

AFRICA UNIVERSITY

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**THE EXPLOITATION OF TRADITIONAL KNOWLEDGE
PROTECTION SYSTEM IN BOTSWANA**

BY

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**A DISSERTATION IN SUBMITTED IN PARTIAL FULFILMENT OF THE
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Abstract

The need to protect and preserve traditional knowledge for the interest of the knowledge holders has become paramount as the appreciation and application of traditional knowledge (TK) throughout the world began to be apparent. In recognition of the significance of TK, the contemporary legal frameworks have since included TK in their agenda. Botswana, through its intellectual property laws, has also included TK protection in her current legal framework. The Industrial Property Act was amended in 2010 to include other areas of IP. These included the protection of traditional knowledge which was not provided for in the previous law. The Industrial Property Act, 2010 is implemented by the Botswana intellectual property office, CIPA. Over these years however, after TK's inclusion in the law, the Botswana intellectual property office has been experiencing very low numbers of filings in traditional knowledge applications. This brought uncertainty as the country is transforming from a resource-based economy into a knowledge-based economy which is meant to promote the generation, protection, commercialization and use of intangible assets such as traditional knowledge and Expressions of Folklore. Although there is an available mechanism for the protection of TK in the country, the number of TK filings are still rather insignificant. Following the conceptual presumption of direct cause=effect relationship between traditional knowledge protection and different factors that may hinder or encourage its protection, a mixed research method was adopted to study and examine the level of TK protection in Botswana as well as factors hindering or promoting TK protection. In addition, the study explored and suggested better strategies to employ to improve TK protection in the country. Among the many barriers and challenges that were found to deter knowledge holders from using the available protection frameworks was lack of awareness. The study further revealed lack of Government support towards commercialisation of TK emerging to be the leading factors hindering TK protection. Through the findings, it was revealed that TK holders generally have lost confidence in the protection of their knowledge blaming the Government for lack of support towards commercialisation of TK and TK based products. Based on these findings, the study then concluded that continued intensified awareness raising is needed with regards to traditional knowledge in order to benefit all. The study further calls for collaboration of all TK stakeholders to devise mechanisms supporting TK commercial activities.

Key words: Traditional knowledge, legal framework, protection, Intellectual Property.

Declaration Page

I declare that this dissertation is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another university for the award of a degree.

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List of Acronyms and Abbreviations

ABS	Access and Benefit Sharing
ARIPO	African Regional Intellectual Property Organisation
AU	African Union
BIPP	Botswana Intellectual Property Policy Draft
CBD	Convention on Biodiversity
CIPA	Companies and Intellectual Authority
EoF	Expressions of Folklore
GRs	Genetic Resources
IGC	Intergovernmental Committee
IP	Intellectual Property
IPRs	Intellectual Property Rights
NGOs	Non-governmental Organisations
NBSAP	National Strategy and Action Plan
TCEs	Traditional Cultural Expressions

TK	Traditional Knowledge
TRIPS	Trade-Related Aspects of Intellectual Property Rights
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation

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CHAPTER 1 INTRODUCTION

1.1 Introduction

This chapter discusses the background of the study and underlines the problem statement in relation to the study. The research objectives together with the research questions are highlighted in the same section. Further, the chapter presents the significance of the study, the study delimitations and limitations along with strategies employed by the researcher to overcome the study limitations encountered.

1.2 Background of the Study

From time immemorial, indigenous people and local communities have been surviving using a complex set of knowledge developed and preserved over time to improve their livelihoods. The knowledge included the protection or preservation of the environment, the use in agriculture for food security as well as the use of such knowledge for medicinal purposes. Through passing from generation to generation, traditional knowledge (TK) continues to give value and importance beyond just the cultural connotation. The Swakopmund Protocol on the protection of traditional knowledge and expressions of folklore (2010) defines traditional knowledge as:

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. TK is not limited to a specific

technical field, and may include agricultural, environmental, or medical knowledge, and knowledge associated with genetic resources (p. 8).

The current international system for protecting intellectual property was fashioned during the age of industrialization in the West and developed subsequently in line with the perceived needs of technologically advanced societies (WIPO, n.d.). However, in recent years, indigenous peoples, local communities, as well as governments, mainly in developing countries, have demanded equivalent protection for traditional knowledge settings. In line with the apparent relevance of TK in today's environment, economies are designing strategies aimed at meeting the much-needed protection of such knowledge. Nations have begun to develop specific policies in support of acquiring, absorbing, communicating, and using knowledge. The emphasis on these policies is on the indigenous knowledge in response to the recognition of the importance brought about by such knowledge in different national development processes.

As years progress, knowledge creation and the application of this knowledge have become central to today's economic growth. The new technological advancement has resulted in the use of genetic resources (GRs) and associated traditional knowledge by multinational companies to develop products and services. This is evidenced by the pharmaceutical and cosmetics industries being among the prominent sectors in which the use of genetic resources and associated TK are seen as key instruments for securing the economic benefits of innovation. The trend in the use of TK in the cosmetic industry has been increasing over the years. Statistics reveal growth in sales of products having been

developed using genetic resources and associated TK. Justifying the aforesaid, a study conducted by Wynberg and Laird (2013) revealed the following:

The spectrum of companies using natural ingredients forms part of a much larger personal care industry, estimated to be worth US\$426 billion. Global sales in 2011 for the “natural cosmetics” segment comprised about US\$26.3 billion, representing strong growth in this sector over the past fifteen years, up from just US\$1.4 billion in 1996 (p.4).

The need to protect and preserve traditional knowledge for the interest of the knowledge holders has hence become paramount as the appreciation and application of traditional knowledge throughout the world began to be apparent. In recognition of the significance of TK, the contemporary legal frameworks have since included TK in their agenda. Worldwide, several structures have been established to address issues around biodiversity, genetic resources, and associated TK, as well as TK and Expressions of Folklore (EoF) protection. Although currently there has not been an internationally formally concluded and ratified agreement between states, dedicated for the protection of traditional knowledge, in recent years, progress has been made towards TK protection. Several international bodies including the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) as well as the Convention on Biodiversity (CBD) have considered addressing the need to protect TK through participatory planning, knowledge management and capacity building within their member states.

The Convention on Biological Diversity (CBD) has turned out to be the most important international instrument with respect to the preservation of genetic resources and the protection of TK as well as incentives brought about by the exploitation of such knowledge. The Convention obliges its members to include into their national laws a provision on prior informed consent to regulate accessing the country's genetic resources as well as agreeing to principles of fair and equitable sharing of benefits arising from the utilization of such resources. This denotes the recognition of the importance and value exhibited by genetic resources and associated TK, which when exploited properly, have the potential to benefit both the knowledge holders as well as users of such knowledge. In addition, internationally, the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore has since embarked on negotiations towards the development of an international legal instrument for the protection of traditional knowledge, traditional cultural expressions and genetic resources.

Regionally, Botswana is a member of African Regional Intellectual Property Organization (ARIPO). ARIPO member states adopted the Swakopmund Protocol on the protection of traditional knowledge and expressions of folklore in 2010. The protocol entered into force in 2015. It seeks to provide a legal framework for the protection of traditional knowledge and expressions of folklore to the nationals of the protocol's contracting states. The system provides protection against any unlawful exploitation of TK held and registered by its signatories. The protection granted by the protocol extends to exploitation of the held and registered knowledge beyond its traditional context.

Nationally, several actions have been taken in recognition of the potential contribution indigenous knowledge has towards sustainable economic development of the country. The National IP Policy has been recently developed essentially “to leverage the country's IP potential for inclusive and sustainable economic growth and development, aiming at delivering prosperity for all citizens” (Botswana Intellectual Property draft Policy (BIPP), 2020, p.20). Further, property in knowledge embedded in Traditional Knowledge (TK), and Expressions of Folklore (EoF) / Traditional Cultural Expressions (TCEs) has been recognised in the same policy as an emerging issue in the intellectual property arena.

Considering the value and importance of TK beyond just the cultural connotation, the nation has since found a need to protect and preserve such knowledge. In response to this need, Parliament enacted the Industrial Property Act in 2010 to incorporate traditional knowledge (TK) protection in Botswana. This followed a call from the civil societies as well as the knowledge holders for a mechanism that can be used to protect such knowledge to be put in place. Traditional knowledge protection in Botswana is provided for by the implementation of the Industrial Property Act (2010), under Section 115 of the act. Despite having a protection mechanism in place, the current statistics on traditional knowledge applications received by the Botswana IP office is still rather insignificant, represented by only 30 applications filed since the introduction of the law 10 years back.

1.3 Statement of the Problem

Although there is vast indigenous knowledge in Botswana as well as a legal instrument providing for protection of traditional knowledge in a form of implementation of the

Industrial Property law, statistics evidence lower numbers of traditional knowledge applications received by the Botswana intellectual property office. Since the implementation of the Industrial Property Act in 2010, to date, the latest statistics of 2020 reveal that only 30 TK applications have been filed. The statistics are relatively low as compared to other industrial property areas administered through the same act with a total number of 9, 938 Trademark applications, 64 Patent applications and 158 Industrial design applications all received within the same period. This signifies that TK applicants are not coming forth to use the available platform for TK registration. The eminent issue then is, since currently there is a mechanism for traditional knowledge protection in Botswana, that is, the administration of the Industrial Property Act, is the mechanism providing adequate protection for the satisfaction of knowledge holders?

1.4 Research Objectives

The study intended to achieve the following objectives:

- 1.4.1 To assess the extent to which traditional knowledge is protected in Botswana;
- 1.4.2 To examine factors that affect the protection of traditional knowledge in Botswana;
- 1.4.3 To recommend an effective strategy for the protection of traditional knowledge in Botswana.

1.5 Research Questions

The above objectives were addressed by answering the following research questions:

1.5.1 To what extent is traditional knowledge protected in Botswana?

1.5.2 What factors affect the protection of traditional knowledge in Botswana?

1.5.3 What measures can be put in place to strengthen the current legal framework for traditional knowledge protection in Botswana?

1.6 Significance of the Study

As the need to recognise the value of TK and EoF is being widely promoted, the need to provide effective protection mechanisms is equally critical. The results of this research study, therefore, shall further contribute to the literature on the protection of traditional knowledge, as well as provide information on improved traditional knowledge protection strategies with more emphasis on Botswana environment. Subsequent to studying factors that hinder or promote TK protection, the results of the study will contribute substantially as a reference point to TK stakeholders especially the policy makers when designing suitable protection mechanisms for TK protection. In addition, this study results would provide guidance to TK stakeholders to assess and review the current TK legal protection mechanism and its relevance to Botswana's environment and eventually recommend whether there is a need to strengthen the existing legal framework for TK protection. Thus, designing an effective protection mechanism for the benefit of all stakeholders. Through the study's findings, the Botswana intellectual property office will be guided towards

employing better ways in quest to improve the level of traditional knowledge filings received using the available legal framework.

The greater demand for the use of TK in the product and service development justifies the need for more effective life changing protection approaches to holders of this knowledge. Therefore, as the world continues to transform using TK, the usefulness of the interaction of structures and policies dealing with TK protection for the development of enhanced protection mechanisms going forward must be re-emphasised. The appraisal of existing structures and protection mechanisms from time to time is however often overlooked. It is evident that once a protection mechanism is put in place, efforts to review its relevance are often neglected. Therefore, more research is needed to explore ways verifying the importance of appraising the existing protection mechanisms more often to confirm their relevance for efficiency and for the benefit of all stakeholders involved.

1.7 Delimitation of the Study

This study only focused on the exploitation of TK protection framework in Botswana's context. Traditional knowledge is practiced throughout the nation in Botswana. For the purpose of this study however, only the capital city Gaborone and the surrounding areas were consulted as opposed to carrying the study nationwide. The areas were chosen because the researcher is based in Gaborone, therefore the selection of the location eased coordination of the study. In addition, most Government authorities and relevant Non-Governmental Organizations (NGO's) whose input was used to carry out the study are situated in the said area.

1.8 Limitations of the Study

The study was undertaken on the background of pressing limitations including:

- I. **Time constraint:** Being a full-time employee and studying at the same time presented major challenges. In order to mitigate the challenge presented, the researcher had to put in some extra hours after working hours as well as taking leave from work in order to complete the study.
- II. **Lower response rate:** While the study results will be applied across the country, conducting the study in Gaborone only may have posed a likelihood of low response rate. For this reason, the researcher then employed telecommunicating tools in a form of email and telephone to reach other key stakeholders outside the city as a way of improving the response rate of the study.
- III. The study was carried out during the period of the novel **Covid 19 pandemic** where strict health precautions including social distancing (no physical meetings or public gatherings) had to be observed. As a result, the researcher had to employ other modes of facilitating collection of data. These include the use of telephones and digital forums such as email, for gathering information as a way of mitigating the challenges presented by the pandemic.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter provides an analysis and review of related literature on the available legal framework for the protection of TK and its usage on both the international and national spheres. The concept of traditional knowledge, the degree to which TK protection extends, factors that promote or hinder TK protection as well as the status of traditional knowledge protection were reviewed in the same chapter. Furthermore, the chapter explored and analysed different scholars' points of view on the legal TK protection systems. All the discussions in this chapter were informed by the analysis of factors that promote or hinder the protection of TK, which formed the conceptual framework guiding the study.

