



Why Protect Traditional Knowledge?

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The African Technology Policy Studies Network (ATPS) is a multi-disciplinary network of researchers, private sector actors and policy makers promoting the generation, dissemination, use and mastery of science, technology and innovation (ST&I) for African development, environmental sustainability and global inclusion. ATPS intends to achieve its mandate through research, capacity building and training, science communication/dissemination and sensitization, participatory multi-stakeholder dialogue, knowledge brokerage, and policy advocacy.



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List of Acronyms

ARIPO	African Regional Intellectual Property Organization
ATPS	African Technology Policy Studies Network
BTA	Biotechnology Trust Africa
CSIR	Council of Scientific and Industrial Research
IK	Indigenous Knowledge
ILO	International Labour Organization
IP	Intellectual Property
IPR	Intellectual Property Right
OAPI	Organisation Africaine de la Propriété Intellectuelle
TCE	Traditional Cultural Expressions
TEK	Traditional Environment Knowledge
TK	Traditional Knowledge
TRIPS	Trade-Related Aspects of Intellectual Property
WHO	World Health Organization
WIPO	The World Intellectual Property Organization
WTO	World Trade Organization

Introduction

During the desk study of the Intellectual Property (IP) Background/Environment in target countries (Malawi, Mozambique, Swaziland, Lesotho, Tanzania, Uganda, Ethiopia and Kenya) for the ATPS/BTA IP Programme, it was observed that there were limited policy and legal frameworks for Traditional Knowledge (TK). Kenya is the only country that has a policy on Traditional Knowledge, Genetic resources and Traditional Cultural Expressions but the policy is not yet formalized; the other seven countries have none. It also has a draft policy on Traditional Medicine and Medicinal Plants under the Ministry of Health. However, it's only Tanzania that has a law on Traditional and alternative medicine under the Ministry of Health. Malawi and Uganda have bills developed on Traditional Medicine but not yet enacted. The others have no policies or legal frameworks covering Traditional Knowledge.

The regional or international legal instruments are unlikely to address the needs and aspirations of the individual states. The problem here is the understanding of the economic and social values of Traditional Knowledge, in general, by the African States.

This policy paper attempts to explain Traditional Knowledge, its economic and social values, the opportunities available to protect it, and the way forward for countries which may wish to consider protecting Traditional Knowledge.

What are the Limitations of Current IP Regimes?

The criteria set for inventions under the current Intellectual Property Rights make them inadequate to protect Traditional Knowledge. IPRs are largely individual rights and as such they recognize individual ownership based on time and labour expended in coming up with the new invention, however, they do not recognize TK. Conversely TK is owned largely by the Community and it is passed on from generation to generation. In addition, TK is largely in public domain but limited to certain families or communities, hence there is no one inventor.

The main limitation of IPRs in the protection of TK is the requirement of novelty, inventive step and commercial viability. TK does not pass the test for the three requirements because the knowledge under TK is not new, has no inventive step and the restriction of ownership within families or communities does not make TK commercially viable. The families or communities in possession of specific TK take pride in keeping it secret. Traditional Medicine men or women cannot use the current IP to protect their knowledge.

What Opportunities Exist through International Treaties, Agreements, Conventions, etc. for Protection of TK?

The Convention on Biological Diversity (CBD) was the first to develop measures for the use and protection of Traditional Knowledge but related to the conservation and sustainable use of biodiversity. Article 8 (j) States “subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity”.

The Agreement on Trade Related Intellectual Property Rights (TRIPS) inserted Article 27.3 (b) which allows member states of the World Trade Organization (WTO) to use sui-generis system. This permits countries to come up with specialized and appropriate forms of protection regimes, which can use local legislation to protect TK.

The World Intellectual Property Organization (WIPO) is working with organizations and indigenous and local communities in different nations to address the policy/legal issues on traditional knowledge protection through the Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore. WIPO continues to work on this until an agreement in the text of an International legal instrument is found to protect TK and Traditional Cultural expressions. This means WIPO recognizes the need to protect TK.

