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# BALANCING INDIGENOUS COMMUNITY RIGHTS AND INTELLECTUAL PROPERTY RIGHTS IN THE PROTECTION OF GENETIC RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE IN SOUTH AFRICA

Dissertation submitted in fulfilment of the requirements for the degree of Master of Laws (LLM) at the University of Venda

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18 June 2023

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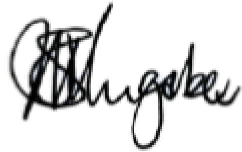
**DECLARATION**

I, James Chapangara Mugabe (Student No. 21008924), hereby declare that this dissertation for the LLM degree at the University of Venda is my own work and has not been submitted previously at this university or any other university. All reference materials contained herein have been duly acknowledged.

STUDENT



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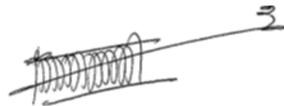

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Furthermore, I am indebted to my parents, siblings and friends, who have provided me with much-needed encouragement, motivation, and moral support. Their presence, words of wisdom, and willingness to lend an ear during moments of doubt have made this journey all the more meaningful. I am truly fortunate to have such incredible individuals in my life.



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## DEDICATION

I dedicate this dissertation to my mother, Mrs Prudence Mugabe

> *Madhuve, Manjenjenje, Chishongo cherenje, Gandarevasikana, Kuringa mbizi kuringa makumbo kumusoro kuvaraidza…*

and father, Mr Kingstone Chapangara Mugabe,

> *Soko Wafawanaka, Makwiramiti, Makumbo mana, muswe weshanu Vari Zvihota, vanaisi vemvura, Vari Chikwindingwi, vagari venhaka,VaMudyazvarimwa, vegana paura, VaMushambanegore, vanodya zvokupara…*



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## LIST OF ACRONYMS

| | |
|---|---|
| ABS | Access and benefit sharing |
| AIPO | Australia Intellectual Property Office |
| ARIPO | African Regional Intellectual Property Organisation |
| BABS Regulations | Biopiracy, Access and Benefit Sharing Regulations |
| BABS | Bioprospecting, Access and Benefit Sharing |
| BDA | Biological Diversity Act |
| BioPANZA | BioProducts Advancement Network South Africa |
| BMC | Biodiversity Management Committees |
| CBD | Convention on Biological Diversity |
| CGEN | Council for Genetic Heritage Management |
| CGPDTM | Indian Controller General of Patents, Designs and Trademarks |
| CIPO | Canadian Intellectual Property Office |
| CSIR | Centre for Scientific and Industrial Research |
| DEFF | Department of Environment, Forestry and Fisheries |
| DPG | Department of Genetic Heritage (Brazil) |
| DTI | Department of Trade and Industry |
| EPO | European Patent Office |
| ETC Group | Action Group on Erosion Technology and Concentration |



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| | |
|---|---|
| FAO | Food and Agriculture Organisation |
| GATT | General Agreement on Tariffs and Trade |
| ICESCR | International Covenant on Economic, Social and Cultural Rights |
| ICJ | International Court of Justice (ICJ |
| ICSIR | Indian Centre for Scientific and Industrial Research |
| IKS Act | Protection, Promotion, Development, and Management of Indigenous Knowledge Systems Act |
| ILO | International Labour Organisation |
| IP | Intellectual property |
| IPLAA | Intellectual Property Laws Amendment Act |
| IPLC | Indigenous Peoples and Local Communities |
| IPR | Intellectual Property Right |
| ITPGRFA | International Treaty on Plant Genetic Resources for Food and Agriculture |
| IUPGR | International Undertaking on Plant Genetic Resources |
| MAT | Mutually Agreed Terms |
| NBA | National Biodiversity Authority |
| NEMA | National Environmental Management Act |
| NEMBA | National Environmental Management Biodiversity Act |
| NIKMAS | National Indigenous Knowledge Management System |



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| | |
|---|---|
| NIKSO | National Indigenous Knowledge Systems Office |
| NP | Nagoya Protocol |
| NP | Nagoya Protocol |
| NRS | National Recordal System |
| OAU | Organisation of African Unity |
| PIC | Prior informed consent |
| SADC | Southern African Development Community |
| SisGen | National System of Genetic Resource Management and Associated Traditional Knowledge |
| TCE | Traditional Cultural Expressions |
| TKDL | Traditional Knowledge Digital Library |
| TRIPS Agreement | Agreement on Trade-Related Aspects of Intellectual Property |
| UKPTO | United Kingdom Patent and Trademark Office |
| UN | United Nations |
| UNDRIP | United Nations Declaration on the Rights of Indigenous Peoples |
| UPOV | International Union for the Protection of New Varieties of Plants |
| USPTO | United States Patent and Trademark Office |
| WIPO | World Intellectual Property Oganisation |



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| | |
|---|---|
| WIPO-IGC | World Intellectual Property Organization - Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore |
| WTO | World Trade Organisation |



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# TABLE OF STATUTES

## South Africa

Constitution of the Republic of South Africa, No. 200 of 1993

Constitution of the Republic of South Africa, 1996

Copyright Act No. 98 of 1978

Designs Act No. 195 of 1993

Intellectual Property Laws Amendment Act 28 of 2013

Intellectual Property Policy of The Republic of South Africa Phase I 2018

National Environmental Management Act No. 107 of 1998

National Environmental Management Biodiversity Act No. 10 of 2004

National Environmental Management: Biodiversity Act, 10 of 2004: Bio-prospecting, Access and Benefit-Sharing Regulations, 2008 2014 (Government Gazette) 1

Natives Land Act of 1913

Protection, Promotion, Development and Management of Indigenous Knowledge Act 6 of 2019

Trademarks Act No. 194 of 1993

## Brazil

Biodiversity Law (Law No. 13,123/2015

Provisional Law 2052

## India

Biological Diversity Act 2002



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Patent Amendment Act 2005

Patents Act, 1970

Protection of Plant Varieties and Farmers Rights Act, 2001

**International Instruments**

African Charter on Human and Peoples' Rights, 27 June 1981, CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982)

African Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa 2015 1

Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994)

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*Laugh It Off Promotions CC v SAB International (Finance) BV t/a SABMARK International* 2006 1 SA 144 (CC),

*S v Makwanyane* 1995 6 BCLR 665 (CC) 686



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## ABSTRACT

The growing realisation of the importance of traditional knowledge in the commercial exploitation of genetic resources has fuelled intense debate over whether and how such traditional knowledge should be protected. This debate is also driven by the need to protect genetic resources and associated traditional knowledge from misappropriation and biopiracy, whilst also ensuring that biodiversity rich countries and their indigenous peoples receive a fair and equitable share of the benefits derived from their utilisation. This study examined the protection of genetic resources and traditional knowledge in South Africa and how it is balanced with the competing rights of holders and users of genetic resources and traditional knowledge. The study examined the current debates regarding the protectability of traditional knowledge within the IP system. It then looked at the theoretical and legal foundations from the South African Constitution and international law. Thereafter, the study provided an in-depth and critical comparative analysis of the measures taken in South Africa, Brazil, and India, to determine whether there are any lessons and opportunities for strengthening the policies and legislation to protect genetic resources and traditional knowledge in South Africa. The study found that, even though there is no single binding international instrument for the protection of genetic resources and associated traditional knowledge within the international IP regime, The Constitution of the Republic of South Africa, 1996 (the Constitution) and several international legal instruments provide some basis for their domestic protection. The study found similarities between the approaches taken by India and Brazil to the South African approach. Lastly, the study concluded that the protection of genetic resources and associated traditional knowledge should be implemented in such a way that it serves the various goals, which include the protection of the rights of IPLCs, and fair, equitable and sustainable socio-economic development, among others. Recommendations for further study and for policy development were also made.

Key words: Genetic resources, Traditional Knowledge, Biopiracy, Indigenous peoples and local communities, TRIPS Agreement, Convention on Biological Diversity (CBD



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# CHAPTER ONE

# GENERAL INTRODUCTION

## 1.1 Introduction and background

The growing realisation of the importance of traditional knowledge in the global economy, including, among others, in the commercial exploitation of genetic resources,[1] has fuelled intense debate over whether and how such traditional knowledge should be protected.[2] This debate generally pits industrialised states of the global North on the one side and the biodiversity-rich but technologically poorer countries of the global South on the other.[3] Developed countries question the desirability and practicality of protecting traditional knowledge, which they insist is unsuitable for protection as intellectual property (IP). On the other hand, developing countries accuse corporations from developed countries of unfairly misappropriating and benefiting from the utilisation of their traditional knowledge with no benefits accruing to them. These countries insist that there is an urgent and pressing need to protect traditional knowledge to prevent its unauthorised use[4] and ensure that they derive some benefit from the commercial exploitation of their genetic resources and associated traditional knowledge.[5]

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[1] Emeka Polycarp Amechi, 'Traditional Knowledge on the Medicinal Uses of Plants, Biopiracy and National Patent Measures in Africa: Exploratory Reflections and Comparative Experiences' (2018) 30 South African Mercantile Law Journal 251 <https://journals.co.za/content/journal/10520/EJC-f993b966c?crawler=true&mimetype=application/pdf>; Graham Dutfield, 'Harnessing Traditional Knowledge and Genetic Resources for Local Development and Trade' [2005] International Seminar on Intellectual Property and Development 1; Charles R McManis, *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2012); Mark Ritchie, Kristin Dawkuns and Mark Vallianatos, 'Intellectual Property Rights and Biodiversity: The Industrialization of Natural Resources and Traditional Knowledge' (1996) 11 Journal of Civil Rights and Economic Development 431.

[2] Kamrul Hossain and Rosa Maria Ballardini, 'Protecting Indigenous Traditional Knowledge Through a Holistic Principle-Based Approach' (2021) 39 Nordic Journal of Human Rights 51 <https://doi.org/10.1080/18918131.2021.1947449>.

[3] Charles McManis and Yolanda Terán, 'Trends and Scenarios in the Legal Protection of Traditional Knowledge' [2010] Intellectual Property and Human Development: Current Trends and Future Scenarios 139.

[4] Tanya Wyatt, 'Invisible Pillaging: The Hidden Harm of Corporate Biopiracy' [2014] Invisible Crimes and Social Harms 161.

[5] Paul Gepts, 'Who Owns Biodiversity, and How Should the Owners Be Compensated?' (2004) 134 Plant Physiology 1295.



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The unauthorised use of genetic resources and traditional knowledge, known as ‘biopiracy’,[6] has been rampant over the last few decades.[7] Against this background, there have been efforts to develop an agreeable international instrument to govern how the world approaches the protection and utilisation of genetic resources and associated traditional knowledge within the global IP framework. Therefore, over the last two decades, the WIPO-IGC[8] has been engaged in negotiations and deliberations to develop an international instrument to protect genetic resources and associated traditional knowledge and folklore within the context of the global IP regime.[9] However, after more than two decades of this endeavour, there is no consensus between the parties,[10] which means that, within the WIPO framework, there is yet to be a binding legal instrument that effectively and explicitly protects traditional knowledge and the rights of holders of such knowledge.[11]

The scope and content of intellectual property (IP) protection at the international level expanded under the World Trade Organisation (WTO) with the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement).[12] Whilst most intellectual property rights are domestic (i.e. they can only be enforced in the country they are registered), the TRIPS Agreement sought to harmonise IP laws among the WTO member states. Also, it placed a mandate on individual countries to protect and respect IPRs.[13]

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[6] Wyatt (n 3) 161.
[7] Yoonus Imran and others, ‘Biopiracy: Abolish Corporate Hijacking of Indigenous Medicinal Entities’ (2021) 2021 The Scientific World Journal 1.
[8] World Intellectual Property Organisation's Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore.
[9] Chidi Oguamanam, ‘Wandering Footloose: Traditional Knowledge and the ‘Public Domain’ Revisited’ (2018) 21 Journal of World Intellectual Property 306.
[10] WIPO-IGC, ‘The Protection of Traditional Knowledge: Draft Articles’ <https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=276361> accessed 17 August 2021.https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=276361.
[11] Over the last year, however, there has been some significant traction and movement towards a ‘final’ text for the protection of genetic resources and traditional knowledge at the WIPO-IGC. See for example https://openair.africa/wipo-igc-45-moves-toward-tk-tce-texts/ (accessed 30 January 2023). See also discussion in section 3.8 below.
[12] Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).
[13] Susanne Droege and Birgit Soete, ‘Trade-Related Intellectual Property Rights, North-South Trade, and Biological Diversity’ (2001) 19 Environmental and Resource Economics 149.



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Even though it is celebrated for its strong IP protection, the TRIPS Agreement fails to provide any significant protection for traditional knowledge.[14] Thus the major criticism against the international IP regime is that it protects most other forms of knowledge while ignoring traditional knowledge.[15] Similarly, the global IP regime also fails to acknowledge and protect the rights of the owners, custodians and holders of genetic resources and associated traditional knowledge.[16] This mismatch of strong IP protection and weak protection of traditional knowledge or the rights of IPLCs has enabled companies from the global North to misappropriate genetic resources and associated traditional knowledge. Genetic resources and traditional knowledge were previously considered either freely available to everyone or owned communally by indigenous and local communities without proper protection. This lack of specific protection mechanisms also contributed to misappropriation.[17]

The Convention on Biological Diversity[18] (the CBD), which was negotiated and signed by 150 member states of the United Nations in 1992, was the first international instrument to recognise the need to protect traditional knowledge, given its value primarily in protecting biodiversity. The CBD set out to achieve a trio of objectives: 'the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources….'[19] In addition to requiring the protection of traditional knowledge, the CBD also recognised state sovereignty[20] over biodiversity and its components, including genetic resources.[21] The CBD also recognised the rights of IPLCs to share fairly and equitably the benefits derived

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[14] JA Ekpere, 'TRIPs, Biodiversity and Traditional Knowledge: OAU Model Law on Community Rights and Access to Genetic Resources.' UNCTAD. ITCSD (2000).
[15] Graham Dutfield, 'traditional knowledge Unlimited: The Emerging but Incoherent International Law of Traditional Knowledge Protection' (2017) 20 Journal of World Intellectual Property 144.
[16] McManis (n 1); Dewi Nurmasari Pane, Miftah EL Fikri and Husni Muharram Ritonga, *Beyond Intellectual Property Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*, vol 53 (2018); Hope Shand, 'There Is a Conflict between Intellectual Property Rights and the Rights of Farmers in Developing Countries' [1991] Journal of Agricultural and Environmental Ethics 1991 131.
[17] Loretta Feris, 'Protecting Traditional Knowledge in Africa : Considering African Approaches' (2004) 4 African Human Rights Law Journal 242.
[18] Convention on Biological Diversity 1992 (United Nations).
[19] Article 1 of the CBD.
[20] Articles 3, 4 and 5 of the CBD.
[21] T Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law' (1998) 1 Journal of International Economic Law 555.



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from the utilisation of these genetic resources and associated traditional knowledge.[22] The CBD, however, does not have provisions that effectively enforce its objectives by, for example, providing for monitoring, deterring and sanctioning of non-compliancee with its provisions.[23] This means that the latter's requirement that member states of the WTO must take steps to protect intellectual property rights is often enforced at the expense of holders of traditional knowledge and genetic resources.[24] Thus, creations based on or derived from traditional knowledge and genetic resources can be protected through monopoly-based IPRs,[25] with little or no benefit to traditional knowledge and genetic resource holders.

As a signatory to both the CBD[26] and the TRIPS Agreement, South Africa faces the predicament of dealing with the seemingly contradictory requirements of these two instruments.[27] The South African government must, on the one hand, respect and protect intellectual property rights (IPRs) according to the precepts of the TRIPS Agreement. On the other hand, this must be balanced with the rights and interests of IPLCs in protecting traditional knowledge associated with genetic resources. Given its status as one of the megadiverse countries, richly endowed with very high levels of biological diversity,[28] South Africa has suffered from the biopiracy of its genetic resources and their associated traditional knowledge.[29] At the same time, the desire to promote socio-economic development by utilising genetic resources and traditional knowledge means that South Africa must recognise, promote and protect innovation by implementing the international IP regime. However, there has been little benefit to the country or indigenous and local

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[22] Article 3 of the CBD; see also the Preamble of the CBD.
[23] Florian Rabitz, 'Biopiracy after the Nagoya Protocol: Problem Structure, Regime Design and Implementation Challenges' (2015) 9 Brazilian Political Science Review 30.
[24] Article 7 of the TRIPS Agreement.
[25] Charles Lawson and Kamalesh Adhikari, 'Biodiversity, Genetic Resources and Intellectual Property' in Charles Lawson and Kamalesh Adhikari (eds), Biodiversity, Genetic Resources and Intellectual Property (Routledge 2018) <https://www.taylorfrancis.com/chapters/edit/10.4324/9781315098517-1/biodiversity-genetic-resources-intellectual-property-charles-lawson-kamalesh-adhikari> accessed 31 August 2021.
[26] https://www.cbd.int/information/parties.shtml (Accessed 14 June 2021).
[27] K Saggi, 'Trade, Intellectual Property Rights, and the World Trade Organization', *Handbook of Commercial Policy*, vol 1 (Part B, North-Holland 2016).
[28] A Skowno et al. National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity - Synthesis Report (2018).
[29] Y Daya and N Vink, 'Protecting Traditional Ethno-Botanical Knowledge in South Africa through the Intellectual Property Regime' (2006) 45 Agrekon 319; Coenraad Visser, 'Biodiversity, Bioprospecting, and Biopiracy: A Prior Informed Consent Requirement for Patents' (2006) 18 S. Afr. Mercantile LJ 497.



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communities (IPLCs), who are caretakers of the genetic resources and owners and holders of the traditional knowledge.[30]

However, South Africa is not alone in facing the challenge of trying to develop domestic mechanisms that effectively protect genetic resources and associated traditional knowledge whilst promoting innovation by respecting and protecting IPRs. Among others, India and Brazil are some of the megadiverse countries that have been at the forefront of developing domestic solutions to protect indigenous knowledge and the rights of IPLCs.[31] Therefore, it is submitted that as South Africa takes measures to protect and promote traditional knowledge and the rights of holders of traditional knowledge, valuable lessons may be learned from developments in these foreign jurisdictions.

### 1.2 Problem statement

In the absence of an internationally binding legal instrument for the protection of traditional knowledge,[32] some biodiversity-rich developing nations, including South Africa, Brazil and India, have drafted domestic laws to protect traditional knowledge and control access to their genetic resources. These include regulations to implement the 'fair and equitable sharing of the benefits derived from biodiversity and its components' requirement of the CBD.[33] In the South African context, these regulatory interventions include draft policies,[34] amendments to IP laws,[35] biodiversity protection laws, access and benefit-sharing regulations,[36] and *sui generis* laws for the specific protection of traditional knowledge.[37]

[30] Lawson and Adhikari (n 23) 129.
[31] Marie Yasmin M Sanchez, 'Combating Biopiracy: Harmonizinf the Convention on Biodiversity (CBD) and the WTO Treaty on Trade-Related Aspects of Intellectual Property Right (TRIPS) in Relation to the Protection of Indigenous Traditional Knowledge and Genetic Resources' (2012) 57 Ateneo Law journal 142.
[32] Blakeney (n 26) 159.
[33] Lawson and Adhikari (n 23) 20.
[34] Department of Trade and Industry, *Intellectual Property Policy of The Republic of South Africa Phase I* (2018).
[35] 'Intellectual Property Laws Amendment Act, 2013 (Act No. 28 of 2013)' <http://www.wipo.int/edocs/lexdocs/laws/en/za/za106en.pdf>.
[36] National Environmental Management: Biodiversity Act No. 10 of 2004 2004.
[37] DoE and Republic of South Africa, 'Protection, Promotion, Development and Management of Indigenous Knowledge Act' (2019) 469 Government Gazette 4 <https://static.pmg.org.za/42647_19-8_Act6of2019ProtectPromoDevelopManagementIndigenousKnowledgeAct.pdf>.



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Bagley provides an overview of the steps taken by South Africa toward the protection of indigenous knowledge. The author concludes that, even though there has been some progress, most of the benefits are yet to be realised by the majority of traditional knowledge holders.[38] Other studies in South Africa agree with this conclusion[39] and suggest that this may partly be because there is no sufficient consideration of the rights of IPLCs in protecting traditional knowledge.[40] Therefore, this study seeks to critically examine the legislative and policy measures in South Africa to protect traditional knowledge associated with genetic resources. In particular, the study seeks to understand whether and how the rights of IPLCs and intellectual property rights (IPRs) are balanced in protecting traditional knowledge related to genetic resources.

[38] Margo A Bagley, 'Toward an Effective Indigenous Knowledge Protection Regime Case Study of South Africa' (2018) 207.
[39] Neil R Crouch and others, 'South Africa's Bioprospecting, Access and Benefit-Sharing Legislation: Current Realities, Future Complications, and a Proposed Alternative' (2008) 104 South African Journal of Science 355.
[40] Hassan O Kaya, 'Indigenous Knowledge and Biodiversity for Sustainable Food Security in South Africa' (2016) 53 Journal of Human Ecology 141.



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## 1.3 Aims and objectives

### *1.3.1 Research aim*

Therefore, the study aims to critically assess the regulatory and policy interventions in South Africa and how they balance the competing rights and interests of IPLCs and IPRs in protecting traditional knowledge associated with genetic resources.

### *1.3.2 Research objectives*

More specifically, the study seeks to:

(i) Examine South Africa's international and constitutional obligations to utilising and protecting genetic resources and associated traditional knowledge.
(ii) Examine the scope and content of the rights of IPLCs relating to genetic resources and associated traditional knowledge.
(iii) Examine South Africa's legislative and policy interventions to evaluate the extent to which they recognise and protect indigenous and local community rights and IPRs in genetic resources and associated traditional knowledge.
(iv) Critically compare the interventions in (iii) with two foreign jurisdictions, namely Brazil and India, to determine whether any challenges and opportunities exist for improving South Africa's protection of indigenous and local community rights.
(v) Make recommendations to fill any gaps in the South African policy and legislative framework that the study may uncover.

### *1.3.3 Research questions*

The overarching research question is whether the South African legislative and policy space achieves a balance between the rights of IPLCs and IPRs relating to genetic resources and traditional knowledge. This question is split further into the following sub-questions:

(i) What are South Africa's obligations stemming from international law and the Constitution regarding balancing the competing rights of indigenous



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communities and IPRs related to the ownership, utilisation and conservation of genetic resources and associated traditional knowledge?

(ii) What is the nature, scope and content of indigenous and local community rights as far as they relate to genetic resources and associated traditional knowledge?

(iii) What legal instruments (legislation and policies) has South Africa implemented to achieve its obligations and objectives in (i) above?

(iv) How do these interventions compare with similarly aimed interventions in Brazil and India?

(v) What recommendations and other innovations can be considered by policy and lawmakers to improve the effectiveness of these instruments?

### 1.4 Hypothesis

This study hypothesises that protecting traditional knowledge associated with genetic resources requires holistic and innovative legal and policy instruments that balance the rights of traditional knowledge holders (IPLCs) and IP rights holders. Whilst this is admittedly a complex endeavour, if a balance is achieved, this can facilitate the achievement of the goals of both the CBD and the TRIPS Agreement, namely to promote and reward innovation while ensuring the fair and equitable sharing of the benefits from the utilisation of traditional knowledge and genetic resources.

### 1.5 Significance of the research

The study will assist researchers in understanding better the nexus between intellectual property law, IPLC rights, genetic resources and associated traditional knowledge. Understanding whether and how South Africa has managed to strike this balance has implications not only for South Africa but for many other developing countries that must protect traditional knowledge and the rights of its holders and custodians. The knowledge generated from this study is expected to provide policymakers and decision-makers with recommendations and tools to develop South Africa's regulatory mechanisms and ensure that genetic resources and associated traditional knowledge are effectively harnessed for socio-economic development.



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## 1.6 Scope and limitations of the study

The scope refers to the delimitation of the study. Even though the rights of IPLCs relating to genetic resources and traditional knowledge are closely linked to biodiversity in general, this study did not attempt to discuss aspects of biodiversity in detail. The study did not look at traditional knowledge in general but only at traditional knowledge associated with genetic resources. Regarding IPR laws, the study's primary focus was on patents as the central IP right to protect interests in genetic resources and traditional knowledge. Also, balancing the rights of indigenous and local communities in the ownership, utilisation and conservation of biodiversity is a problem that affects almost all the countries in the biodiversity-rich global South. However, the present study will focus primarily on South Africa's legislative, policy and other interventions. Two foreign jurisdictions were selected to provide a comparative analysis of South Africa's legislation and policies. Therefore, the study was primarily desktop-based. Any cases, literature and legislation used for comparative purposes were obtained from the published literature and other online databases.

## 1.7 Preliminary literature review

### *1.7.1 Introduction*

The following section briefly reviews the existing literature on the interface between genetic resources, traditional knowledge and the international IP regime. It will start by providing a brief overview of the definition and importance of genetic resources as an integral part of biodiversity and discuss their commoditisation and increased importance in light of the advances in biotechnology. The relationship between genetic resources and traditional knowledge will then be canvassed, as will the rights of indigenous and local communities (IPLCs) pertaining to these. The literature review concludes by locating this discussion within the context of the apparent tension between the objectives of the CBD and the TRIPS Agreement.



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### 1.7.2 Biodiversity, genetic resources and traditional knowledge

Even though many definitions of 'biodiversity' [41] have emerged since its first mention in the 1980s,[42] the most widely accepted definition is the one provided in the CBD.[43] From this definition, biodiversity can be understood to consist of variability at three hierarchical levels: genetic, species, and ecosystem levels.[44] Defining biodiversity at these three hierarchical levels has implications for how resources derived from it are utilised and protected. Biological resources are defined as 'genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.'[45] Even though genetic resources may relate to animals, plants, fungi and microorganisms, the study shall focus on traditional knowledge associated with plant genetic resources as they occupy a critical space at the interface between biodiversity, traditional knowledge and intellectual property.[46] Genetic resources are defined as 'genetic material (material containing functional units of heredity) of actual or potential value.'[47]

Deplaze-Zemp posits that the term 'genetic resources' is a multifaceted concept that primarily describes biodiversity's value, and this creates or substantiates the incentive for its utilisation and protection.[48] The value or potential value inherent in genetic resources has led to their commodification, transforming them into commodities subject to private property ownership, control and trade.[49] The opening of genetic resources to property rights has, in turn, landed them squarely within the domain of intellectual property rights.[50]

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[41] Don C Delong, 'Defining Biodiversity' (1996) 24 Wildlife Society Bulletin 738 <http://www.jstor.com/stable/3783168?seq=1&cid=pdf-reference#references_tab_contents> accessed 13 September 2021.
[42] The first use term 'biodiversity is attributed to Walter Rosen who used it as shorthand for biological diversity at the US National Forum for Biodiversity in September 1986.
[43] Article 2 of the CBD defines biodiversity as 'the variability among all living organisms from all sources including *inter alia* terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes the diversity within species, between species and of ecosystems.'
[44] Kevin J Gaston and John I Spicer, *Biodiversity: An Introduction* (John Wiley & Sons, Ltd 2013).
[45] Article 2 of the CBD
[46] Anna Deplazes-Zemp, ''Genetic Resources' an Analysis of a Multifaceted Concept' (2018) 222 Biological Conservation 86.
[47] Article 2 of the CBD.
[48] Deplazes-Zemp (n 45) 2.
[49] Gepts (n 4) 1303.
[50] ibid.