2.2 Conceptual Framework

The primary approach that motivated the study on the exploitation of TK protection system in Botswana is the evaluation of different factors promoting or hindering the protection of traditional knowledge as depicted in Figure 2.1 below.

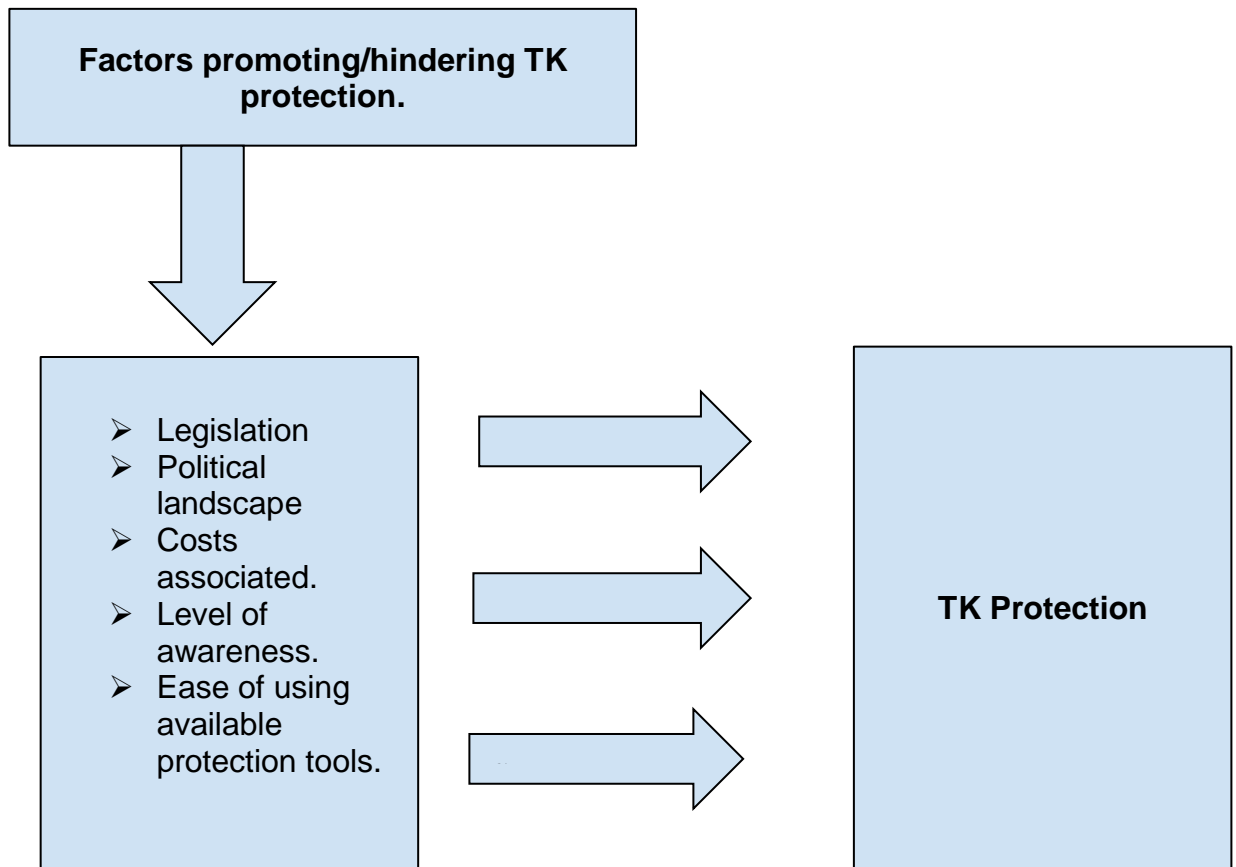


Figure 2.1. Factors promoting/ hindering TK protection.

2.3 Relevance of the Conceptual Framework to the Study

The proposed framework best describes the research study at hand as it puts forth the direct cause-effect relationship between traditional knowledge protection and different factors that may hinder or encourage its protection. The framework affirms that, although protection mechanisms may be put in place, TK is usually exposed to both internal and external environmental factors which may promote or hinder its protection. The framework therefore confirms that to derive the benefits brought about by the TK protection mechanism availed, there is a need to examine and consider all factors that directly or indirectly influence traditional knowledge protection. Having considered these

factors would eventually result in the design of relevant TK legal protection mechanisms, hence facilitating in efforts to guard against misuse of such knowledge by third parties, while at the same time protecting the legitimate interests of knowledge holders. The proposed conceptual framework subscribes to an understanding of TK as a vulnerable discipline and hence needs an effective system designed to protect legitimate knowledge holders against unauthorized exploitation of their knowledge. The underlying presumption is that external factors such as the availability of functional government structures in the form of legislation as well as other incentives such as the ease of using available protection tools for the benefit and protection of rights holders are critical to guard against TK misappropriation.

The proposed framework gives ground for the role of other incentives including availability of legal structures that are environmental specific to the said area or tailor made to specific TK industries like agriculture, medicine and environmental preservation. The incentives largely affect traditional knowledge protection of jurisdictions and hence need to be considered in the design of protection mechanisms. Some legislations, for example do provide for traditional knowledge protection, but do not spell out measures aimed against unauthorised use of TK. This might in turn demoralise knowledge holders from the use of such provision as they might translate like they do not serve a comprehensive purpose of protection against unauthorised use.

TK is characterized by diverse people from a range of social and ethnic backgrounds. Harmonization and alignment of the existing political regimes with these different backgrounds often becomes a challenge, thereby impacting on the potential exploitation

of the existing protection frameworks by knowledge holders for their benefit. Therefore, the political environment eventually plays a vital role in promoting or hindering TK protection.

As much as traditional knowledge needs to be protected against unauthorised exploitation by third parties for financial gains, several authors have alluded to the fact that monetary value should not be regarded to be the only motivation towards TK protection (Daya & Vink, 2006; Masungu, 2010). In light of the aforesaid, it can be concluded that financial benefit from the exploitation of TK by knowledge holders is directly linked to the availability of a relevant protection mechanism and its effective use. Financial benefits from the use of traditional knowledge can only be realised by first availing an effective legal framework for traditional knowledge protection as well as the exploitation of such framework by TK holders.

Financial costs associated with the protection of TK using the contemporary systems may hinder knowledge holders from registering their knowledge. According to the Food and Agriculture Organisation (as cited in Dagne, 2014), using contemporary systems is generally expensive, complicated and time consuming for most TK holders. The costs include those associated with the registration procedures. Due to the technicalities involved with using these contemporary protection regimes, traditional knowledge holders may opt to engage a legal representative to handle all the registration procedures on their behalf. When this service is offered by the legal representative, it normally attracts more costs which might result in communities and knowledge holders failing to afford, thereby failing to use the available protection system.

The level of awareness of the existence of TK protection mechanisms also represents an important factor for consideration regarding TK protection. If the information on the available traditional knowledge protection options is disseminated to the relevant knowledge holders, the assumption is that the holders would respond by using such a platform. Conversely if such information is not availed, chances are that the knowledge holders would not know of the existence of such a mechanism, thereby failing to utilise it.

Equally, the complexity of using the available protection tools may also hinder or promote the use of such tools. If for example, the registration procedures are complex, knowledge holders might find it difficult to proceed with the formal registration process, and thereby fail to benefit from the use of the available protection mechanism. In addition, location of offices rendering the protection service may also impact on whether knowledge holders consume such a service, that is, if the agencies providing protection services are situated away from the holders, then the holders might not be able to reach them, thus resultant in failure to utilise the availed tools, and therefore affect TK protection.

The proposed framework further underpins that if factors that influence TK protection are not extensively reviewed and considered prior to designing protection regimes as well as during reviews of such mechanisms, then efforts to prevent unauthorised use of such knowledge will be futile. All the presented challenges hindering the protection of TK however have solutions. If the right mechanism for protection is available to the right audience under effective conditions, then the protection mechanism would work while satisfying the needs of recipients. As rightfully indicated by Adam (2005), the available

protection system is based on the needs of communities and if the shared benefits of the use of such a system are communicated with communities, then the communities will be more willing to use them.

2.4 The Concept of Traditional Knowledge

Generally, TK involves the knowledge systems embedded in the cultural traditions of a set of communities (Ghosh, 2017). The knowledge includes but is not limited to traditional practices in areas such as agriculture, biological diversity and medicines. The knowledge is stored in people's memories and activities that are expressed in such actions as stories, songs, cultural values, beliefs, community laws, local language, agricultural practices, equipment, and plant species (Bagley, 2018). According to the Convention on Biological Diversity, (CBD para.1) traditional knowledge is defined as "knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity", while WIPO (n.d.) outlines traditional knowledge (TK) as "the know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity". TK is usually undocumented, and it is characterized by oral transmission from generation to generation within communities through their everyday life activities as well as through their cultural practices. Although the knowledge in question is generally in the public domain within indigenous communities, it remains exclusive within the community.

Whereas there has not been any legal framework to protect TK, communities have in the past relied on their community structural arrangements, customs, conducts, practices, and

beliefs to manage their knowledge. The knowledge management was however limited as it was only applicable to individual communities. This included a traditional system where the chief was the custodian of the community and its resources. TK has been passed from generation to generation, adopted and improved upon with the passing of time. As a result of contact with external factors including globalisation, TK keeps changing. It evolves as communities respond to the new environmental challenges and societal needs (Daya & Vink, 2006).

Traditional knowledge is used in several fields including use in industrial setups for production of medicines and cosmetics, in agricultural setups for food security as well as in biodiversity for the protection of the ecosystem and sustainable use of natural resources. Hence, the use of the knowledge has a potential source of commercial gain for authentic knowledge holders as well as through authorised exploitation by third parties. Multinational companies and researchers have since found the value in genetic resources and associated traditional knowledge and have increased the use of such resources and knowledge. According to WHO Strategy for Traditional Medicine (as cited in Andrzejewski, 2010), the world market for herbal medicines has reached over forty-three billion US dollars, with an annual growth rate of between five and fifteen percent. This clearly affirms the value TK has in the contemporary setups especially as denoted in the medicinal sector.

Through advancements in technologies, it is evident that enhancements are made to natural resources and associated knowledge for commercial gain by multinational enterprises while local communities and knowledge holders are left with nothing to

benefit. Daya & Vink (2006, p.320) emphasised that “as technological progress continues to drive the process of globalisation, resulting in an increasingly integrated global economy, traditional knowledge has come under increasing threat from bio prospectors”. The vulnerability of such knowledge to misuse, hence, calls for responses by means of provision of an effective protection mechanisms to be put in place. The mechanisms would ensure that knowledge holders and local communities are compensated for their contribution towards the development of products and services by multinational companies.

2.5 Rationale for TK Protection

Traditional knowledge has been under extreme pressure and severe threat of erosion and marginalisation mainly due to modernisation, urbanisation and globalisation. The need for indigenous knowledge protection systems has been necessitated by the fact that in many cases, scientists, researchers and multinational enterprises get into collaborations between modern research and indigenous knowledge for their sole economic benefits and fail to recognize the important role of the resource-rich but economically disadvantaged local communities. In line with this view, Dange (2014) observed that with the increase in the commercial applicability of TK in pharmaceutical and agricultural biotechnology, the lack of protection of TK has prompted the unregulated and unmonitored taking of biodiversity through intellectual property regime. It can therefore be concluded that lack of available TK mechanisms as well as failure to exploit the available protection systems results in the accessing of genetic resources and associated TK without compensation or

acknowledgement of intellectual inputs of knowledge holders; nor gaining prior informed consent of the owners of the resources and associated traditional knowledge in question.

Emphasising on the need to have TK protected, several authors have alluded to the fact that indigenous traditional knowledge is vulnerable both because it is exploitable and has been exploited financially by global industries. As a result, communities have been crippled economically and socially, damaged or threatened and the integrity of their cultures have been undermined by unauthorised exploitation by third parties (Ragavan 2001; Masango, 2010). This therefore calls for some measures to be put in place to safeguard such knowledge from being used without the authorisation of knowledge holders as well as to protect the moral rights of the concerned knowledge holders. The significance of the need for TK protection against unauthorised exploitation has been equally highlighted by many experts over time. According to WIPO's review, the following was observed:

Work within the intellectual property (IP) community on the protection of traditional cultural expressions (TCEs) goes back to the 1960s. The incentive came from a growing sense in developing countries that folklore embodied creativity and was part of the cultural identity of indigenous and local communities; it was therefore seen as worthy of IP protection, especially since new technologies were making folklore increasingly vulnerable to exploitation and misuse WIPO (-n.d. p.1).

As it is commonly accepted that we are living in the information age, in the absence of effective legal protection systems and exploitation of such systems, this notion might

somehow influence unauthorised exploitation of the knowledge that is regarded as traditional and sacred in some cases. Accordingly, the knowledge needs to be preserved and kept safe by means of formal or legal measures for the benefit of knowledge holders as well as authorised users.

2.6 Extent of TK Protection

The knowledge systems embedded in the cultural traditions of regional, indigenous, or local communities can be applied in the development of products and services that can eventually generate future growth and benefits for the knowledge holders. This however can only be attainable if appropriate policies aiming to protect knowledge holders while at the same time balancing with public interests are initiated, implemented and exploited accordingly. In recognition of the significance of the aforesaid, several international, regional, national and local legal frameworks have been formulated to address issues of TK and EoF especially with regards to its protection as well as control of access to genetic resources associated with such knowledge.