The African Model Law is mainly concerned with access to biological resources and not with the establishment of a property rights system. It however provides a few pointers for the development of property rights over plant varieties and recognizes the need to protect the rights of local communities over biological resources and their knowledge, innovations and practices.

The African Regional Intellectual Property Organization (ARIPO) and Organisation Africaine de la Propriété Intellectuelle (OAPI) Traditional Knowledge and Traditional Cultural Expressions (TCE) and Folklore instrument for protection of TK, TCE and Folklore aims at providing a legal framework to protect them, and it is formalized into a protocol (Swakopmund protocol) for protection of TK.

The collective human right of indigenous and local communities is increasingly recognized by the International Labour Organization (ILO) (Convention 169 of 1989) and Declaration on the Rights of Indigenous people (2007). However, they do not clearly state what can be done to address the concerns of the indigenous people, on the protection of TK.

African states therefore have enough ground to come up with policies and legal frameworks to protect their Traditional Knowledge.

What is traditional knowledge?

Traditional Knowledge is knowledge that is held by members of a distinct and or sometimes acquired by means of inquiry peculiar to that culture and concerning the culture itself or the local environment in which they exist.

TK is thus the totality of all knowledge and practices whether explicit or implicit used in the management of socio-economic and ecological facets of life. This knowledge is established on past experience and observation. It is usually a collective property of a Society. Many members of the Society contribute to it over time and it is modified and enlarged as it is used over time. It is transmitted from generation to generation and it is generally an attribute of a particular group of people who are intimately linked to a particular socio economic context, through various economic, cultural, ritual and religious activities. TK is also dynamic in nature and changes its character as the needs of the local people change. Examples of TK include knowledge about the use of specific plants and/or parts

thereof, identification of medicinal properties in plants and harvesting practices (Mbeva J., 2008).

Traditional Knowledge can be grouped into: Traditional Knowledge (TK); Indigenous Knowledge (IK); Traditional Environment Knowledge (TEK) and local knowledge and they all generally refer to the long standing traditions and practices of certain indigenous or local communities.

TK is a cumulative body of knowledge, know-how practices and representations maintained and developed by people with extended histories of interactions with the natural environment. These sophisticated set of understandings, interpretation and meanings are part and parcel of a cultural complex that encompasses language, naming and classification systems, resource use practices, customs, spirituality etc. TK emphasizes the accumulation and transmission of knowledge through generations. Local knowledge is a broader term that refers to the knowledge of any people who have lived in an area for a long period of time.

IK is the information base for a society which facilitates communication and decision making. IK systems are dynamic and are continually influenced by internal creativity and experimentation as well as by contact with external systems. IK and TK about people, plants, animals and the environment, contain spiritual, cultural and social aspects. Knowledge systems are passed from generation to generation and are at a risk of being eroded or lost as time passes and society changes. In Africa, IK and TK are often passed through shared practice and story telling and the lack of a written record of these, puts it at risk of extinction.

TEK refers to a particular form of place-based knowledge diversity and interactions among plants and animal species, land forms, watercourses and other qualities of the biophysical environment in a given place. An example of a society with a wealth of TEK is the South American Kayapo people who have developed an extensive classification system of ecological zones of the Amazonian Tropical Savannah to better manage their land. For some communities TK takes on a personal and spiritual meaning and it can also reflect a community's interests. Some communities like the case of the Kayapo people depend on TK for survival.

What is the Economic Value of TK?

There is a significant value of Traditional Knowledge especially Traditional Medicine and trade with Traditional Cultural Expressions.

In Kenya, there has been an increase in trade related to traditional cultural expressions. Kenyans are deeply involved in their traditional arts and crafts which are part of their daily lives. This includes tourism related activities such as traditional songs and dance, cultural artifacts such as wood and soft stones, carvings, traditional baskets e.g. kiondo. It also covers traditional medicines which cover products such as those of the neem tree for treatment of various diseases; prunus africana for treatment of prostate cancer, Artemisia for treatment of malaria, etc. This has not been quantified into money value; however, it runs into millions of Kenya shillings.