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However, the traditional knowledge of indigenous peoples and local communities (IPLCs) is closely tied to genetic resources, particularly of the biodiversity-rich global South. Bush and Stabinsky define traditional knowledge as information held by local or indigenous people regarding, among other things, biodiversity, crop landraces, the medicinal properties and culinary qualities of indigenous plant species and so forth.[51] For example, most of South Africa's IPLCs rely directly on their immediate environment, which includes biodiversity and genetic resources for their livelihoods and culture. Chisa and Hoskins note that traditional knowledge is part and parcel of the culture and history of indigenous South Africans and is directly linked to how they interact with and use the natural resources in their environment.[52] The WIPO-IGC states that traditional knowledge is essential for extracting the value embedded in genetic resources. Thus, traditional knowledge forms an integral component of the culture, livelihoods and lifestyles of the indigenous people of South Africa.[53]

### *1.7.3 Traditional knowledge, genetic resources and IP*

Given its close relationship with genetic resources, traditional knowledge has also become subject to the commoditisation drive. However, this transition has not been as straightforward due to the characteristic features incompatible with private property regimes. In this regard, Gepts[54] notes that the current IPR regime has been criticised as inadequate to cater to traditional knowledge. He highlights that IPRs are styled on a Western or Eurocentric worldview that is individual-driven, whereas traditional knowledge and genetic resources in IPLCs are community-driven. Oguamanam[55] concurs and adds that the nature of traditional knowledge makes it unsuitable for assigning it to private

[51] SB Brush and D Stabinsky (eds), *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights* (Island Press 1996).
[52] Ken Chisa and Ruth Hoskins, 'African Customary Law and the Protection of Indigenous Cultural Heritage: Challenges and Issues in the Digitization of Indigenous Knowledge in South Africa' (2016) 15 Indilinga African Journal of Indigenous Knowledge Systems 1 <http://0-journals.co.za.oasis.unisa.ac.za/docserver/fulltext/linga/15/1/linga_v15_n1_a1.pdf?expires=1496833048&id=id&accname=58010&checksum=122482D5BFBC7E3C378521F51DF14713>; Ken Chisa and Ruth Hoskins, 'Decolonising Indigenous Intellectual and Cultural Rights in Heritage Institutions: A Survey of Policy and Protocol in South Africa' (2016) 33 Mousaion: South African Journal of Information Studies 55.
[53] Chisa & Hoskins (n 49) 4.
[54] Gepts (n 4) 1303.
[55] Oguamanam, 'Wandering Footloose: Traditional Knowledge and the 'Public Domain' Revisited' (n 9).



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ownership, as would be the case in IPRs. Another important characteristic that makes traditional knowledge unsuitable for IPR protection is that there is no specific act of invention, which is a requirement for protection under patent laws. Traditional knowledge also develops over generations and sometimes transcends beyond the confines of specific communities.

Because of these problems, there have been attempts by the World Intellectual Property Organisation Intergovernmental Committee on Intellectual Property and Genetic Resources, traditional knowledge and Folklore (WIPO-IGC) to find ways to harmonise them.[56] Oguamanam, drawing from his experiences as a participant in the WIPO-IGC, states that most of these attempts have lacked a deliberate effort to recognise the rights of IPLCs or incorporate the customs, practices, and customary laws of the holders of traditional knowledge, namely the IPLCs. He argues this is mainly due to several factors, including the Eurocentric roots of the international IP regime. In this respect, Eurocentrism is criticised for its tendency to measure and validate parallel constructs according to European values and standards.[57] This means that traditional knowledge is taken from its context within IPLCs and forced into an individual and private property-based paradigm. Secondly, he argues that the history of most IPLCs as colonial subjects of European powers also plays a role whereby the socio-political and economic arrangements and institutions of these IPLCs were both delegitimised and disempowered. This has led to the present situation whereby genetic resources and traditional knowledge have been misappropriated through IPRs at the expense of IPLCs.

Despite these seemingly irreconcilable differences, Eugui and Oliva suggest that the relationship between IP, genetic resources and traditional knowledge does present some opportunities for biodiversity conservation and the sustainable utilisation of genetic resources.[58] Firstly, they argue that IPRs provide a realistic means to secure and realise the economic value of genetic resources. This is because IPRs enable corporate players to invest in researching and developing these genetic resources into consumer products.

[56] WIPO-IGC (n 10).
[57] Oguamanam (n 7) 30.
[58] David Vivas-Eugui and Maria Julia Oliva, 'Biodiversity Related Intellectual Property Provisions in Free Trade Agreements' 39.



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On the other hand, the protection of genetic resources and associated traditional knowledge through the exclusive rights of IPRs is often at odds with the principles of state sovereignty and collective or communal ownership of genetic resources and traditional knowledge by IPLCs. As noted by Dutfield,[59] this is exacerbated by the lack of recognition of these rights and principles within the international IPR regime, particularly the TRIPS Agreement.

#### *1.7.4 Traditional knowledge in South Africa: TRIPS Agreement v the CBD*

Finally, because South Africa's efforts towards effectively protecting traditional knowledge and the rights of holders of traditional knowledge may be complicated by the apparent contradictions between the CBD and the TRIPS Agreement, a brief discussion of their interaction is appropriate. The CBD has two main provisions that have implications for IPRs, namely Articles 16.5 and 22. Article 16.5 requires cooperation between the contracting parties to the CBD to ensure that, subject to their respective domestic legislation and international law, IPRs are 'supportive of and do not run counter to the CBD's objectives.' Article 22 further provides that the rights and obligations of parties in terms of other international agreements will not be affected by the CBD's provisions, except where 'the exercise of such rights and obligations would cause serious damage or threat to biological diversity.'

When regard is had to the objectives of the CBD, the above provisions can potentially counter the effects of the TRIPS agreement.[60] This is especially so where the TRIPS Agreement seeks to replace public or communal rights with private property rights. Whereas the TRIPS Agreement mandates all WTO member states to make available patent protections (private property) to material that includes genetic resources and traditional knowledge, the CBD recognises these as public property (state sovereignty principle) or communal property IPLCs. Therefore, the authors contend that when the TRIPS Agreement seeks to enforce a uniform IP regime, it interferes with the sovereignty

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[59] Graham Dutfield 'Intellectual property rights, trade and biodiversity: the case of seeds and plant varieties' in *IUCN Project on Convention on Biological Diversity and the International Trade Regime* (1999) IUCN.
[60] Ashish Kothari and R V. Anuradha, 'Biodiversity and Intellectual Property Rights: Can the Two Co-exist?' (1999) 2 Journal of International Wildlife Law and Policy 204.



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principle of the CBD, from which states derive freedom to choose how they deal with the utilisation and protection of genetic resources and associated traditional knowledge.[61]

While, as shown above, the CBD deals directly with the question of access to genetic resources and traditional knowledge,[62] the TRIPS Agreement does not mention them at all. However, some of its provisions have direct implications for them. For example, member states of the WTO, including South Africa, must make available patent protection 'for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.'[63] This has the dual effect of putting genetic resources under the scope of IPR protection whilst excluding traditional knowledge, whose nature makes it incompatible with IPR protection. However, despite these seemingly irreconcilable differences, some authors argue that there is good reason to strike a balancing act between them.[64]

### *1.7.5 Conclusion*

Genetic resources and traditional knowledge have emerged as critical resources for biotechnology-related industries, with components derived from them generating billions of dollars annually.[65] However, the debate between developed and developing countries regarding the protection of traditional knowledge rages on. The net result is the absence of an internationally binding instrument for the protection of traditional knowledge. The consensus in the literature is that this means countries have to develop domestic protections for their genetic resources and associated traditional knowledge whilst trying

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[61] ibid.
[62] Noah Zerbe, 'Contested Ownership: TRIPs, CBD, and Implications for Southern African Biodiversity' (2002) 1 Perspectives on Global Development and Technology 294.
[63] Article 27(1) of the TRIPS Agreement
[64] Lekha Laxman and Abdul Haseeb Ansari, 'The Interface between TRIPS and CBD: Efforts towards Harmonisation' (2012) 11 Journal of International Trade Law and Policy 108.
[65] Graham Dutfield and Uma Suthersanen, 'Traditional Knowledge and Genetic Resources: Observing Legal Protection through the Lens of Historical Geography and Human Rights' (2019) 58 Washburn Law Journal 399 <https://ssrn.com/abstract=3282818https://ssrn.com/abstract=3282818>.



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to strike a balance between the objectives of the CBD and the TRIPS Agreement. Even though the CBD acknowledges the rights of indigenous communities and the States over the utilisation of their biological resources, the benefits are yet to be realised by most states and IPLCs.

On the other hand, the TRIPS Agreement further strengthens the advancement of private property-oriented IPRs, which member states of the WTO, such as South Africa, must protect. The protection of traditional knowledge thus must entail a delicate balancing act. Therefore, the present study sought to ascertain the legal and policy interventions in South Africa and assess how far they go in balancing the rights of indigenous and local communities with the IPRs that must be protected in terms of the TRIPS Agreement.

## 1.8 Definitions of key concepts

The following primal concepts and terms shall be used throughout this study. The meanings below shall be assumed, except where the context provides otherwise or another specific interpretation is preferred.

Intellectual Property Rights (IPRs)

Intellectual property rights include, but are not limited to, patents, copyright, trademarks and trade secrets. However, throughout this study, a reference to IPRs will primarily refer to patents, except where the context provides otherwise.

Traditional knowledge

Traditional knowledge refers to the know-how possessed by indigenous communities regarding the utilisation, conservation and cultivation of any indigenous biological resource. This includes knowledge about plants with medicinal properties, their location, cultivation, harvesting and utilisation. This study deals only with traditional knowledge associated with genetic resources.

Access and benefit-sharing



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Access and benefit-sharing shall carry the meaning derived from the CBD and shall include any domestic and international instruments aimed at regulating access to biological resources by both researchers and commercial companies and organisations, as well as mechanisms to ensure that both the country and IPLCs are guaranteed to derive some economic or other benefits from the commercial exploitation of the said resource.

Biodiversity

Biodiversity is defined comprehensively in the CBD as '…the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.' This definition implies three levels of biological diversity: genetic (within species), species, and ecosystem diversity. The study shall focus only on genetic diversity.

Indigenous community rights

Indigenous community rights shall refer to those rights that accrue to indigenous communities through the operation of the South African Constitution, international law (including but not limited to the CBD), and other legal provisions, including South Africa's common law and customary law.

## 1.9 Research methodology

The study followed a doctrinal and comparative research methodology based on desktop research of international law instruments, the Constitution, domestic legislation and regulations, policy documents, reports of both local and international NGOs and other interest groups, as well as case law from domestic courts, international courts and foreign jurisdictions. The study also utilised the available academic literature and reports from reputable organisations and sources.



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According to Van Hoecke, doctrinal research ranges from straightforward descriptions of legal systems and the laws, whilst in some instances, it may also include some interpretive comments, where necessary.[66] On the other end, doctrinal research seeks to develop and build on general theories of law. Comparative legal research essentially involves the description of two or more legal systems coupled with comparative analyses. The main thrust of such a study would be to identify and analyse the significant similarities and differences between the legal systems being compared.

Two foreign jurisdictions were selected for the comparative study based on similarities to the South African context and the potential for South Africa to learn from them. Thus, Brazil and India were selected from a list of megadiverse countries that have implemented laws to protect their genetic resources and associated traditional knowledge, as well as the rights of the holders of such knowledge. This list also includes countries such as China, Australia, Ecuador, Costa Rica and Canada. Where necessary, reference is also made to these countries' laws.

### 1.10 Ethical considerations

The study was conducted in compliance with the ethical requirements of the University of Venda Research Ethics. The researcher undertook this study himself and acknowledged all sources used through appropriate intext citation and referencing, following the Oxford University Standard for Citation of Legal Authorities (OSCOLA) system using the Mendeley Desktop referencing software. The researcher avoided plagiarism and any other academic dishonesty, and the resultant dissertation and publications were submitted to Turnitin to check for plagiarism. The researcher did not falsify any data or information to support preconceived conclusions.

### 1.11 Limitations and assumptions of the study

This study was conducted when there were restrictions on the movement of people due to the COVID-19 pandemic. This means that the researcher did not fully use the library facilities at the University of Venda. However, the researcher utilised all available online

[66] Mark Van Hoecke, 'Methodology of Comparative Legal Research' [2016] Law and Method 279.



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research databases and the University of Venda's online resources to mitigate this. The study largely depended on primary and secondary sources of law to which the researcher gained online access. The comparative study of foreign jurisdictions was done via a desktop examination of their legal and policy documents available online and in the literature available online. Even though the researcher made every effort to stay abreast with any legislative changes affecting the study, most of the law that was valid at the beginning of the study was assumed to be in force for the duration of the study.

## 1.12 Overview of chapters

Chapter 1

Chapter 1 is an introductory chapter in which the study topic shall be introduced and the background to the study given. Based on the study's proposal, the chapter sets the scene for the rest of the study by introducing the current debates regarding the rights of indigenous communities, traditional knowledge, and IPRs regarding the ownership, utilisation and conservation of biodiversity. An overview of domestic (South African) legislation, international instruments and other measures was given. The study rationale, justification and objectives were also discussed herein. The chapter was primarily built from the research proposal.

Chapter 2

In Chapter 2, current academic and other literature are reviewed to provide a contextual and theoretical framework within which the objectives of the study shall be approached. This framework will be based on a critical analysis of the current debates and controversies regarding the protection of genetic resources and associated traditional knowledge. This includes a discussion of bioprospecting, the problem of biopiracy and the need for the protection of genetic resources and associated traditional knowledge. The chapter utilised both international and South African-focussed literature.

Chapter 3



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Chapter 3 provides a detailed discussion of both the international and South Africa's domestic regulatory instruments dealing with IPRs, traditional knowledge, rights of indigenous communities and access to and utilisation of genetic resources.

Chapter 4

Chapter 4 is a comparative study in which Brazil and India's legislative and policy interventions are analysed and compared to South Africa's to identify any opportunities for South Africa to enhance its interventions.

Chapter 5

The final chapter of the study synthesised the findings from all the chapters and drew conclusions and recommendations for policy and further study on balancing the rights of IPLCs and IPRs in the utilisation of genetic resources and associated traditional knowledge.



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# CHAPTER TWO

# GENETIC RESOURCES, TRADITIONAL KNOWLEDGE, AND INDIGENOUS COMMUNITY RIGHTS

## 2.1 Introduction

One of the most heated debates in academia and international policymaking is whether and how traditional knowledge should be protected.[1] This debate is linked to the increasing realisation of the importance of traditional knowledge in both the conservation[2] and commercial exploitation of genetic resources.[3] The latter is facilitated by a global intellectual property regime that has, over the years, seen intellectual property rights (IPRs), particularly patents, expanded to include the protection of some plant genetic resources.[4] Related to this debate is the question of what rights or interests are attached to traditional knowledge and genetic resources, and what is the basis, scope, and content of these rights?[5] However, this crucial issue of the rights of the custodians and holders of genetic resources and traditional knowledge is usually overlooked in these debates.

Therefore, this chapter critically examines the controversies surrounding the protection of traditional knowledge associated with genetic resources.[6] The chapter starts with a

[1] Anupam Manhas and Sneha Sharma, 'Protection of Traditional Knowledge : Issues and Concerns' (2018) 3 CPUH Research Journal 132; Charles R McManis, *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2012); Peter Drahos and Susy Frankel, 'Indigenous Peoples' Innovation and Intellectual Property: The Issues' in Peter Drahos and Susy Frankel (eds), *Indigenous Peoples' Innovation: Intellectual Property Pathways to Development* (Australian National University E-Press 2012) <https://library.oapen.org/bitstream/handle/20.500.12657/33574/459872.pdf?sequence=1#page=101> accessed 17 July 2022.

[2] Ulia Popova, 'Conservation, Traditional Knowledge, and Indigenous Peoples' (2014) 58 American Behavioral Scientist 197.

[3] Teshager Worku Dagne, 'Intellectual Property, Traditional Knowledge and Biodiversity in the Global Economy: The Potential of Geographical Indicators for Protecting Traditional Knowledge-Based Agricultural Products' (Dalhousie University 2012) <https://dalspace.library.dal.ca/handle/10222/14535>.

[4] Keith E Maskus, 'The New Globalisation of Intellectual Property Rights: What's New This Time?' (2014) 54 Australian Economic History Review 262; Keith E Maskus, 'Intellectual Property in a Globalizing World: Issues for Economic Research' (2015) 22 Asia-Pacific Journal of Accounting and Economics 231.

[5] Susette Biber-Klemm, Thomas Cottier and Danuta Szymura Berglas, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Susette Biber-Klemm, Thomas Cottier and Bergla eds, CABI 2006).

[6] As is discussed later on in this chapter, there are several formulations or definitions of traditional knowledge. The current discussion, however, only relates to traditional knowledge associated with the conservation and utilisation of genetic resources.



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discussion of genetic resources as an integral part of biodiversity. The role of traditional knowledge in harnessing the full potential of genetic resources through bioprospecting is then canvassed. Such a discussion is a precursor to understanding how competing rights, including intellectual property rights and indigenous peoples' rights associated with or derived from genetic resources and traditional knowledge, can be balanced and protected. The chapter argues that the protection of traditional knowledge cannot be divorced from the protection and promotion of the rights of holders of such traditional knowledge. The chapter will conclude by setting the scene for Chapter 3, which will examine the legal basis for protecting genetic resources and associated traditional knowledge in international and South African domestic law. To contextualise the following discussion, it is necessary to briefly discuss the connection between biodiversity, genetic resources, and traditional knowledge with a particular focus on South Africa.

## 2.2 Genetic resources: bioprospecting and biopiracy

### *2.2.1 Genetic resources in South Africa*

Botanically, over 50,000 vascular plant species, or 20-25% of the global total, are found in Africa.[7] Of these, 20,401 different plant species are found in South Africa.[8] As a result, South Africa is listed as one of the world's megadiverse countries, with rich biological diversity and abundant genetic resources.[9] For centuries, indigenous communities have conserved and utilised different plant species for various uses, including food, agricultural seed, and medicines. In the early 2000s, Neuwinger reported that more than 5,400 plant species recorded in Africa accounted for more than 16,300 traditional medicinal uses.[10] In Southern Africa, 3,000 species were reported to have potential medicinal or other

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[7] Ronell R Klopper and others, 'Floristics of the Angiosperm Flora of Sub-Saharan Africa: An Analysis of the African Plant Checklist and Database' (2007) 56 Taxon 201.

[8] AL Skowno and others, 'National Biodiversity Assessment 2018: The Status of South Africa's Ecosystems and Biodiversity - Synthesis Report', vol 1 (2018) <http://bgis.sanbi.org/NBA/NBA2011_metadata_formalprotectedareas.pdf%5Cnpapers2://publication/uuid/786A77C5-B11A-4F8D-B139-F3F626EBC802>.

[9] Wilfried Thuiller and others, 'Predicting Patterns of Plant Species Richness in Megadiverse South Africa' (2006) 29 Ecography 733 <https://onlinelibrary.wiley.com/doi/10.1111/j.0906-7590.2006.04674.x> accessed 29 June 2022.

[10] Rudolf Schmid and Hans Dieter Neuwinger, 'African Traditional Medicine: A Dictionary of Plant Use and Applications, with Supplement: Search System for Diseases' (2001) 50 Taxon 310 <https://www.cabdirect.org/cabdirect/abstract/20026790056> accessed 15 July 2022.



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commercial applications.[11] As of 2020, Van Wyk reported that more than 4,576 vascular plant species were used in African traditional medicine.[12] Of these, 83 are already commercially produced as branded products.[13]

In South Africa, the earliest recorded systematic studies of plants and their potential medicinal applications were conducted by Pappe in the 1840s and 1850s.[14] Since then, the field has grown significantly. By 2011, a review by Van Wyk revealed that there were more than 90 indigenous South African plants with proven commercial applications as medicinal products.[15] This is not surprising because over the last few decades, due to advances in biotechnology, plant genetic resources have increasingly come to the fore in the commercial development of many products, including cosmetics, agricultural seeds, food, and medicines.[16]

### *2.2.2 Bioprospecting and biopiracy*

Bioprospecting is vital in realising the full economic potential of genetic resources. Through bioprospecting, novel chemical and biological products derived from genetic resources that have potential applications in medicine, agriculture, cosmetics, and other industries have come to the fore.[17] The widespread search for genetic resources did not begin recently. However, the practice has gained further traction due to the expansion of the biotechnology industry and globalisation. According to Dal Monico, bioprospecting is driven by the patentability of living organisms, especially in countries from the global North, such as the United States.[18] However, a major cause for tension is that the bulk of

[11] BE Van Wyk and M Wink, *Medicinal Plants of the World* (1st edn, CABI 2004).
[12] BE Van Wyk, ‘A Family-Level Floristic Inventory and Analysis of Medicinal Plants Used in Traditional African Medicine’ (2020) 249 Journal of Ethnopharmacology 112351 <https://doi.org/10.1016/j.jep.2019.112351>.
[13] ibid.
[14] BE Van Wyk, ‘The Potential of South African Plants in the Development of New Medicinal Products’ (2011) 77 South African Journal of Botany 812 <http://dx.doi.org/10.1016/j.sajb.2011.08.011> accessed 13 February 2023.
[15] ibid.
[16] McManis (n 1).
[17] NP Makunga, LE Philander and M Smith, ‘Current Perspectives on an Emerging Formal Natural Products Sector in South Africa’ (2008) 119 Journal of Ethnopharmacology 365; John A Beutler, ‘Natural Products as a Foundation for Drug Discovery’ (2009) 46 Current Protocols in Pharmacology 1.
[18] Until 1980, living organisms could not be patented as they were considered to be elements of nature. However, the US Supreme Court case of *Diamond vs Chakrabarty* which allowed the patenting of a bacterium transfected with DNA opened the door to the patenting of living organisms.



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the world's intact biodiversity and genetic resources are found in the developing countries of the global South. Most of these countries, including South Africa, Brazil, and India, also often have neither the economic nor technological capacity to exploit these resources commercially.[19]

One of the earliest definitions of bioprospecting stated that it was 'the exploration of biological material for commercially valuable genetic and biochemical properties.'[20] However, since then, the definition has evolved with the advances in scientific methods, technology, and biotechnology. One of the more recent definitions states that bioprospecting is the 'systematic search for genes, natural compounds, designs, and whole organisms in wildlife with a potential for product development by biological observations and biophysical, biochemical and genetic methods without disruption to nature.'[21]

This latter definition shows that bioprospecting has developed into a highly systematic and technical process comprising three distinct steps. These are (i) biodiversity protection, (ii) collection of biological samples, and (iii) research and development.[22] Because of the connection between the first two steps, bioprospectors are able to collect samples of plants and genetic resources in the name of conservation and science. Once samples are collected and screened, the research and development stage involves determining each genetic resource's value or potential usefulness. Dal Monico notes that this last step almost always occurs in another country in the global North and never in the country of origin of the genetic resource.[23]

Three main issues are worth noting here. Firstly, the fact that private entities from the global North finance the bulk of bioprospecting activities means that the consequences

[19] Joseph Millum, 'How Should the Benefits of Bioprospecting Be Shared?' (2010).
[20] Sara Dal Monico, 'Biopiracy, or the Misappropriation of Traditional Knowledge for Profit : A Human Rights Perspective' (Ca' Foscari University of Venice 2018) <http://157.138.7.91/bitstream/handle/10579/14374/843353-1221115.pdf?sequence=2>.
[21] Palpu Pushpangadan and others, 'Biodiversity, Bioprospecting, Traditional Knowledge, Sustainable Development and Value Added Products: A Review' (2018) 07 Journal of Traditional Medicine & Clinical Naturopathy 1.
[22] Dal Monico (n 20).
[23] ibid, 34.



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of such activities will most likely be unfavourable to indigenous peoples and developing countries of the global South.[24] Secondly, the absence of legally enforceable international laws protecting genetic resources and associated traditional knowledge means that bioprospectors can take any valuable genetic resources without compensating indigenous people or their countries or facing any consequences.[25] Thirdly, bioprospectors can then turn to and utilise their countries' strong intellectual property protections to secure their 'discoveries' and 'inventions' at the expense of the indigenous peoples and developing countries.[26] Furthermore, the TRIPS Agreement,[27] with its drive towards the homogenisation of laws towards stronger IP protection, means that the very same developing countries are forced to respect and protect these intellectual property rights. Also, other writers have lamented that most bioprospecting happens with little involvement or acknowledgement of the roles played by IPLCs, local scientists and researchers,[28] or traditional knowledge.[29] When this happens, the actions of bioprospectors border on biopiracy, which has been flagged as a significant and urgent problem that must be addressed.[30]

Biopiracy is a complex phenomenon that does not have a universally accepted definition in international law.[31] According to Dal Monico, the term *piracy* on which *biopiracy* is based is a broad term whose origins lie in maritime piracy.[32] Piracy, in its modern context, refers primarily to the unauthorised use of someone's production or invention. In terms of intellectual property, 'piracy' primarily refers to the copying of copyrighted works[33] as well

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[24] ibid.
[25] Shannon F Smith, 'All Hands on Deck: Biopiracy and the Available Protections for Traditional Knowledge' (2014) 10 Journal of Animal and Natural Resource Law 273.
[26] Ashleigh Breske, 'Biocolonialism: Examining Biopiracy, Inequality, and Power' (2018) 6 Spectra.
[27] Agreement on Trade-Related Aspects of Intellectual Property Rights 1994.
[28] Maui Hudson and others, 'Rights, Interests and Expectations: Indigenous Perspectives on Unrestricted Access to Genomic Data' (2020) 21 Nature Reviews Genetics 377 <http://dx.doi.org/10.1038/s41576-020-0228-x>.
[29] Victoria Reyes-García, 'The Relevance of Traditional Knowledge Systems for Ethnopharmacological Research' (2014) 32 Recent Advances in Plant-Based, Traditional, and Natural Medicines 1.
[30] Smith (n 25).
[31] Dal Monico (n 20).
[32] Article 15 of the United Nations Convention on the High Seas of 1958 (entered into force on September 30th, 1962).
[33] International protection of copyright works mostly falls under the Universal Copyright Convention of 1952, and the Berne Convention of 1971.