While currently there is no international legal instrument for the protection of TK, WIPO member states in 2000 established the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). The committee seeks to develop an international legal instrument(s) that would give traditional knowledge, genetic resources and traditional cultural expressions (folklore) effective protection once developed and implemented by member states. The legal instrument could range from a recommendation to WIPO members to a formal treaty that would bind countries choosing to ratify it WIPO (n.d.).

The Convention on Biological Diversity (CBD) is another multilateral treaty formulated with more emphasis on the conservation and sustainable use of biodiversity. The convention seeks to address the safeguarding and sustainable use of the genetic resources as well as the fair and equitable sharing of the benefits arising out of the utilization of genetic resources to local communities within which such resources are accessed. The CBD's objective on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization is implemented through the Nagoya Protocol. Botswana, as a contracting party to the convention, has domesticated the convention and is implementing it through a multi-sectoral planning instrument, the National Biodiversity Strategy and Action Plan (NBSAP). The instrument aims at contributing to the protection of biodiversity in the country. In relation to access and benefit sharing, Botswana is in the process of drafting an Access and Benefit Sharing (ABS) law which shall be used in cases of access of genetic resources from the country and benefit sharing arrangements. The development of such law is spearheaded by the Ministry of Environment and Natural Resources who are working with other stakeholders including the national IP office.

Regionally, the member states of the African Regional Intellectual Property Organization (ARIPO) adopted the Swakopmund Protocol on the protection of traditional knowledge and expressions of folklore in 2010. The formation of the protocol was initiated by ARIPO member states in realisation of growing interest in TK, GRs and EoF which has led to cases of misuse, misappropriation, and unauthorized exploitation. In some instances, this was evidenced by third parties having made profits from such exploitation. However, the communities that generated, maintained and transmitted the TK and EoF have received no or few benefits. Often, even IP rights have been granted to third parties for creations

and innovations that were based on TK and EoF. The Protocol aims to address these deficiencies through providing the necessary tools to prevent the misappropriation of the TK and EoF from its member states. The Protocol also incorporates some elements of traditional customary law and human rights law, along with elements of the IP system, thereby, providing a unique kind of protection system.

Despite the measures taken by international bodies, as well as regional and national efforts, gaps still persist from which failures to protect traditional knowledge and genetic resources associated with that knowledge arise (Key, 2020). In Botswana, there are available deliberate systems of principles guiding decisions and aimed to achieve rational outcomes around the issues concerning genetic resources, traditional knowledge and TCEs. This includes the legislation in a form of the national policy, strategies and acts. The national transformation strategy (Vision 2036) is driven by a number of key pillars including that of a knowledge-based economy which acknowledges traditional knowledge as an important element towards the nation reaching its vision of a knowledge-based economy. Recently, the national policy and strategy on IP were developed with the aim of providing a foundation and guide to all legal arrangements designed to address intellectual property protection in the country including the protection of TK. In addition, there are available provisions for TK and EoF in both the Industrial Property Act as well as the Copyright and Neighbouring Rights Act. However, there are low numbers of TK applications having been filed to date whilst there are existing tools aimed at protection of TK. This signifies a gap between laws provided in relation to their consumption by the right holders.

2.7 TK Protection strategies

Traditional knowledge as the name suggests, relates to a community's know-how, skills and practices that are developed, sustained, and passed on from generation to generation forming part of the community's cultural or spiritual identity. This signifies the distinctiveness as displayed by different communities with different identities. Therefore, in designing approaches to TK protection, it is of utmost importance to take into consideration the different environmental aspects within which communities live as well as prioritise what such communities deem would work efficiently. Protection strategies proposed should be customised to the needs of communities and knowledge holders for their benefit. Ellis (2004) suggests that creating policies and procedures for the inclusion of traditional knowledge in institutions of authority is a fruitless endeavor if indigenous groups do not have the capacity to develop or transmit their knowledge. Likewise, promoting the capacity to develop and transmit traditional knowledge in the interest of decision making is largely ineffective if the structures of governance are not prepared to receive this type of knowledge. An effective protection strategy can only be achieved through collective decision making where all stakeholders particularly the knowledge holders are involved in the development of the proposed protection tool designed to meet their demands. Involvement of knowledge holders will inform the form of protection they deem relevant, efficient and beneficial.

Peci et al (2002) and Usher (2000) (as cited in Ellis, 2004) argued that, while protection policies are well-intentioned and comparatively progressive, they constantly lack either direction or common agreement on the meaning and scope of TK. As a result,

organisations are left to implement as they see fit, thereby defeating the overall policy's intentions. In view of this, it is important for researchers to further address the need for review of such strategies more often in order to determine their relevance throughout the years and allow for alignment whenever necessary.

2.7.1 Positive Protection (IPRs)

Positive protection is concerned with the granting of exclusive rights that entitle communities to promote their traditional knowledge, control its uses and benefit from its commercial exploitation, WIPO (n.d.). The use of Intellectual Property system as a legal protection option can be employed to protect traditional knowledge and expressions of folklore. Intellectual property involves a category of property that includes intangible creations of human creativity.

Traditional Knowledge holders as well as communities can use trademarks protection system to protect their traditional knowledge. The system involves communities designing their unique brands that they can use in trade to differentiate their goods and services from those of other enterprises. This can be in the form of the use of collective marks where a designated identity is used collectively by a specific community to signify their relationship with the products or services offered. Geographical indications can also be used by knowledge holders to identify themselves as the owners of the knowledge in question. The use of these identities links the customers and the producers of the goods provided, highlighting the qualities associated with the geographical connotation of the product origins. Both trademarks and geographical indications can be used as source indicators for different communities when trading. Unlike traditional knowledge itself, for

both the trademark and the geographical indications, internationally, there are some legal instruments set forth for their protection. These are the Madrid Agreement and Lisbon Agreement respectively. These international instruments form a foundation through which member states can create their national laws as well as provide an opportunity for national communities to enforce their exclusive rights in other states.

Trade secret law can be another option available under the intellectual property regime that could be used to protect traditional knowledge. The system involves the act of not disclosing the corporation's practices or processes that are generally not known outside of the corporation. Unlike other intellectual property rights, with trade secrets regime, the applicant is not obligated to disclose what they have created in return for protection. The kind of information that can be kept secret includes, but is not limited to, the list of customers, list of suppliers, undisclosed information as well as financial information of the enterprise. The moment the secret is created, it is upon the owner of the said to make efforts to keep and preserve it in order to curb against misappropriation of the knowledge by third parties. With the use of trade secret option for traditional knowledge protection, it is important for knowledge holders to first acknowledge the value that the said knowledge possesses. The long-term benefit of having such protection as a trade secret is also vital in communities deciding whether to employ the said protection mechanism since their main desire is to get a tool that provides for perpetual protection term.

TK and EoF can be protected using the copyright system. The system involves protection of literary and artistic works. It vests the right of authorship in the creator of a work and enables the author to prevent any unauthorised use. Folklore denotes a form of art, and

rightfully qualifies for copyright protection. However, it had been evident that folklore had been misused by third parties. Its unauthorised use involves the copying of works, especially in the music industry. Knowledge holders can therefore use the copyright law which grants them the exclusive right to prevent third parties from exploiting their knowledge without their authorization.

Further, under the intellectual property regime, the patent law can be used to protect traditional knowledge. The system involves the sole right granted by a state to an inventor to exclude others from making, using, or selling the granted invention. The protection term lasts for a limited time, usually twenty years from the date of filing an application as provided by the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement). For a patent to be granted, there are some requirements that must be met by the applicant. These are novelty, inventive step and industrial application. If any of the three requirements for patentability is not met, the application shall not be granted. Novelty seeks to find whether there has not been any similar invention in the prior art. The inventive step is measured with a person skilled in the area of technology that protection is sought. The invention shall not qualify for protection if it is found to be obvious to someone skilled in the technical said field. Lastly, industrial application requirement relates to the invention seeking protection capable of being made or used in an industrial setup. Traditional knowledge meeting the foregoing requirements can then be protected using the patent system.

Many scholars, however, are of the view that the current IPR instruments cannot adequately protect TK due to inherent inadequacies in the system. These include the

requirements of originality or novelty, and therefore non-IPR options can also be explored to protect traditional knowledge. In relation to trade secrets for example, indigenous people are often easily willing to share knowledge, thus leading to exploitation of the information that was meant to be kept secret (Ragavan, 2001).

2.7.2 Obstacles to Protecting Traditional Knowledge Using IPRs

While many holders of TK and EoF would like to see their rights protected in perpetuity, the protection provided by the conventional IP regime is granted for a limited period. Depending on the laws of a country, patents for example, in many jurisdictions are protected for twenty years, trademarks ten years, although with a possibility of being renewed every ten years indefinitely. Trade secrets on the other hand last as long as the secret is kept whilst copyright is generally granted fifty years of protection counted after the author's death as stipulated by the Berne Convention. The duration can however extend beyond fifty years. Some jurisdictions provide a longer period of protection extending up to seventy years after the author's death.

Novelty of the creations is also one of the requirements that must be met for protection under the IPRs regime. According to Ragavan (2001), most often, the knowledge in question will be known to the entire community and remains exclusively within the community. However, within the society, the knowledge is already in the public domain and therefore, the knowledge in question shall be rejected by the patent system on the basis that the knowledge forms part of prior art. The focus of IPRs on new knowledge through the criteria of novelty and originality then puts traditional knowledge out of the

scope of protection since the knowledge is built on that accumulated over generations and continues to evolve in response to changing and emerging needs (Dagne, 2014).

Intellectual property regime grants private rights which generally rewards individual achievements and, in most cases, do not take into account the collective nature of traditional knowledge involved. As such, the use of IPRs system then becomes ineffective in case of TK protection where collective ownership of the knowledge is generally endorsed. The key question then remains, since the IPR system does not provide an ultimate effective protection system to TK, what would be the best protection mechanism for TK protection?

2.7.3 Defensive protection

Defensive form of protection is another mechanism which aims to cease people outside the indigenous community, that is third parties from acquiring intellectual property rights over traditional knowledge and its components. Defensive protection system is noticeable within India's patent regime where a database has been created to capture all the information on GR, traditional knowledge and expressions of folklore found in the country. The nation imposes substantial limitations and the potential for administrative exclusion regarding patents that concern biodiversity (Key, 2020). The disadvantages of the use of defensive protection mechanism have however not been reported on, hence it is difficult to establish its other merits other than that of prevention against granting of illegitimate IPRs. In light of the aforementioned, nations can weigh and adopt the defensive protection as a strategic move towards safeguarding TK in their jurisdictions

against unauthorised utilisation by third parties who seek to acquire IPRs using GRs, EoF and TK.

2.7.4 The Use of Contracts

While the world experiences mass use of genetic resources and associated traditional knowledge, indigenous people's rights and their possible entitlement to protection increases. Legally binding written agreements defining and governing the rights and duties of both the TK right holders and TK users (third parties) can be used as a way of protecting and preserving the knowledge. Corn & Ackerman, 1993 (as cited in Dutfield, 2003) noted that, as a form of compensation while promoting biodiversity, the use of contracts between knowledge holders and companies and research organisations might play a role in protecting right holders as opposed to the use of intellectual property rights (IPRs). With the use of contracts, the degree to which the knowledge is to be used by third parties will be clearly stipulated in such agreements, thus monitored usage of the knowledge in question. This form of protection becomes highly recommended as it sets boundaries on how far TK can be exploited by third parties as per the agreements which shall be set by all parties, hence misappropriation of TK may be mitigated. The system can however be used effectively by knowledge holders with full knowledge of its existence as well as its benefits.

2.7.5 The use of customary law

Customary law provides protection by implementing the regulating structures towards TK exploitation at community level. Although there is no generic form of customary

procedures regulating traditional knowledge, several generally applicable principles and characteristics regarding traditional knowledge could be identified and adopted. These however are limited as they do not represent the total characteristics of traditional cultures as they relate to TK. The use of customary laws merely provides a framework that could be generally applicable within and across most traditional communities (Daya & Vink, 2006). Therefore, communities may opt to use this kind of a protection system within their respective communities.

2.7.6 Policy and Legislative Reforms

Some policy and legislation reforms will be required to enable the indigenous and local communities to benefit from the exploitation of genetic resources within their localities as well as from the knowledge they possess. National policies and legislation can be improved by inclusion of some actions for the enhancement of the existing legislations. The inclusion of disclosure of the source of origin of genetic resources and related TK in patent applications, recognition of the ownership of TK-holding communities on their TK, recognition of customary law, contracts, prior informed consent, and use of conventional IP instruments such as geographical indications are some of the actions that can be taken to enhance the existing legal protection frameworks and improve the usage of such frameworks by potential beneficiaries.

Currently in Botswana, with the ongoing review of the existing legislation, a disclosure requirement on patents having used genetic resources and associated traditional knowledge in efforts to reinforce the TK protection requirements has been proposed for inclusion in the law. This would facilitate in appreciation and recognition of the origins of

the genetic resources. The provision will also be vital when handling issues related to the access and benefit sharing.

