall, the broadcaster and former ITN newsreader who is writing a book on the bushmen of southern Africa, described the situation

Pfizer made millions from Viagra Now

METHODS OF PROTECTION

- The International Intellectual Property Conventions
- National
- Customary Law Protection: In some African Countries, Customary Law is accepted and used alongside common law. Customary law can be used to protect plant medicine knowledge but it has its limitations. Also, It is national and cannot be enforced internationally.
- Contracts :The general law of contracts could also be used to protect plant medicines.
- Due to the Lack of comprehensive policies by some African countries they have to enter bilateral contracts with partners in the developed world. There was one such initiative by the US Cancer institute Missouri Gardens and the University of Ghana. The national Cancer Institute and the Missouri Botanical Gardens and some other African countries like Madagascar, Cameroon and Tanzania. In recent times the Botany and Chemistry departments of the University of Ghana have also entered such bilateral contracts.
- Databases: Databases could be used to protect this knowledge. India has compiled a database of traditional medicines through the Traditional Knowledge Digital Library(TKDL)
- Sui generis Systems :Sui generis systems are another means of protecting plant medicinal knowledge. Thailand, Peru have established such systems to protect their knowledge.
- The Thailand Act on the protection of Traditional medical intelligence gives legal protection for the knowledge holder.

Source :Addae-mensah, Biodiversity, Herbal Medicines and Intellectual Property.

METHODS OF PROTECTION (Cont'd)

- WIPO through its intergovernmental committee has also agreed to develop new sui generis ways of protecting indigenous knowledge.
- The OAU model law is a sui generis model for African Communities to protect their knowledge.

INTERNATIONAL CONVENTIONS AND AFRICA IP RIGHTS

Most African Countries are signatories to these international Conventions. They include:

- The Convention establishing the World Intellectual Property Organization(WIPO)
- The The World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights(TRIPS)
- The Paris Convention for the Protection of Industrial Property (Paris Convention)
- The Patent Co-operation Treaty 1970

INTERNATIONAL COVENTIONS (Cont'd)

- The Protocol of Patents and Industrial Designs adopted in Harare, Zimbabwe(Harare Protocol)
- Convention on Biological Diversity

AFRICAN REGIONAL CONVENTIONS:

- African Model Law
- African Regional Property Organization(Swakopmund Protocol)

PROTECTION UNDER TRIPS

- The Trips agreement covers patents, trademarks, copyright, geographical indications, industrial designs and trade secrets.
- Allows parties to enact laws for protecting traditional knowledge.
- Even though it allows traditional knowledge to be patented, most forms of these knowledge cannot be patented because such knowledge is not amenable to the strict standards of the conventional IP system.
- However, Trips allows the protection of this knowledge under a sui generis system in Art 27, 3(b).
- As a result developing countries should make use the provision granted under Art 27 3(b) to re-establish non-patent modes of protection.

INTERNATIONAL INTELLECTUAL PROPERTY REGIME

- Since the year 2000, WIPO's Intergovernmental Committee on Intellectual Property and Genetic Resources, traditional Knowledge and Folklore (IGC) has worked very hard with African countries to find a solution to the protection of Traditional Knowledge Protection. In 2010, the IGC decided to develop an international instrument for the Protection of Traditional Knowledge.
- The African Model law is mainly concerned about access to biological resources and is not really an instrument to protect intellectual property rights.
- The African Regional Intellectual Property Organization (ARIPO)

INTERNATIONAL INTELLECTUAL PROPERTY REGIME (Cont'd)

- The Swakopmund Protocol for protection of TK providing a legal framework for protecting TK.
- The African Model law: Though inadequate in the establishment of Property Rights, it is very helpful in the development of property rights over plant varieties.
- It also recognizes the need to protect the rights of local communities over biological resources and their Knowledge, innovations and practices.
- The Convention on Biodiversity (CBD) :This convention in Art 8(j) could be used to ensure that there is fair sharing of the benefits are given to local communities when others use the resources they have conserved. Also it will ensure that the local communities receive recognition for their dedication to preserving the knowledge of their traditional resources.

PATENTING

- Patents are granted either by national patent bodies or through international organizations.
- African Countries can obtain their patents through the African Intellectual property organization(ARIPO) or through the WIPO Administered Patent Cooperation Treaty(PCT)
- Under PCT filling a single individual application has the same effect as applications filed in any of the countries that are signatories to the treaty.

THE CURRENT PATENTING SITUATION IN AFRICA

- Africa has the least number of patents in the world.
- According to research conducted in 44 African countries, it was discovered that most patent offices were not adequately equipped to perform the functions of a patent office.
- They lacked the basic infrastructure for examining patent applications and collecting patent information.
- They also had poor record keeping procedures that made it difficult for the public to access any information
- There is a lack of expertise amongst African Patent staff, most lack skills in drafting patents.
- In some countries there is no well defined or current legislation concerning the use of patents to protect plant medicines.
- Several countries in Africa are still updating their patent laws.

PROBLEMS OF PATENTING

- Patents are difficult to obtain for the following reasons:
- The requirements of Novelty, and originality are not things that most rural folk who have practiced plant medicine for years can prove. Most of them acquired the knowledge by apprenticeship and by oral tradition, how do they prove who is the originator of the knowledge?
- In addition how do they access funds to pay for the registration procedure?
- The Lengthy procedure prevents most people from pursuing patents for their knowledge.