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as digital piracy.[34] Dal Monico argues that 'biopiracy' is a form of misappropriation that falls somewhere between the two extreme ends of maritime and digital piracy.[35]

The term biopiracy was first coined in the 1990s by environmental organisations and environmentalists.[36] The Non-Governmental Organisation Action Group on Erosion Technology and Concentration (the ETC group, cited in McManis *et al.*) defines biopiracy as the 'appropriation of the knowledge and genetic resources of farming and indigenous communities by individuals or institutions seeking exclusive monopoly control (patents or intellectual property) over these resources and knowledge.'[37] On the other hand, Robinson distinguishes between biopiracy and misappropriation. He defines biopiracy as 'the patenting of (often spurious) inventions based on biological resources or traditional knowledge that are extracted without adequate authorisation and benefit sharing from other (usually developing) countries, indigenous or local communities.' On the other hand, misappropriations refer to 'the unauthorised extraction of biological resources and/ or traditional knowledge for research and development purposes from other (usually developing) countries, indigenous or local communities without adequate benefit sharing.'[38]

These definitions seem to imply that with biopiracy, the main objective is to secure private property rights, primarily patents, over 'inventions' based on genetic resources and associated traditional knowledge. On the other hand, misappropriation covers activities that may appear benign at face value, such as research and collecting sample biological materials. However, this paper submits that this distinction is not necessary, as the

[34] Digital piracy is defined as 'the act of reproducing, using, or distributing information products, in digital formats and/or using digital technologies, without the authorisation of their legal orners.' See also P. Belleflamme and M. Peitz 'Digital Piracy' Encyclopedia of Law and Economics, New York, Springer Science and Business Media, (2014) 1.
[35] Dal Monico (n 15) 37.
[36] Thomas Efferth and others, 'Biopiracy of Natural Products and Good Bioprospecting Practice' (2016) 23 Phytomedicine 166.
[37] McManis (n 9) 20. Pat Roy Mooney from the Non-Governmental Organisation Action Group on Erosion Technology and Concentration (the ETC Group) is often cited as the original proponent of the term 'biopiracy'. See also www.etcgroup.org/text/txt_key_defs.asp for the definition.
[38] Daniel F Robinson, 'Biopiracy and the Innovations of Indigenous Peoples and Local Communities' in Peter Drahos and Susy Frankel (eds), *Indigenous Peoples' Innovation: Intellectual Property Pathways to Development* (Australian National University E-Press 2012) <https://library.oapen.org/bitstream/handle/20.500.12657/33574/459872.pdf?sequence=1#page=101>.



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ultimate implications of both biopiracy and misappropriation are that IPLCs and host countries are denied fair and equitable sharing of the benefits of the utilisation of these resources. The following section discusses bioprospecting and biopiracy in the South African context.

### *2.2.3 Bioprospecting and biopiracy in South Africa*

Due to its status as a megadiverse country, there is a very active and lucrative bioprospecting industry in South Africa focussed on the search for economically valuable genetic resources and other biochemicals.[39] The South African government recognises the potential of the country's rich biodiversity in the nation's socio-economic development.[40] According to its Biodiversity Economy Programme, the country aims to 'enhance and create new and inclusive opportunities for economic growth through biodiversity-based initiatives.'[41] Some of the initiatives under this programme include facilitating and promoting mass cultivation of some key plant species, facilitating sustainable wild harvesting of some species of economic importance, and establishing, coordinating and facilitating applied research, local processing, innovation and product development through the BioPANZA initiative.[42]

South Africa's bioprospecting policies are rooted in the quest for the socio-economic emancipation of historically disadvantaged South Africans, the majority of whom still live in the rural areas as traditional communities.[43] Rutert et al. argue that a country such as South Africa must approach bioprospecting within its historical and regional setting/

[39] DFFE, 'The Access and Benefit-Sharing (BABS) Clearing House of the Republic of South Africa' <https://www.dffe.gov.za/projectsprogrammes/bioprospectingaccess_benefitsharing_babs_clearinghouse#indigenous> accessed 6 September 2022.
[40] Department of Environmental Affairs, 'Unlocking the Socio- Economic Potential of South Africa's Biodiversity Assets through Sustainable Use of Biodiversity Biodiversity Economy Programme Date' (2020).
[41] ibid.
[42] Bio Products Advancement Network South Africa. See also https://www.dffe.gov.za/projectsprogrammes/bioprospectingaccess_benefitsharing_babs_clearinghouse#legislative.
[43] Rachel Wynberg and others, *Guidelines for Providers, Users and Regulators South Africa's Bioprospecting, Access and Benefit-Sharing Regulatory Framework Overall Project Management and Coordination, Sections for Regulators and Users: Natural Justice Section for Providers* (2012) <www.environment.gov.za> accessed 10 February 2023.



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context.[44] The legacy of colonialism and apartheid is that most indigenous peoples were dispossessed of their land and resources and were excluded from active participation in the formal economy, including benefitting from the commercial exploitation of the country's biological resources.[45] Also, during the pre-democratic period, any discourse about bioprospecting did not recognise the rights and interests of indigenous peoples, whether as custodians of the genetic resources or as the users and innovators of the traditional knowledge used by bioprospectors.[46] Mukuka adds that another consequence of apartheid and colonialism was the erasure of non-Western cultures and the dismissal of their contributions as 'non-science.'[47] Morris argues that apartheid policies disrupted the traditional resource management systems and contributed to the marginalisation of indigenous peoples and traditional authorities in South Africa.[48] The author suggests that this legacy of apartheid continues to shape the bioprospecting landscape in South Africa, contributing to the ongoing challenges posed by bioprospecting activities.[49]

After the fall of apartheid, South Africa started taking significant steps towards protecting the rights and interests of IPLCs in bioprospecting. One of the first steps was ratifying and signing the CBD in 1995.[50] South Africa would also sign, ratify and become a party to the CBD's Nagoya Protocol on access and benefit sharing in October 2014.[51] According to Wynberg, the first ten years of democracy saw some dynamic shifts in South Africa's biodiversity conservation policies.[52] According to this author, the country moved away from a purely protectionist approach to one that recognised the need for an inclusive

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[44] Britta Rutert and others, 'Bioprospecting in South Africa: Opportunities and Challenges in the Global Knowledge Economy-a Field in the Becoming' (2011) No. 1/2011 <www.fu-berlin.de/cas/forschung/publikationen/working-papers/.www.fu-berlin.de/sites/en/cas/forschung/publikationen/.> accessed 17 August 2022.
[45] Rachel Wynberg, 'A Decade of Biodiversity Conservation and Use in South Africa: Tracking Progress from the Rio Earth Summit to the Johannesburg World Summit on Sustainable Development' (2002) 98 South African Journal of Science 233.
[46] George Sombe Mukuka, 'Indigenous Knowledge Systems and Intellectual Property Laws in South Africa' (University of the Witwatersrand 2010).
[47] ibid.
[48] Christopher Morris, 'Royal Pharmaceuticals: Bioprospecting, Rights, and Traditional Authority in South Africa' (2016) 43 American Ethnologist 525.
[49] ibid.
[50] 'List of Parties' <https://www.cbd.int/information/parties.shtml> accessed 10 February 2023.
[51] 'Parties to the Nagoya Protocol' <https://www.cbd.int/abs/nagoya-protocol/signatories/> accessed 12 February 2023. South Africa's obligations stemming from these international instruments (and other sources of law) will be discussed in the following chapter.
[52] Wynberg (n 45).



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approach to utilising and conserving biodiversity. However, some serious constraints have hampered the achievement of these goals. These include 'insufficient skills, expertise and funding, legal fragmentation, the inadequate integration of biodiversity into sectoral and land-use plans, and weak political commitment.'[53] These constraints have also hampered the field of bioprospecting in South Africa, often resulting in alleged incidences of biopiracy. The two most outstanding cases of biopiracy in South Africa are the *Hoodia* and the rooibos cases.

*Hoodia gordonii* is a succulent cactus plant traditionally utilised by the Khoi and San people of Southern Africa for hundreds of years. Its main uses include food, a hunger and thirst suppressant, and medicine. South Africa's Centre for Scientific and Industrial Research (CSIR) researched the plant, based primarily on the Khoi and San people's traditional knowledge, and isolated an active ingredient known as P57 or *oxypregnane steroidal glycoside* which is believed to be an appetite suppressant[54]. In a blatant act of biopiracy, the CSIR then went on to patent this active ingredient without acknowledging the use of the Khoi and San's traditional knowledge. In addition, several other international corporations started to obtain patents based on *Hoodia gordonii* for its weight-loss properties.[55]

The biopiracy of *Hoodia gordonii* was challenged by the South African government and several advocacy organisations, who argued that the patents were obtained without the proper recognition or compensation of the indigenous communities. In 2004, the South African government signed an agreement with a British pharmaceutical company, Phytopharm, which granted the company exclusive rights to use *Hoodia gordonii* for weight loss in exchange for a percentage of the profits and funding for conservation and development projects in the affected communities. Before this agreement, this case was a prime example of the exploitation of genetic resources and traditional knowledge for

[53] ibid.
[54] Fabian Simasiku Kapepiso and Richard Higgs, 'Tracing the Curation of Indigenous Knowledge in a Biopiracy Case' (2020) 16 AlterNative 38.
[55] ibid.



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corporate commercial gain without the benefits accruing to the IPLCs, who are the owners and holders of this traditional knowledge.

Another example involves rooibos, *Asparathus linearis*, a well-known herbal tea endemic to South Africa. Rooibos is currently marketed and sold in more than 37 countries worldwide.[56] Joubert and de Beer also highlight the potential of rooibos as a phytopharmaceutical whose medicinal properties have potential applications in health and wellness. Like *Hoodia gordonii*, corporations marketed and sold rooibos products based on the traditional knowledge of indigenous and local peoples without acknowledging them or sharing any benefits.[57] However, in 2019, the Rooibos industry and the Khoi and San communities signed an access and benefit sharing (ABS) agreement which would see these indigenous communities receive some financial benefits from the commercial exploitation of their traditional knowledge and the rooibos plants.[58]

These two cases highlight the issue of bioprospecting and how, for example, the absence of an international legally binding instrument has allowed it to morph into biopiracy in some cases. There is thus a pressing need to protect genetic resources and associated traditional knowledge from biopiracy and to ensure that IPLCs also derive benefits from the commercial utilisation of these resources. Therefore, the following section discusses the protection of genetic resources and associated traditional knowledge.

## 2.3 Protecting genetic resources and associated traditional knowledge

The utility of traditional knowledge in harnessing genetic resources in plant-based pharmaceuticals, agriculture, cosmetics, and other biotechnology products and processes, is well documented.[59] For example, it is estimated that traditional knowledge

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[56] E Joubert and D de Beer, 'Rooibos (Aspalathus Linearis) beyond the Farm Gate: From Herbal Tea to Potential Phytopharmaceutical' (2011) 77 South African Journal of Botany 869 <http://dx.doi.org/10.1016/j.sajb.2011.07.004>.
[57] Doris Schroeder and others, 'The Rooibos Benefit Sharing Agreement-Breaking New Ground with Respect, Honesty, Fairness, and Care' (2020) 29 Cambridge Quarterly of Healthcare Ethics 285.
[58] Desmond Oriakhogba, 'Reflections on the San and Khoi Rooibos Benefit-Sharing Agreement. | UCT IP Unit' (2020) 6 Benin Journal of Public Law 356 <https://ip-unit.org/2020/reflections-on-the-san-and-khoi-rooibos-benefit-sharing-agreement/>.
[59] Reyes-García (n 29).



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reduces drug discovery time and financial costs by as much as 50%.[60] Also, traditional knowledge is often cited as one of the ways indigenous peoples have managed to conserve and sustainably utilise the biological and genetic resources within their ecosystems.[61] It is argued in this chapter that this makes the protection of traditional knowledge associated with genetic resources just as important as protecting genetic resources. In fact, over the past twenty years, attention has shifted towards finding mechanisms to protect genetic resources and associated traditional knowledge.[62] As such, the following section briefly discusses traditional knowledge associated with genetic resources.

One of the key characteristics of genetic resources and traditional knowledge is their unequal distribution around the world.[63] Some countries, especially those in the global South, such as South Africa, India, and Brazil, are described as megadiverse due to their richly abundant genetic and biological diversity.[64] These countries also have indigenous peoples and local communities whose rich customs and traditions and close connections to their environment, including biological resources, have seen them develop their traditional knowledge. However, most of these countries are often socio-economically weaker than their biodiversity-poor but economically wealthier counterparts from the global North.[65] These unequal power dynamics between the global North and the global South[66] and the unequal distribution of genetic resources and traditional knowledge directly influence the protection of genetic resources and traditional knowledge.[67] These differences are partly to blame for the continued absence of an international legally

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[60] Beutler (n 17); Reyes-García (n 29).
[61] Joelle Dountio, 'The Protection of Traditional Knowledge: Challenges and Possibilities Arising from the Protection of Biodiversity in South Africa' (2011) 26 Sajah 10.
[62] Graham Dutfield and Uma Suthersanen, 'Traditional Knowledge and Genetic Resources: Observing Legal Protection through the Lens of Historical Geography and Human Rights' (2019) 58 Washburn Law Journal 399 <https://ssrn.com/abstract=3282818https://ssrn.com/abstract=3282818>.
[63] Dountio (n 61).
[64] Lerato N Hoveka and others, 'Identifying Biodiversity Knowledge Gaps for Conserving South Africa's Endemic Flora' (2020) 29 Biodiversity and Conservation 2803 <https://doi.org/10.1007/s10531-020-01998-4>.
[65] Dion Dennis, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge*, vol 29 (2007).
[66] Breske (n 26).
[67] WIPO, 'Report on the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC): Decision' (WIPO, 2021) <https://www.wipo.int/export/sites/www/tk/en/documents/pdf/igc-mandate-2022-2023.pdf>.



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binding instrument for the protection of genetic resources and associated traditional knowledge.[68]

Regardless, several biodiversity-rich developing countries have enacted domestic legislation and policies for the protection of genetic resources and associated traditional knowledge. Most of these laws are based on the CBD and NP's access and benefit-sharing (ABS) regulations. However, Imran and et al., point out that most of these measures, including bioprospecting protocols, remain ineffective in many developing countries.[69] Some of the reasons cited include the unaffordable technical costs of implementing or enforcing them.[70] Another reason which has been gaining traction in the literature and policymaking is the realisation that most measures to combat biopiracy and mechanisms to protect genetic resources and traditional knowledge have scarcely integrated considerations of indigenous peoples' rights in the decision-making process.[71]

### 2.3 Traditional knowledge associated with genetic resources

The protection of traditional knowledge is littered with various debates that range from questions about what constitutes traditional knowledge, who owns it, whether it should be protected, and, if so, how it can be protected.[72] One often cited challenge in any discussion involving traditional knowledge is the absence of a single unifying definition in the literature. As a term, traditional knowledge arises in various socio-economic contexts where it is applied in different roles and functions. As a concept, traditional knowledge is both broad and very complex. It includes knowledge about ecology, access and utilisation, and the conservation/preservation of environmental elements, including plants and

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[68] Chidi Oguamanam, 'Towards a Tiered or Differentiated Approach to Protection of Traditional Knowledge (traditional knowledge) and Traditional Cultural Expressions (TCEs) in Relation to the Intellectual Property System' [2019] The African Journal of Information and Communication 1.
[69] Yoonus Imran and others, 'Biopiracy: Abolish Corporate Hijacking of Indigenous Medicinal Entities' (2021) 2021 The Scientific World Journal 1.
[70] ibid.
[71] Peter Drahos and Susy Frankel, *Indigenous Peoples' Innovation: Intellectual Property Pathways to Development* (Peter Drahos and Susy Frankel eds, Australian National University E-Press 2012); Oguamanam, 'Towards a Tiered or Differentiated Approach to Protection of Traditional Knowledge (traditional knowledge) and Traditional Cultural Expressions (TCEs) in Relation to the Intellectual Property System' (n 134); Hossain and Ballardini (n 2); Hossain and Ballardini (n 2).
[72] Charles A Masango, 'Indigenous Traditional Knowledge Protection:Prospects in South Africa's Intellectual Property Framework?' (2010) 76 South African Journal of Libraries and Information Science 74.



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animals. Traditional knowledge also relates to 'traditional cultural expressions which include traditional folklore, handicrafts, songs, dance, and literature.'[73] Thus, several definitions and conceptions of traditional knowledge exist in the literature and policy documents, including domestic legislation and international instruments.

Traditional knowledge is often called by various other names, depending on the context. These include traditional ecological knowledge,[74] indigenous knowledge, indigenous traditional knowledge,[75] and traditional knowledge related to the medicinal use of plants.[76] According to some authors, these terms are not variations of the term ‘traditional knowledge’ but are distinct concepts.[77] In general, traditional knowledge refers to the knowledge developed by indigenous communities.[78] According to WIPO, traditional knowledge encompasses ‘tradition-based literary, artistic or scientific works, performances, inventions, scientific discoveries, designs, marks, names, symbols, undisclosed information and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, literary or artistic fields.’[79] On the other hand, the CBD defines traditional knowledge as the ‘knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyle.’[80]

The World Intellectual Property Organisation (WIPO), through its Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore (WIPO-IGC), has been involved in negotiations to develop a legally binding international instrument for the protection of, among others, genetic resources and traditional knowledge.[81] Because of its leading role in the international discourse on the

[73] ‘Traditional Cultural Expressions’ <https://www.wipo.int/tk/en/folklore/> accessed 18 July 2022.
[74] Fikret Berkes, Johan Colding and Carl Folke, ‘Rediscovery of Traditional Ecological Knowledge as Adaptive Management’ (2000) 10 Ecological Applications 1251; L Feris, ‘A Legal Framework for the Protection of Biodiversity Related Traditional Knowledge’ (2004) 11 South African Journal of Environmental Law and Policy 1.
[75] Masango (n 72).
[76] Emeka Polycarp Amechi, ‘Traditional Knowledge Relating to Medical Uses of Plants and the Patent Regime in South Africa: Whither the Traditional Healers?’ (2015) 27 SA Mercantile Law Journal 58.
[77] See for example, A Andrzejewski, ‘Traditional Knowledge and Patent Protection: Conflicting Views on International Patent Standards’ (2010) 13 PER/ PELJ 94.
[78] ibid.
[79] WIPO-IGC, ‘Traditional Knowledge’ <https://www.wipo.int/tk/en/tk/> accessed 17 August 2021.
[80] Article 8(j) of the United Nations Convention on Biological Diversity (CBD) 1992.
[81] WIPO (n 67).



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protection of genetic resources and traditional knowledge, the WIPO-IGC's definition of traditional knowledge is worth noting. The WIPO-IGC defines traditional knowledge as the 'knowledge, 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.'[82] Another definition commonly cited in the literature states that traditional knowledge is 'the knowledge, practices, and beliefs about the relations between people and the environment.'[83] These definitions clarify the connection between traditional knowledge and the communities that would have developed it. It is generally accepted in the literature that traditional knowledge forms part of the cultural and spiritual identity of the traditional and local communities from which it originates.[84]

Whilst the above definitions are generally used and cited in the international literature, some have been used in the African and South African contexts. Firstly, the ARIPO's[85] Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore (the Swakopmund Protocol) 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. The term shall not be limited to a specific technical field and may include agricultural, environmental or medical knowledge, and knowledge associated with genetic resources.'[86]

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[82] WIPO-IGC, 'The Protection of Traditional Knowledge: Draft Articles' <https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=276361> accessed 17 August 2021; WIPO-IGC (n 79).
[83] Berkes, Colding and Folke (n 74); Victoria Reyes-García and others, 'Documenting and Protecting Traditional Knowledge in the Era of Open Science: Insights from Two Spanish Initiatives' (2021) 278 Journal of Ethnopharmacology 114295 <https://linkinghub.elsevier.com/retrieve/pii/S0378874121005225> accessed 14 August 2022.
[84] WIPO (n 67); Dal Monico (n 20); Robinson (n 38); Drahos and Frankel (n 71).
[85] Even though South Africa is not a party to the African Regional Intellectual Property Organisation (ARIPO), membership of the organisation is open to Member States of the African Union (AU). Several countries from Southern Africa, including all South Africa's neighbours are Member States of the organisation. Therefore, the definition from ARIPO's Swakopmund Protocol may be worth considering.
[86] Section 2 of the Swakopmund Protocol



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The main difference between this definition and those found in the literature is the express characterisation of traditional knowledge as a product of intellectual activity and innovation. Similarly, in South Africa, Regulation 1 of the BABS regulations defines traditional knowledge as;

> '…knowledge of indigenous genetic and biological resources by an indigenous community or specific individual, in accordance with written or unwritten rules, usages, customs or practices traditionally observed, accepted and recognised by them, and includes discoveries about relevant indigenous genetic and biological resources by that community or individual.'[87]

According to WIPO, a complete and authoritative definition of traditional knowledge is not a necessary precursor to developing a legal system that protects it.[88] Carvalho further states that most patent laws do not contain comprehensive definitions for 'inventions.' Instead, the critical element is that such laws identify the mandatory characteristics or features an invention must meet to qualify for patent protection.[89] Similarly, trademark laws do not define what a 'sign' is. Instead, laws explicitly state that signs must be:' distinctive' to be protectable under trademark laws. According to Carvalho, what is required, instead of a comprehensive definition of traditional knowledge, is a 'working definition' in which the essential elements of traditional knowledge are articulated.

Accordingly, traditional knowledge comprises two distinct categories, namely the actual knowledge itself and the expression of that knowledge (for example, in music, verbal, artistic or other cultural expressions.[90] Under the first category, traditional knowledge consists of the knowledge itself, namely the ideas developed by indigenous peoples in an informal, traditional manner. Most of these ideas respond to the needs imposed by their physical and cultural environments. The author, however, argues that this conceptualisation of traditional knowledge implies that the production of traditional

[87] Regulation 1 of the Biodiversity Access and Benefit Sharing (BABS) regulations. https://cer.org.za/wp-content/uploads/2010/05/Amendments-to-Regulations-on-Bioprospecting-access-and-benefit-sharing.pdf, accessed 11 November 2022.
[88] Nuno Pires de Carvalho, 'From the Shaman's Hut to the Patent Office: A Road Under Construction' in Charles R McManis (ed), *Biodiversity and the Law* (1st edn, Routledge 2012).
[89] ibid.
[90] de Carvalho (n 147) 242.



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knowledge is a reactive rather than a proactive process. It is submitted that this is a colonial mentality that views indigenous peoples as incapable of proactively creating knowledge for the betterment of their communities. Carvalho distinguishes between this category of traditional knowledge and a second category which comprises the expression of traditional knowledge or cultural expressions of traditional knowledge, also known as 'folklore' or TCEs.[91] This distinction appears to have been adopted at the WIPO-IGC, where the approach clearly distinguishes between traditional knowledge and TCEs. The same approach is adopted in this study, focusing on traditional knowledge associated with genetic resources.

De Carvalho offers 'a working definition' of traditional knowledge. Under this definition, traditional knowledge is made up of two distinct categories. The first category consists of the knowledge or ideas developed by the indigenous peoples through traditional means and in response to the pressures imposed on them by their immediate physical and cultural environments. Such knowledge and ideas are closely tied to cultural identification.[92] He terms this 'traditional knowledge *stricto sensu*'. This is differentiated from 'expressions of traditional knowledge,' which include verbal, musical, and artistic expressions, collectively known as traditional cultural expressions (TCEs).[93] Together these two categories make up traditional knowledge *lato sensu*.[94]

This approach acknowledges the dichotomy between expressions and ideas. De Carvalho argues that this is commendable as it puts traditional knowledge within the realms of IP since the development of international IP law was based on such a dichotomy. This approach's weakness, however, is that it attempts to merely fit traditional knowledge within the general conception of IP without paying particular attention to the nuances within traditional knowledge. It also ignores the interrelationships with the communities within which it is developed and other factors, such as biological and genetic

[91] Nuno Pires de Carvalho, 'From the Shaman's Hut to the Patent Office: A Road Under Construction' in Charles R McManis (ed), *Biodiversity and the Law* (1st edn, Routledge 2012) at 243. According to Carvalho, 'expressions of traditional knowledge' include verbal expressions such as poetry, folk tales and riddles, musical expressions, songs, instrumental music, expressions by action or performances, dances, plays and artistic forms or rituals. TCEs can be in either tangible or intangible form.
[92] McManis (n 1).
[93] WIPO-IGC (n 79).
[94] McManis (n 1). 243



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resources, that spur its development to enable indigenous peoples to harness the utility of these resources. It is also argued that the approach suggested by De Carvalho underplays the relationship between traditional knowledge, genetic resources, and the communities that develop and, therefore, own the traditional knowledge.

Regardless, De Carvalho proposes the recognition of the following as the main elements of traditional knowledge. Traditional knowledge is created in an incremental and collective process, subject to customary laws and principles applicable to particular situations. However, De Carvalho's approach distinguishes between the authorship and the ownership of traditional knowledge by indigenous peoples. He states that the reference to indigenous peoples in the definition is not concerned with ownership but rather authorship. Indigenous peoples must be identified as a separate group (on linguistic, ethnic, or religious criteria, or a combination thereof) and maintain a close relationship with their geographical environment.

De Carvalho states that '*traditional*' refers to the method of creating traditional knowledge, not the knowledge itself. Thus, 'traditional' means that traditional knowledge is developed according to a particular community's rules, protocols, and customs. This means traditional knowledge is generated through an incremental and informal trial-and-error method. Therefore, traditional knowledge cannot be generated in laboratories or other systematic research and development places.

Traditional knowledge is the result of informal creation because it is developed as a response to the needs imposed by the physical and cultural environments that dictate the lifestyles of traditional communities and indigenous peoples. As a result, traditional knowledge is considered holistic because its spiritual and practical elements have the same purpose of integrating the community with its environment. Traditional knowledge is a means of cultural identification. This means that, because of the close association between traditional knowledge and a community's cultural context, the elements of traditional knowledge are closely intertwined with the community's identity. ‘There must be an unbreakable link that connects traditional knowledge to its creators, a sort of subtle (but spiritually significant) thread of Ariadne that does not permit that link to be broken



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and thus lost.'[95] Describing traditional knowledge as 'informal' can be argued to be a way of 'boxing' traditional knowledge within the Eurocentric conceptualisation of intellectual property where knowledge derived through western means is deemed formal, and anything else is deemed informal.[96]

Grenier (cited in Mukuka) defines indigenous knowledge as the 'unique…knowledge existing within and developed around specific conditions of women and men indigenous to a particular geographic area.'[97] Implicit in this definition is the 'inalienable link' of such knowledge to the indigenous peoples of the particular geographic area wherein it is developed.[98] Unlike the arguments advanced by De Carvalho, Grenier argues that traditional knowledge is structured and systematic in how it is generated, used, stored and transferred from one generation to the next.[99]

### 2.4 Indigenous peoples and local communities (IPLCs) rights

Implicit in the above discussion on the definition of traditional knowledge is the role traditional communities play. This study adopts the descriptions and definitions widely used in the literature of traditional communities as 'indigenous peoples and local communities.'[100] Indigenous peoples are groups with a unique connection to their ancestral lands, territories, and resources.[101] They have distinct cultures, social systems,

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[95] de Carvalho (n 144) 244.
[96] Christoph Antons, 'Traditional Knowledge, Traditional Cultural Expressions and Intellectual Property Rights: Approaches in the Asia-Pacific Region', *Traditional knowledge, traditional cultural expressions and intellectual property law in the Asia-Pacific Region* (Kluwer Law International 2009).
[97] George Sombe Mukuka, *'Reap What You Have Not Sown': Indigenous Knowledge Systems and Intellectual Property Laws in South Africa* (Pretoria University Law Press 2010), 16.
[98] ibid.
[99] L Grenier, *Working with Indigenous Knowledge: A Guide for Researchers* (International Development Research Centre 1998).
[100] The United Nations declaration on the rights of indigenous peoples 2007 (Resoultion adopted by the General Assembly on 13 September 2007); D Robinson, 'Biopiracy and the Innovations of Indigenous Peoples and Local Communities' in Peter Drahos and Susy Frankel (Eds), Indigenous Peoples' Innovation'; Giulia Sajeva, 'The Legal Framework Behind Biocultural Rights. An Analysis of Their Pros and Cons for Indigenous Peoples and for Local Communities' in Fabien Girard, Ingrid Hall and Christine Frison (eds), *Biocultural Rights and Community Protocols. Protecting and Promoting Indigenous Peoples' and Local Communities' Ways of Life.* (Earthscan-Routeledge 2022) <https://library.oapen.org/bitstream/handle/20.500.12657/53679/9781000593624.pdf?sequence=1#page=202> accessed 24 August 2022.
[101] Chidi Oguamanam, *Genetic Resources, Justice and Reconciliation* (Chidi Oguamanam ed, Cambridge University Press 2018); Federica Cittadino, 'Indigenous Rights and the Protection of Biodiversity: A Study of Conflict and Reconciliation in International Law' (University of Trento 2016).