2.7.7 Sui generis options

The sui generis is another feasible alternative protection option that can be employed for the protection of traditional knowledge. Sui generis refers to a form of legal protection that exists outside the typical legal protection forms. It provides protection that is unique or different from the usual protection forms. In practice, this kind of protection has not been systematically implemented, but is strongly supported by many scholars and non-governmental organisations. Several researchers have indicated that the sui generis system approach modifies some of the features brought about by the existing intellectual property rights in order to accommodate the requirements of the traditional knowledge subject matter (Feris, n.d; Kalaskar, 2012).

With the significant value of the traditional knowledge as well as its vulnerability to unauthorised exploitation, some nations have resorted to designing their own national frameworks directed at the protection of genetic resources, traditional knowledge and expressions of folklore, taking into consideration their unique environments as well as their local needs. India is one of the countries that have made efforts to protect their traditional knowledge using this special form of protection. The country has created some databases containing all the genetic resources found in the country as well as their uses. Such databases provide a pool of resources that can be used to verify against any application seeking intellectual property protection in the country and having used the resources found in the country. This information helps in the granting of legitimate

intellectual property rights indicating the use of such resources. The mechanism can also assist in addressing issues of access and benefit sharing regarding IPRs having used some genetic resources found in the country.

In Africa, there are steps taken at the regional level to protect traditional knowledge. This is evident particularly for countries party to African regional organisations responsible for the administration of intellectual property law. African Regional Intellectual Property Organisation (ARIPO) in particular, is an organisation whose members have made efforts to design a framework that protects traditional knowledge and expressions of folklore. ARIPO member states, with the recognition that a significant part of the global economy is based on the appropriation of traditional knowledge added to the developments of TK protection by adopting in 2007, the legal instrument for the protection of TK and EoF. In pursuance of this, in 2010, the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore was adopted in Swakopmund, Namibia. Nationals of Botswana, as a country party to the Swakopmund protocol therefore can benefit from the sui generis protection accorded by the protocol.

In addition, there are non-intellectual property regional organizations dealing with issues relating to traditional knowledge in Africa. The African Union (AU) has developed a Model Law on the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources aimed to guide African countries on the protection of Africa's traditional knowledge systems and biological resources. AU strives to develop an African Common Position to safeguard the sovereign rights of AU member states and the interests of their local communities.

2.8 Botswana Intellectual Property Framework

As the world moves from being resource-based economies to knowledge-based economies, Botswana is not an exception. This realisation has driven Botswana to make major changes to its legal systems in efforts to begin to value and utilise knowledge. Several initiatives have been devised and implemented by both the government and the public sector to position Botswana as a knowledge-based economy. Nationally, TK protection forms part of the national priority areas as recognised in the national development strategy as well as in several policies and acts.

In line with the National Transformation Strategy, which serves as a point of departure for the transformation of the country, the potential contribution of indigenous knowledge is recognised through the sustainable economic development pillar with an objective to become a knowledge-based economy. As part of a broader economic diversification plan, Botswana is in a state of transition from being a resource-based economy to a knowledge-based economy. Botswana's national development strategy, Vision 2036, provides an anchor for this by envisioning an economy that is efficient and knowledge-based, incorporating the use of TK. The government initially enacted the Industrial Property Act in 1996 which provided for the protection of patents, trademarks and Industrial Designs. The Act was later reviewed in 2010 to ensure compliance with the World Trade Organization's TRIPs Agreement and to incorporate the protection of new areas of IP including Traditional Knowledge (TK), Handicrafts and Geographical Indications. The country also enacted the Copyright and Neighbouring Rights Act in 2000 to protect literary and artistic works. The act was reviewed in 2006.

However, it is important to note that the development of these laws left a gap as they were enacted in the absence of a national IP Policy which is very critical in guiding the use of IP for the economic development of the country. In efforts to fill the gap, the national IP Policy was later developed in 2020 to guide all the intellectual property activities in the country. The policy recognises TK as an emerging issue in as far as IP is concerned. In light of this, the policy is encouraging the realization that the innovations and creative expressions of indigenous and local communities also constitute a category of IP. The policy recognises the property in knowledge embedded in Traditional Knowledge (TK), and Expressions of Folklore (EoF) / Traditional Cultural Expressions (TCEs) as forming another distinctive group of IP after Industrial Property and Copyright. However, the TK and EoF may not enjoy full protection under the existing IP legal protection systems pending the development of the international frameworks. Similarly, several critical IP issues arise in connection with Genetic Resources (GR), especially access to GR, equitable sharing of the benefits arising from GR, defensive protection of GR, disclosure requirements in patent applications that relate to GR and associated TK used in registered and granted inventions.

The need to recognise the value of TK and EoF is being widely promoted as critical for sustainability as well as natural resource management and conservation initiatives. However, in much of the case study and survey literature, especially on the need to review the existing protection mechanisms, to verify their usage as well as the relevance of such mechanisms tends to be overlooked. Findings from the literatures that link TK and the exploitation of protection mechanisms are largely sector focused. This includes literature on different sectors such as agriculture systems, TK governance, biodiversity and

environmental management. In addition, the growing importance of multi-stakeholder collaborations in designing and the promoting of inclusive consultations during designing and executing relevant TK legal framework have assisted in the process of TK management process. However, more research is needed to explore ways to constantly appraise the existing TK legal frameworks, the extent to which the frameworks are exploited and eventually recommend what best works for different environments.

The greater demand for TK protection mechanisms further calls for more studies to confirm the usefulness of existing TK legal frameworks that has not been explored as well as the interaction of structures and policies dealing with the TK critical areas. Through such future studies, recommendations on the development of enhanced protection mechanisms may be made. Thus, application of the recommended approach derived from the results of such studies will somehow influence the design and employment of better protection mechanisms. New theories on effective TK protection mechanisms may be arrived at.

2.9 Summary

It can be concluded that since TK, having been in existence for decades now, is still vulnerable to unauthorised use by third parties, there is a need for nations to design as well as reinforce their legal frameworks for the protection of TK. A practical TK protection system is possible with emphasis on the environmental considerations of where the knowledge is found and more importantly with the participation of knowledge holders as the lead of such initiatives, thereby ensuring effective protection. Continuous appraisal of the existing TK protection systems is therefore essential to determine the relevance of

such protection regimes in response to the advances in technologies and changes in economic, social and cultural conditions which threatens the existence of TK.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the research methodology that was employed in order to address the study objectives. It provides information on the order and procedure through which the research was planned, and how it was conducted through discussing the research design. The chapter further discusses the study population, study sample and sampling techniques used, data collection procedures and subsequently, how the research was reported on. Ethical considerations during the study are also discussed in the same chapter.

3.2 Research Design

Research design provides insights about how to conduct research using a particular methodology (Gall, 2003). It entails a framework of methods and techniques adopted by the researcher to combine various components of research in a logical and structured manner in order to address the research problem as well as the objectives. To achieve the research objectives a mixed research method was adopted. This study sought to coherently explore the exploitation of TK legal protection system in Botswana with reference to the outlined research problem and the objectives. A qualitative survey was conducted to assess and analyse different thoughts, opinions, and feelings of respondents on the exploitation of the legal framework provided for traditional knowledge protection and its relevance in the Botswana context. This assisted the researcher to gain deeper insights on the people's views on their understanding of the importance of the protection of TK in Botswana. Further, a quantitative method was also employed to review statistical data and

information on the number of TK filings received by the IP office to date in comparison with filings for other IP areas received during the same period.

3.3 Population and Sampling

In statistics, a population is the entire pool from which a statistical sample is drawn (Kenton, 2020). The population for this study comprised of TK stakeholders in Botswana. This consists of TK regulators, policy makers, TK holders and potential practitioners, different Government departments and private sector and the public at large, who are directly or indirectly involved in the exploitation of the TK protection system in Botswana.

From the study population, 30 participants were selected to form the study sample. Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population (Tuovila, n.d.). The 30 participants who formed the sample size to the study included respondents from the national IP office, other government departments, the local IP attorneys, the public as well as beneficiaries (prior registered TK holders) in Gaborone and surrounding areas.

For the purpose of this study, both the purposive and random sampling techniques were employed to select participants. Purposive sampling involves a form of sampling that occurs when units are selected for inclusion in a study based on the professional judgment of the researcher (Frey, 2018). Purposive sampling was used to select 5 participants from the national IP office and 4 participants from other government departments as well as one participant from the local IP agent. This method of sampling was opted for as it gave the researcher an opportunity to interview specific respondents knowledgeable in the

current subject of TK protection legal framework and hence, in a better position to best inform the study. The participants were selected purposively in accordance with their backgrounds as well as their administrative mandates for the implementation of TK protection in Botswana. CIPA, the authority mandated with the implementation of the two pieces of legislation incorporating protection of TK and EoF that is, the Industrial Property Act and the Copyright and Neighbouring Rights Act respectively, formed part of the sample. The Copyright and Industrial Property department heads as well as their assistants formed part of the respondents as they happen to be well informed on the subject matter. The communications and awareness manager at CIPA was also part of the respondents representing the authority with regards to information sharing on the level of TK protection awareness in the country. In addition, other Government departments and law firms participated in the study as their respective mandates had some elements of TK and EoF.

Random sampling was also used to select 10 participants from the public (as the potential users of the legislation) as well as 10 participants from the beneficiaries (prior registered) respectively. Random sampling is a sampling technique in which each sample has an equal probability of being chosen. The rationale for the selection of TK beneficiaries as participants to the study was that the group comprise of people who have first-hand experience with the subject of TK and therefore, shall be able to deliberate on the study at hand by sharing their experiences with regards the legal protection framework.

3.4 Data Collection Instruments

Qualitative data was collected by the researcher using interviews. Four sets of interviewer guide with open-ended questions, each targeting the identified TK category of respondents were first developed and were used as a guide during the in-depth interview sessions with the respective study sampled category of respondents. Occasional follow ups with respondents were often done in cases where clarity was sought by the researcher. Further to conducting interviews, statistics on the level of TK protection was extracted from the IP office and was reviewed and analysed by the researcher using Microsoft excel spreadsheet.

3.5 Data Collection procedure

In order to prepare for interviews with respondents, both the institutions (Department of Science Research and Technology, Ministry of Youth, Sports and Culture, Ministry of Environmental Affairs, Desai Law Group Attorney and the Botswana IP Office, CIPA) as well as individual study respondents were contacted by telephone and email to request for interviews prior to carrying out the interviews. The requests for interviews stated the specific nature and purpose of the study. The role that respondents would play through participating in the study to conduct the analysis on the exploitation of the current legal protection framework in Botswana was emphasised on the invitations. The institutions were selected using purposive sampling technique based on their legal and administrative mandates in the areas of interest of this research. In addition, prior registered TK owners as well as the potential TK users were contacted by telephone prior to conducting the interviews, the purpose of the study was clearly discussed with them and the date and time

to conduct the actual interviews was agreed on and set by both the researcher and the respondents.

The data collection procedures involved calling the appropriate individual respondents to arrange for the interview sessions. Departments of the relevant selected institutions were also called to identify and locate the person who shall receive the interview invitation. Emails were then sent with the attached informed consent letter and research approval letter from Africa University to the person identified to participate in the interviews. Upon confirmation of receipt of the interview invites, approvals and time to conduct the actual interviews were communicated. Some email invitations to participate in the interviews were followed up by phone calls and email alerts, until the reply to the request were provided by the respondents. Interviews were then scheduled and conducted on the scheduled time.

For the purpose of this study, two main activities were carried out by the research in order to gather information on the analysis of the current legal framework for the protection of Traditional Knowledge and its exploitation. These include the primary and secondary data collection.

Primary data collection

A primary data source is an original data source, that is, one in which the data are collected firsthand by the researcher for a specific research purpose or project (Salkind, 2010). Both the qualitative and quantitative data forming first-hand data were used by the researcher. Field interviews in the form of interviewer guided questions were employed by the

research to different TK stakeholders identified. Four different interview guide questionnaires were used by the researcher to collect information from all these identified groups of traditional knowledge stakeholders being the TK administrators (IP office as well as other government departments and law firms), the TK users and potential TK holders (general public) and lastly the TK beneficiaries (those that had previously registered their knowledge). Statistical review on the current level of TK protection in comparison with other IP rights was also retrieved from the Botswana IP office, CIPA analysed by the researcher all forming primary data collection.

Secondary data collection

Secondary data was obtained from different sources by reviewing previous studies on related subject matter. Such sources include but are not limited to books, journals, online platforms, newspapers articles on the concept of traditional knowledge, the extent of its protection as well analysing different factors that promote or hinder traditional knowledge protection. This was carried out as a desktop research where the researcher was studying, summarising and analyzing existing literature on subjects related to the protection of traditional knowledge as well as protection options and their usage with the aim of increasing the overall effectiveness of the research.

3.6 Analysis and Organisation of Data

In order to arrive at a detailed analysis of the countries' experiences on the administration and usage of the available traditional knowledge protection system, data collected from the interview sessions was compiled using key thematic areas relating to the research

objectives. It was then analysed using thematic analysis then discussed, compared, and synthesized to eventually reach conclusions. Thematic data analysis involves a method of identifying, analyzing, organizing, describing, and reporting themes found within a data set using qualitative data (Braun & Clarke, 2006).