PROTECTING PLANT MEDICINES: THE CURRENT SITUATION

- Before Africa was Colonized, Plant medicines were the only sources of health care for African communities.
- However, during the colonial period plant medicines were considered as backward. In some African countries there was an outright ban on the use of such medicines
- After independence there has been a vast improvement in the development and protection of plant medicine.
- Some Post independence African Governments encouraged several initiatives. In some countries Institutes were set up to research on Plant medicine. In Ghana, the Centre for Research into Plant Medicine was one of those institutions. Nigeria has a similar institution namely the Nigerian National Medicine Development to study, collate and promote Nigerian Traditional Medicine and to integrate it into the mainstream modern health care system.
- The educational system inherited from the colonialists whilst has helped in educating some Africans has encouraged some of them to abandon their traditional knowledge including medicinal knowledge

THE CURRENT SITUATION (Cont'd)

- In some communities in Africa the present generation are no longer interested in acquiring traditional medicinal knowledge because the westernized educational system does not encourage them to learn from the older generation.
- As the older generation passes on without imparting this vital knowledge to the younger generation, gradually this knowledge is decreasing.
- However, there have been certain initiatives from the WHO African Region who have adopted its regional strategy and its resolutions AFR/RC50/RC-28. African Countries have formulated initial policies to “regulate, promote, develop and standardize through the practice of African Traditional Medicine”
- Some countries like Benin, Burkina Faso and Cameroon have developed monographs on medicinal plants. Nigeria and Ghana have published National Herbal Pharmacopeia.
- A number of Countries are conducting research into Traditional medicines used for the treatment of HIV/AIDS.

THE CURRENT SITUATION (Cont'd)

- Since the African Region of the World Health Organization adopted Its Regional Strategy and its resolution AFR/RC50/R3(1), 28 countries have formulated National Policies to “regulate promote, develop and standardize the practice of African traditional Medicine”
 - In addition, 21 countries have also developed legal frameworks for traditional medicine practice.
 - Others have established traditional medicine programs in their ministries of Health.
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- Source: An Overview of Traditional medicine Situation in the African Region.

CONCLUSIONS

- A hybrid of both the conventional Intellectual Property Systems like patents, trade Secrets, geographical indications, collective intellectual Property Rights of communities and sui generis systems can be used for protecting plant Medicines. But the problem of most African Countries is that they have “weak institutional Infrastructure and a lack of Context-sensitive Policy orientation on Intellectual Property”.
- Secondly, Intellectual Property protection can only be possible if Institutions are ready to enforce Intellectual Property Regulations. There should be institutional frameworks that back Intellectual Property Policies with enforcement on the Laws of Intellectual Property.
- There is a need to introduce in the curricula of educational Institutions from basic schools to University, indigenous knowledge especially on traditional medicines. It should be presented positively so that people’s minds will be liberated from all the negative views they have about traditional medicine. The media should give positive coverage of the successful use of plant medicines for health as an alternative to orthodox medicines.

Source: De Beers J, and Oguamanam, “Intellectual Property Training and Education: A Development Perspective” ICTSD Programme on IPRS and Sustainable Development Issue Paper No 31, International Centre for Trade and Sustainable Development, Geneva, PP. 1-58 in Innovation & Intellectual Property Collaborative Dynamics in Africa, UCT Press 2014

CONCLUSIONS (Cont'd)

- There is not much awareness of the citizenry of the vast economic value of plant medicines so there is general apathy towards improving this Knowledge.
- Most governments of the individual African countries pay lip service to the conventions and other legislations, though the laws are on their statute books, nothing is achieved.
- The general knowledge about Intellectual property is very low, so there is not much awareness of its huge potential for economic growth.
- The conventional Intellectual Property system cannot protect indigenous knowledge adequately.

RECOMMENDATIONS

- The African Union and other regional bodies should as a matter of priority, sensitize their members as to the huge potential of Tropical Plant medicine, socially and economically
- Individual Governments should make good policies that would protect Plant Medicine knowledge and help in innovation.
- There must be learning in the area of Intellectual Property. Educational institutions especially universities should introduce courses in Intellectual Property law with special emphasis on Traditional knowledge.
- African Governments should stop paying lip service to all the numerous Intellectual Property Conventions and get them of the statute books, encourage enabling legislation in order for those laws to be effective.
- Finally enforcement is needed, most of the time the real problem is not the law but the enforcement. Enough staff should be trained to work in this area because the bane of all good laws which are ineffective is the lack of enforcement.

RECOMMENDATIONS (Cont'd)

- The African Union and other regional bodies should as a matter of priority, sensitize their members as to the huge potential of Traditional Knowledge socially and economically. As stated in Innovation & Intellectual Property pg. 393.”African Policy Makers should Harness Intellectual property Rights on their own terms”
- There must be Capacity Building in the area of Intellectual Property. More Lawyers should be encouraged to pursue courses in Patent Law. Faculties of law in African Countries should also introduce Traditional knowledge as part of the course in Intellectual Property law.

Sources:De Beer Jeremy et al ‘current realities of Collaborative Intellectual Property in Africa pg. 393
Innovation & Intellectual Property Collaborative Dynamics in Africa, UCT Press, 2014

RECOMMENDATIONS(Cont'd)

- The knowledge of Plant Medicines must be recorded and digitized
- The Traditional owners of plant medicines must be assisted to coordinate with International organizations like WIPO
- The Patent offices in African Countries must be well equipped for their task
- There should be research coordination between all institutions , involved in Plant medicine
- Research into plant medicine should be supported by respective governments
- Knowledge Censer should be established in communities. This centers must have access to plant medicinal knowledge.
- This centers must be equipped not only to collect, protect, promote the knowledge of these plant medicines.

THANK YOU