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and worldviews, often shaped by their close relationship and reliance on their environment for their livelihoods.[102] Therefore, the protection of traditional knowledge and genetic resources is closely linked to the rights and interests of IPLCs.

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) defines indigenous peoples as

> peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country or a geographical region to which the country belongs at the time of conquest or colonisation or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural, and political institutions. IPLCs, on the other hand, are groups that are closely associated with indigenous peoples and often share similar cultural, social, and economic practices.[103]

This definition has been praised by some authors who argue that recognising the diversity of indigenous communities and their varied circumstances foments inclusivity and attempts to improve their socio-economic status.[104] Some experts have questioned the use of self-identification as the main factor for determining indigenous status, as it can result in disagreements and the exclusion of certain groups. Moreover, some scholars have highlighted that the definition's concentration on cultural uniqueness and historical continuity may perpetuate simplistic ideas of indigeneity and disregard the present-day experiences of indigenous communities.[105] Another commonly used definition of indigenous people is the one given by the International Labour Organisation (ILO). According to this definition, indigenous and tribal peoples refer to

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[102] Graham Dutfield, 'HARNESSING TRADITIONAL KNOWLEDGE AND GENETIC RESOURCES FOR LOCAL DEVELOPMENT AND TRADE Draft Paper Presented at the International Seminar on Intellectual Property and Development Organised by WIPO Jointly with UNCTAD, UNIDO, WHO and WTO May 2005'.

[103] The United Nations declaration on the rights of indigenous peoples.

[104] Mauro Barelli, 'The Role of Soft Law in the International Legal System: The Case of the United Nations Declaration on the Rights of Indigenous Peoples' (2009) 58 International and Comparative Law Quarterly 957.

[105] ibid.



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> 'those [people] which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form, at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems.'[106]

In the South African literature, the term 'indigenous communities' has been used to identify 'the Khoisan communities, the Nguni peoples (Zulu, Xhosa, Swazi and Ndebele), the Sotho-Tswana peoples (Tswana, Pedi and Basotho) and the Venda, Lemba and Shangaan-Tsonga.[107] Even though, as noted by Mukuka, other authors include other ethnic groups, such as the Afrikaners and the so-called coloureds, in their definition of indigenous South African communities,[108] this study is limited to the former classification.

As mentioned above, genetic resources and associated traditional knowledge are often closely linked to the rights and interests of IPLCs, including their cultural and spiritual practices and sources of livelihood.[109] Thus protecting genetic resources and traditional knowledge cannot ignore the protection and promotion of the rights and interests of IPLCs. Traditional knowledge is often viewed as a common resource for these communities, which is deeply intertwined with their cultural, social, and economic practices. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) recognises the importance of traditional knowledge to these communities.[110] Article 31 of

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[106] Indigenous and Tribal Peoples Convention, 1989 (No. 169) 1989 (Adopted on 27 June 1989 by the General Conference of the International Labour Organisation at its seventy-sixth session: Entry into force 5 September 1991).
[107] Mukuka (n 97); Amechi (n 76).
[108] George Sombe Mukuka, *'Reap What You Have Not Sown': Indigenous Knowledge Systems and Intellectual Property Laws in South Africa* (Pretoria University Law Press 2010), 16.
[109] Xiaomei Mai, 'Traditional Knowledge Protection Consistent With Indigenous Interests' (2020) 16 Cross-Cultural Communication 39; S Geyer, 'Towards a Clearer Definition an Understanding of 'Indigenous Community' for the Purposes of the Intellectual Proper Laws Amendment Bill, 2010: An Exploration of the Concepts 'Indigenous' and 'Traditional'' (2010) 13 PER/ PELJ 127.
[110] The United Nations declaration on the rights of indigenous peoples.



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the UNDRIP recognises the right of indigenous peoples to maintain, control, protect, and develop their cultural heritage, traditional knowledge, and traditional cultural expressions.

The relationship between traditional knowledge and IPRs is complex.[111] Unlike traditional knowledge, which is rooted in communal ownership and benefit, IPRs are mainly focused on the commercial exploitation, by individuals or corporations, of resources and the protection of the economic interests of these entities.[112] As a result, authors such as Oguamanam assert that integrating indigenous peoples' rights into the intellectual property legal framework is essential for ensuring their rights are protected.[113] He argues that IPRs should be redefined to recognise the collective nature of traditional knowledge and the need for the informed and prior consent of indigenous communities.[114]

The issue of intellectual property rights and indigenous people's rights is a significant challenge for policymakers. Lea argues that the current international legal framework for intellectual property is inadequate in protecting the rights and interests of indigenous peoples.[115] He asserts that there is a need to create an international legal regime that balances the rights IPLCs with the economic and individualised interests protected by IPRs. Similarly, calls have been made for countries to create their own legal regimes to protect genetic resources and associated knowledge and balance these protections with the purposes of IPRs.[116]

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[111] TRIPS Council, 'The Relationship between the TRIPS Agreement and the Convention on Biological Diversity: Summary of Issues Raised and Points Made' (2006) <https://www.wto.org/english/tratop_e/trips_e/ipcw368_e.doc>.
[112] Lekha Laxman and Abdul Haseeb Ansari, 'The Interface between TRIPS and CBD: Efforts towards Harmonisation' (2012) 11 Journal of International Trade Law and Policy 108.
[113] Chidi Oguamanam, 'Indigenous Peoples' Rights At The Intersection of Human Rights And Intellectual Property Rights' (2014) 18 Marquette Intellectual Property Law Review 265 <http://scholarship.law.marquette.edu/iplrhttp://scholarship.law.marquette.edu/iplr/vol18/iss2/8>.
[114] Chidi Oguamanam, 'Indigenous Peoples Rights in Equitable Benefit-Sharing over Genetic Resources: Digital Sequence Information (DSI) and a New Technological Landscape', *Research Handbook on the International Law of Indigenous Rights* (Edward Elgar Publishing 2022) <https://bit.ly/3fMtz6f> accessed 30 August 2022.
[115] David Lea, *Property Rights, Indigenous People and the Developing World: Issues from Aboriginal Entitlement of Intellectual Ownership Rights* (Martinus Nijhoff Publishers 2008).
[116] Chidi Oguamanam, *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine* (Univesity of Toronto Press 2006); Patrick Agejoh and Steve Cornelius, 'Legal Justification to Innovation of Indigenous Knowledge and the Right to Development in Africa' (2017) 47 Africa Insight 135.



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In addition, such measures must be inclusive to cater to the diversity of IPLCs, users, and holders of genetic resources and traditional knowledge.[117] Authors such as Biber-Klemm et al. assert that the protection of traditional knowledge associated with genetic resources should be based on the principle of equitable benefit-sharing.[118] They argue that this principle recognises the contributions made by indigenous communities to the development of genetic resources and provides for the fair and equitable sharing of benefits arising from their use. The authors also argue that the protection of traditional knowledge associated with genetic resources should be guided by a partnership approach, which recognises the rights and interests of all stakeholders, including indigenous communities.[119]

**2.5 Conclusion**

The above section has discussed the definitions of traditional knowledge associated with genetic resources, indigenous peoples and local communities and how the protection of the former is closely tied to the rights of the latter. The protection of traditional knowledge is essential for the preservation of cultural heritage and the promotion of sustainable development. The current legal framework for IPRs is inadequate in addressing the concerns of indigenous peoples, and there is a need to create a legal regime that balances the rights of indigenous communities with the economic interests of commercial entities. The protection of traditional knowledge should be based on the principle of equitable benefit-sharing and a partnership approach, which recognises the rights and interests of all stakeholders, including indigenous communities.

Traditional knowledge increases the efficacy of genetic resource screening considerably.[120] However, due to the lack of international legally binding protection mechanisms, the providers of traditional knowledge often do not receive any reward or compensation for the use of their traditional knowledge. In other cases, the correct identity

[117] E Kibuka-Sebitosi, 'Protecting Indigenous Knowledge And The Rights And Interests Of Indigenous Medicine Practitioners In Africa' (2008) 7 Indilinga: African Journal of Indigenous Knowledge Systems 72.
[118] Biber-Klemm, Cottier and Berglas (n 5).
[119] ibid.
[120] Dwight D Baker and others, 'The Value of Natural Products to Future Pharmaceutical Discovery' (2007) 24 Natural Product Reports 1225.



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of the exact holders of particular traditional knowledge is debatable.[121] This failure by holders of traditional knowledge to benefit from its use, coupled with the seemingly blatant utilisation for profit by other parties, primarily drives the calls to protect traditional knowledge. More accurately, however, what is sought to be protected is the rights of holders of traditional knowledge. The following chapter will examine South Africa's legal duties in international law and South African law to protect traditional knowledge, genetic resources, and the rights of indigenous peoples within the context of the international intellectual property regime.

[121] Sita Reddy, 'Making Heritage Legible: Who Owns Traditional Medical Knowledge?' (2006) 13 International Journal of Cultural Property 161.



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# CHAPTER THREE

# THE LEGAL BASIS FOR PROTECTING GENETIC RESOURCES, TRADITIONAL KNOWLEDGE, INDIGENOUS COMMUNITY RIGHTS AND INTELLECTUAL PROPERTY RIGHTS: INTERNATIONAL AND CONSTITUTIONAL FRAMEWORKS

## 3.1 Introduction and background

The previous chapter discussed the utility of traditional knowledge in bioprospecting and the commercial utilisation of genetic resources. It demonstrated how the protection of traditional knowledge and associated genetic resources is intricately linked to the rights of IPLCs. The previous chapter also highlighted the conflict between protecting genetic resources and traditional knowledge on the one hand and intellectual property rights (IPRs) on the other. It was noted that this conflict is exacerbated by the unique features of traditional knowledge, the inadequacy of the global intellectual property (IP) regime to protect it, and the absence of a comprehensive legally binding international instrument to protect genetic resources and associated traditional knowledge within the global intellectual property (IP) system.

However, it was also noted that some countries, such as South Africa, have developed domestic legal tools to protect genetic resources and associated traditional knowledge within their jurisdictions. To determine whether these tools effectively balance the rights and interests at stake, it is necessary first to understand the legal basis for protecting genetic resources and associated traditional knowledge in South Africa. This chapter, therefore, examines the nature, scope and content of the constitutional and international legal frameworks from which an obligation to balance the protection of genetic resources and associated traditional knowledge, IPRs, and the rights of IPLCs could be derived. However, before delving into this discussion, the following section sets the scene by first giving an overview of the historical context within which these legal frameworks must be viewed.



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## 3.2 Pre-democratic South Africa

It is a widely accepted principle that nations are a product of their history. Thus, it is appropriate to briefly discuss South Africa's colonial and apartheid history as it shaped the protection and utilisation of genetic resources, traditional knowledge and the recognition of IPRs and the rights of IPLCs in the country. A socio-economic and political system of racial segregation and race-based deprivation characterised the colonial and apartheid government systems that preceded democracy in South Africa.[1] The enactment of legislation such as the Natives Land Act of 1913 saw South Africa's indigenous peoples being systematically dispossessed of land and denied access to land-based resources such as fertile agricultural land and related biological resources.[2] Most of these communities were driven to less fertile and less productive areas, whilst the white minority had ample access to the prime land in the country.[3] The net result was under-resourced and impoverished indigenous communities who relied directly on their immediate environment for their livelihoods.[4]

Also, the colonial system was premised on denying the humanity of non-European peoples at worst, or at least denying the validity of their traditional and indigenous systems of doing things.[5] This system meant that indigenous peoples' customs, traditions, methods and knowledge were relegated in favour of the promotion of Eurocentric notions of civilisation. A direct consequence is that the global intellectual property system, which developed around this time and was premised on Western notions of individual private property, ignored indigenous customs and traditions when assigning value to knowledge

[1] Worldbank, 'An Incomplete Transition: Overcoming the Legacy of Exclusion in South Africa' (2018) <http://documents.worldbank.org/curated/en/815401525706928690/pdf/WBG-South-Africa-Systematic-Country-Diagnostic-FINAL-for-board-SECPO-Edit-05032018.pdf>.
[2] Thembela Kepe, Rachel Wynberg and William Ellis, 'Land Reform and Biodiversity Conservation in South Africa: Complementary or in Conflict?' (2005) 1 International Journal of Biodiversity Science & Management 3.
[3] Leepo Modise and Ndikho Mtshiselwa, 'The Natives Land Act of 1913 Engineered the Poverty of Black South Africans: A Historico-Ecclesiastical Perspective' (2013) 39 Studia Historiae Ecclesiasticae 359 <http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S1017-04992013000200020&lng=en&tlng=en> accessed 11 March 2023.
[4] Kepe, Wynberg and Ellis (n 2).
[5] Ulia Popova, 'Conservation, Traditional Knowledge, and Indigenous Peoples' (2014) 58 American Behavioral Scientist 197; Liddy Scarlet Curbishley, 'Destabilizing the Colonization of Indigenous Knowledge In the Case of Biopiracy' (Utrecht University 2015).



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and products of innovation.[6] In other words, because it did not fit Western notions of innovation, indigenous people's traditional knowledge was dismissed as not innovative and, therefore, not worthy of protection.[7]

One of the consequences of colonialism and apartheid was the treatment of genetic resources as a commons belonging to no one in particular.[8] The basis of colonialism was that the land in Africa and, by extension, everything on it was *terra nullius*, belonging to no one.[9] Other authors, however, claim that there was some recognition of genetic resources and associated traditional knowledge as being 'communally' owned.[10] Even so, this did not prevent such genetic resources from being misappropriated and deemed unsuitable for protection under IP laws.[11] In addition to this, the colonial and apartheid governments never enacted any legislation that could govern the search and collection of biological and genetic samples of economic potential.[12] Historically, there was unrestricted access to South Africa's biological resources, which resulted in large quantities of these being harvested and exported abroad for research, development, value-addition and off-shore financial benefit.[13] Crouch *et al*. added that this was due to the absence of legislation and regulations governing bioprospecting in South Africa.[14] Thus, the historical absence of legal provisions governing bioprospecting and its associated activities in South Africa led to unbridled access to the nation's biological

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[6] Curbishley (n 5).
[7] Nuno Pires de Carvalho, 'From the Shaman's Hut to the Patent Office: A Road Under Construction' in Charles R McManis (ed), *Biodiversity and the Law* (1st edn, Routledge 2012).
[8] Sita Reddy, 'Making Heritage Legible: Who Owns Traditional Medical Knowledge?' (2006) 13 International Journal of Cultural Property 161; Graham Dutfield and Uma Suthersanen, 'Traditional Knowledge and Genetic Resources: Observing Legal Protection through the Lens of Historical Geography and Human Rights' (2019) 58 Washburn Law Journal 399 <https://ssrn.com/abstract=3282818https://ssrn.com/abstract=3282818>.
[9] Yogi Hale Hendlin, 'From Terra Nullius to Terra Communis' (2014) 11 Environmental Philosophy 141.
[10] Emeka Polycarp Amechi, 'Whose Knowledge Is It Anyway? Traditional Healers, Benefit-Sharing Agreements and the Communalism of Traditional Knowledge of the Medicinal Uses of Plants in South Africa' (2017) 4 South African Law Journal 847.
[11] Michael Blakeney, 'Remedying the Misappropriation of Genetic Resources' in HB Singh (ed), *Intellectual Property Issues in Microbiology* (Springer Nature Pte Ltd 2019).
[12] Neil R Crouch and others, 'South Africa's Bioprospecting, Access and Benefit-Sharing Legislation: Current Realities, Future Complications, and a Proposed Alternative' (2008) 104 South African Journal of Science 355.
[13] ibid.
[14] ibid.



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aresources.[15] As a result, the nation and IPLCs were denied fair and equitable benefits from the commercial utilisation of the local biological resources.[16]

Therefore, at the advent of democracy, South Africa, in line with the transformative nature of its democratic Constitution, sought to redress these disparities. As discussed below, these efforts entailed not only protecting genetic resources and associated traditional knowledge but coupling these efforts with the protection and promotion of the rights of all South Africans as enshrined in the Bill of Rights.[17] Also, for South Africa, democracy came at a time when there were increasing calls for better protections for the rights of indigenous peoples, genetic resources and traditional knowledge in the international arena.[18] The following section briefly discusses some key developments in the academic and policy circles that called for the legal protection of genetic resources and associated traditional knowledge, as well as the rights of IPLCs.

### 3.3 Early calls for the protection of genetic resources and traditional knowledge

More than 30 years ago, trailblazing researchers, including Darrell Posey, Vandana Shiva, and Pat Mooney, began advocating for the recognition of indigenous peoples' rights concerning genetic resources and associated traditional knowledge.[19] For example, the

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[15] ibid.
[16] Rachel Wynberg and others, *Guidelines for Providers, Users and Regulators South Africa's Bioprospecting, Access and Benefit-Sharing Regulatory Framework Overall Project Management and Coordination, Sections for Regulators and Users: Natural Justice Section for Providers* (2012) <www.environment.gov.za> accessed 10 February 2023.
[17] Chapter 2 of the Constitution.
[18] Hope Shand, 'There Is a Conflict between Intellectual Property Rights and the Rights of Farmers in Developing Countries' [1991] Journal of Agricultural and Environmental Ethics 1991 131; SK Verma, 'Biodiversity and Intellectual Property Rights' (1997) 49 Journal of the Indian Law Institute 203; Mark Ritchie, Kristin Dawkuns and Mark Vallianatos, 'Intellectual Property Rights and Biodiversity: The Industrialization of Natural Resources and Traditional Knowledge' (1996) 11 Journal of Civil Rights and Economic Development 431; World Bank, 'Indigenous Knowledge Definitions, Concepts and Applications [Type the Document Subtitle]' (1998) <moz-extension://c9b3b6de-e239-4e06-aea7-a692c1eadae2/enhanced-reader.html?openApp&pdf=https%3A%2F%2Fchm.cbd.int%2Fapi%2Fv2013%2Fdocuments%2F4A27922D-31BC-EEFF-7940-DB40D6DB706B%2Fattachments%2F209070%2FHoda%2520Yacoub%2520-%2520IK%2520Report%2520(1).pdf> accessed 18 August 2022; African National Congress, 'Ready to Govern: ANC Policy Guidelines for a Democratic South Africa' (1992) <https://www.anc1912.org.za/policy-documents-1992-ready-to-govern-anc-policy-guidelines-for-a-democratic-south-africa/> accessed 26 November 2022.
[19] Graham Dutfield, 'Traditional Knowledge, Intellectual Property and Pharmaceutical Innovation: What's Left to Discuss?' in M David and D Halbert (eds), *The SAGE Handbook of Intellectual Property* (SAGE Publications Ltd 2014).



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Declaration of Belém[20] proclaimed at the inaugural conference of the Society of Ethnobiology, which Darrell Posey had helped establish, recognised indigenous peoples as stewards of 99% of the world's genetic resources and advocated for them to be compensated for the use of these genetic resources and their traditional knowledge.[21] These calls for compensation spawned discussions about the need for legal protection regimes. Darell Posey argued that such legal protections and compensation were necessary for 'honouring indigenous peoples instead of exploiting them, and responding to large scale environmental destruction.'[22] The calls for protection also stemmed from the view that these resources were best characterised as 'anthropogenic cultural landscapes'.[23] According to this perspective, indigenous peoples possess practical knowledge regarding their local environment and biological resources and how to manage them to meet their needs. This view, therefore, stood contrary to the prevailing view at that time that genetic resources were part of 'wild' ecosystems to which indigenous peoples had to adapt themselves to survive.[24]

On the other hand, Vandana Shiva argued that protecting genetic resources and traditional knowledge was necessary for protecting the rights of indigenous peoples and reversing the global power structures of colonialism that had deprived indigenous peoples' rights to their environment and livelihoods.[25] According to Shiva, large, powerful patent-wielding Western corporates and the World Trade Organisation (WTO) represented global powers whose pro-business focus was contrary and detrimental to the rights of indigenous peoples and the environment.[26]

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[20] International Society of Ethnobiology, 'Declaration of Belém' (1988) <https://www.ethnobiology.net/what-we-do/core-programs/global-coalition-2/declaration-of-belem/> accessed 11 March 2023.
[21] Dutfield, 'Traditional Knowledge, Intellectual Property and Pharmaceutical Innovation: What's Left to Discuss?' (n 19).
[22] ibid.
[23] Dutfield 1.
[24] Dutfield, 'Traditional Knowledge, Intellectual Property and Pharmaceutical Innovation: What's Left to Discuss?' (n 19).
[25] ibid.
[26] Vandana Shiva, *Protect or Plunder?: Understanding Intellectual Property Rights* (Zed Books 2001) <https://books.google.com/books/about/Protect_Or_Plunder.html?id=lGlPAAAAMAAJ> accessed 11 March 2023.



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She argued that two changes transformed the 'patent' from an instrument that protected real innovation into something that invaded the lives and rights of indigenous peoples. The first change was brought about by the US Supreme Court decision, allowing the US Patents Office to grant patents for life forms. The second was the US's introduction of patents and IPRs in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), which significantly influenced the content of the TRIPS Agreement.[27] Shiva bemoaned that patents, which historically had been used to protect technological inventions such as machines, could now be used to misappropriate lifeforms, biodiversity and traditional knowledge.[28] She argued that this would be detrimental to the human population in general, especially indigenous communities and holders of traditional knowledge.[29]

Many authors point out that global intellectual property standards to recognise and protect innovations under intellectual property were developed to make traditional knowledge generally unsuitable for protection under such a regime.[30] This chapter argues that these developments on the international front, coupled with South Africa's colonial and apartheid history, provide the 'moral' or ethical basis for the need to protect genetic resources and associated traditional knowledge. Such interventions would ultimately be tied to the protection of the rights of IPLCs as advocated by authors such as Shiva.[31]

The following section briefly discusses the Constitution of the Republic of South Africa, 1996 (hereinafter, the Constitution) and how it provides a basis for the protection of genetic resources, associated traditional knowledge, IPRs and the rights of IPLCs.

### 3.4 The Constitution of the Republic of South Africa, 1996

[27] Agreement on Trade-Related Aspects of Intellectual Property Rights 1994.
[28] Shiva, *Protect or Plunder?: Understanding Intellectual Property Rights* (n 26); Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (North Atlantic Books 1999).
[29] Vandana Shiva, 'Profiteering from Death: TRIPS and Monopolies on Seeds and Medicines' [2006] Revista Brasileira de Direito Internacional 295; Vandana Shiva, 'Farmers' Rights, Biodiversity and International Treaties' (1993) 28 Economic and Political Weekly 555.
[30] Patrick Agejoh and Steve Cornelius, 'Legal Justification to Innovation of Indigenous Knowledge and the Right to Development in Africa' (2017) 47 Africa Insight 135.
[31] Shiva, *Protect or Plunder?: Understanding Intellectual Property Rights* (n 26).



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The advent of democracy ushered in a new dispensation characterised by a supreme constitution. Section 2 of the Constitution declares that this 'Constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled.'[32] The Constitution has been described as transformative in nature, seeking to transform South Africa from the legacy of its colonial and apartheid past to a democratic society founded on, among other values, human dignity, equality and 'the advancement of human rights and freedoms'.[33] As a result, the Constitution provides for a Bill of Rights which protects several fundamental freedoms.

It is argued that the constitutional basis for the protection of genetic resources, traditional knowledge, intellectual property rights and the rights of IPLCs can be traced back to the rights protected in the Bill of Rights. This is because section 7(1) of the Constitution proclaims that the Bill of Rights is the cornerstone of South Africa's democracy.[34] The Constitution also places an obligation on the State to 'respect, protect, promote and fulfil the rights in the Bill of Rights,'[35] subject to the limitation clause of the Constitution.[36] This section will discuss three constitutional rights as paramount to the protection of genetic resources and associated traditional knowledge. These are the environmental rights in section 24, property rights (section 25) and cultural rights (sections 30 and 31). Even though Ncube also recognises the section 22 right to choose a trade, occupation or profession as providing support for the protection of traditional knowledge, this is within the context of TCEs (cultural artefacts and performances)[37] and will not be dealt with in this chapter.

### *3.4.1 Environmental rights*

Section 24 of the Constitution states that 'Everyone has the right (a) to an environment that is not harmful to their health or wellbeing; and (b) to have the environment protected,

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[32] Constitution of the Republic of South Africa, 1996 (hereinafter, the Constitution) was preceded by the Constitution of the Reoublic of South Africa, No. 200 of 1993 (hereinafter the Interim Constitution).
[33] ibid section 1.
[34] Section 7 of the Constitution.
[35] Section 7(2) of the Constitution
[36] Section 7(3) and s 36 of the Constitution.
[37] Caroline Ncube, 'Intellectual Property Protection of Traditional Knowledge and Access to Knowledge in South Africa', *Indigenous Intellectual Property: A Handbook of Contemporary Research* (2015).



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for the benefit of present and future generations, through reasonable legislative and other measures that (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development.' The inclusion of environmental rights in this section paved the way for the South African State to develop an array of policies, legislation, and judicial pronouncements to give effect to this right. In *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation and Land Affairs*, it was held that,

> by elevating the environment to a fundamental justiciable human right, South Africa has irreversibly embarked on a road which will lead to the goal of attaining a protected environment by an integrated approach, which takes into consideration, *inter alia*, socio-economic concerns and principles.[38]

In *HTF Developers (Pty) Ltd v Minister of Environmental Affairs and Tourism*, it was held by Murphy J that section 24(b) of the Constitution was 'more in the nature of a directive principle' which imposed a 'constitutional imperative on the State to secure the environmental rights by reasonable legislation and other measures.'[39] Kidd noted that the phrase 'for the benefit of present and future generations' in this section also implicates 'a notion of intergenerational equity, which is internationally recognised.'[40] Even though not mentioned directly, it is argued here that this section has direct implications for traditional knowledge associated with genetic resources, given its intergenerational scope and relevance for utilising environmental (genetic) resources.