The researcher had to write down the responses as provided by the respondents during from the interview sessions. In a similar study on protecting traditional medicine and associated knowledge in Botswana, Motlhaping (2013) attested that recording the interview sessions proved to be a faster and efficient mode as opposed to taking down notes. The researcher however could not record the interview sessions due to the current situation of the Coronavirus where most interviews were conducted remotely, but rather resorted to the traditional mode of note taking. Data from the responses was closely analysed to identify unique experiences as well as identify common themes, topics, ideas and patterns of meaning that come up repeatedly from the interview responses.

The common responses from the interview questions among the three categories of respondents were then systematically grouped, recorded into a Microsoft excel spreadsheet, summarised and interpreted to reach a conclusion. Three themes were eventually drawn from the repeated interview responses. The themes were being categorised as knowledge and experience, factors affecting TK protection and measures to enhance TK protection. The three themes answered all the three research objectives highlighted in Chapter 1. Regarding quantitative data, the researcher used Microsoft Excel program to generate statistical computations in assessing the number of TK filings to date

in Botswana in comparison to other IP rights filed between the same period. The program was also used to present data in graphical form when presenting the research findings.

3.7 Ethical Considerations

Qualitative research often brings up questions of ethics because the study design involves human subjects, some of whom are underage (Dooly, Moore & Vallejo n.d.). Ethics as defined by Saunders, Lewis & Thornhill (2007), refers to the appropriateness of the researcher's behavior in relation to the rights of those who become the subject of the research work, or are affected by it.

To ensure adherence to ethical considerations, the researcher received an approval letter from the Africa University Research and Ethics Committee (AUREC) of Africa University in Mutare, Zimbabwe to carry out the research, prior to the commencement of the study. The informed consent form and the AUREC approval letter were attached to the interview requests addressed to the relevant respondent's institutions. As indicated by Dooly, Moore & Vallejo (n.d.) the researcher employed the best approach to minimize the effects should she identify any possible ill effects. This was done by carefully allowing the interviews to be more relaxed by letting the respondents take a lead during the discussions, while the researcher controlled the conversations into the relevant questions through the use of the interview guide prepared.

Since discussions around traditional knowledge subject can sometimes result in emotional dialogues, the researcher mitigated this from happening by sticking as much as possible to the research at hand and avoided any uncomfortable discussions with the respondents.

The researcher also took the needed steps to ensure participants remain anonymous throughout the study. In carrying out this study, the researcher notified the respondents of the research study, its implication as well as the respondent's roles in the study prior to participating in the actual interviews.

The information collected from the study was only used to analyse the exploitation of the legal framework of TK protection in Botswana and was treated with utmost confidentiality. When interpreting the study results, the researcher was as ethical as possible in order to reflect information as per the responses obtained when collecting data. The researcher did her best to avoid over-interpreting and misinterpreting the data and represented the possible conclusions as closely as possible. Since the subject matter under study (traditional knowledge) tends to be sensitive to some people, the researcher ensured confidentiality of all research subjects throughout the study. Other data sources were acknowledged and cited as prescribed the American Psychological Association Guidelines throughout the research.

3.8 Summary

The aim of the research was to analyse the exploitation of the TK protection legal framework in Botswana. The research methodology was guided by a mixed research approach where both qualitative and quantitative research designs in the form of in-depth interviews as well as statistical analyses on the level of TK filings received thus far by the national IP office were explored respectively. Data was collected using both primary and secondary data sources. 30 selected respondents formed the sample of the study. These respondents were divided into four groups whose mandates and everyday activities have some TK elements in Botswana. The research methodology also involved assessing the number of TK filings to date in comparison to other IP rights filed between the same period in Botswana. Subsequent to carrying out interviews on the exploitation of the TK protection legal framework in Botswana, the interview results were analysed using thematic analysis while quantitative data on the number of TK filings received by the IP office in comparison with other IP areas was analysed using Microsoft Excel. Ethical issues as outlined by the AUREC regulations were observed by the researcher in designing data collection instruments as well as during the data collection process. Respect for the dignity of research participants was prioritised during data collection through interviews with respondents.

CHAPTER 4 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

To address the objectives and research questions discussed in Chapter 1, this chapter outlines the findings on the exploitation of the legal system for the protection of TK in Botswana. The chapter begins by providing a restatement of the research questions which form the basis for the discussions on the research findings. It then focuses on the data presentation, interpretations and analysis which displays how the research objectives were achieved. Respondents' background information in relation to their knowledge, experience, and relationship with the topic at hand is provided in this chapter. A narrative of the findings from respondent's point of views on the research topic at hand then follows and the chapter then ends with an overall summary of the results.

In addition to the review of related literature, data was also collected through direct interviews to complete this study. In-depth interviews were completed with different categories of participants from distinct backgrounds to focus on their diverse context of knowledge and experiences on the current TK legal framework in Botswana. The findings informing the research were analysed and presented thematically, based on the fundamental emergent issues raised during data collection in relation to the research questions. Thematic analysis was opted for since it allows for flexibility in the analysis of data, provides a structure for organization of themes, and assists in interpreting the research topic (Braun & Clarke, 2006). In order to carry out the interviews, four (4) different sets of questions were prepared for each group of selected respondents to guide

the interviewer during the interview sessions. These interviews were mainly directed by how much information the respondent had regarding TK protection in Botswana. Data collected during interview sessions was recorded through note taking and was later reviewed and initial codes were created. The codes were later reviewed and eventually combined into themes. These themes were then presented in a cohesive manner representing the research findings. The data was analysed mainly after transcribing the recorded notes and the observations made from live procedures by Microsoft Excel 2010 while the research findings were presented using descriptive statistics such as figures, tables and descriptive narrations.

4.2.5 Restatement of the research questions

Table 4.1 restates research questions of this study which forms a basis for the evaluation of the exploitation of traditional knowledge protection system in Botswana

Table 4.1

Reinstatement of Research Questions

Research Questions	To what extent is traditional knowledge protected in Botswana?
	What factors affect the protection of traditional knowledge in Botswana?
	What measures can be put in place to strengthen the current legal framework for traditional knowledge protection in Botswana?

4.2 Data Presentation and Analysis

This section presents the data collected from the targeted categories of respondents using the research approach, methodology and data collection instruments outlined in Chapter 3 of this research. To conduct a complete, in-depth analysis of the data, the study was guided by the thematic analysis of the knowledge and experiences of respondents in relation to the contact and interaction they have had with the current TK protection system. The results on the responses were presented and analysed using tables, figures and narratives to answer the questions posed in this research.

4.2.1 Respondent's background Information

The sample was made up of four different groups of respondents as depicted in the figure below. The sources of data for this research were mainly from individuals although some

of the individuals represented the organisations they work for. The age, income level, geographical locations, employment and other demographic information was not required for the analysis in this study, therefore, were not reported on.

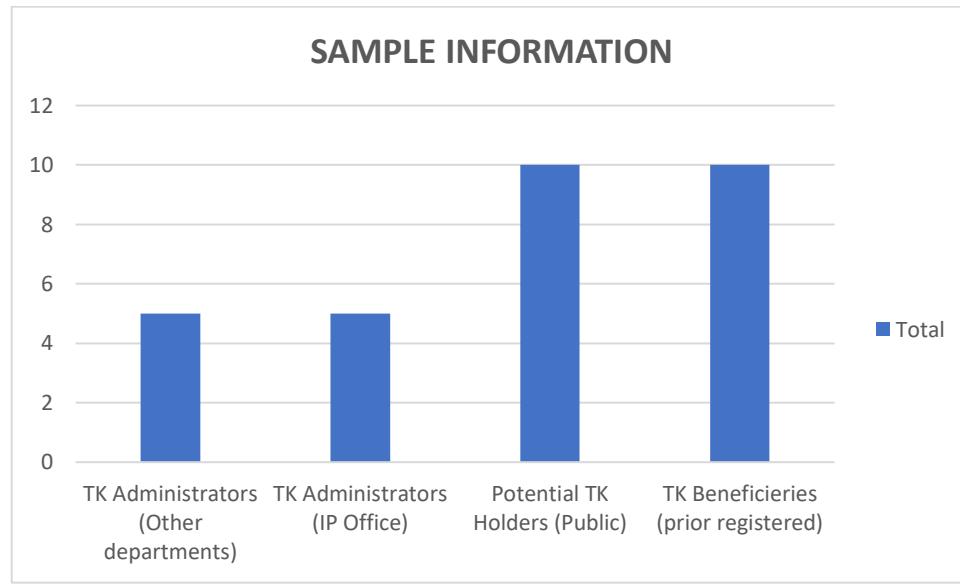


Figure 4.2. Respondents' Background Information

The figure above presents a total sample of thirty (30) respondents. The sample comprised the four illustrated groups. Five respondents from the total sample were TK administrators from different organizations (other government departments as well as law firms), five respondents were TK administrators from the IP office while ten respondents represented prior registered TK beneficiaries and lastly ten respondents constituted potential TK holders interviewed. The following is an overview of the respondent's categories. In writing respondent's backgrounds, the researcher felt it was important to avoid too much generalisation of the participants' backgrounds in order to avoid taking away the authentic essence from the respondents' experience with the research topic.

Category one: Discusses the findings from IP administrators (IP Office). A total of five respondents were interviewed, four of whom were IP specialists tasked with the administration of both the Copyright and Neighbouring Rights Act and the Industrial Property Act, while the other respondent was an awareness and communications manager for the Botswana Intellectual Property Office (CIPA) and is responsible for driving all awareness activities including the planning and implementation of Intellectual Property awareness initiatives and activities.

Category two: Further discusses the points of view of other IP administrators in relation to TK protection in Botswana. All the five respondents interviewed are responsible for activities associated with the administration of TK related matters in their respective organisations. These include other government departments (representatives from the Ministry of Environmental affairs, Department of Research, Science and Technology and the Ministry of Youth sports and Culture), law firm (represented by a local attorney).

Category three: Presents discussion of responses from prior registered TK holders who make part of the prior filed TK applications. The findings from the respondents who have previously used the legal protection mechanism seek to convey the experience the respondents have had while using the current legal framework for TK protection.

Category four: Discusses the views of potential TK holders. Four of the respondents interviewed were referrals from prior registered TK holders who happened to be either their relatives or from other social relations.

4.2.2 Thematic areas

This portion provides a narrative of the themes constructed during data analysis. The themes were deduced from the repeated responses provided during data collection. The themes developed addresses the research the three research objectives which are the extent to which TK is protected in Botswana, factors affecting TK protection as well as strategies that can be put in place to strengthen the current legal framework for traditional knowledge protection.

Table 4.2 provides a brief description of the themes against the related research objective, a detailed discussion of the themes in relation to the research findings follows the table.

Table 4.2

Themes

RESEARCH OBJECTIVES	Extent of TK protection in Botswana	Factors influencing TK protection	Strategies to employ to improve TK protection
THEMES	Knowledge and experience Benefits of Registration Use of other protection forms	Awareness Government support	Awareness Government Support Strategic linkages/collaboration Use of other protection form

4.2.3 Theme 1: Knowledge and experience

The theme under knowledge on the TK legal framework and experience with the Botswana IP office answered the research questions that centered on the extent of TK protection in Botswana. It covers the common experiences of respondents as they got into contact with the Botswana IP office, CIPA with regards to TK services, and how the respondents' diverse TK backgrounds influenced their knowledge and experience with the IP office. In analysing the data, it emerged that these two interview questions on how participants got to learn about TK protection mechanisms and their backgrounds were intertwined. The respondents could not detail their knowledge about CIPA, IP services and how they got to learn about the services without also detailing how their knowledge about the organisation had been motivated by their diverse backgrounds and the knowledge they possessed. In analysing data, it was evident that among respondents in category four of potential TK holders, there was lack of knowledge on the TK protection framework administered by the CIPA. Respondents could generally associate CIPA with the company registration and could not link it to IP protection. TK Protection through trade secrets and undisclosed information as a mode of protection emerged as the prominent form of TK protection most respondents could relate to as opposed to the use of the legal framework provided for by the intellectual property law which involves formal registration. The analysis also evidenced that most of the prior registered TK beneficiaries indicated that although they are legally registered, they have not got the immediate benefit from their TK registrations.

4.2.4 Theme 2: Benefits of registration

The question on whether the respondents would consider protecting their knowledge using the available protection mechanism evoked varying reactions among respondents as some were of the view that by registering their knowledge, the IP office then exposes their knowledge to be accessible by third parties, hence creating room for unauthorised exploitation, while some respondents were willing to register their knowledge, provided they are convinced of the benefits brought about by registration as well as assurance of sole ownership. This was after the researcher explained the benefits of TK registration which they understood as assurance of sole ownership on the knowledge. Respondents highlighted sole ownership of TK and preventing unauthorised use by third parties as the main reasons for TK protection. On the other hand, some respondents were totally not convinced with the form of protection suggested to them. One participant, a traditional medical practitioner based in Mogoditshane, an area not far from the capital had this to say when asked if he could protect his knowledge with CIPA, “No, I don't think there is much of a benefit in registration, my knowledge is already protected as I am the only one who provides the special knowledge I possess”. Although most respondents in the prior registered category have indicated that they had not been completely satisfied with the framework, as far as commercialisation is concerned, when asked if they would recommend other TK holders to register their knowledge with CIPA, the majority of the respondents attested that indeed they would recommend other holders to register their knowledge with CIPA with the anticipation that there might be some developments in the realisation of their desire for commercialisation efforts going forward.