On the African front, South Africa gets R29 billion per year from trade in Traditional Medicine (Monder, M. et al) the San tribe of South Africa sold the right of ownership of the Hoodia plant to a British Company for about US\$ 20 million. The devils claw plant in Namibia which is used as an analgesic and anti-inflammatory drug earns Namibia US\$ 2 million annually. Prunus Africana was imported from Kenya, Ethiopia and Cameroon by Germany in 1994 and it was worth US\$150. Worldwide the products of prunus africana fetch US\$ 220 million annually.

Trade in Biopiracy also illustrates the economic values of TK. Industrial enzymes from microbes used for fading jeans, stolen from Kenya, are worth US\$600 million per year. The enzymes were collected from Lake Bogoria in Kenya. The diabetes drug processed by microbes (Actinoplanes Sp.) from Lake Ruiru is worth Euro 278 million; it was collected from the Lake in Kenya. There are several other cases within the target countries but they are yet to be studied e.g. Amarula in Swaziland.

On the global scene, Australia gets an estimated annual value of A\$1000 million, China gets US\$ 2.3 billion, Japan US\$ 1.5 billion, Republic of Korea US\$ 543.5 million, Malaysia M\$ 2 billion annually, Philippines US\$ 10 million and Singapore S\$ 13 million from Traditional Medicine alone (WHO 2001).

All these countries have established herbal industries and or pharmaceutical companies that handle traditional medicines and have plenty of herbal dealers, drug stores for herbal medicine etc. (WHO 2001).

Why Protect Traditional Knowledge?

For indigenous people, the rationale for protecting traditional knowledge centres on questions of fundamental justice and the ability to protect, preserve, and control one's cultural heritage. There is also the concomitant right to receive a fair return on what these communities have developed. Many areas of Traditional Knowledge have potentially lucrative applications as shown above.

Even non-indigenous people also have a strong incentive to ensure that fair use of TK is ensured because it has much to offer the modern society. It is increasingly being used to assist policy making in many areas: food and diversity; health, trade and economic development. On this basis there are five reasons why TK should be protected; these are: Equity, Conservation of biodiversity, preservation of traditional practices, prevention of biopiracy, and importance of TK in development.

Equity

TK generates value that is currently inadequately recognized and compensated. Traditional farmers, for example, have nurtured, conserved and used both plants and animals. They have improved the value of plant genetic resources through continuous selection of the best adapted varieties. Seed companies then collect the varieties, process and produce for sale. They are even allowed to protect the varieties through Plant Breeders Rights and can benefit from them while the farmers are left out. Farmers and Scientists thus rely on the genetic diversity present in crop plants that in hundreds of generations were accumulated, observed, selected, multiplied, traded and kept variants. The whole irony is that scientists can protect and benefit from their innovations whereas the traditional farmers contributions are overlooked. Farmers did not charge for the samples that the scientists and seed companies took, hence the inequality inherent in the current system of intellectual property rights.

Conservation of Biodiversity

Knowledge innovations and practices of indigenous peoples and local communities are a show of their cultures. Protection of people's culture therefore entails preserving the link between the people and natural features including plants and animals. Protection of TK can therefore, help conserve the environment and promote sustainable agriculture and food security.

Preservation of Traditional Practices

Protection of TK can provide a framework for maintaining practices and knowledge embodying traditional lifestyles. Preservation of TK helps to preserve the self identification of people and can ensure the continuous existence of indigenous and traditional people. This role is certainly beyond the scope of IPRs protection foreseen in TRIPS or any other multilateral instruments. The protection of TK through appropriate form of IPRs can raise the profile of the knowledge and make it more attractive and worthy of preservation.

Prevention of Biopiracy

A Large number of patents have been granted on genetic resources and knowledge obtained from Africa and other developing countries. An example is the use of patent number 5, 401, 5041 granted for wound healing properties of turmeric acid. The innovation had been used in India for centuries prior to the registration of the patent by USA. The Council of Scientific and Industrial Research (CSIR) from India successfully applied for its revocation. Kenya's kiondo was patented in Japan but this has not been revoked, same has been with the micro-organism for fading jeans, and the energy saving jiko just to mention a few cases.