Also, as discussed below (under the section on the CBD) and in Chapter 4 (under the section analysing NEMBA and the BABS regulations), one of the objectives of protecting genetic resources and traditional knowledge is to ensure the fair and equitable sharing of the benefits derived from their utilisation. This principle is also evident in the constitutional right to have 'the environment protected for the benefit of present and future

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[38] BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation and Land Affairs 2004 (5) SA 124 (W) at 144D.
[39] HFD Developers (Pty) Ltd v Minister of Environment and Tourism 2006 (5) SA 512 (T) at 17.
[40] Michael Kidd, 'Environment' in Ian Currie and Johan De Waal (eds), *The Bill of Rights Handbook* (6th edn, Juta 2013).



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generations.'[41] As Kidd notes, not only do the rights in section 24 provide 'the underpinnings of the environmental [and other] legislation' which the State must enact to give effect to the rights, but they also serve 'as a guide to the interpretation of both the common law and all legislation through section 39'[42] of the Constitution. Section 39(3) requires every court, tribunal or forum to 'promote the spirit, purport and objects of the Bill of Rights when interpreting any legislation and developing the common law or customary law.

### *3.4.2 Property rights*

One of the lingering questions in the debates about the protection of genetic resources and traditional knowledge is the question of who owns the genetic resources and associated traditional knowledge.[43] This question presupposes that genetic resources and associated traditional knowledge are 'property' capable of being owned, and this would bring them within the ambit of the protection offered by section 25 of the Constitution, which protects the right to property.[44] Whilst the application of this right to tangible property appears straightforward and has been dealt with by the South African courts on several occasions, its application to intangible property interests such as intellectual property requires some discussion.[45] Therefore, it is important first to determine whether traditional knowledge associated with genetic resources can be deemed property, rendering it protectable in section 25.

[41] Section 24(b) of the Constitution.
[42] Section 39 of the Constitution provides that '(1) When interpreting the Bill of Rights, a court, tribunal or forum— (a) must promote the values that underlie an open and democratic society based on human dignity, equality and freedom; (b) must consider international law; and (c) may consider foreign law. (2) When interpreting any legislation, and when developing the common law or customary law, every court, tribunal or forum must promote the spirit, purport and objects of the Bill of Rights. (3) The Bill of Rights does not deny the existence of any other rights or freedoms that are recognised or conferred by common law, customary law or legislation, to the extent that they are consistent with the Bill.
[43] Shiva, 'Farmers' Rights, Biodiversity and International Treaties' (n 29); Paul Gepts, 'Who Owns Biodiversity, and How Should the Owners Be Compensated?' (2004) 134 Plant Physiology 1295; Reddy (n 8).
[44] Section 25(1) of the Constitution states that, 'No one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property.'
[45] Andre J Van der Walt and Ray M Shay, 'Constitutional Analysis of Intellectual Property' (2014) 17 Potchefstroom Electronic Law Journal 51.



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The Constitution does not explicitly define what is meant by the term, and section 25(4)(b) simply states that 'property is not limited to land.' Also, as noted by Ncube, the Constitution 'does not provide for the right to intellectual property protection as a fundamental right'.[46] The Constitutional Court held, in *First National Bank of SA Ltd t/a Wesbank v Commissioner, South African Revenue Service; First National Bank of SA Ltd t/a Wesbank v Minister of Finance* 2002 4 SA 768 (CC) (hereinafter the *FNB* case) that it was both practically impossible and unnecessary to have an exhaustive definition of property. Instead, the courts' approach is to focus on the 'function of the alleged property…in society rather than the traditional, pre-constitutional conceptions of property.'[47] Based on this approach, some intellectual property rights have been recognised as property by the Constitutional Court. For example, in *Laugh It Off Promotions CC v SAB International (Finance) BV t/a SABMARK International* 2006 1 SA 144 (CC), the Constitutional Court held that section 25 rights applied to intellectual property rights such as trademarks.

Similarly, South African legislation on the protection of traditional knowledge explicitly states that [traditional] knowledge constitutes property of indigenous communities within the meaning of section 25 of the Constitution'.[48] Section 5(b) of the IKS Act also states that the functions of the NIKSO include 'protecting and recognising [traditional] knowledge as property owned by indigenous communities'. This section thus clearly lays down the position in South African law that traditional knowledge is 'property' and further identifies to whom it belongs.

Van der Walt and Shay argue that when considering the purpose of the property clause in the Constitution, there are still some nuanced differences between the recognition of property rights in land and other corporeal property and intellectual property. These authors argue that, as far as land and natural resources are concerned, the purpose of the property clause was to, among other things, 'foster equitable access to and redistribution of land and other natural resources while providing adequate security to

[46] Ncube (n 37).
[47] ibid 54.
[48] Section 9(2) of the Protection, Promotion, Development and Management of Indigenous Knowledge Act (No. 6 of 2019) (the IKS Act).



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property owners.'[49] They argue further that this purpose cannot be transposed to intellectual property rights because they may not have been subject to past historical injustices at the same scale as other corporeal property. Therefore, they recommend that 'a nuanced approach must be devised to ensure that intellectual property owners benefit from constitutional protection in a way that serves the values underlying and enshrined in the Bill of Rights'.[50]

However, one central thesis in the present study is that genetic resources and associated traditional knowledge have been subjects of historical injustices resulting in biopiracy (see Chapter 2 above). As a result, it is argued that the approach proposed by Van der Walt and Shay would not strictly apply to traditional knowledge. The preamble of the IKS Act alludes to a recognition of the 'centuries of racially discriminatory rule and domination' and that the founding values enshrined in the Constitution include achieving equality and transforming South Africa's society. As such, this study agrees with and echoes the sentiments of the Constitutional Court, which held that intellectual property, like any other property, 'does not enjoy special status under the Constitution' and, as such, its enforcement and protection is subject to the Constitution.[51] In obiter dictum in the *FNB* case, the Constitutional Court also stated that 'the preamble to the Constitution indicated that one of the purposes of its adoption was to establish a society based, not only on "democratic values" and "fundamental human rights" but also on "social justice". The purpose of section 25 had to be seen both as protecting existing private property rights and also serving the public interest, mainly in the sphere of land reform but not limited to that.'[52] This position implies that when enacting measures and legislation to protect genetic resources and traditional knowledge, there must be a balance between protecting intellectual property rights and other competing rights, such as the rights of IPLCs.

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[49] Van der Walt and Shay (n 43) 63.
[50] ibid.
[51] *Laugh It Off Promotions CC v SAB International (Finance) BV t/a SABMARK International* 2006 1 SA 144 (CC), para 17.
[52] *First National Bank of SA Ltd t/a Wesbank v Commissioner, South African Revenue Service; First National Bank of SA Ltd t/a Wesbank v Minister of Finance* 2002 4 SA 768 (CC) (hereinafter the FNB case)



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### *3.4.3 Cultural rights*

In addition to environmental rights, the Constitution also protects the right of every person in South Africa to participate in the cultural life of their choice.[53] Culture is defined in the South African government as 'the dynamic totality of distinctive spiritual, material, intellectual and emotional features which characterise a society or social group. It includes the arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions, heritage and beliefs developed over time and subject to change.'[54] According to Faris, the term culture, as used in the Constitution, is a broad and inclusive concept closely linked to other rights such as the rights to development,[55] equality, artistic and intellectual creativity, etc.[56] As mentioned in Chapter 2 above, genetic resources and associated traditional knowledge are strongly linked to the culture, customs, traditions and livelihoods of IPLCs. Therefore, they are critical for the socio-economic development of IPLCs.[57] This dissertation argues that the environmental right in section 24 and the cultural rights in sections 30 and 31 both directly and indirectly place a constitutional obligation on the South African State to protect the rights of IPLCs to genetic resources and associated traditional knowledge.

As mentioned above, no comprehensive internationally binding legal instrument protects genetic resources and traditional knowledge within the IP system. However, some international treaties to which South Africa is a party may provide a direct and an indirect basis for South Africa to respect and protect genetic resources and associated traditional knowledge, IPRs and the rights of IPLCs. The following section examines this international legal framework.

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[53] Sections 30 and 31 of the Constitution.
[54] Department of Arts and Culture, 'Revised White Paper on Arts, Culture and Heritage, Third Draft' (2017) <http://www.dac.gov.za/sites/default/files/revised draft White Paper on Arts, Culture and Heritage.pdf> accessed 12 March 2023.
[55] See also discussion below under the section 3.7 International and regional human rights instruments on the right to development and its connection with the principle of access and benefit sharing.
[56] JA Faris, 'Culture and Cultural Rights', *The Law of South Africa (LAWSA) Volume 12 - Third Edition* (Third, LexisNexis Butterworths 2020).
[57] Loretta Feris, 'Protecting Traditional Knowledge in Africa : Considering African Approaches' (2004) 4 African Human Rights Law Journal 242.



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### 3.5 The position of international law in South African law

It is necessary to first briefly explain how international law is incorporated and applied in South African law. As mentioned above, section 39(1)(b) of the Constitution requires that the courts, when interpreting the Bill of Rights, must consider international law. This requirement is peremptory. However, the critical question is, what are the sources of international law, and when does it bind South Africa? In general, sources of international law are those listed in Article 38 of the Statute of the International Court of Justice. These are (a) treaties, (b) international custom, (c) general principles of law; and (d) judicial decisions and the teachings of the most highly qualified publicists of the various nations making up the international community.[58] In *S v Makwanyane*, the Constitutional Court confirmed the role of international law in interpreting the Bill of Rights in South Africa, as enacted in the Constitution of the Republic of South Africa, No. 200 of 1993 (the Interim Constitution).[59]

Section 231 of the Constitution deals with the circumstances under which international law becomes binding in South Africa. It is established that South Africa follows a dualist rather than a monist approach to international law.[60] Thus, according to section 231(1), the national executive has the power to negotiate and enter into international agreements (treaties, conventions etc.). However, to be binding on the Republic, they must first be approved by a resolution in both the National Assembly and the National Council of Provinces unless they fall within any exceptions in section 231(3).[61] Also, the provisions of the treaty or convention must be operationalised by enacting them into domestic legislation before they can have an effect in South Africa.[62] However, 'a self-executing

[58] Statute of the International Court of Justice.
[59] *S v Makwanyane* 1995 6 BCLR 665 (CC) 686.
[60] Moses Retselisistoe Phooko, 'Revisiting the Monism and Dualism Dichotomy: What Does the South African Constitution of 1996 and the Practice by the Courts Tell Us about the Reception of SADC Community Law (Treaty Law) in South Africa?' (2021) 29 https://doi.org/10.3366/ajicl.2021.0356 168 <https://www.euppublishing.com/doi/10.3366/ajicl.2021.0356> accessed 30 May 2023.
[61] Section 231(2) of the Constitution. Section 231(3) provides that, '(3) An international agreement of a technical, administrative or executive nature, or an agreement which does not require either ratification or accession, entered into by the national executive, binds the Republic without approval by the National Assembly and the National Council of Provinces, but must be tabled in the Assembly and the Council within a reasonable time.'
[62] Section 231(4) of the Constitution.



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provision of an agreement that Parliament has approved is law in the Republic unless it is inconsistent with the Constitution or an Act of Parliament.'[63]

One more thing needs to be stated about international law in South Africa. According to de Wet and du Plessis, the Constitutional Court has previously stated that section 39(1)(b) of the Constitution 'embraces both binding and non-binding instruments of international law.'[64] Thus, besides binding treaties as discussed above, non-binding instruments such as UN declarations, regional instruments in which South Africa is not a member or a party and other soft law sources may also find persuasive application within South African law.

### 3.6 International law on genetic resources and traditional knowledge

As mentioned above, traditional knowledge associated with genetic resources has long been considered unsuited for international intellectual property frameworks that prioritise economic considerations.[65] Therefore, on the global stage, policymakers working on intellectual property issues have struggled to reconcile the protection of traditional knowledge with conventional intellectual property models.[66] Despite the continuing work of the WIPO-IGC,[67] there is still no internationally binding broad framework for the protection of genetic resources and associated traditional knowledge. However, several international legal frameworks provide international support for the protection of genetic resources and associated traditional knowledge and can be used to provide a basis for their protection in South Africa. Oguamanam posits that because most indigenous knowledge systems are intricately and holistically linked to various aspects of the lives of

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[63] Ibid.
[64] Erika de Wet and Anél du Plessis, 'The Meaning of Certain Substantive Obligations Distilled from International Human Rights Instruments for Constitutional Environmental Rights in South Africa' (2010) 10 African Human Rights Law Journal 345.
[65] Chidi Oguamanam, *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine* (Univesity of Toronto Press 2006).
[66] Patricia L Judd, 'The Difficulties in Harmonizing Legal Protections for Traditional Knowledge and Intellectual Property' (2019) 58 Washburn Law Journal 249 <https://perma.cc/T25U-3PEZ].>.
[67] WIPO-IGC, 'The Protection of Traditional Knowledge: Draft Articles' <https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=276361> accessed 17 August 2021.



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IPLCs, including culture, land rights and livelihoods, the protection of genetic resources and associated traditional knowledge may be implicated in various legal instruments.[68] The following section discusses some of these international and regional legal frameworks.

### *3.6.1 International frameworks*

#### *a. The TRIPS Agreement and the international intellectual property regime*

The current global intellectual property regime is governed by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), among other instruments.[69] The TRIPS Agreement came into force in 1995 as the culmination of long-standing debates within the General Agreement on Tariffs and Trade (GATT),[70] the predecessor of the World Trade Organisation (WTO). The main aim of the TRIPS agreement was to establish a common set of rules or minimum standards for protecting and enforcing intellectual property rights (IPRs) across all member countries of the WTO.[71] This aim was driven by the need to encourage innovation and creativity by providing strong legal protection for IPRs. Before the TRIPS agreement, patents were governed domestically through each country's own legislation and regulatory frameworks.

Since its enactment, the TRIPS Agreement has been credited with expanding the strength and scope of intellectual property protections worldwide and harmonising patent protection worldwide.[72] However, from its onset, the TRIPS Agreement was beset with disputes between the developed countries of the global North and their less developed counterparts of the global South.[73] Developing countries were concerned about, among

[68] Oguamanam (n 65).
[69] Anselm Kamperman Sanders and Dalindyebo Bafana Shabalala, 'Intellectual Property Treaties and Development' [2018] SSRN Electronic Journal 1.
[70] The General Agreement on Tariffs and Trade 1948.
[71] Peter K Yu, 'The Objectives and Principles of the TRIPS Agreement' (2009) 46 Houston Law Review 979.
[72] K Saggi, 'Trade, Intellectual Property Rights, and the World Trade Organization', *Handbook of Commercial Policy*, vol 1 (Part B, North-Holland 2016); Lenka Pelegrinová and Martin Lačný, 'Protection of Intellectual Property and Its Economic Aspects' (2016) 5 Journal of Economic Development, Environment and People 5.
[73] TRIPS Council, 'The Relationship between the TRIPS Agreement and the Convention on Biological Diversity: Summary of Issues Raised and Points Made' (2006) <https://www.wto.org/english/tratop_e/trips_e/ipcw368_e.doc>; Susanne Droege and Birgit Soete, 'Trade-



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other things, the impact of strong IPR protection on their ability to access affordable medicines and technologies. They also argued that the TRIPS Agreement facilitated the excessive demands of developed countries in bilateral and regional trade and investment negotiations and forced developing counties to ignore their own developmental needs.[74] On the other hand, developed countries argued that strong IPR protection was necessary to incentivise innovation and investment.[75]

The controversies surrounding the TRIPS Agreement were more pronounced in relation to the position of biological resources and traditional knowledge[76] as recognised in the United Nations Convention on Biological Diversity (CBD).[77] Many sceptics criticised the TRIPS Agreement for completely ignoring traditional knowledge's role in innovation or not offering suitable protection mechanisms within the intellectual property framework.[78] Dutfield, for example, noted that in the 1980s, even before the TRIPS Agreement came into being, many activists and scholars had been calling for the protection of the traditional knowledge within the existing intellectual property framework or through other sui generis means such as 'traditional resources rights and community intellectual property rights.'[79] Therefore, the TRIPS Agreement failed to offer any significant protections for traditional knowledge, let alone acknowledge its contribution to innovation. Many considered it contra the best interests of IPLCs and developing countries, most of whom are the owners and holders of traditional knowledge and genetic resources.[80] However, it is worth noting here that even though the TRIPS Agreement does provide some flexibility for member

Related Intellectual Property Rights, North-South Trade, and Biological Diversity' (2001) 19 Environmental and Resource Economics 149; Saggi (n 72).
[74] Yu (n 71).
[75] Pelegrinová and Lačný (n 72).
[76] TRIPS Council (n 73); Ola Fouad Dajani, *Genetic Resources under the CBD and TRIPS: Issues on Sovereignty and Property* (2002); Graham Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge' (2001) 33 Case Western Reserve Journal of International Law 233; Lin Cai, 'Intellectual Property Problems of Biodiversity in Multi-Dimensional Perspective' (2017) 23 Journal of Commercial Biotechnology 44.
[77] Convention on Biological Diversity 1992 (United Nations) 30.
[78] Cai (n 76); Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge' (n 76).
[79] Dutfield (n 58) 234.
[80] Dewi Nurmasari Pane, Miftah EL Fikri and Husni Muharram Ritonga, *Beyond Intellectual Property Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*, vol 53 (2018); Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (n 28); TRIPS Council (n 73).



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countries in the interests of development and public health concerns.[81] However, a discussion of these flexibilities falls outside the scope of this dissertation.

Despite these controversies, South Africa has been a party to the TRIPS agreement since 1995, when it acceded to the WTO.[82] From South Africa's perspective, having just emerged from the apartheid era during which it has increasingly become economically isolated, being a member of the WTO allowed it to ensure that its national IPR laws were in line with international standards and to benefit from increased access to global markets.[83] Derek Keys, the last apartheid government finance minister, signed the Marrakesh Declaration (which initiated the transition from GATT to the WTO)[84] on 15 April 1994, two weeks before the Interim Constitution came into effect.[85] The Interim Constitution would have required the participation and approval of the legislature for any international agreement to be binding on the Republic. However, under the prevailing apartheid constitution, no further action after the signature was required, and South Africa became bound by the agreement. Therefore, South Africa is obligated under the TRIPS Agreement to give effect to the provisions of the TRIPS Agreement, which include strengthening and broadening the protection of IPRs in South African legislation.[86] This includes the controversial issue of protecting IPRs derived from genetic resources and traditional knowledge.[87]

### *b. The CBD and Nagoya Protocol (NP)*

The Convention on Biological Diversity (CBD)[88] was opened for signing by United Nations member states at the 1992 Rio Earth Summit. To date, it has been signed by 196 member

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[81] Articles 7 and 8 of the TRIPS Agreement.
[82] 'WTO | South Africa - Member Information' <https://www.wto.org/english/thewto_e/countries_e/south_africa_e.htm> accessed 13 March 2023.
[83] Nico Steytler, 'Global Governance and National Sovereignty: The World Trade Organisation and South Africa's New Constitutional Framework' (1999) 3 Law, Democracy and Development 89.
[84] Paragraph 6 of the Marrakesh Declaration, available online: https://www.wto.org/english/docs_e/legal_e/marrakesh_decl_e.htm. Accessed: 25 February 2023.
[85] Steytler (n 83).
[86] Article 1(1) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).
[87] Charles R McManis, 'Biodiversity, Biotechnology and Traditional Knowledge Protection: Law, Science and Practice' in Charles R Mcmanis (ed), *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (Earthscan 2012).
[88] Convention on Biological Diversity.



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states.[89] South Africa signed the CBD on 4 June 1993 and became a party on 31 January 1996. The main objectives of the CBD are to facilitate and promote the conservation of biodiversity, to ensure the sustainable utilisation of its components and the fair and equitable sharing of the benefits derived from its utilisation.[90] In pursuit of these objectives, the CBD mandates parties to

> respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity, and to promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the sharing of benefits arising from the utilisation of such knowledge, innovations and practices.[91]

Before the CBD, the doctrine of the 'common heritage of mankind ' applied to all biodiversity and access to genetic resources.[92] This means that biodiversity and genetic resources belonged to no one in particular, and anyone who wished to use them could do so. This position was concretised in the Food and Agriculture Organisation (FAO's) International Undertaking on Plant Genetic Resources, adopted in 1981.[93] However, this approach was beset with problems, given the unequal treatment of the intellectual contributions of IPLCs and developing countries to genetic resources and that of Western corporations. Therefore, the CBD's approach to recognising genetic resources as 'property' subject to the sovereignty of nations[94] and to the rights of IPLCs[95] who have the power to control access to these resources was a decisive break with this tradition.

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[89] 'List of Parties' <https://www.cbd.int/information/parties.shtml> accessed 10 February 2023.
[90] ibid article 1.
[91] ibid article 8(j).
[92] Aman Gebru, 'Intellectual Property, Traditional Knowledge, and Bioprospecting: Searching for Efficient Balance of Rights' [2017] ProQuest Dissertations and Theses <http://cyber.usask.ca/login?url=https://search.proquest.com/docview/2002094052?accountid=14739&bdid=6492&_bd=b7u1ZKeAvdVT3wklvS4O0LZ0p2U%3D>; Alexa K Lutzenberger, Franziska Lichter and Sarah Holzgreve, 'Natural Resources as Common Goods' [2020] Sustainable Development and Resource Productivity 205; Michael Halewood, Isabel Lopez Noriega and Selim Louafi, *Crop Genetic Resources as a Global Commons: Challenges in International Law and Governance* (Michael Halewood, Isabel Lopez Noriega and Selim Louafi eds, 1st`, Routledge 2013).
[93] GRAIN, 'International Undertaking on Plant Genetic Resources: The Final Stretch' (2001) <https://grain.org/en/article/90-international-undertaking-on-plant-genetic-resources-the-final-stretch>.
[94] Article 3 of the CBD.
[95] Article 8(j) of the CBD.



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According to the CBD and the NP, users of genetic resources and associated traditional knowledge should access them under the principles of prior informed consent (PIC), mutually agreed terms (MAT) and fair and equitable sharing of benefits.[96]

The CBD also obliged parties to 'respect, preserve and maintain knowledge, innovations and parties of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge. [97] This obligation is in line with the principles mentioned above. However, because the CBD does not specify how these obligations must be met in practice, parties to the CBD adopted the Nagoya Protocol[98] as the international instrument for operationalising the CBD's ABS provisions.[99] The NP was intended to ensure 'the fair and equitable sharing of benefits arising from the use of genetic resources, including through access to genetic resources and the transfer of relevant technologies, taking into account all rights over such resources and technologies, and by adequate funding, thus contributing to the conservation of biological diversity and the sustainable use of its components'.[100] The NP thus creates standards for access to genetic resources and sharing benefits from their utilisation.[101]

Thus, the NP reinforces that the benefits of utilising genetic resources should be shared fairly and equitably with the provider country or IPLCs.[102] According to the NP, this process should include negotiating and concluding agreements based on mutually agreed terms (MAT). The NP also obligates parties to support IPLCs in all relevant matters pertaining to the utilisation of genetic resources and traditional knowledge and any activities regarding the fair and equitable sharing of benefits.[103] In addition, it requires parties to

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[96] Article 3, 8 and 15 of the CBD.
[97] Article 8(j) of the CBD.
[98] 'Nagoya Protocol on Access to Genetic Resources and the Fair and Eqiotable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity'.
[99] Article 4(4) of the Nagoya Protocol.
[100] Ibid.
[101] Bruno David, 'New Regulations for Accessing Plant Biodiversity Samples, What Is ABS?' (2018) 17 Phytochemistry Reviews 1211 <https://doi.org/10.1007/s11101-018-9573-1>.
[102] Articles 5 and 7 of the Nagoya Protocol.
[103] Article 5 of the Nagoya Protocol.



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ensure that users within their respective jurisdictions only utilise genetic resources and associated traditional knowledge that would have been acquired in compliance with the NP's legal provisions and the provider countries' applicable domestic laws.

Therefore, whilst the CBD creates an international regime to govern access to genetic resources and the sharing of benefits of their use, the NP provides a framework for developing and implementing national and regional regimes.[104] However, some authors have criticised the CBD's implementation mechanism as being 'toothless' compared to the TRIPS Agreement.[105] Firstly, as noted by David, the 'CBD and NP have no direct impact on the users of genetic resources'.[106] These instruments only bind the state parties that have ratified them and are contracting parties. [107] Also, whereas the language of the TRIPS Agreement is peremptory, with strong compliance policing mechanisms, the language of the CBD is 'hortatory'.[108] For example, article 6 requires contracting parties in accordance with [their] particular conditions and capabilities to;

> (a) develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes…; and (b) integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.[109]

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[104] 'Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the COnvention on Biological Diversity' (n 284).
[105] Dajani (n 76); Anindya Bhukta, *Legal Protection for Traditional Knowledge; Towards a New Law for Indigenous Intellectual Property* (1st edn, Emerald Publishing 2020); Sanjit Kumar Chakraborty, 'Protection of Traditional Knowledge and Plant Intellectual Property Rights : Emerging Challenges and Issues in India Although Not Too Severely , for the Present and Future Generations ." The Backdrop : Traditional Knowledge Is a Central Component for The' (2017) 3 Amity International Journal of Juridical Sciences 1 <https://amity.edu/UserFiles/aibs/c8cd2017 AIJJS Final_5-18.pdf>; Charles R McManis, *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (2012).
[106] David (n 101).
[107] Elisa Morgera, Elsa Tsioumani and Matthias Buck, *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-Sharing to the Convention on Biological Diversity*, vol 15 (Brill Nijhoff Publishers 2016); Nicolas Pauchard, 'Access and Benefit Sharing under the Convention on Biological Diversity and Its Protocol : What Can Some Numbers Tell Us about the Effectiveness of the Regulatory Regime ?' 1.
[108] McManis (n 67) 5.
[109] Convention on Biological Diversity.



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It is argued that the wording of this article, as is the case with most other articles in the CDB, though using the peremptory word 'shall', still leaves a lot of room for state parties to comply or not entirely. However, the CBD's weak enforcement or dispute resolution mechanisms are more worrying. The enforcement of the CBD is mainly the responsibility of the parties themselves, who are required to take appropriate legal, administrative, and other measures to ensure compliance with the convention's provisions.[110] However, there is very little respite within the CBD mechanism for the economically weaker but biodiverse countries of the global South when multinational corporations and powerful countries of the global North infringe on their rights and sovereignty. Also, the CBD's dispute resolution mechanisms, including consultation, negotiation, and mediation, are ineffective.[111] Whilst parties are encouraged to settle any disputes through these mechanisms, they always have the option of resorting to more formal procedures such as arbitration or the International Court of Justice (ICJ). If parties cannot resolve a dispute through these mechanisms, they may submit the dispute to the ICJ or an arbitral tribunal, provided that both parties have accepted the jurisdiction of such a tribunal in advance.[112]

The CBD also establishes a Compliance Committee, which is responsible for reviewing the implementation of the convention by parties and for providing advice and assistance on compliance-related matters.[113] The Compliance Committee may also consider and respond to communications from parties or other stakeholders regarding compliance with the convention. Even though it recognises state sovereignty over biodiversity and associated genetic resources, the CBD does not provide mechanisms to ensure that other state parties respect and comply with another state party's sovereign rights.