4.2.5 Theme 3: Awareness

In analysing data, the results revealed awareness emerging to be leading in addressing the two research objectives on examining the barriers, challenges, and opportunities that affect TK protection as well as suggesting strategies to employ to strengthen TK protection. In responding to questions around this theme, participants further observed several factors as having an impact on both the administration as well as the exploitation of legal protection provided in the country including lack of resources and poor coordination of TK frameworks in the country. For the purpose of this study, the responses with the highest frequency were then reported on as the factors observed to be affecting TK protection in the country. Lack of awareness emerged to be the leading factor to TK protection, highlighted by almost all respondents across all the categories and evident especially on the part of potential knowledge holders. Although respondents in other categories generally felt that awareness in relation to protection of TK is low, respondents in category four, potential TK holders, generally were not aware of the existence of TK protection legal framework. Due to lack of awareness, knowledge holders revealed that they were willing to share their knowledge to third parties with the little knowledge that they are losing out.

4.2.6 Theme 4: Government Support

Government support was observed in addressing objectives on both the factors that affect TK protection as well as strategies to employ to improve TK protection in the country. In addressing both research objectives, TK was primarily highlighted as complex. An example of its complexity noted by one respondent from a Government department was

that there is lack of quantifiable measures that could be used when dealing with TK, hence TK and TK based products are not recognisable in the contemporary setups, he highlighted the medical industry as an example. This then results in holders being discouraged from exploiting the existing frameworks for protecting their knowledge. Government support was also suggested as a strategy to strengthen TK protection.

Throughout the interviews, a common response of blaming the Government for lack of support in relation to TK initiatives kept on emerging. Respondents were of the view that TK protection should not only be limited to registration and prohibition of unauthorised use of the said registered knowledge, but rather be extended to commercialisation, indicating that, that is where the challenge is. Respondents indicated that resources dedicated for commercialisation of TK can be solicited through outsourcing donor funds from NGOs to support TK initiatives. Payment for certification of products produced as a result of TK was highlighted as a form of support that can be extended by the Government to mitigate some of the challenges including that of financial resources faced by TK knowledge holders. One respondent in a category of potential TK holders lamented that the Government would demand to own a larger portion of the benefits derived from TK as a condition for acquiring trade licenses which the TK holders were not willing to get into, and as a result, TK holders end up unable to benefit from the available protection mechanisms. He further went on to indicate that even though the Government seems not to support their activities, the government officials including lawmakers would come to him as private clients while they fail to publicly support their TK business activities. In addition, he cited a situation where he had all resources including funds and land but was

denied a license to open a TK based hospital, adding that TK is underrated in the country there is lack of appreciation of TK as a potential for economic contribution.

When responding to a question on factors that promote or hinder TK protection, two participants from the two categories of prior registered TK beneficiaries and potential TK holders respectively, noted that the current standards set to be met when seeking protection are relatively high and therefore result in knowledge holders failing to benefit from the available tools. They went on to call for these standards to be localised in order to cater for the local environment. While respondents across all categories revealed that they were not members of the association /organisation dealing with TK & EoF matters, save for the association of traditional healers, lack of Government support for TK was also highlighted as a major factor discouraging efforts to spearhead the collaboration between science and TK.

4.2.7 Theme 5: Strategic Linkages and collaborations

As part of the improvement to the current protection legal framework, such initiatives like linkages between the contemporary industries including the likes of pharmaceutical companies and TK based industries was suggested as having the potential to assist in TK commercialisation, which emerged to be a common problem following TK registration.

Other than the association for traditional doctors, respondents across all categories could not identify themselves as members of any other association where TK & EoF issues could be discussed collectively. Respondents however revealed that there are some individual committees commissioned to deal with other issues which sometimes have a component

of traditional knowledge protection. The ABS committee made up of different organisations was cited as one committee dealing with some aspects of TK. This could be concluded to be a reason for delayed implementation of TK related initiatives and proposals due to lack of collective bargaining.

Collaboration between contemporary health facilities and TK services was another important point observed by prior registered TK holders. One respondent shared that his dream is to see the law supporting such collaborations where contemporary health facilities would refer patients to traditional healers who are knowledgeable in treating medical conditions that the modern facilities are limited to treat. Still on the issue of collaborations, it was suggested that other government authorities especially at the points of entry (borders) should work with CIPA to monitor acts of unauthorised transmission of TK based resources. Respondents added that government intervention at the borders could help in addressing issues of benefit sharing as TK associated resources are taken out of the country. In addition, one respondent who identified himself as a TK practitioner emphasised on the need to include TK holders in all TK initiatives. He highlighted that this could be achieved through profiling all key stakeholders who would then work together, design and roll out targeted programs for TK promotion and protection. The programs would then be monitored and evaluated more often by the said stakeholders.

4.2.8 Theme 6: The use of other protection forms

When analysing data, the findings revealed a commonality in answering two research objectives of Extent of TK protection in Botswana and Strategies to employ to improve TK protection. The extent of TK protection was examined through analysing the use of

other TK protection modes in addition to the legal framework administered by the national IP office. Respondents also highlighted the use of other forms of protection as a strategy that can be employed to strengthen TK protection in Botswana.

One issue which was considered critical before anything else was the complexity of TK subject matter. When responding to a question on measures that can be put in place to improve TK protection in the country, respondents generally first acknowledged TK as a broad subject comprising broad sectors and has a lot of complexities. Therefore, respondents suggested that tailor made protection mechanisms per TK sector could be devised as opposed to having one legal protection mechanism which might not be favourable to one sector. Compilation of all the country's knowledge into a database in order to track and trace goods produced having used Botswana's genetic resources and associated TK was proposed as one of the strategies to be employed to enhance TK protection in the country by respondents among the prior registered category of respondent.

Since communities at times do not utilise the current protection system, an ABS coordinator in the Ministry of environmental affairs suggested that communities can develop biocultural protocols. The protocols include procedures, rules, and regulations that could be used to regulate the community's interactions within and between communities and with the third parties with whom they deal. She noted that the protocols provide clarity to community members about their rights, responsibilities, and appropriate behavior. She further highlighted that respecting and acting according to community protocols helps ensure social cohesion and reinforces customary laws, values, and

decision-making processes as well as guides communities when dealing with external parties. Establishment of focal persons in different districts across the country who could work with TK holders and as well as encourage others to protect their knowledge was also observed as a strategy that can be employed to improve the current TK protection framework and its exploitation.

4.3 Discussion and Interpretation

The purpose of this thematic study was to critically analyse the exploitation of the legal framework for traditional knowledge protection in Botswana. The following provides the discussions and interpretation of the findings from the four categories of targeted respondents. This is presented by highlighting key responses to questions asked during the interview sessions with the respective categories of respondents. The section addresses the meaning, importance and relevance of the research results. It focuses on revealing and evaluating what the study found, showing how it relates the literature review and research questions, and eventually making an argument in support of the overall conclusion. The discussions were addressed in relation with study themes.

4.3.1 Extent of TK Protection in Botswana

The Government has taken a number of actions in efforts to protect TK in the country. This has been through the development and implementation of different legal structures in the form of policies and acts. The Government of Botswana has shown interest in developing initiatives aimed at recognition and protection of TK. The extent of TK protection is evident as the country has put TK as one of the key priorities in its national

development policy. National structures have been put in place in the form of the Industrial Property Act as well as the Copyright and Neighboring Rights Act at national level to offer protection to TK and EoF thereby driving the regulation, coordination and protection of TK and EoF. The study results however revealed a gap in the knowledge of the existence of the TK protection mechanism administered by CIPA. Knowledge on the availability of TK protection mechanisms is vital as a basis for the utilisation of such mechanisms for the benefit of both the knowledge holders and the society at large. Respondents knew of the existence of CIPA as an organisation but did not know its function of TK law administration.

Most of those who had not registered their knowledge knew about the organisation but do not know of its IP services. They generally associate CIPA with the registration of companies. In responding to how they learnt about CIPA, participants generally linked their knowledge about CIPA to referrals, radio programs and adverts as well as through workshops and seminars. As Bagley (2018) asserted, knowledge on TK assists in awareness creation on available services and their utilisation. Participants shared that their knowledge on the TK legal framework started when they met or worked with other stakeholders including research institutions. Encouragement in protecting TK and knowledge sharing through these relationships was highlighted as how such encounters influenced their knowledge on the available legal framework. The participants linked their experience with such issues as knowledge and procedures of how to gain access to protect their knowledge using the current legal protection mechanism.

There was consistency in responses by all respondents when addressing the question on the benefits of protecting TK using the available legal mechanism. Recognition and credit of ownership which results in exercising effective control over the way their knowledge is exploited emerged to be the leading response to the question. Protection from unauthorised third-party exploitation of the knowledge as well as recognition of the knowledge holder as the owner was highlighted emerged to be the reasons for TK registration. Only a few respondents from the two categories of prior registered TK owners as well as potential holders were having reservations regarding the benefits of registering TK using the available legal protection tool. According to Dagne (2014) protection of TK implies granting protection over the social, ecological, cultural and spiritual context of the knowledge so that it continues to be produced and reproduced. This denotes that TK protection is beyond just enforcing exclusive private rights and hence important in knowledge holder's exploitation of the available protection mechanisms.

The results evidenced that participants were almost entirely non-members of associations /organisations dealing with TK & EoF with the exception of a few respondents who practice traditional medicine in the country. These respondents, comprising traditional doctors, generally indicated that they were members of Dingaka association, a government-recognised association for traditional healers in Botswana. Lack of a collective voice might be the reason why TK holders still have a lot of challenges even after being availed with a variety of protection mechanisms. The absence of these associations might lead to knowledge holders losing out on the opportunity afforded by

collective bargaining power. Commercialisation of protected TK was identified as key and as such, efforts to support it should be taken through action by all TK stakeholders.

4.3.2 Factors that hinder/promote TK protection in Botswana

In relation to factors hindering or promoting TK protection in Botswana a number of factors were indicated. Awareness, ease of accessing service as well as lack of resources and to carry out TK commercial activities were raised as critical to enabling TK protection by all categories of respondents in the survey. Lack of Government support emerged as a leading factor that hinders TK protection in the country. A common response of dissatisfaction by respondents pointed towards lack of support from the Government in relation to TK initiatives. Respondents highlighted that the government underrates traditional knowledge, citing that the country's medicinal regulatory body disapproves TK based products and services whenever they seek approval for operation. Respondents also called attention to unfavourable conditions including issues of unfair competition in the market as well as complexities in the laws and procedures which makes it difficult for knowledge holders to utilise the available legal protection mechanisms.

Lack of adequate resources as a hindering factor results in discouraging knowledge holders to protect their knowledge. In view of this, respondents suggested the support of the Government as an alternative. In-depth examination of the main findings, conclusions and recommendations of the reviewed studies also revealed that indeed these factors can lead to the success and failures of TK protection.

Stakeholders' involvement in the development of protection regimes, and consideration of their backgrounds were highlighted as indicators of an effective protection mechanism. For local communities, well designed and proper communication and implementation of awareness programs play a large part in the success and usage of the protection mechanisms provided. If knowledge holders receive support and encouragement nationally, they are likely to benefit from the knowledge they possess (Adam, 2005). In addition, while TK is generally of communal ownership in nature, all participants forming the category of prior registered TK were individuals. TK ownership sometimes raises issues which in most cases results in costly disputes. Such ownership disputes may then require government interventions (Bagley, 2018).

4.3.3 Measures to put in place to strengthen the current legal framework for traditional knowledge protection in Botswana.

Having discussed the previous research objectives of the extent of TK protection as well as the factors affecting TK protection in Botswana, measures that could be put in place to strengthen the current legal framework for traditional knowledge protection were proposed by objective 3. The objective captures what the literature as well as study participants propose could be done in efforts to strengthen the current legal framework for traditional knowledge protection and its exploitation. This study highlighted a number of measures that were proposed to be considered in order to strengthen the current TK protection in Botswana. The proposed measures are as to the frequency of responses given by respondents as well as literature from other authors specific to TK protection.

The responses generally linked measures that could be put in place to promote TK protection in the country with factors hindering TK protection in the country. Having observed the level of awareness in relation to protection of TK as low, the study highlighted the need for CIPA to embark on public awareness activities aimed at stimulating knowledge on the availability of TK protection systems across the country through the engagement of local communities with a view to protect such knowledge while at the same time increasing TK filings. Easier access to CIPA for purposes of information and services by knowledge holders was also noted as a way to enhance the current protection system. One respondent, a legal practitioner from a local law firm specializing in traditional knowledge, together with the other respondent, an IP and intangible culture specialist, both outlined that the TK services should be made more accessible especially in rural areas where much of the TK based creations originate.

TK as a very broad subject, comprising broad sectors and has a lot of complexities. Therefore, devising of tailor-made protection mechanisms per TK sector as opposed to having one legal protection mechanism which might not be favourable to one sector was suggested. As a way to mitigate the challenge of awareness of TK amongst holders, Bagley (2010) observed that a rigorous awareness program targeting different TK holders is one of the most important predictors of protection. Intensifying collaborations in dealing with TK and EoF issues, increased Government support in terms of budget, and resources; tailor made TK protection mechanisms to specific TK groups as well as review of structures and legislation more often for alignment were indicated as effective measures

that can be employed to strengthen the TK protection mechanisms and its exploitation in Botswana.