A major concern is on how to prevent misappropriation of TK. Three suggestions have been advanced: documentation of TK with a view of establishing a TK digital library. This will enable states to check the possible misuse; the requirement of proof of origin for materials to be patented; and prior informed consent.

The use and Importance of TK in Development

There is need to protect TK against loss and misappropriation. Some form of protection may make local communities willing to part with their TK and genetic resources. Thus if knowledge owners are compensated, they would be motivated to provide easy access to their TK. Moreover, they may be encouraged

to conserve it and ensure future use and access. Concerning Traditional Medicine, if IPRs are used for protection, they may reduce access to products and treatment which are essential for a community. Government may therefore consider promoting the use of TK and also attempt to prevent misappropriation.

How is Traditional Knowledge Protected?

There are two paradigms employed to protect traditional knowledge using intellectual property tools. The first protection paradigm uses created traditional knowledge databases to give evidence of their traditional knowledge as prior art in order to prevent perceived abuses such as biopiracy. But TK databases may pre-empt others from securing rights over traditional knowledge since they disclose the TK to the public nevertheless it provides some protection. However, many communities would rather keep such TK within their communities. Many communities have their own traditional or customary laws that regulate the use of TK. It differs from their national systems which may want to develop databases or document the TK, as a means of protection.

The second protection paradigm is achieved by either using the existing laws or using legislative means to enact sui-generis laws. Currently, only a few countries offer explicit sui-generis protection for TK, these countries are Costa Rica, the Philippines, Peru, Thailand, and Venezuela.

Other countries are using existing laws e.g. Environmental Management Acts and other related Acts that could be used to protect the TK of indigenous communities. However, many countries are still undecided and have argued that the form of protection should refer to collective human rights to protect their distinct identities; religious and cultural heritage. Others are waiting for the regional or international instruments to protect their TK. ARIPO and OAPI have come up with the Swakopmund protocol on protection of TK and Expression of Folklore and the instrument could be a template for member countries while ARIPO and OAPI could also protect TK on behalf of the member countries. An International Instrument is still under discussions in WIPO.

What is the Way Forward for African Countries in the Protection of TK?

Given the economic value of TK, especially for Traditional Medicine and Traditional cultural expressions in which Africa is rich in, policies and legal frameworks should be developed to protect the TK available in Africa. This is acceptable through TRIPS 27.3 (b). South Africa and countries in the Far East are making a lot of money from Traditional Medicine. They even have companies and industries for herbal medicine which play a key role in reducing the unemployment problem which most African countries are experiencing due to lack of industries. This should be taken up as a priority to reduce biopiracy which has cost Africa millions of US dollars.

The African States should bank on the regional instrument (through ARIPO) and later on the International instrument (through WIPO) to protect TK. This means that the International negotiations should continue until a proper instrument for protecting TK is in place at WIPO.

Apart from that, most African States are members of the International treaties, conventions, and protocols for IPR. This means that they still have an obligation to develop clear policies and legal frameworks for classic IPRs. Together with the protection of TK, African countries can be able to develop economically. To benefit from the IPRs, the African countries must develop capacities in terms of human and physical infrastructure in Science and Technology.

Conclusions

The development of a sui-generis system could take the form of a single comprehensive regime like the way Kenya is going; with a policy on TK, genetic resources and Traditional Cultural Expressions. This form of legislation could attract a lot of publicity and interest from the owners as well as the policy makers. However, it needs to be interactive and participative by all the stakeholders.

The second form of protection through sui-generis could involve a set of specific regimes adapted to various forms of TK or could be done through incorporation

to existing laws pertaining to the particular TK. This requires a lot of review of the existing laws. Although it can be done without problems, the focus could be less.

The African states must take a clear policy on the protection of TK in addition to the classic IPRs, given the economic value of TK. Already ARIPO/OAPI have come up with the Swakopmund protocol on the protection of TK and Expression of Folklore.

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