### c. *Conflict between the CBD and the TRIPS Agreement*

Before continuing, something must be said about the apparent conflict between the CBD and the TRIPS agreement, particularly concerning governing the use of genetic resources and traditional knowledge. The TRIPS Agreement and the CBD propose divergent

[110] ibid article 15.
[111] ibid article 27.
[112] ibid.
[113] ibid article 24.



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policies in relation to the 'areas of patentable subject matter, benefit sharing, protection of [traditional] knowledge, requirements of prior informed consent and the role of the State'.[114] Zerbe argues that these contradictions stem from the fundamentally different perspectives upon which the agreements are based. '

Some parties argue that there is no conflict between the TRIPS Agreement and the CBD because these instruments govern different subject matters, namely trade for the TRIPS Agreement and biodiversity protection for the latter.[115] However, this argument ignores pressing issues such as the trade and utilisation of genetic resources in biotechnology-related industries. Also, many authors have argued that pharmaceuticals and other products, such as seeds, are being developed using traditional knowledge of PLCs and local farmers.[116] The TRIPS Agreement does provide that states may protect some aspects of genetic resources. It is, however, silent on traditional knowledge or the rights of IPLCs. Instead, where it mandates countries to allow the patenting of biological products, this stands at odds with the CBD, which recognises the rights of IPLCs and state sovereignty to these genetic resources. The table below summarises some conflicting areas between the CBD and the TRIPS Agreement.

Table 1: A comparison of the conflicting issue areas between the TRIPS Agreement and the CBD (Adapted from Zerbe 2002).

| Issue Area | TRIPS Agreement | CBD |
| --- | --- | --- |

[114] Noah Zerbe, 'Contested Ownership: TRIPs, CBD, and Implications for Southern African Biodiversity' (2002) 1 Perspectives on Global Development and Technology 294.
[115] TRIPS Council (n 73).
[116] Dutfield, 'Traditional Knowledge, Intellectual Property and Pharmaceutical Innovation: What's Left to Discuss?' (n 19); Emeka Polycarp Amechi, 'Traditional Knowledge on the Medicinal Uses of Plants, Biopiracy and National Patent Measures in Africa: Exploratory Reflections and Comparative Experiences' (2018) 5 Jorunal of Comparative Law in Africa 73 <https://journals.co.za/content/journal/10520/EJC-f993b966c?crawler=true&mimetype=application/pdf>; Ryan D Levy and Spencer Green, 'Pharmaceuticals and Biopiracy: How the America Invents Act May Reduce the Misappropriation of Traditional Medicine' (2015) 23 University of Miami Business Law 401; McManis (n 105).



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| | | |
|---|---|---|
| Patentable subject matter | Limits national sovereignty by requiring *sui generis* mechanisms or patents to protect biological and biotechnological innovations. | The principle of national sovereignty implies discretion in drafting IPR legislation, including the right to prohibit protections on biological and genetic resources. |
| Benefit sharing | Strong private IPRs with no corresponding rights for IPLCs or farmers and no mandated benefit sharing. | Benefit sharing is mandated, with the exact terms to be negotiated between the government and interested parties. |
| Protection of traditional knowledge | Narrow understanding of innovation associated only with commercial utility. | Recognises the role played by traditional knowledge. |
| Role of the State | The role of the State is limited to protecting IP. The State has no set role in maintaining, promoting or protecting biodiversity. | Access to biodiversity is governed by the principle of informed prior consent, which includes consulting with IPLCs. |

Despite these controversies and the patent shortcomings of the CBD, the CBD has been pivotal in the development of domestic legal tools for the protection of genetic resources and traditional knowledge by several biodiversity-rich nations of the global South, including South Africa.[117] This dissertation argues that, as a party to both the CBD and

[117] Crouch and others (n 12); Lee Ann Tong, 'South Africa Adopts Sui Generis Indigenous Knowledge Protection Legislation' (2019) 14 Journal of Intellectual Property Law and Practice 935; AF Myburgh, 'Legal Developments in the Protection of Plant-Related Traditional Knowledge: An Intellectual Property Lawyer's Perspective of the International and South African Legal Framework' (2011) 77 South African



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the TRIPS Agreement, South Africa must strike a balance between protecting IPRs on the one side and protecting genetic resources, traditional knowledge and rights of IPLCs on the other. The success of these measures is directly dependent on whether the State is able to protect and guarantee the rights of IPLCs to control local biodiversity and to ensure their constant participation in the development of national policies and legislation.[118]

### *d. International Treaty on Plant Genetic Resources for Food and Agriculture*

Even though South Africa is not a party[119] to FAO's International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA),[120] it is worth mentioning briefly due to the possible persuasive value it has in South African law and some similarities it shares with the CBD. Article 1 of the ITPGRFA states that its objectives 'are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising from their use, in harmony with the CBD, for sustainable agriculture and food security. It also mentions that achieving these objectives is closely related to the work of the FAO and, importantly, the CBD.

However, the treaty's scope is limited to plant genetic resources for food and agriculture.[121] Regardless, it is important to note that the treaty makes provisions that are in similar vein to the CBD which include the recognition of the contributions of IPLCs and local farmers (Article 9.1) and mandate contracting parties to realise their rights which include the right to have their traditional knowledge relevant to plant genetic resources protected, the right to an equitable share of the benefits arising from the utilisation of plant genetic resources for food and agriculture and the right to participate in the relevant

Journal of Botany 844 <http://dx.doi.org/10.1016/j.sajb.2011.09.003> accessed 13 February 2023; Caroline B Ncube, 'Sui Generis Legislation for the Protection of Traditional Knowledge in South Africa: An Opportunity Lost*' in Elmien (WJ) du Plessis and Caroline B Ncube (eds), *Indigenous knowledge and intellectual property* (Juta 2016).
[118] Zerbe (n 114).
[119] Food Agriculture Organisation, 'List of Contracting Parties' <https://www.fao.org/plant-treaty/countries/membership/en/> accessed 12 May 2023.
[120] International Treaty on Plant Genetic Resources and Food and Agriculture (2001) 2400 UNTS 303, entered into force on 29 June 2004.
[121] Article3 of the ITPGRFA.



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decision-making processes.[122] Furthermore, article 10 establishes a multilateral system for access and benefit sharing.

### *3.6.2 African regional frameworks*

In addition to the CBD, NP and TRIPS Agreement discussed above, a few other international and regional instruments are worth mentioning. These are the African Model Law for the protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources (African Model Law),[123] the African Union's Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa 2015,[124] the Intellectual Property Rights Protocol to the Agreement Establishing the African Continent Free Trade Area, the African Regional Intellectual Property Organisation (ARIPO's) Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore (Swakopmund Protocol). Also, ARIPO published the Policy Framework on Access and Benefit Sharing arising from using Genetic Resources in the ARIPO Member States: A Guide for ARIPO Member States (2016) (ARIPO Guidelines). The ARIPO Guidelines are meant to complement the Swakopmund Protocol and guide ARIPO member states in implementing the CBD.[125] A detailed discussion of each of these instruments is beyond the scope of this study. However, the following subsection looks at the African Model Law and how it was designed to assist member states of the African Union in developing their domestic legislative frameworks. It is important to note that the African Model Law is regarded as soft international law without binding power on member states of the AU. However, it may serve a persuasive role in developing South Africa's policy and legislative frameworks.

[122] Article 9.2 of the ITPGRFA.
[123] African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources (2001) adopted by the Council of Ministers of the then Organisation of African Unity (OAU), now the African Union (AU).
[124] African Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa 2015 1.
[125] Ncube (n 117).



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### *3.6.3 African Model Law*

The objectives of the African Model Law include, among other things, to (a) 'recognise, protect and support the inalienable rights of local communities including farming communities over their biological resources, knowledge and technologies', (c) 'provide an appropriate system of access to biological resources, community knowledge and technologies subject to prior informed consent of the State and the concerned local communities; (d) promote appropriate mechanisms for a fair and equitable sharing of benefits arising from the use of biological resources, knowledge and technologies. The African model law also provides mechanisms for the 'implementation and enforcement of the rights of local communities.'[126] The definition of biological resources in the African Model Law includes genetic resources and effectively follows the definition in the CBD. Also, the definition of community or indigenous knowledge provided in Part II of the African Model Law states that it is 'the accumulated knowledge that is vital for the conservation and sustainable use of biological resources and/or which is of socio-economic value, and which has been developed over the years in indigenous/ local communities.

The intention of enacting the African Model Law was to provide member states of the AU with a working example of the sui generis protection of biological resources and traditional knowledge and the protection of the rights of indigenous peoples and local communities.[127] According to Ekpere, the African Model Law came about as a result of the rejection by African countries of the UPOV Convention, which they viewed as 'a tool for allowing foreign monopolies over local biodiversity.'[128] Ekpere also argued that the provisions of the African Model Law met the obligations of Article 27(3)(b) of the TRIPS Agreement for the development of a sui generis mechanism for the protection of genetic resources and traditional knowledge while at the same time meeting the obligations of the CBD regarding the rights of IPLCs.

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[126] Parts 1(a), (c), (d) and (g) of the African Model Law.
[127] A Ekpere, *The OAU's Model Law The Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources: An Explanatory Booklet* (OPEC Fund for Development 2000).
[128] ibid 8.



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According to Ncube, articles 16 and 17 of the Model Law provide for the recognition and protection of the rights of communities over their traditional knowledge, including the right to benefit from the utilisation of such traditional knowledge, innovation and technologies.[129] Ncube also adds that to help member states of the SADC to implement the African Model Law into their domestic legal systems, SADC developed the Nyanga Guidelines.[130] These guidelines sought to guide member states to develop policies and legislation that would balance the protection of genetic resources and traditional knowledge within the intellectual property system (as per the obligations from the CBD and the TRIPS Agreement) with protecting the rights of IPLCs.

## 3.7 International and regional human rights charters

This section discusses several international and regional human rights instruments that may form a direct or indirect basis for South Africa's obligations to protect the rights and interests of IPLCs regarding genetic resources and traditional knowledge. These include the United Nations Charter (UN Charter), the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), the Indigenous and Tribal Peoples Convention (ILO Convention No. 169), the African Charter on Human and Peoples' Rights (African Charter)[131] and the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the Optional Protocol to the ICESCR. According to Tennberg et al., these instruments represent the progress that has been made in the international recognition and protection of the rights of indigenous people throughout the world.[132]

### *3.7.1 The African Charter*

The African Charter was adopted by the member states of the then Organisation of African Unity (OAU), now the African Union (AU)) on 5 July 1976. However, it only came into force on 21 October 1986.[133] South Africa signed, ratified and became a party to the African

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[129] Ncube (n 95) 35.
[130] Southern African Development Community.
[131] African Charter on Human and Peoples' Rights.
[132] Monica Tennberg, Else Grete Broderstad and Hans Kristian Hernes, *Indigenous Peoples, Natural Resources and Governance: Agencies and Interactions* (2021).
[133] Feris (n 57).



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Charter on 9 July 1996.[134] Member states of the AU that are parties to the African Charter must 'recognise the rights, duties and freedoms enshrined in [the African Charter] and shall undertake to adopt legislative and other measures to effect them.[135] This includes a duty to enact suitable legislation to provide recognition or protection of innovation in indigenous knowledge in Africa to exercise their God-given right to development.[136] Article 22 of the African Charter recognises the inalienable right of all peoples to 'their economic, social and cultural development…' and calls on states to 'individually or collectively, to ensure the exercise of the right to development.' This right to development is echoed in the UN Charter,[137] where articles 55 and 56 obligate UN member states to work together to advance economic and social development and promote universal human rights for all individuals.

### *3.7.2 The ICCPR*

The ICCPR was adopted by a resolution of the UN General Assembly on 16 December 1966 and came into force nearly ten years later on 23 March 1976.[138] South Africa became a party to the ICCPR in 1998. Even though this instrument does not specifically protect the right to a healthy environment like section 24 of the South African Constitution, de Wet and du Plessis suggest that it offers 'some indirect substantive protection' through article 27's protection of the rights of minorities (indigenous peoples).[139] These rights include the right to 'enjoy their own culture, to profess and practise their own religion, or to use their own language'.[140]

Some authors such as Agejoh and Cornelius argue that these obligations stemming from these international human rights instruments also entail protecting traditional knowledge

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[134] African Union, 'List of Countries Which Have Signed, Ratified or Adhered to the African Charter on Human and People's Rights' <https://au.int/sites/default/files/treaties/36390-sl-african_charter_on_human_and_peoples_rights_2.pdf> accessed 13 March 2023.
[135] African Charter on Human and Peoples' Rights.
[136] Agejoh and Cornelius (n 31) 142.
[137] African Charter on Human and Peoples' Rights.
[138] International Covenant on Civil and Political Rights.
[139] Erika de Wet and Anél du Plessis, 'The Meaning of Certain Substantive Obligations Distilled from International Human Rights Instruments for Constitutional Environmental Rights in South Africa' (2010) 10 African Human Rights Law Journal 345, 351.
[140] Article 27 of the International Covenant on Civil and Political Rights.



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(and genetic resources) as these form an integral part of IPLCs' heritage and are crucial for the realisation of their socio-economic development.[141] It must also be noted here that article 14 of the African Charter guarantees the right to property, with the proviso that it can only be encroached upon in the public interest or the community's general interest. Given the status of IPRs as property in South African law, it can be argued that this protection also extends to them. This would then imply that as a party to the African Charter, these obligations also fall squarely on South Africa, and as such it must seek ways to balance the protections of these rights.

### 3.8 Current status of the international protection of genetic resources and traditional knowledge: Overview of the progress at the WIPO-IGC

One thing is clear from the above discussion. Even though several international instruments are binding on South Africa (and other state parties) for the protection of genetic resources, traditional knowledge, the rights of IPLCs and IPRs, these instruments are, at best, fragmented and incoherent.[142] The CBD, the authoritative instrument that directly seeks to protect genetic resources, has been criticised as weak.[143] There is, therefore, a consensus that there is a pressing need for a single internationally binding legal instrument within the global IPR forum (WIPO).[144] This has been the quest of the WIPO-IGC for over two decades. Despite challenges and a lack of consensus, there are indications that some progress has been made in the negotiations. The following section briefly discusses the current status of the efforts towards developing an international framework for the protection of genetic resources and traditional knowledge within the auspices of the WIPO-IGC. It provides a brief history of the WIPO-IGC, what it has

[141] Agejoh and Cornelius (n 31 142).
[142] Graham Dutfield, 'TK Unlimited: The Emerging but Incoherent International Law of Traditional Knowledge Protection' (2017) 20 Journal of World Intellectual Property 144.
[143] Anne E Magurran, *Biological Diversity.*, vol 15 (2005).
[144] Asiia Sharifullovna Gazizova, 'Protection of Traditional Knowledge: The Work and the Role of International Organisations and Conferences' (2020) 9 International Journal of Higher Education 95.



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achieved to date and a brief overview of the challenges faced in coming up with a comprehensive international legal instrument.[145]

The WIPO General Assembly established the IGC in 2000 as a forum in which member countries of WIPO could explore the intellectual property issues related to access and utilisation of genetic resources, traditional knowledge and TCEs. Oguamanam notes that over the course of its life, the mandate of the WIPO-IGC has evolved to include negotiations for a text-based legal instrument or instruments for the protection of genetic resources, traditional knowledge and TCEs.[146] By 2021, the WIPO General Assembly had resolved to expedite the work of the WIPO-IGC so as to finalise an agreement on an international legal instrument or instruments for the balanced and effective protection of genetic resources, traditional knowledge and traditional cultural expressions.[147]Even though there is still no consensus, a key step in this quest has been the convergence of parties around the WIPO-IGC Chair's text on a Draft International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources[148] as a focussed, effective and balanced basis for further discussions and engagement.[149] However, despite this, Oguamanam also notes that at the 45th IGC in 2022, delegates continued to work on separate instruments for traditional knowledge and traditional cultural expression side by side with the Chair's text.[150]

Thus, even though some significant progress has been noted in developing an international legal instrument or instruments for the protection of genetic resources and associated traditional knowledge, some challenges remain. Dutfield identifies three issues that he argues complicate and stand in the way of developing a complete and

[145] Some of the challenges faced within the WIPO-IGC include the seemingly irreconcilable differing belief systems between countries of the global North and those of the global South regarding the nature of traditional knowledge and its suitability for protection. See discussion in Chapter 2 above.
[146] Chidi Oguamanam, 'Understanding African and Like-Minded Countries' Positions at WIPO-IGC' (2020) 60 IDEA 386.
[147] The Africa Group, 'Proposal to Advance WIPO Normative Agenda on Genetic Resources Associated with Traditional Knowledge' (2022).
[148] WIPO-IGC (n 67).
[149] The Africa Group (n 147).
[150] Chidi Ougamanama, 'WIPO-IGC 45: Bold and Strategic Moves Toward TK and TCE Text(s) - ABS Canada' (2020) <https://openair.africa/wipo-igc-45-moves-toward-tk-tce-texts/> accessed 13 March 2023.



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coherent international protection regime for traditional knowledge.[151] First, he argues that the ahistorical positioning of traditional knowledge as a 'direct' and 'binary' opposite of modern (Western) knowledge reinforces misconceptions regarding the nature of traditional knowledge and its relationship with other knowledge systems. Secondly, and as a consequence of the above, the proponents of the protection of traditional knowledge tend to be expansive in terms of the scope of such protection, resulting in policy incoherence. Thirdly, he argues that the prevailing understanding of the access and benefit-sharing measures introduced by the CBD tends to undervalue traditional knowledge's social and cultural significance for IPLCs. This, he adds, is critical as it glosses over the fact that the significance of genetic resources and traditional knowledge in the lives of IPLCs likely outweighs the monetary value that may arise from its commercialisation. In other words, the value of genetic resources and traditional knowledge to IPLCs extends beyond the potential commercial value of its utilisation.

Oguamanam, on the other hand, argues that over the course of the negotiations for a comprehensive binding text, nations from the biodiversity-rich global South (demandeur nations) and those from the technologically advanced (non-demandeur nations) both tend to stick to their own positions and exhibit an unwillingness to compromise and bridge the gaps.[152] Because of this, he views the adoption of the Chair's text as a pragmatic approach towards narrowing the gaps and finding middle grounds and compromises, which are necessary precursors to consensus on a binding instrument.

A comprehensive discussion of the Chair's draft's provisions is beyond the present study's scope. However, a few aspects of this draft instrument are worth mentioning. Firstly, as Oguamanam notes, this draft is an incomplete document which does not include 'articles on preamble, use of terms, disclosure requirements, administration of rights, database protection, terms of protection, formalities and other sections within the frame of existing traditional knowledge/ traditional cultural expressions instruments'.[153] The text, however, does contain several provisions and elaborate explanatory notes for the objectives,

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[151] Graham Dutfield 'TK unlimited: The emerging but coherent international law of traditional knowledge protection' *The Journal of World Intellectual Property*, (2017) 20:144-159.
[152] Ougamanama (n 150).
[153] ibid.



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subject matter, cope of protection and beneficiaries of the protection of traditional knowledge. Crucially, the text also contains provisions detailing exceptions and limitations to protection and sanctions and remedies, which will definitely give the instrument more clout.

Also, the Chair's text states that the protection of traditional knowledge should aim to recognise the 'holistic' and 'distinctive' nature and 'intrinsic value, including its social, spiritual, economic, intellectual, scientific, ecological, technological, commercial, educational and cultural value'. The text also recognises the intrinsic connection between traditional knowledge and IPLCs and states that the protection of traditional knowledge should aim to promote respect for traditional knowledge systems and 'for the dignity, cultural integrity and intellectual and spiritual values of the traditional knowledge holders/ owners who conserve, develop and maintain those systems'.[154] It is argued that this position taken by the WIPO-IGC in this draft instrument reflects the need to consider and balance the rights of IPLCs in the protection of traditional knowledge. In other words, the protection of traditional knowledge should not only aim at stopping or preventing its misappropriation but should also place at the centre the protection and promotion of the rights of IPLCs.[155]

Even though the debate about the form that the legal protection of genetic resources and associated traditional knowledge should take is still topical, some significant progress has been made under the auspices of the WIPO-IGC. It is argued that the approach taken in the Chair's text and Draft Instrument of the WIPO-IGC reflects the concern that the rights of IPLCs fall at the centre of all considerations in the protection of genetic resources and associated traditional knowledge and intellectual property rights.

## 3.9 Conclusion

This chapter examined the legal basis for South Africa's obligations to protect genetic resources, traditional knowledge, and the rights of IPLCs and IPRs. It started off by tracing

[154] WIPO-IGC (n 67).
[155] At the time of the writing of this dissertation, the WIPO-IGC was engaged in its 47th meeting (WIPO-IGC47), which is preceeding the 2024 Diplomatic Conference on Genetic Resources where the Chair's Draft Text well be the working instrument.



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the genesis of calls in the literature for the rights of IPLCs to genetic resources and traditional knowledge to be recognised in international law. The constitutional mandate to protect the environment for the benefit of present and future generations was then canvassed in light of the human rights-based transformation quest of democratic South Africa. The position of international law in South African jurisprudence was then followed by a discussion of various international legal instruments to which South Africa is a party.

Even though different instruments were adopted to protect different aspects of human endeavour, it was demonstrated in this chapter that most of these instruments could serve as a basis for the development and enactment of legal regimes to protect genetic resources and associated traditional knowledge, as well as balancing these protections with the rights of IPLCs and IPRs. However, differences also emerged, particularly between the TRIPS Agreement and the CBD. These imply that South Africa, when developing domestic tools to protect genetic resources, traditional knowledge and IPRs, must engage in a skilful balancing act to achieve human socio-economic development for IPLCs while promoting and rewarding innovation through strong IP laws. The following chapter will examine the domestic legislative and policy interventions for the protection of genetic resources and traditional knowledge in South Africa. These interventions will be contrasted with those of two similarly placed jurisdictions: Brazil and India.



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# CHAPTER FOUR

# PROTECTION OF GENETIC RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE IN SOUTH AFRICA, BRAZIL, AND INDIA: A COMPARATIVE ANALYSIS

## 4.1 Introduction

The previous chapter discussed the various constitutional and international law frameworks which may provide the basis for the legal protection of genetic resources and associated traditional knowledge in South Africa. It also provided an overview of the current developments within the WIPO-IGC regarding the development of an internationally binding instrument or instruments for the protection of genetic resources and associated traditional knowledge. The chapter argued for a human rights-based approach to balance the competing rights and interests of IPLCs and IPRs. This chapter takes the discussion forward by providing a comparative analysis of the legislative and policy developments in South Africa, Brazil, and India, in the protection of genetic resources and associated traditional knowledge. As mentioned in Chapter One, these jurisdictions were selected based on their similarities to South Africa (e.g., megadiverse countries with a rich heritage of genetic resources and traditional knowledge) and the fact that they are two of the leading countries in developing domestic tools for their protection.[1] Therefore, this chapter will deduce lessons and opportunities for South Africa's legislative and policy frameworks from an analysis of Brazil and India's legislation and policies. The analysis concludes by setting the scene for Chapter Five, which will provide the study's overall conclusions and recommendations.

As highlighted in Chapter Two above, the prevailing international intellectual property regime is widely viewed as unsuitable for protecting traditional knowledge associated with genetic resources. This, coupled with the absence of a comprehensive, legally binding international legal instrument to protect traditional knowledge within the global IP system, has led several countries to draft their own domestic measures to protect their genetic

[1] Valbona Muzaka and Omar Ramon Serrano, 'Teaming Up? China, India and Brazil and the Issue of Benefit-Sharing from Genetic Resource Use' (2020) 25 New Political Economy 734 <https://doi.org/10.1080/13563467.2019.1584169>.



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resources and associated traditional knowledge. This chapter, therefore, compares the legislative and policy approaches adopted by South Africa, Brazil, and India, in protecting their genetic resources and associated traditional knowledge.

## 4.2 South Africa

### *4.2.1 Context and background*

As discussed in the previous chapter, South Africa's historical context is one in which genetic resources and associated traditional knowledge were misappropriated and utilised without any recognition or benefits accruing to the country or the IPLCs, the holders and custodians of these resources. This was largely due to the absence of laws to regulate bioprospecting or the lax implementation of existing regulations.[2] Despite this, however, South Africa is reputed to have strong intellectual property protection laws.[3] Since becoming a party to the CBD, South Africa has been developing and realigning its legal and policy frameworks to include protections for genetic resources and associated traditional knowledge[4] within the context of the transformative nature of the human rights-centred supreme Constitution.[5] To this end, the country has implemented a multifaceted legal framework that protects genetic resources, associated traditional knowledge, and intellectual property rights by employing existing IP laws (with amendments) and *sui generis* legal systems.[6]

According to Bagley, this legal framework can be said to comprise four main components, which she classifies as (i) bioprospecting and genetic resources; (ii) defensive protection of traditional knowledge through a documentation system; (iii) a suite of *sui generis* laws;

[2] Neil R Crouch and others, 'South Africa's Bioprospecting, Access and Benefit-Sharing Legislation: Current Realities, Future Complications, and a Proposed Alternative' (2008) 104 South African Journal of Science 355.
[3] George Sombe Mukuka, *Indigenous Knowledge Systems & Intellectual Property Laws in South Africa: 'Reap What You Have Not Sown'* (Pretoria University Law Press 2010) <https://www.pulp.up.ac.za/component/edocman/reap-what-you-have-not-sown-indigenous-knowledge-systems-and-intellectual-property-laws-in-south-africa>.
[4] Margo A Bagley, 'Toward an Effective Indigenous Knowledge Protection Regime Case Study of South Africa' (2018) 207.
[5] Andre Van Der Merwe, 'South and Southern Africa-Recent Developments in the Legal Protection of Traditional Knowledge and Traditional Cultural Expressions' (2014) 9 Journal of Intellectual Property Law and Practice 411.
[6] Bagley (n 4).



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and, (iv) the use of existing IP laws.[7] This legal framework is discussed in the following section.

### *4.2.2 NEMA, NEMBA and the BABS Regulations*

The first component of South Africa's legislative and policy framework focuses on regulating bioprospecting and the role genetic resources can play in socio-economic development in South Africa. The key principle driving this component is that all bioprospecting activities and uses of genetic resources and associated traditional knowledge must support national and local economic development in South Africa.[8] This component thus consists of laws governing how bioprospecting must be conducted and how foreign and domestic users of genetic resources and associated traditional knowledge must conduct their activities.[9] These laws comprise South Africa's framework environmental legislation, the National Environmental Management Act No. 107 of 1998 (NEMA) and its subordinate Acts, such as the National Environmental Management Biodiversity Act No. 10 of 2004 (NEMBA). NEMA, NEMBA and their respective regulations provide a system through which bioprospectors apply for and secure bioprospecting permits. Most of the processes under this component are administered by the Department of Environment, Forestry and Fisheries (DEFF), which implements a rigorous process for assessing and approving bioprospecting activities and issuing bioprospecting permits.[10] However, it is important to note that the bioprospecting permitting system is not without its flaws. The South African permitting scheme is beset with challenges, and complaints include that the process is arduous. Others charge that the regulations are also impracticable and restrictive.[11]

[7] ibid.
[8] Emeka Polycarp Amechi, 'Bio-Economy, Patents, and the Commercialisation of Traditional Knowledge on the Medicinal Uses of Plants in South Africa' (2018) 30 South African Mercantile Law Journal 251.
[9] These laws include NEMBA and the Bioprospecting, Access and Benefit-Sharing Regulations, No. R138 of 2008 (BABS Regulations) as amended by the BABS Amendment regulations 2015.
[10] Rachel Wynberg and others, *Guidelines for Providers, Users and Regulators South Africa's Bioprospecting, Access and Benefit-Sharing Regulatory Framework Overall Project Management and Coordination, Sections for Regulators and Users: Natural Justice Section for Providers* (2012) <www.environment.gov.za> accessed 10 February 2023.
[11] ibid.