The need for the documentation of TK was repeated often as another strategy that could be employed to improve the protection of TK in the country. Andrzejewski (2010) attests that indeed some countries like India are developing TK databases through which defensive protection could be exercised as a form of protection. Through these databases, prior art evidence can be obtained. Sui generis as strongly supported by many scholars (Dagne, 2014; Kongolo, 2001) and non-governmental organisations can be an applicable approach for TK protection. The sui generis system, as explained by several researchers, modifies some of the features brought about by the existing intellectual rights in order to accommodate the requirements of the traditional knowledge subject matter (Feris, n.d; Kalaskar, 2012).

4.4 Level of TK filings

Figure 4.4 represents statistics on the number of different IPRs filed since the inception of the industrial property act of 2010 to end of the year 2020.

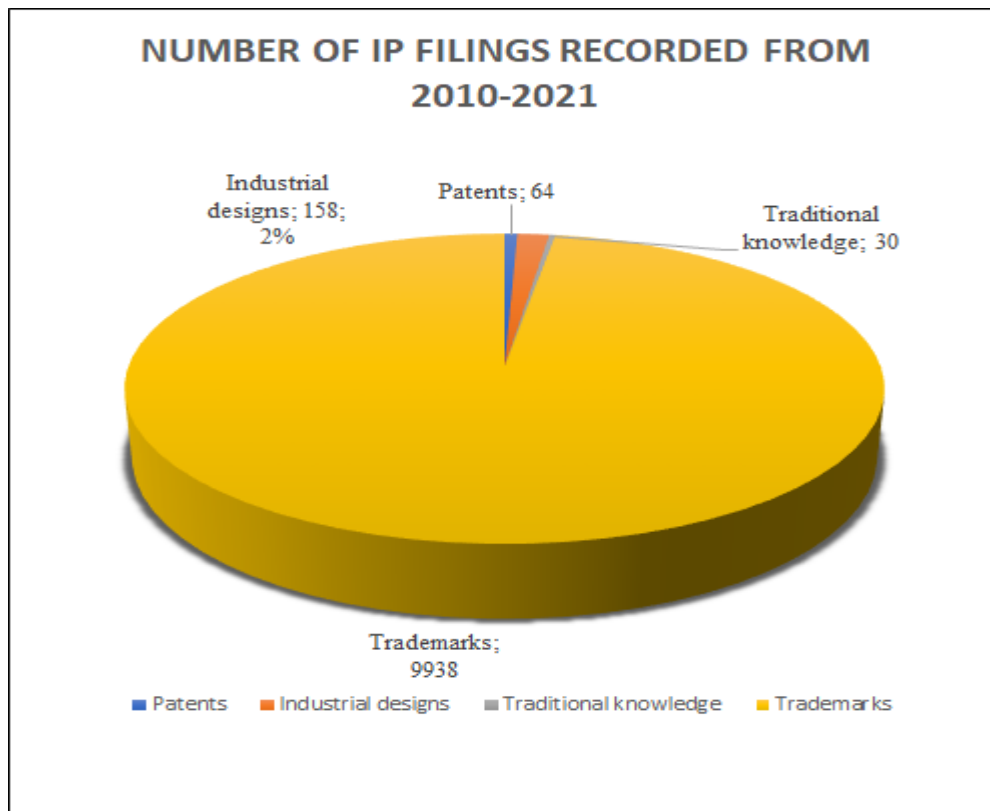


Figure 4.4: Number of IP filings [Source: Botswana Intellectual Property Office 2020 statistics]

As evidenced by Figure 4.4 above, the number of TK filings received thus far by the Botswana IP Office is rather insignificant as compared to the other IPRs filed during the same period. Statistics reveal a higher number of trademark applications received from 2010 to 2020 and the lowest number of applications relating to TK.

4.5 Summary

In order to achieve the research objectives and the arising research questions, this chapter analysed data and literature using the adopted research methodology in chapter 3. The aim of the analysis was to establish whether the current TK protection framework is being

effectively exploited, as well as discussing factors that affect TK protection in the country and eventually recommend whether Botswana should adopt some of the measures proposed to improve TK protection in the country. This chapter provided an overview of the approach and framework used to analyze the data, participant backgrounds, and a report of the groups and themes analyzed through the proposed conceptual framework, the literature, and participant's data to answer the research questions. The structure is focused on the three the research objectives addressed through the discussed selected thematic areas.

Six themes were developed and were grouped under three main areas of research objectives: the extent of TK protection in Botswana; factors that promote hinder or TK protection in Botswana as well as strategies for the protection of traditional knowledge in Botswana. In addition, the number of TK filings received by the Botswana IP office since the inception of the legal framework to date was presented in this chapter. Factors affecting TK protection revealed lack of support for carrying out commercial activities as a major hindering factor for exploitation of TK legal framework. Although participants generally felt that the available legal framework is a good initiative in terms of TK protection, they however indicated that due to financial constraints, they could not fully use their knowledge for the betterment of their lives, that is, through commercialisation. Finally, regarding strategies proposed to improve TK protection in the country. The need to improve protection of TK was strongly felt by all the respondents across the categories citing Government support towards TK commercial activities as vital.

CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter 5, the final chapter of the study, presents the study's overall conclusions, implications for practice with regards to the topic at hand on the exploitation of the legal system for the protection of TK in Botswana. The chapter further suggests recommendations on the exploitation of the legal system for the protection of TK in Botswana. In the end, suggestions for further research on the TK subject matter is outlined.

5.2 Discussion

The purpose of this research was to study the exploitation of traditional knowledge protection system in Botswana through addressing the study objectives on the extent of TK protection in Botswana, factors that hinder or promote TK protection and discussion of the measures that can be employed to enhance TK protection in the country. The study follows a notice in lower number TK applications being filed although there is a legal framework on the protection of TK administered through the Botswana IP office. The research justified the proposed conceptual framework on the direct cause-effect relationship between TK protection and factors promoting or hindering TK protection. The framework affirms that although protection mechanisms may be put in place, TK protection mechanism is usually exposed to both the internal and external environmental factors which may promote or hinder its exploitation and its efficiency. The research adopted a mixed research analysis as its methodology where both the qualitative and quantitative analysis were employed to address the research objectives. The qualitative

data was analysed and interpreted using the thematic approach, while the qualitative data was interpreted and presented with illustrative tables and figures to reflect the exploitation of traditional knowledge protection system in Botswana. The study explored the extent of TK protection in the country and revealed that indeed efforts to protect TK in the country are there, the only challenge is with the exploitation of the available frameworks. The study further presented measures that can be put in place to improve to strengthen the available protection frameworks in the country.

5.3 Conclusions

Following the review of related literature on the legal protection of TK as well as the extent of the exploitation of such protection legal protection systems, the study was conducted through interviews and observations. The following three the study objectives were critically analysed, and the conclusion was reached.

1. Extent of TK protection in Botswana
2. Factors affecting TK protection in Botswana and
3. Measures to be put in place to promote the protection of TK in Botswana.

The study concluded that indeed TK protection is still relevant in Botswana. Efforts to protect TK are evident through the development of the frameworks towards TK protection in the country. This is through the development of structures such as policies, strategies as well as acts all aiming towards TK protection in the country. The development of such structures lay a solid foundation through which TK protection mechanisms can be reinforced. The study concluded that the level of awareness regarding TK protection still

needs to be intensified with a view of highlighting the importance of TK protection as well as exploitation of the available protection tools. The study further concluded that what might be interpreted as lower numbers of TK filings does not necessarily reflect the level of TK protection in the country. It was evident that most TK holders opt to use other forms of protection as opposed to the legal system implemented by the IP office, where physical presentation of applications is made. This is generally because TK is a very broad subject matter characterized by diverse backgrounds of knowledge holders, therefore, the current framework might not be favorable and utilised by all TK holders and as such knowledge holders may opt to use other modes of protection including the use of trade secrets and other TK protection forms as discussed in the previous chapter. Lack of resources for commercialisation of TK and TK based products was also highlight as a factor that has bad implications on the protection of TK in the country, thus hindering the exploitation of available TK protection mechanisms. This therefore calls for the need to strengthen the current legal protection framework by proposing for support on TK commercial initiatives from the Government in addition to intensifying awareness programs towards TK protection, its exploitation as well as activities to improve its commercial activity.

5.4 Implications

Based on the research questions and objectives, the expectation of carrying out this study is that the findings may be considered for policy making, administration and practice, theory development around the subject of TK, as well as influence subsequent research. The results of the study shall be used to examine the legal protection mechanism in place,

the exploitation of such protection mechanisms in Botswana and provide best practices, provide practitioners with information on what is/is not working, hence aid in the development of TK programs that support effective TK protection systems which can be exploited by all TK holders for their benefit.

The conclusions drawn from the study as well as the recommendations made from this research study shall, therefore, further contribute to the literature on the protection of traditional knowledge, as well as provide information on improved traditional knowledge protection strategies with more emphasis on Botswana environment. Subsequent to studying factors that hinder or promote TK protection, the results of the study will contribute substantially as a reference point to TK stakeholders especially the policy makers when designing suitable protection mechanisms for TK protection. In addition, this study results will provide guidance to TK stakeholders to assess and review the current TK legal protection mechanism and its relevance to Botswana's environment and eventually recommend whether there is need to strengthen the existing legal framework for TK protection, thus designing an effective protection mechanism for the benefit of all stakeholders. Through the study's findings, the Botswana intellectual property office will be guided towards employing better ways in the quest to improve the level of traditional knowledge filings received using the available legal framework.

The appraisal of existing structures and protection mechanisms from time to time is however often overlooked. It is evident that once a protection mechanism is put in place, efforts to review its relevance are often neglected. Therefore, more research is needed to explore ways verifying the importance of appraising the existing protection mechanisms

more often to confirm their relevance for efficiency and for the benefit of all stakeholders involved.

5.5 Recommendations

In view of the conclusions made following the review of related literature, the survey conducted, and the observations made by the researcher, the following recommendations were made:

- **Acknowledgement of the nature of TK in relation to protection mechanisms**

Since TK is a very broad subject made up of diverse holders from distinct communities, comprising different backgrounds, different approaches can be simultaneously used to protect TK as opposed to using just one protection mechanism which might not work for all categories of right holders. This is to say, solutions to problems of common concerns by holders (different groups) should be devised by taking into account their unique compositions.

- **Effective Cooperation and Collaborations**

There is a need for effective collaborations between all TK stakeholders in efforts to find solutions to common TK concerns as well as devising effective structures and systems that will facilitate in handling all issues related to the legal protection of TK and its exploitation. Effective collaborations involves sharing of resources, which is often a challenge to TK holders. Through these collective efforts by all TK stakeholders in recognition and management of common as well as potential TK issues, challenges such as lack of resources as well as delays in the implementation of TK initiatives can be

mitigated. Therefore, with shared vision among all stakeholders, a common goal of TK protection as well as its exploitation might be achieved through effective collaborations.

- **Government support**

In an age where the whole world is moving into a knowledge economy, TK protection as well as issues relating to its generation and exploitation have become critical. As such, policymakers have recognized the need to protect traditional knowledge by availing the legal protection framework. However, there is still a need to do more in relation to commercialisation of TK based outputs. Hence, the Government should devote greater attention as well as allocate resources towards TK initiatives in order to leverage on the potential economic value TK has. Beyond its protection which the government has laid a foundation on by proving the legal protection framework, TK commercialisation activities should be supported by the Government which in turn shall motivates TK holders to utilise the available protection mechanisms, thereby contributing to the overall development of the county.

- **Timely review of the legal frameworks**

Review of the legal framework should be done more often in order to align the provisions of the law with the ever-changing environmental conditions. As indicated in the findings, provisions on how to go about commercialisation of TK based products as well as provisions on how researchers can use the knowledge for the betterment of the society while at the same time benefiting knowledge holders are recommended to be considered for inclusion when reviewing the legal framework and its usage.

- **Intensify Awareness raising**

Awareness raising is an essential and should be an ongoing component of all efforts intended to realise the benefits of any provided system. The strategies involved in any intensified awareness program extends beyond just public communications, but also important and practical in actions such as changes to the ways of message delivery as well as employment of other strategies to encourage the design and exploitation of effective awareness raising programs. Therefore, continuous effective awareness raising with a view of highlighting the significance of TK subject as well as the need for its protection for the benefit of all is essential. This include the design of integrated awareness programs targeting diverse TK holders who shall in the end benefit from the TK system.

5.6 Suggestions for Further Research

It is evident that once a protection mechanism is put in place, efforts to review its relevance are often neglected. Since the implementation of the Industrial Property Act in 2010, there seem to have been a rather insignificant number of filings in relation to TK applications. This research is the first of its kind as there has not been any study on the exploitation of the legal framework for the protection of TK in the country since the development of the TK law. Therefore, more research is needed to explore ways verifying the importance of appraising the existing protection mechanisms more often in order to confirm their relevance for efficiency and for the benefit of all stakeholders involved. The review of existing legal structures and protection mechanisms from time to time as is often overlooked, it is hence suggested as an area that needs to be explored further in future research.

The greater demand for TK protection mechanisms further calls for more studies to confirm the usefulness of existing TK legal frameworks that has not been explored as well as the interaction of structures and policies dealing with the TK critical areas. Through such future studies, recommendations on the development of enhanced protection mechanisms may be made. Thus, application of the recommended approach derived from the results of such studies will somehow influence the design and employment of better protection mechanisms. Therefore, new theories on effective TK protection mechanisms may be arrived at.