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#### 4.2.2.1 NEMA

The National Environmental Management Act, 107 of 1998 (NEMA), is South Africa's framework environmental legislation[12] aimed at providing, among others, the overarching principles governing environmental management. The preamble of NEMA recognises the harmful nature of prevailing environmental conditions to people's health and well-being and sets out the State's obligation to 'respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities'.[13] As such, one of the National Environmental Management Principles in NEMA states that 'environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably'.[14]

In this respect, de Wet and du Plessis argue that NEMA requires that the State meet its international law obligations to the environment in a manner that prioritises the national interest, particularly the rights of previously disadvantaged persons.[15] It is argued in this chapter that, in terms of genetic resources and associated traditional knowledge, and given the historical context of South Africa, IPLCs constitute the majority of these 'previously disadvantaged persons'. However, it is important to note that, as a framework legislation, NEMA does not directly deal with the protection of genetic resources and associated traditional knowledge. Instead, as indicated above, it provides for the overall governance and management principles on which subordinate legislation and regulations are based. Therefore, to give practical effect to South Africa's obligations to protect genetic resources and associated traditional knowledge, parliament enacted the National Environmental Management Biodiversity Act No. 10 of 2004 (NEMBA).

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[12] Section 2(1)(b) provides that NEMA serves 'as the general framework within which environmental management and implementation plans must be formulated.

[13] Preamble of NEMA.

[14] Section 2(2) of NEMA.

[15] Erika de Wet and Anél du Plessis, 'The Meaning of Certain Substantive Obligations Distilled from International Human Rights Instruments for Constitutional Environmental Rights in South Africa' (2010) 10 African Human Rights Law Journal 345.



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#### *4.2.2.2 NEMBA and the BABS regulations*

According to Rutert et al., the enactment of the National Environmental Management Biodiversity Act (NEMBA) was a culmination of the South African government's policies focussing on indigenous knowledge systems, traditional medicine and access to biodiversity.[16] The Act was debated through 13 cycles of public consultations and comment processes before it was gazetted by the then Department of Environmental Affairs and Tourism (now Department of Environment, Forestry and Fisheries (DEFF)). NEMBA was enacted to 'provide for the management and conservation of South Africa's biodiversity within the framework of NEMA,[17] and to ensure the 'sustainable use of indigenous biological resources,[18] and the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources.'[19] Section 2 of NEMBA states further that one of its objectives is to give effect to ratified international agreements relating to biodiversity, which are binding on the Republic.[20] This provision is similar in effect to the preamble of India's Biodiversity Act which specifically makes reference to the CBD as the international legal instrument on which it is modelled. Similarly, Brazil's Biodiversity law references the CBD and further states that the objectives and definitions contained therein are modelled after the CBD.

NEMBA, however, contains an innovation that is not apparent in both the Indian and Brazilian biodiversity legislation, namely, to make the State the trustee in respect of all biological diversity.[21] Section 3 states that,

> In fulfilling the rights contained in section 24 of the Constitution,[22] the state, through its organs that implement legislation applicable to biodiversity, must-

[16] Britta Rutert, Hansjörg Dilger and Gilbert Motlalepula Matsabisa, 'Bioprospecting in South Africa : Opportunities and Challenges in the Global Knowledge Economy – a Field in the Becoming' (2011) 1/2011.
[17] Section 6(1) of NEMBA.
[18] The definition of biological resources in NEMBA includes genetic resources.
[19] The preamble of NEMBA.
[20] Section 2(b) of NEMBA. Section 5 of NEMBA also provides that 'this Act gives effect to ratified international agreements affecting biodiversity to which South Africa is a party, and which bind the Republic.
[21] Section 3 of NEMBA.
[22] Section 24 of the Constitution provides for environmental rights. See discussion in Chapter 3 above.



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(a) Manage, conserve and sustain South Africa's biodiversity and its components and genetic resources; and
(b) Implement this Act to achieve the progressive realisation of those rights.

It is submitted that, in addition to giving effect to section 24 of the Constitution, this provision also operationalises South Africa's sovereignty over its biological diversity and places the protection of human rights at the forefront of biodiversity conservation and utilisation. Amirmahmoudi and Nomani agree with this view and state that these provisions 'reflect the sovereignty of the nation over access to bioresources' and recognise the role and interconnectedness of traditional knowledge, IPRs and benefit sharing.[23]

Chapter 6 of NEMBA provides for bioprospecting involving indigenous biological resources, and access and benefit-sharing provisions, in line with the objectives of the CBD. Section 80(1)(c) states that the Chapter seeks to 'provide for a fair and equitable sharing by stakeholders in benefits arising from bioprospecting…' To achieve this and other goals, section 81 introduces a permitting system for bioprospecting activities. According to this section, bioprospectors must obtain bioprospecting permits before they can engage in any bioprospecting activities, and such a permit is obtainable after the applicant has satisfactorily disclosed all the required information regarding the proposed bioprospecting and the indigenous biological resources to be used.[24]

In terms of access to genetic resources, NEMBA provides for a permitting system wherein no bioprospecting activities can commence until the issuing authority has issued a permit. In this regard, one of the most important provisions of NEMBA is the requirement that the rights and interests of holders of genetic resources and IPLCs must be protected before issuing any permit for bioprospecting. It is submitted that this provision implies that there must be some form of consultation with stakeholders to ascertain their rights and interests and for them to be considered during the application process. According to section 82 of NEMBA, before any bioprospecting permit is issued, the issuing authority must protect

[23] Mehdi Amirmahmoudi, 'South African Model of Access and Benefit Sharing and Its Implication for India' (2019) 5 International Journal of Law 60.
[24] Section 81(2) of NEMBA.



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any interests of 'any person…or community, providing access to the indigenous biological resource' and (b) an indigenous community whose traditional uses or traditional knowledge of the indigenous biological resource will form part of, or be utilised in the bioprospecting. This provision, similar to the Brazilian Biodiversity Law discussed below, makes it clear that the protection of genetic resources is to be twinned or balanced with the protection of the rights and interests of IPLCs. The South African NEMBA, however, goes further than the Brazilian law in that, in addition to IPLCs, it recognises stakeholders who may include individuals or even organs of state. Sections 83 and 84 provide for the negotiation and conclusion of benefit-sharing agreements as well as material transfer agreements, respectively.

The Bioprospecting, Access and Benefit Sharing (BABS) regulations were gazetted in 2008 to give effect to the access and benefit sharing provisions of NEMBA.[25] Regulation 2 states that the purpose of the regulations is, among other things, to prescribe the processes to be followed during the discovery phase of bioprospecting and to prescribe the permit system set out in Chapter 7 of NEMBA. The regulations also provide the 'form and content of and the requirements and criteria for benefit-sharing and material transfer agreements.

### *4.2.3 IP laws and the Intellectual Property Laws Amendment Act 28 of 2013*

Some of the earlier attempts to remedy the problem of lack of sufficient regulation to bioprospecting within the context of its IP laws began around 2005 with the amendment of patent legislation to introduce access and benefit sharing (ABS) and prior informed consent (PIC) requirements.[26] In 2013, South Africa further amended its IP laws through the Intellectual Property Laws Amendment Act 28 of 2013 (IPLAA)[27] to recognise traditional knowledge as protectable subject matter.

However, a few points are worth noting. IPLAA was a culmination of policy developments driven by the Department of Trade and Industry (DTI), which sought to '[improve] the

[25] National Environmental Management: Biodiversity Act, 10 of 2004: Bio-prospecting, Access and Benefit-Sharing Regulations, 2008 2014 (Government Gazette) 1.
[26] Patents Amendment Act 20 of 2005.
[27] Intellectual Property Laws Amendment Act No. 28 of 2013 (hereinafter IPLAA).



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livelihood of traditional communities, [benefit] the national economy, [conserve] the environment and [prevent] bio-piracy.'[28] Despite acknowledging the inadequacy of the intellectual property system to meet these objectives and amidst much criticism against this approach,[29] the South African government persisted with enacting IPLAA to protect traditional knowledge by amending the existing IPRs. The long title of IPLAA states that its objectives are to 'provide for the recognition and protection of certain manifestations of indigenous knowledge as a species of intellectual property; to this end to amend certain laws to provide for the protection of relevant manifestations (of traditional knowledge) as a species of intellectual property.[30] Tong, however, argues that despite this pronouncement, IPLAA does not create or recognise a corresponding new species of intellectual property right.[31]

Regardless, most of these introduced provisions applied to traditional knowledge and traditional cultural expressions related to the Copyright Act No. 98 of 1978, the Designs Act No. 195 of 1993 and the Trademarks Act No. 194 of 1993.[32] Because they do not deal with traditional knowledge associated with genetic resources, this study does not discuss these provisions or these Acts further.

### *4.2.4 The indigenous systems policy and the IKS Act*

The second component is a documentation and registration system operationalising the defensive protection of traditional knowledge in South Africa.[33] In 2004, the South African government published its Indigenous Knowledge Systems Policy,[34] which sought, among other things, to recognise, develop and protect traditional knowledge for the benefit of

[28] Lee Ann Tong, 'Aligning the South African Intellectual Property System with Traditional Knowledge Protection' (2017) 12 Journal of Intellectual Property Law and Practice 179.
[29] Ushenta Naidoo, 'A Comparative Assessment of South Africa's Proposed Legislation to Protect Traditional Knowledge' (University of Pretoria 2019) <https://repository.up.ac.za/bitstream/handle/2263/69946/Naidoo_Comparative_2019.pdf?sequence=1&isAllowe>; Tong (n 28); Bagley (n 4).
[30] Long title of IPLAA.
[31] Tong (n 28).
[32] Caroline B Ncube, 'Sui Generis Legislation for the Protection of Traditional Knowledge in South Africa: An Opportunity Lost*' in Elmien (WJ) du Plessis and Caroline B Ncube (eds), *Indigenous knowledge and intellectual property* (Juta 2016).
[33] Bagley (n 4).
[34] Department of Science and Technology, 'IKS Policy' 1 <https://www.dst.gov.za/images/pdfs/IKS_Policy PDF.pdf>.



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IPLCs. This policy, culminating in the IKS Act, established a system to collect, document and publish traditional knowledge through the newly created National Indigenous Knowledge Systems Office (NIKSO). In terms of this measure, traditional knowledge is collected directly from the holders of such knowledge and recorded and stored in the National Recordal System (NRS), which incorporates the National Indigenous Knowledge Management System (NIKMAS). NIKMAS is a digital repository in which the collected traditional knowledge is catalogued in various searchable formats. Dissemination of the traditional knowledge stored within the NIKMAS repository is strictly controlled and administered by the Department of Science and Technology (DST). The provisions of the IKS are discussed in more detail below.

The Protection, Promotion, Development, and Management of Indigenous Knowledge Systems Act of 2019 (IKS Act) is the primary legislation that protects traditional knowledge in South Africa. The IKS Act establishes a regulatory framework for protecting and promoting traditional knowledge by recognising its value in sustainable development, research, and innovation.[35] The IKS Act defines traditional knowledge[36] as 'knowledge which has been developed within an indigenous community and has been assimilated into the cultural and social identity of that community and includes (a) knowledge of a functional nature; (b) knowledge of natural resources; and (c) indigenous cultural expressions.'[37] The IKS Act further defines an indigenous community as 'any recognisable community of people developing from, or historically settled in, a geographic area or areas located within the borders of the Republic characterised by social, cultural and economic conditions which distinguish them from other sections of the national community, and who identify themselves and are recognised by other groups as a distinct collective'.[38] According to Ncube, even though minor differences exist between the definitions of indigenous communities in the IKS Act and IPLAA, the clear objective of

[35] The preamble of the IKS Act. The IKS Act uses the term 'indigenous knowledge'. However, the approach adopted in this study is that indigenous knowledge and traditional knowledge can be used interchangeably.

[36]

[37] Section 1 of the IKS Act.

[38] Ibid.



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both pieces of legislation is the 'protection for a traditional or indigenous collective, rather than an individual.'[39]

Section 2 of the IKS Act states that the objects of the Act are to

(a) Protect the indigenous knowledge of indigenous communities from unauthorised use, misappropriation and misuse;
(b) Promote public awareness and understanding of indigenous knowledge for the wider application and development thereof;
(c) Develop and enhance the potential of indigenous communities to protect their indigenous knowledge;
(d) Regulate the equitable distribution of benefits;
(e) Promote the commercial use of indigenous knowledge in the development of new products, services and processes;
(f) Provide for registration, cataloguing, documentation and recording of indigenous knowledge held by indigenous communities.
(g) Establish mechanisms for the accreditation of assessors and the certification of indigenous knowledge practitioners; and
(h) Recognise indigenous knowledge as prior art under intellectual property laws.

According to Tong, these objects capture 'almost every conceivable [traditional knowledge]-related consideration, including protection from 'unauthorised use, misappropriation and misuse', the regulation of the equitable distribution of benefits, the promotion of the commercial use of [traditional knowledge] 'in the development of new products, services and processes' and the recognition of '[traditional knowledge] as prior art in the context of intellectual property rights.'[40] The IKS Act also establishes the National Indigenous Knowledge Systems Office (NIKSO), responsible for implementing and administering the IKS Act.

[39] Ncube (n 32).
[40] Tong (n 11) 935.



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Traditional knowledge must be registered with the NIKSO in terms of the IKS Act[41] to be protected as property under section 25 of the Constitution of the Republic of South Africa, 1996 (the Constitution).[42] Once registered, any interested parties can apply to amend the register, but the IPLC that registers the traditional knowledge should then be allowed to make representations before any amendment is made. In addition, traditional knowledge must be eligible for protection according to the criteria specified in section 11. Traditional knowledge is protectable if it '(a) has been passed on from generation to generation within an indigenous community; (b) has been developed within an indigenous community; and is (c) associated with the cultural and social identity of that indigenous community.' Section 10 provides that the term of protection of traditional knowledge only subsists as long as it still meets the set criteria, after which it falls into the public domain.[43]

Section 12 provides that the custodianship of the traditional knowledge vests in a trustee, who holds the traditional knowledge in trust on behalf of the IPLC and is responsible and accountable to the IPLC for protecting their rights. If the relevant IPLC cannot be identified, then NIKSO must act as the custodian of that traditional knowledge, with the rights and obligations of a trustee in respect of such traditional knowledge.[44] An IPLC holding traditional knowledge is conferred some exclusive rights in section 13. These rights include the exclusive right to any benefits arising from the commercial use of traditional knowledge, the right to be acknowledged as its origin and the right to limit any unauthorised use of such traditional knowledge. These rights place an obligation on users of traditional knowledge to 'apply through NIKSO for a licence'[45] , and such application must indicate (i) the identity of the indigenous community; (ii) the place of origin of the traditional knowledge; and (iii) whether PIC has been obtained and an ABS agreement concluded with the IPLC.[46]

The IKS Act provides for two enforcement mechanisms. Section (27(1) provides that the Minister of Science and Technology may set up an ad hoc Dispute Resolution Committee

[41] Section 9(1) of the IKS Act.
[42] Section 9(2) of the IKS Act.
[43] Section 10(1) and (2) of the IKS Act.
[44] Section 12(3) of the IKS Act.
[45] Section 13(2)(a) of the IKS Act.
[46] Section 13(2)(b) of the IKS Act.



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(DRC) to resolve any dispute arising from the Act. The DRC is empowered to issue a written warning or notice prohibiting a licence holder from using traditional knowledge without authorisation. It can also recommend cancelling, suspending or revoking licence-holders' rights.[47] Any party not satisfied with the outcome or recommendations of the DRC may take the matter on review to the High Court. [48] The second mechanism is provided for in section 28 and states that it is a criminal offence for anyone to 'knowingly [make] commercial use of [traditional] knowledge in a manner which is not in accordance with an agreement entered into with the indigenous community, and (b) infringes the rights of that indigenous community'. Anyone guilty of this offence may be liable to a fine.

#### *4.2.5 Analysis*

Tong notes that in terms of 'the right to any benefits arising from the commercial use of traditional knowledge', the IKS does not stipulate whether the licences granted to users are exclusive or non-exclusive and whether the IPLCs have 'complete discretion as to the nature and terms' of the licences.[49] This has implications on whether a community can authorise different users to access their traditional knowledge and whether the terms of such access must be uniform for all users, or determined on a case by case basis. Tong also notes that the right of the IPLCs 'to be acknowledged as the origin of the traditional knowledge' probably includes both the commercial and non-commercial utilisation of traditional knowledge. Regarding the third right 'to limit any unauthorised use' Tong argues that the lack of a definition for the term '"use" in the IKS Act creates several problems. The author explains that the right of indigenous communities to limit the unauthorised use of their knowledge is not clearly defined. The term "use" is ambiguous and could include independent creations that resemble indigenous knowledge. It is arguable that the notice of registration only applies to instances where existing knowledge is used, not independent creations. The IKS Act may require obtaining prior informed consent (PIC) for all instances of using indigenous knowledge, even non-commercial use. The exceptions to the PIC requirement are limited to criticism, academic review, news

[47] Section 27(4) of the IKS Act.
[48] Section 27(3) of the IKS Act. There appears to be no provision for appeal in the IKS Act and the review process appears to be the only option for parties.
[49] Tong (n 11) 936.



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reporting, judicial proceedings, national emergencies or natural disasters. All other non-commercial use requires consent, including research and education. If the system of acquiring PIC is not efficient, it may result in increased infringement or avoidance of using indigenous knowledge in creations and innovations.[50]

Section 32(1) of the IKS states that the Act 'does not alter or detract from any right in respect of any statute or the common law'. Section 32(2) further stipulates that compliance with 'any procedures or requirements laid down in this Act does not constitute compliance with any procedures or requirements imposed by any other Act.' This means that the relationship between the rights and obligations created by the IKS Act and their relationship with rights and obligations created by other laws, such as the IPLAA and the Patents Act, may be overlapping or even contradictory.[51]

This concern is shared by Ncube, who posited that if the IPLAA were to come into force, its maligned provisions would 'trump the *sui generis* protection provided by the IKS Act'.[52] According to this author, the unsuitability of conventional IP laws for protecting traditional knowledge has been extensively demonstrated in the literature.[53] This means that only the creation of a *sui generis* protection regime could adequately protect traditional knowledge, especially given that 'the protection of traditional knowledge is an inherent part of biodiversity regulation' and specifically the protection of genetic resources.[54]

South Africa's approach to genetic resources and traditional knowledge protection has also been integrated with the rights and interests of indigenous peoples through the development of a National Biodiversity Framework (NBF).[55] The NBF provides for the recognition of the traditional ecological knowledge of indigenous communities and the incorporation of this knowledge into biodiversity conservation and management efforts. However, there are concerns about the implementation and effectiveness of South Africa's legal frameworks for protecting genetic resources and traditional knowledge. The

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[50] ibid.
[51] ibid.
[52] Ncube (n 32).
[53] See also discussion in Chapter 2 above.
[54] Ncube (n 44) 34.
[55] Department of Environmental Affairs, 'National Biodiversity Economy Strategy (NBES)' (2016) <https://www.environment.gov.za/sites/default/files/reports/nationalbiodiversityeconomystrategy.pdf>.



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complexity of the legal frameworks and the lack of resources and capacity to implement them effectively have been cited as significant challenges.[56] Additionally, the lack of clarity around the definition and scope of traditional knowledge and TCEs has raised concerns about the potential for misappropriation and exploitation of these resources.[57]

In conclusion, South Africa has adopted a multifaceted approach to protect genetic resources and associated traditional knowledge, which includes using both existing IP laws and sui generis legal frameworks. While there are challenges associated with the implementation and effectiveness of these frameworks, ongoing efforts to improve their clarity and effectiveness, and to ensure the participation and benefit-sharing of indigenous communities, can help to ensure that South Africa's approach effectively protects genetic resources and associated traditional knowledge while promoting sustainable development.

## 4.3 Brazil

### *4.3.1 Historical context*

Brazil has one of the world's largest concentrations of biological diversity,[58] the bulk of which falls under the custodianship of its indigenous peoples.[59] According to Schuster et al., the amount of biodiversity under the custodianship of IPLCs within their traditional lands is comparable to that officially protected in conservation areas.[60] This is a testament to the important role that IPLCs and their traditional knowledge play in conserving

[56] Joelle Dountio, 'The Protection of Traditional Knowledge: Challenges and Possibilities Arising from the Protection of Biodiversity in South Africa' (2011) 26 Sajah 10; Tong (n 28); Venencia Shonhai, 'Analysing South African Indigenous Knowledge Policy And' (2016) 12 International Journal on Minority & Group Rights 1 <http://ukzn-dspace.ukzn.ac.za/handle/10413/14927>; Naidoo (n 29).
[57] Tong (n 40).
[58] Anna C Fornero Aguiar and others, 'Business, Biodiversity, and Innovation in Brazil' [2023] Perspectives in Ecology and Conservation <https://linkinghub.elsevier.com/retrieve/pii/S2530064422000761> accessed 19 March 2023.
[59] Rodrigo A Begotti and Carlos A Peres, 'Rapidly Escalating Threats to the Biodiversity and Ethnocultural Capital of Brazilian Indigenous Lands' (2020) 96 Land Use Policy 104694 <https://doi.org/10.1016/j.landusepol.2020.104694>.
[60] Richard Schuster and others, 'Biodiversity on Indigenous Lands Equals That in Protected Areas' [2018] bioRxiv 321935.



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biodiversity and utilising its components.[61] Begotti and Peres note that these indigenous peoples are often disenfranchised in terms of land rights and the custodianship of their ancestral lands, including biodiversity and related genetic resources.[62] The situation of IPLCs in Brazil is comparable to that of South African IPLCs, the majority of whom were disposed of their land rights during successive colonial and apartheid governments.[63]

Also, like South Africa, Brazil's rich biodiversity and heritage of traditional knowledge of IPLCs make it a very attractive destination for bioprospectors.[64] However, like most biodiversity-rich countries, Brazil was also a victim of biopiracy for a long time, with most of its natural resources, including genetic resources, being misappropriated by corporations from the global North.[65] Much of this misappropriation was carried out under the guise that all biodiversity was the 'common heritage of mankind', and anyone could freely access and use it. Also, just like in South Africa, there was historically a lack of regulatory frameworks for bioprospecting and benefit sharing.[66] Regardless, Brazil is reputed to have a long history of developing legal instruments to regulate access to its genetic resources.[67] According to Eimer and Donadelli, by the 1980s, when biotechnological research was on the rise, driven by the patentability of biological materials, Brazil was one of the leading nations that began demanding compensation for the use of their genetic resources.[68] Over time, these demands were formalised through legislative and policy developments, especially after the CBD came into force in 1993.[69]

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[61] AC Guedes and MJA Sampaio, 'Genetic Resources and Traditional Knowledge in Brazil', *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (2004) <https://www.researchgate.net/profile/Promila-Kapoor-Vijay/publication/321587774_Protecting_and_promoting_Traditional_Knowledge/data/5a280cffa6fdcc8e8671a136/Protecting-and-promoting-Traditional-Knowledge.pdf#page=49> accessed 14 May 2023.
[62] Begotti and Peres (n 59).
[63] Thembela Kepe, Rachel Wynberg and William Ellis, 'Land Reform and Biodiversity Conservation in South Africa: Complementary or in Conflict?' (2005) 1 International Journal of Biodiversity Science & Management 3; Begotti and Peres (n 59).
[64] Muzaka and Serrano (n 1).
[65] Florian Rabitz, 'Biopiracy after the Nagoya Protocol: Problem Structure, Regime Design and Implementation Challenges' (2015) 9 Brazilian Political Science Review 30.
[66] Eduardo Vélez, 'Brazil ' s Practical Experience with Access and Benefit Sharing and the Protection of Traditional Knowledge ICTSD Project on Genetic Resources' [2010] Policy Brief.
[67] MC Do Amaral Azevedo, 'Regulation To Access To Genetic Resources and Associated Traditional Knowledge in Brazil' (2005) 5 Biota Neotropica 1.
[68] Thomas R Eimer and Flavia Donadelli, 'Paradoxes of Ratification: The Nagoya Protocol and Brazilian State Transformations' (2022) 31 Journal of Environment and Development 3.
[69] Vélez (n 66).



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Brazil signed and became a party to the CBD in 1992[70] but only ratified the Nagoya Protocol on 4 March 2021.[71]

### *4.3.2 Provisional Law 2052*

Gueges and Sampaio report that the first proposal for a law regulating access, utilisation and conservation of biodiversity was submitted to the Brazilian Congress by Senator Marina Silva in 1995 (Senate proposal no. 306/1995).[72] This was followed by Senate proposal no. 4579 by Congressman Jaques Wagner and the Project of Law (Proposal no. 4751/1998) a short while later.[73] Around the same time, some of the Brazilian states began to develop their own legal instruments to regulate access to genetic resources within their respective jurisdictions.[74] Congressman Wagner proposed the creation of a national catalogue where members of IPLC and other holders of traditional knowledge could deposit documents related to their traditional knowledge. The proposal also suggested that IPLCs should hold exclusive rights to any traditional knowledge associated with genetic resources and that no IPRs be approved for such inventions unless accessed in compliance with the proposed law.[75] These proposals led to the Brazilian government publishing the Provisional Law 2052 (PL2052) on 'access to genetic resources, protection and access to traditional knowledge, benefit sharing and access and transfer of technology for its conservation and use'.[76] This provisional law subsequently became Brazil's first substantive ABS law, aimed at protecting traditional knowledge associated with genetic resources against illegal and unauthorised use.

[70] 'List of Parties' <https://www.cbd.int/information/parties.shtml> accessed 10 February 2023.
[71] 'Parties to the Nagoya Protocol' <https://www.cbd.int/abs/nagoya-protocol/signatories/> accessed 12 February 2023.
[72] Guedes and Sampaio (n 61).
[73] Vélez (n 66).
[74] Guedes and Sampaio (n 61).
[75] ibid.
[76] Graham Dutfield, 'Developing and Implementing National Systems for Protecting Traditional Knowledge: Experiences in Selected Developing Countries' in S Twarog and P Kapoor (eds), *Protecting and promoting traditional knowledge: Systems, national experiences and inernational dimensions* (United Nations Conference on Trade and Development (UNCTAD) 2004) <https://unctad.org/en/docs/ditcted10_en.pdf#page=161> accessed 16 April 2023.