REFERENCES

- Adam L. (2005). Information and communication technologies, knowledge management and indigenous knowledge: *Implications to livelihood of communities in Ethiopia*.
- Andrzejewski A. (2010). Traditional knowledge and patent protection: conflicting views on international patent standards. *13*(4), 94-180. ISSN 1727-3781.
- Bagley M.A. (2018). Towards an effective indigenous knowledge protection regime: *Case study of South Africa*. (207), 2-24.
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Convention on Biological Diversity. (1993, December 29). Retrieved from <https://www.cbd.int/traditional/what.shtml>
- Dagne T. (2014). Protecting traditional knowledge in Intellectual Property law: Imperatives for protection and choice modalities. *The John Marshall Review of Intellectual Property Law* 14(1), 26-49. Retrieved from <https://repository.law.uic.edu/ripl/vol14/iss1/2/>
- Daya Y. & Vink N. (2006). Protecting traditional ethno-botanical knowledge in South Africa through the intellectual property regime. *45*(3), 320-322.
- Dutfield G. (2003). *Literature survey on intellectual property rights and sustainable human development*.

- Dooly M. Moore E. & Vallejo C. (n.d.) *Research ethics*. Retrieved from
<https://files.eric.ed.gov/fulltext/ED573618.pdf>
- Ellis S. (2005). Meaningful Consideration? *A review of Traditional Knowledge in Environment Decision Making*. 58(1), 70-255.
- Feris L. (2004). African human rights journal. *Protecting traditional knowledge in Africa: considering African approaches*. 224-255. Retrieved from
<https://www.corteidh.or.cr/tablas/R21556.pdf>
- Frey B. B. (2018). *Judgement sampling*. *The sage encyclopedia of educational research, management and evaluation*. Retrieved from
<https://methods.sagepub.com/reference/the-sage-encyclopedia-of-educational-research-measurement-and-evaluation/i11890.xml#:~:text=Judgment%20sampling%20>
- Gall M.D. (2003). Educational research. University of Oregon.
- Ghosh. (2017, March 22). Traditional knowledge: problems and prospects. (Blog post). Retrieved from <https://www.researchgate.net/publication/315046340>.
- Industrial Property Act 2010*. (2010, March). Retrieved from
<https://www.cipa.co.bw/wp-content/uploads/2019/06/Industrial-Property-Act-2010-1-2.pdf>
- Kalaskar B.S. (2012). International Journal of Scientific & Engineering Research. *Traditional knowledge and sui generis law*. 3 (7), 1-7.

- Kenton. (2020, March 19). Fundamental analysis: Tools for fundamental analysis. (Blog post). Retrieved from <https://www.investopedia.com/terms/p/population.asp>
- Key. (2020, April 11). *Book review: Traditional knowledge, genetic resources, customary law and intellectual property*. (Blog post). Retrieved from <https://ipkitten.blogspot.com/2020/04/book-review-traditional-knowledge.html>
- Kongolo T. (2001). *Journal of World Trade. Towards a more balanced coexistence of traditional knowledge and pharmaceuticals protection in Africa*. 35 (2), 349-361.
- Masango, C.A. (2010). *Indigenous traditional knowledge protection: prospects in South Africa's intellectual property framework*. University of Cape Town: Department of Research and Innovation
- Mersha B. and Debesu K. (2012). *Theories of intellectual property*. Retrieved from <https://www.abyssinialaw.com/online-resources/study-on-line/item/468-theories-of-intellectual-property>
- Motlhaping, T. (2013) *Protecting traditional medicine and associated knowledge in Botswana- a case study of "Thobega" medicine*, (Master's thesis). Africa University, Mutare, Zimbabwe
- Nfila R.B. & Jain P. (2011). *Managing indigenous systems in Botswana using information and communication technologies*. University of Botswana.
- Ragavan S. (2001) Protection of traditional knowledge. *The Minnesota Journal of Law, Science and Technology*. 2 (2). 5-60.

Salkind N.J. (2010). *Encyclopedia of Research Design: Primary data source*. Retrieved from <https://methods.sagepub.com/Reference/encyc-of-research-design/n333.xml>

Saunders M., Lewis P. & Thornhill A. (2007). *Research methods for business students* (4th ed.). England.

Swakopmund Protocol on the Protection of Traditional knowledge and Expressions of folklore (2010). Retrieved from https://www.wipo.int/edocs/lexdocs/treaties/en/ap010/trt_ap010.pdf

The Botswana Intellectual Property Draft Policy (BIPP). (2020).

Tuovila, A. (n.d.). Sampling definition. Retrieved June 6, 2021, from <http://www.investopedia.com/terms/s/sampling.asp>

The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore. (2016). WIPO. Retrieved from https://www.wipo.int/export/sites/www/tk/en/documents/pdf/background_brief_s-e-nx2-print.pdf

World Intellectual Property Organisation (n.d.). *Traditional Knowledge and Intellectual Property – Background Brief*. Retrieved June 6, 2021, from World Intellectual Property Organization: https://www.wipo.int/pressroom/en/briefs/tk_ip.html

Wynberg, R. & Laird, S. (2013). *Bioscience at a crossroads: Access and benefit sharing in a time of scientific, technological and industry change: the cosmetics sector*. Secretariat of the Convention on Biological Diversity Pres.

APPENDICES

Appendix 1: Informed Consent Guide



COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

INFORMED CONSENT GUIDE

Identify yourself

My name is Dimpho Bonolo, a final year (Master's in Intellectual Property) student from Africa University. I am carrying out a study on The Critical Analysis of the Legal Framework for the Protection of Traditional Knowledge in Botswana. I am kindly asking you to participate in this study by answering the questions I have to enable me to carry out the study.

What you should know about the study:

Purpose of the study:

The purpose of the study is **to analyse the exploitation of the existing legal framework for the protection of traditional knowledge in Botswana since its introduction to the Industrial Property Act 2010**. You were selected for the study because as a Traditional

knowledge right holder/potential right holder/ administrator, your contribution regarding the analysis and the relevance of the existing legal protection of Traditional knowledge in Botswana is vital as it can be used to eventually suggest better ways of designing and implementing an effective protection system.

Procedures and duration

If you decide to participate you will greatly contribute to assessment of the relevance of the existing TK protection legal framework and participate in designing better strategies to employ for the betterment of the protection framework and eventually for the benefit of right holders. It is expected that this interview will take about thirty (30) minutes.

Benefits and/or compensation

With this study, there will not be any direct benefits/compensation to the respondents. The study only seeks to benefit the general public by adding further knowledge to the literature on Traditional knowledge as well as provide information on improved traditional knowledge protection strategies. The results of the study will also make a reference point to TK stakeholders especially the policy makers and the TK holders when designing suitable protection mechanisms for TK protection in Botswana.

Confidentiality

The researcher further assures that any information that is obtained in the study that can be identified with the participant will not be disclosed without your permission. In addition, names and any other identification will not be asked for in the interviews.

Voluntary participation

Participation in this study is voluntary. If participant decides not to participate in this study, their decision will not affect their future relationship with CIPA nor the Africa University (Researcher's employment organisation and the academic institution under which the researcher is currently associated). If they chose to participate, they are free to withdraw their consent and to discontinue participation without penalty.

Offer to answer questions

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

Authorisation

If you have decided to participate in this study, please sign this form in the space provide below as an indication that you have read and understood the information provided above and have agreed to participate.

Name of Research Participant (please print)

Date

Signature of Research Participant or legally authorised representative

If you have any questions concerning this study or consent form beyond those answered by the researcher including questions about the research, your rights as a research participant, or if you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact the Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email aurec@africau.edu

Name of Researcher: Dimpho BONOLO-----

Appendix 1: AUREC Approval Letter



AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 website:
www.africau.edu

Ref: AU1873/20

25 January, 2021

Dimpho Bonolo
C/O CBPLG
Africa University
Box 1320
Mutare

RE: **A CRITICAL ANALYSIS OF THE LEGAL FRAMEWORK FOR
PROTECTION OF TRADITIONAL KNOWLEDGE IN BOTSWANA**

Thank you for the above titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

- a) Research proposal
- b) Data collection instruments
- c) Informed consent guide

• **APPROVAL NUMBER** AUREC1873/21

This number should be used on all correspondences, consent forms, and appropriate documents.

• **AUREC MEETING DATE** NA

• **APPROVAL DATE** January 25, 2021

- **EXPIRATION DATE** January 25, 2022
- **TYPE OF MEETING** Expedited

After the expiration date this research may only continue upon renewal. For purposes of renewal, a progress report on a standard AUREC form should be submitted a month before expiration date.

- **SERIOUS ADVERSE EVENTS** All serious problems having to do with subject safety must be reported to AUREC within 3 working days on standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.



Yours Faithfull,

M. Chinzou

**MARY CHINZOU – A/AUREC ADMINISTRATOR FOR CHAIRPERSON,
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE**

Appendix 3: Interview guide Survey Instrument

Research Objectives	Questions/Themes	Answers
To what extent traditional knowledge is protected in Botswana	<ol style="list-style-type: none"> 1. Are you aware of an organisation called CIPA? (Botswana IP office)? 2. How did you learn about CIPA? 3. Do you know of its functions of TK protection? 4. What motivated you to protect your knowledge with CIPA? 5. What do you think are the benefits of registering your knowledge with CIPA? 6. Do you think the current protection system can be enhanced, if yes, how can it be improved? 	

	<p>7. To what extent would you say TK holders are utilising the existing framework?</p> <p>8. What other modes of TK protection in Botswana do you know of?</p>	
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Factors that enhance or hinder the protection of traditional knowledge in Botswana

1. If you possess traditional knowledge, would you protect it with CIPA?
2. Why would you or would you not protect your knowledge with CIPA?
3. What factors do you think hinder/promote TK protection in BW?
4. How accessible are TK services in Botswana?
5. How easy or difficult is it to register TK in Botswana?
6. How often do you conduct awareness activities related to TK and EoF protection?
7. Do you have some feedback tools in place to capture how

customers feel about TK and EoF services?

8. Are you a member of an association or forum in which TK & EoF issues are handled?
9. What do you think needs to be done to improve TK Protection in Botswana?

Suggest a better strategy for the protection of traditional knowledge in Botswana

1. How do you think TK can better be protected? (What do you propose should be done to promote TK protection in Botswana?)
2. Are you satisfied with the current protection system?
3. What do you propose can be done to better protect?
4. What measures can be put in place to strengthen the current traditional knowledge protection in Botswana?
5. What do you propose should be done to promote TK protection in Botswana?

Appendix 4: Description of themes and general answers

Objective	Question/Theme	Answer
The extent of TK protection in Botswana.	<p>Theme 1: Knowledge and experience with the TK legal framework</p> <ol style="list-style-type: none"> How did you learn about CIPA and its provision of IP services? What do you think are the benefits of registering your knowledge with CIPA? 	<ul style="list-style-type: none"> - Through the radio - Through attending a workshop - Through working with some research institutions. - Referral from a family member - Read about it. - Assurance for sole ownership - life lessons (mitigation from loss of knowledge citing 'sengaparile' devil's claw case - For commercial purposes
Factors that promote hinder or TK protection in Botswana	<p>Theme 2: Factors affecting IK protection in Botswana IP Office</p> <ol style="list-style-type: none"> If you possess TK, would you protect it with CIPA? 	<ul style="list-style-type: none"> - I would, provided CIPA does not expose it to the possibility of

	<p>2. Why would you or would you not protect it with CIPA?</p> <p>3. What factors do you think hinder/promote TK protection?</p>	<p>unauthorized use.</p> <ul style="list-style-type: none"> - No, it is safe with me. - Not interested in protection, would rather gladly share the knowledge. - Lack of trust of the contemporary protection frameworks, - Complexity of TK itself, hence, do not totally fit into the contemporary frameworks. - Availability of laws and programs facilitating protection. - Complex laws and procedures - Collaborations between all TK stakeholders - Lack of support for commercialisation initiatives e.g., offering for sale TK based drugs in
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	<p>4. How often do you conduct awareness activities targeted to TK and EoF?</p>	<p>Chemists.</p> <ul style="list-style-type: none"> - Lack of resources generally (including finances, facilities) - Lack of effective coordinated communication/ Information dissemination between CIPA and TK holders - Market circumstances including Unfair competition. - Lack of recognition of TK and TEC by the government, government has neglected TK. - Fragmentation of TK institutions - Lack of appreciation of TK as a potential for economic contribution - Not quite often
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<p>Better strategy for the protection of traditional knowledge in Botswana.</p>	<p>Measures that can be put in place to strengthen the current legal framework for traditional knowledge protection.</p> <ol style="list-style-type: none"> 1. How do you think TK can better be protected? 2. What do you propose should be done to promote TK protection in Botswana? 	<ul style="list-style-type: none"> - Intensify awareness raising among TK holders and local communities. - Communal ownership as opposed to individual ownership. - Use of IPRs - Establishment of some forums where TK issues can be addressed (Stakeholder Collaborations) - CIPA should also be more accessible in rural areas/villages where much of these creations originate. - Compilation of all the country's knowledge into a 'sesigo' database
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