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Several amendments to PL2052 resulted in MP2186-16, which began to be implemented around 2002.[77]

Some key outcomes from the implementation of MP2186 were the creation of the Department of Genetic Heritage (DPG) within the Ministry of Environment and the constituting and first meetings of the Genetic Heritage Management Council (CGEN).[78] CGEN was formed with representatives from 19 government ministries and federal institutions and was empowered to make rules and deliberate on ABS, genetic resources and traditional knowledge issues.

However, by 2010, there were concerns that Brazil's laws were not fully effective in protecting genetic resources and associated traditional knowledge and the rights of IPLCs. Vélez highlighted five issues that needed to be addressed, namely (i) clearly defining what use of genetic resources should be included; (ii) clearly defining which ABS activities should be regulated; (iii) determining the position of *ex-situ* access to genetic resources; (iv) developing ABS guidelines for patent analysts; and (v) developing means to ensure the effective participation of IPLCs in decision making.[79] In addition, Vélez also noted that the absence of an international regime for ABS within the intellectual property regime provided a significant handicap for the effective implementation and enforcement of domestic laws in Brazil. Some authors have raised similar concerns regarding South Africa's regime for protecting genetic resources and associated traditional knowledge. In particular, the fact that domestic legislation can only be enforced in South Africa, means that an international legal instrument would go a long way to help the country and IPLCs to vindicate their rights against foreign corporations in foreign jurisdictions.[80]

#### *4.3.3 The Brazilian Biodiversity Law (Law No. 13,123/2015)*

Brazil's current approach to protecting its genetic resources and traditional knowledge is through a single comprehensive legislation. This is unlike in South Africa where genetic resources and associated traditional knowledge are protected through a number of

[77] Vélez (n 66).
[78] ibid.
[79] ibid 9.
[80] Ncube (n 32); Tong (n 28).



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statutes.[81] The Brazilian Biodiversity Law (Law No. 13,123/2015) (hereinafter the Biodiversity Law) [82] regulates access to both genetic resources and associated traditional knowledge. Chapter 1 of the law states that ‘the law provides for assets, rights and obligations related to (I) access to the genetic patrimony of the country… (II) the traditional knowledge associated [with] the genetic heritage, relevant to the conservation of biological diversity, the integrity of the country’s genetic heritage and the use of its components.’ The Biodiversity Law also provides for the ‘fair and equitable sharing of the benefits derived from the economic exploitation of…genetic heritage or associated traditional knowledge.’[83] In terms of this law, genetic heritage refers to ‘information of the genetic origin of plant, animal, microbial or other species, including substances derived from the metabolism of these living beings’, while ‘associated traditional knowledge is defined as information or practice of an indigenous population, traditional community or traditional farmer, about the properties or direct or indirect uses associated with genetic heritage.[84] Provision is also made for the distinction between associated traditional knowledge and associated traditional knowledge of unidentifiable origin, i.e. where such knowledge cannot be linked to any indigenous people, traditional community or traditional farmer. Article 2 of the Biodiversity Law contains other definitions that are in line with and additional to the definitions in the CBD. The additional aspect of these definitions is evident in the definition of genetic resources given above, which has been expanded in Brazilian law to include the metabolic products of living organisms.

Article 6 of the Biodiversity Law established the Council for the Genetic Heritage Management (CGen) under the Ministry of the Environment with the mandate to, among other things, prepare and implement policies ‘for the management of access to genetic heritage and to associated traditional knowledge, and for sharing of benefits. Thus the

[81] As shown in the discussion above, these include NEMA, NEMBA and the BABS regulations for biodiversity and genetic resources whilst traditional knowledge is specifically dealt with within the IKS Act and policies.
[82] Brazilian Biodiversity Law (Law No. 13,123/2015). A Portuguese version of the law is available on https://www.wipo.int/wipolex/en/text/376795 and was translated to English using the free version of DeepL (available from https://www.deepl.com/translator Accessed 16 March 2023). Because the DeepL service is not an official translation, in this study the translation is not used to derive the specific meanings of the statutes but to obtain an overall understanding.
[83] Ibid, Chapter 1(V).
[84] Ibid, Article 2(I) and (II) of the Biodiversity Law.



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responsibility of managing the fundamental data for ABS compliance lies with the Genetic Heritage Management Council (CGen).[85] This body is structured to include government and private sector persons, including indigenous populations, traditional communities, and traditional farmers.[86] To ensure adherence to the law, the Ministry of Environment created the National System of Genetic Resource Management and Associated Traditional Knowledge (SisGen).[87]

Article 8 specifically protects traditional knowledge associated with genetic heritage 'against illicit use and exploitation.' The article recognises the rights of IPLCs to participate in decision-making, at the national level, on matters related to the conservation and sustainable use of their traditional knowledge. In addition, provision is made for such traditional knowledge to be recorded and deposited in a database provided by the CGen or other specific legislation. The law exempted the 'exchange and dissemination of genetic heritage and associated traditional knowledge practised by indigenous populations, traditional communities and traditional farmers for their own benefit and based on their uses, customs and traditions.' This exemption is similar in effect to the provisions of South African law, which specify that outsiders need authorisation to use traditional knowledge.

The Biodiversity Law also requires that prior informed consent (PIC)[88] be obtained from IPLCs where the traditional knowledge is of identifiable origin. Users of traditional knowledge from unidentifiable origin are exempt from this requirement. This position is slightly different from the South African requirement that where an IPLC cannot be identified, the NIKSO acts as the trustee for any such traditional knowledge, and thus NIKSO's prior informed consent is required.

[85] Do Amaral Azevedo (n 67).
[86] Article 6 of the Biodiversity Law.
[87] Roberta Peixoto Ramos, 'Benefit-Sharing in the Brazilian Amazon : The Challenges to Achieving Equity and Fairness' (London School of Economics and Political Science 2019).
[88] Article 9 of the Biodiversity Law.



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### *4.3.4 Analysis*

Eimer and Donadelli argue that despite being recognised internationally as a leader in regulating access to genetic resources and ensuring benefit-sharing with traditional communities, Biodiversity Law (Law No. 13,123/2015) weakened Brazil's domestic legislation.[89] This reversal undermined the previously stringent requirements for protecting and obtaining informed consent from indigenous and traditional communities, directly contradicting the principles and intentions of the Nagoya Protocol. Eimer and Donadelli also note that, even though Brazil was the first country to ratify the CBD, it took another ten years to implement its major provisions legally.[90] These authors argue that this was due to disagreements between policymakers on how best to balance the rights of IPLCs as holders of genetic resources and associated traditional knowledge and those of the potential users of such genetic resources.[91]

The challenges of implementing policies to protect genetic resources and associated traditional knowledge are not unique to Brazil only. In South Africa, the provisions of IPLAA, enacted in 2013, are yet to be fully operationalised.[92] This chapter argues that this is a reflection of the unresolved debates regarding the protection of IPRs supported by the powerful countries of the global North on the one hand and the protection of the rights and interests of IPLCs in genetic resources and associated traditional knowledge on the other.

Despite challenges, Brazil is still reputed to be one of the leading nations in protecting genetic resources and traditional knowledge and has developed policies that address the concerns of both holders and users.[93] Brazil's laws for the protection of genetic resources and associated traditional knowledge give IPLCs several rights that may ensure that they

[89] Eimer and Donadelli (n 68).
[90] ibid 9.
[91] These authors also provide a detailed chronology of the legal debates and developments in Brazil for the implementation of the CBD and NP which they attribute to Brazil's emerging transition from a democratic developmental state to an environmental competition state.
[92] Tong (n 40); Bagley (n 4).
[93] Eimer and Donadelli (n 68).



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receive fair and equitable benefits from the utilisation of biodiversity. These include the right;

- to be acknowledged as the source of traditional knowledge;
- to be acknowledged in any uses and exploitation;
- to stop third parties from conducting research on or using the traditional knowledge;
- to prevent third parties from releasing information on the traditional knowledge under their control;
- to receive, directly or indirectly, payments or royalties in return for the commercial exploitation of traditional knowledge.[94]

Brazil's approach to traditional knowledge protection is primarily based on recognising it as collective and community property, focusing on protecting indigenous communities' cultural and intellectual heritage. This position is similar to South African law, which recognises traditional knowledge as property belonging to IPLCs. However, despite these efforts, there are concerns about the effectiveness of Brazil's legal framework in protecting traditional knowledge and the interests of indigenous communities.[95] Hasse and co-workers further criticise the exclusion of IPLCs in developing Brazil's ABS laws and state that the ABS laws 'are inadequate and do not comply with the CBD and the Nagoya Protocol', which Brazil ratified in 2020.'[96] Also, the use of existing IP laws to protect traditional knowledge may not be adequate to address its cultural and spiritual significance to IPLCs. In conclusion, despite the concerns raised by some authors, Brazil has taken a comprehensive approach to protecting genetic resources and traditional knowledge through a combination of IP laws and a *sui generis* legal framework.

## 4.4 India:

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[94] Dewi Nurmasari Pane, Miftah EL Fikri and Husni Muharram Ritonga, *Beyond Intellectual Property Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*, vol 53 (2018).
[95] Gaia Hasse, Kelly Lissandra Bruch and Joana Stelzer, 'Institutionalizing Biopiracy: Analysis of the Benefit-Sharing Rules in the Brazilian Biodiversity Law' (2021) 17 Law, Environment and Development Journal 115 <http://www.lead-journal.org/content/a1707.pdf>.
[96] ibid 117.



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#### *4.4.1 Context*

In its preamble, the Constitution of India alludes to the need to secure social, economic and political justice for its people. Like many other countries of the global South, India was historically a subject of colonialism, dispossession and the misappropriation of its genetic resources and associated traditional knowledge by more powerful countries of the West. In pursuit of these goals, India's Constitution provides some rights for its people, especially IPLCs. For example, section 29 states, 'Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.' Given the close relationship between genetic resources and associated traditional knowledge with the culture, customs and livelihood of IPLCs, this provision can be interpreted to include their protection. However, unlike South Africa's Constitution, which provides for environmental rights, India's Constitution merely states, ' The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.'[97]

India is recognised as one of the world's leaders in protecting traditional knowledge and genetic resources. The protection of genetic resources and traditional knowledge in India, just like in South Africa and Brazil discussed above, is rooted in the desire to prevent biopiracy and to secure the fair and equitable sharing of benefits derived from the use of genetic resources and associated traditional knowledge for India's IPLCs.[98] One of the key biopiracy incidents that drove this desire was the granting of a patent for turmeric in the USA to two non-resident Indians.[99] In successfully challenging the granting of this patent, India's Council for Scientific and Industrial Research (ICSIR) provided references from ancient Indian scriptures that demonstrated that turmeric had been used for centuries for the same uses as claimed in the patent application.[100] Several other incidences of biopiracy included patent applications for an oil extract of the Neem tree and basmati rice. Ganesan states that to avoid fighting the misappropriation of traditional

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[97] Section 48A of the Constitution of India. This duty is also repeated in section 51A(g) as one of the 'fundamental duties' of the every citizen of India.
[98] Muzaka and Serrano (n 1).
[99] Deekshitha Ganesan, 'Sui Generis Is the Answer: Positive Protection of Traditional Knowledge in India' (2016) 11 Journal of Intellectual Property Law and Practice 49.
[100] ibid.



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knowledge on a case-by-case basis, the Indian government implemented a defensive protection of traditional knowledge through the Traditional Knowledge Digital Library (TKDL) in 2001.[101]

The TKDL documents traditional knowledge from various fields, including medicine and agriculture, and provides a searchable database of traditional knowledge.[102] This makes India one of the earliest countries to institute a defensive protection mechanism for its traditional knowledge. Since then, the country has implemented several additional policies and legal frameworks to protect traditional knowledge and genetic resources.[103] India's unique approach to traditional knowledge protection uses a *sui generis* legal framework, which recognises traditional knowledge as a distinct category of intellectual property (IP) and acknowledges its cultural and spiritual significance.[104]

Whilst the Biological Diversity Act of 2002 is India's primary legislation regulating access to its biological resources and associated traditional knowledge, intellectual property laws are also relevant for protecting traditional knowledge in India. These include the Copyright Act, Patents Act, 1970 as amended by the Patent (Amendment) Act, 2005, the Trademarks Act, the Protection of Plant Varieties and Farmers Rights Act, 2001, and Indian law on geographic indicators.[105] It is important to note that most of these Acts protect traditional knowledge in different and specific contexts. Only laws that protect traditional knowledge associated with genetic resources will be discussed in this study. The Protection of Plant Varieties and Farmers Rights explicitly states that its objectives are protecting plant varieties and farmers' rights within the IP framework. Given this narrow focus, this Act will not be discussed further in this study. Therefore, only the

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[101] Sita Reddy, 'Making Heritage Legible: Who Owns Traditional Medical Knowledge?' (2006) 13 International Journal of Cultural Property 161.
[102] ibid.
[103] Sanjit Kumar Chakraborty, 'Protection of Traditional Knowledge and Plant Intellectual Property Rights : Emerging Challenges and Issues in India Although Not Too Severely , for the Present and Future Generations ." The Backdrop : Traditional Knowledge Is a Central Component for The' (2017) 3 Amity International Journal of Juridical Sciences 1 <https://amity.edu/UserFiles/aibs/c8cd2017 AIJJS Final_5-18.pdf>.
[104] Ganesan (n 99).
[105] Anupam Manhas and Sneha Sharma, 'Protection of Traditional Knowledge : Issues and Concerns' (2018) 3 CPUH Research Journal 132.



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Patents Act, as amended by the Patent (Amendment) Act and the BDA, are discussed below.

### *4.4.2 The Patents Act 1970 and the Patent (Amendment) Act 2005*

The Patent (Amendment) Act of 2005 introduced some measures to protect traditional knowledge within the Indian patent laws. Section 3(p) excludes from patentability any 'invention which, in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known substances'. Similarly, section 3(b) excludes any purported invention that is essentially a new use of a known substance from patentability. The law thus provides for any person to challenge or oppose a patent application in which traditional knowledge has been used because it lacks an inventive step or that there was either non-disclosure or wrongful disclosure of the source or usage of traditional knowledge in the invention.[106] According to Ganesan, these provisions mean that traditional knowledge is considered 'prior art' in India's IP laws.[107] Also, these provisions seek to correct the problem that many biodiversity-rich countries have historically faced, where the contribution of traditional knowledge holders is neither acknowledged nor rewarded.[108]

### *4.4.3 The Biological Diversity Act, 2002 (BDA)*

The preamble of the BDA states that its purpose is 'to provide for [the] conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge…' The preamble also recognises India's rich 'biological diversity and its associated traditional and contemporary knowledge system' within the context of India being a party to the CBD since 1992. The preamble, therefore, expresses that the BDA reflects India's domestic attempts to comply with the objectives of the CBD. Even though the BDA defines

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[106] ibid.
[107] Ganesan (n 99).
[108] ibid.



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biological resources, it does not define genetic resources or traditional knowledge.[109] What is crucial to note, however, is that the BDA does not only recognise traditional knowledge associated with biodiversity but also any contemporary knowledge associated with it. Without a clear definition of what is meant by traditional or contemporary knowledge associated with biodiversity may pose a challenge of what exactly is aimed at being protected. However, because the BDA is primarily based on the need for India to comply with the provisions of the CBD, it can be safely assumed that the definitions of terms in the CBD may be adopted here.[110]

The Act establishes a National Biodiversity Authority (NBA)[111] , which is mandated with administering and regulating access to India's biodiversity and associated knowledge. In section 3 of the BDA, persons who are not citizens of India, non-resident citizens, as well as body corporates, associations or organisations operating from outside India, are required to obtain the approval of the NBA before they can undertake any biodiversity-related activities. Section 4 further prohibits the transfer of 'the results of research relating to any biological resources occurring in or obtained from India for monetary consideration or otherwise' without the prior consent of the NBA. In an explanatory note for section 4, the BDA stipulates that 'transfer' does not include publishing research papers or disseminating knowledge in any seminar or workshop. It is argued that such a provision caters to concerns such as those raised in the literature concerning South Africa's ABS legislation that it hinders academic research of biodiversity and genetic resources.[112]

One of the innovative provisions of the BDA is its requirement that 'no person shall apply for an intellectual property right, by whatever name called, in or outside India, for any invention based on any research or information on a biological resource obtained from India without obtaining the previous approval of the NBA.'[113] The BDA further provides that 'no person… shall obtain any biological resource for commercial utilisation, bio-

[109] Section 2(c) defines biological resources as 'plants, animals and microorganisms or parts thereof, their genetic material and by-products (excluding value added products) with actual or potential use or value, but does not include human genetic material'.
[110] Manhas and Sharma (n 105).
[111] Chapter III of the BDA.
[112] Graham J Alexander and others, 'Excessive Red Tape Is Strangling Biodiversity Research in South Africa' (2021) 117 South African Journal of Science 2.
[113] Section 6(1) of the NBA.



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survey and bio-utilisation for commercial utilisation' without getting prior approval from the concerned State Biodiversity Board. Even though this provision binds Indian citizens and body corporates registered in India, it makes an exception for 'local people and communities of the area, including growers and cultivators of biodiversity, and *vaids* and *hakims* who have been practising indigenous medicine.'[114]

### *4.4.4 Analysis*

One of the main challenges in safeguarding traditional knowledge and genetic resources involves finding a balance between the rights and interests of indigenous peoples and intellectual property (IP) rights holders. India's approach aims to strike this balance by ensuring indigenous communities' participation and benefit sharing in any commercial use of genetic resources and traditional knowledge[115]. However, there are concerns that the existing legal framework may not sufficiently safeguard the interests of indigenous communities.[116] For example, the requirement for prior informed consent (PIC) might not adequately protect indigenous communities, as they may lack the resources to negotiate fair benefit-sharing agreements. Moreover, the absence of a clear definition of traditional knowledge in the BDA and the lack of specific provisions for traditional knowledge protection in patent law have raised doubts about the effectiveness of the current legal framework. Additionally, there are worries that the sui generis legal framework proposed in India's Protection of Traditional Knowledge and Cultural Expressions Bill may not fully safeguard TK's cultural and spiritual significance.[117]

Another example of complexity in following the national regulations is in India where the BDA introduces distinct regulations for Indian and non-Indian companies and citizens entities. These regulations are implemented and enforced through numerous local Biodiversity Management Committees (BMCs) and various authorities including India's National Biodiversity Authority and the State Biodiversity Boards are mandated to consult

[114] Section 7 of the NBA.
[115] Nurul Barizah, 'Access and Benefit Sharing of Biodiversity for Empowering Local Communities ; Case Studies in Selected Countries' (2021) 11 190.
[116] Charles McManis and Yolanda Terán, 'Trends and Scenarios in the Legal Protection of Traditional Knowledge' [2010] Intellectual Property and Human Development: Current Trends and Future Scenarios 139.
[117] ibid.



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them when deciding the conditions for ABS agreements. Non-Indian companies and persons require permits and benefit sharing agreements, even without utilising the traditional knowledge or genetic resources as defined by the Nagoya Protocol. The BDA however, provides that in some instances some foreign companies may be exempted from this requirement. What makes India's ABS implementation complex, however, is the fact that the BDA does not define specific instances of when they may be implemented, leaving their interpretation to debate between users, BMCs and national authorities. Therefore, implementation of India's ABS legislation is fastidious as foreign companies need to negotiate with national authorities on contractual clauses that sometimes are hardly accepted by companies' lawyers.[118]

In conclusion, India has taken a unique approach to protecting traditional knowledge and genetic resources by combining a *sui generis* legal framework and the existing intellectual property laws (as amended). While India's approach seeks to balance the rights and interests of indigenous communities and IP rights holders, there are concerns about the effectiveness of the existing legal framework in protecting traditional knowledge and the interests of indigenous communities. It is thus essential to continue monitoring and evaluating the existing legal frameworks' effectiveness and address the gaps and challenges to ensure that they adequately protect traditional knowledge and genetic resources while promoting sustainable development.[119]

### 4.5 Comparative analysis

The above sections described the main legislative tools deployed by South Africa, Brazil and India to protect genetic resources and associated traditional knowledge and how these measures seek to balance these objectives with the protection of the rights of IPLCs

[118] Frank Michiels and others, 'Facing the Harsh Reality of Access and Benefit Sharing (Abs) Legislation: An Industry Perspective' (2022) 14 Sustainability (Switzerland).
[119] Rai S Rana, 'Access to Genetic Resources and Benefit Sharing: Indian Experience' (2016) 29 Indian Journal of Plant Genetic Resources 434; Chakraborty (n 103); Rakesh Kumar, 'Intellectual Property Rights in India: Legal Analysis, Status and Strategies' (2020) 9 International Journal of Social Sciences 141.



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and IPRs. As shown above, South Africa combines a *sui generis* system with developments of the existing intellectual property system to achieve this purpose. Brazil, on the other hand, utilises a *sui generis* system to provide a positive protection mechanism. Positive protection mechanisms entail developing and acquiring certain rights to genetic resources and or the associated traditional knowledge.[120] Thus Brazil's system confers rights and obligations on the holders and users of genetic resources and associated traditional knowledge. Overall, holders have the right to the fair and equitable sharing of benefits arising from the use of genetic resources and associated traditional knowledge, whilst users must comply with all the requirements for accessing and using these resources. Oyewunmi argues that the Brazilian system for protecting genetic resources and associated traditional knowledge is exceptional in that it clearly provides due recognition for the rights of IPLCs over genetic heritage and traditional knowledge.[121]

It is argued that the South African system, by recognising traditional knowledge as property belonging to traditional communities, effectively offers positive protection, similar to Brazilian law. Property rights regimes grant specific exclusive rights related to the subject matter, which includes the authority to prevent others from utilizing or obtaining access to the property.[122] However, South Africa could learn from the Brazilian system to clarify the scope and content of IPLC rights to genetic resources and traditional knowledge as property and how these measure up against other competing rights such as IPRs.

India's defensive protection system is highly regarded worldwide, and thus, even though South Africa has developed its own documentation and registration system for traditional knowledge, it may be worthwhile to glean some lessons from it. One of the innovative mechanisms included in the Indian legislative system is the creation of new grounds to challenge the granting of patents because the use of genetic resources and traditional

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[120] Adejoke O Oyewunmi, 'Sharpening the Legal Tools to Overcome Biopiracy in Africa Through Pro-Development Implementation of Normative International Standards: Lessons from Brazil, South Africa and India' (2013) 21 African Journal of International and Comparative Law 447.
[121] ibid.
[122] John T Cross, 'Property Rights and Traditional Knowledge' (2011) 13 Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad 11; Wanjiku Karanja, 'Legitimacy of Indigenous Intellectual Property Rights' Claims' (2016) 1 Strathmore Law Review 165.



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knowledge was not disclosed. Accordingly, patents can be opposed because the invention is anticipated if regard is had to the traditional knowledge of IPLCs.[123] Whilst this is similar to the South African system (in the amended IP laws), a major difference is that the onus is on the applicant to disclose the use of genetic resources or associated traditional knowledge in South Africa.

According to Oyewunmi, India's legislative system goes beyond merely guarding against biopiracy and the misappropriation of genetic resources and associated traditional knowledge within India.[124] To prevent transborder biopiracy, India's TKDL, a comprehensive collection of traditional knowledge, is made available to patent examiners in different countries, including the USA, Japan and the European Union, in an accessible and readily searchable format. The Indian TKDL reports that since July 2009 to date, more than 323 patent applications have either been rejected, withdrawn or modified as a direct consequence of the Indian TKDL revealing the use of traditional knowledge as prior art.[125] This number includes patents applications made to the European Patent Office (EPO) (135 cases), Indian Controller General of Patents, Designs and Trademarks (CGPDTM) (111 cases), United States Patent and Trademark Office (USPTO) (29 cases), Canadian Intellectual Property Office (CIPO) (37 cases), IP Australia (AIPO) (10 cases) and the United Kingdom Patent and Trademark Office (UKPTO) (1 case). It is submitted that traditional knowledge registered with NIKSO must also be structured in such a way that it is readily searchable and accessible to patent offices abroad. Also, as shown in the Indian case, there is a need to build capacity in NIKSO to enable South African officials to identify patent applications at international patent offices that may be utilising traditional knowledge and genetic resources from South Africa.

Lastly, one of the criticisms against the South African legislative mechanism is the use of several legislative instruments to protect genetic resources and associated traditional knowledge instead of a single comprehensive instrument. This leaves users and holders of genetic resources and associated traditional knowledge with the complex task of

[123] Section 25(1)(k) of the Indian Biodiversity Act.
[124] Oyewunmi (n 120).
[125] Indian TKDL Team, 'TKDL Outcomes against Bio-Piracy' (2023) <https://www.tkdl.res.in/tkdl/LangDefault/Common/outcomemain.asp?GL=Eng> accessed 5 June 2023.



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determining which laws to consult, which specific provisions apply in a particular instance, and what takes precedence over the other. This is not helped by the provision in the IKS Act, for example, which states that 'this Act does not alter or detract from any right in respect of any statutes or the common law'.[126] It is argued that this provision subordinates any rights conferred by the IKS Act to other pre-existing rights, such as IPRs.

## 4.6 Discussion and conclusion

All three countries have implemented legal frameworks to protect their genetic resources and traditional knowledge. Even though there are many similarities, there are some significant differences in the approaches taken by each country. South Africa and India, for instance, have implemented policies that recognise the value of traditional knowledge in sustainable development and the utilisation of genetic resources. On the other hand, Brazil focuses on regulating access to its biological resources, which it terms 'genetic heritage' and intellectual property rights over genetic resources and traditional knowledge.[127] It is argued that the use of the term 'genetic heritage' in Brazil places genetic resources squarely within the realm of IPLC rights and implies that protecting them implicates the rights and interests of IPLCs. Therefore, the protection of genetic resources and traditional knowledge in Brazil already takes into account the rights of IPLCs to such genetic resources and traditional knowledge. Thus, while South Africa and India recognise the value of traditional knowledge in sustainable development, Brazil focuses more on regulating access to biological resources as a conduit for protecting traditional knowledge and the rights of IPLCs. Mengistie argues that the main objective of Brazil's regime is to regulate access to genetic resources and associated traditional knowledge and to ensure the fair and equitable sharing of benefits.[128] The author also notes that 'there is no definition of traditional knowledge' in Brazilian legislation, and neither are the criteria for protection provided nor the scope of the rights of IPLCs defined.

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[126] Section 32(1) of the IKS Act.
[127] Dutfield chapter cited in Ncube.
[128] Getachew Mengistie, 'The Impact of the International Patent System on Developing Countries' [2003] Réunion de l'Assemblée des Etats membre de l'OMPI 1.



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In conclusion, protecting genetic resources and traditional knowledge is essential for many countries' sustainable development. South Africa, Brazil, and India have implemented legal frameworks to protect their respective jurisdictions' genetic resources and traditional knowledge. Even though their approaches differ, all three countries demonstrate a desire for their genetic resources and associated traditional knowledge to contribute towards the socio-economic development of the country and the relevant IPLCs. In other words, all the legislative and policy frameworks aim to promote the sustainable use of their genetic resources and ensure equitable benefit sharing. It is essential to continue monitoring and evaluating the effectiveness of these legal frameworks to ensure that they remain relevant and effective in the changing world. Some authors, such as David, have opined that, despite the differences in the approaches adopted by these three countries, their examples are worth following for most biodiversity-rich countries.[129]

[129] Bruno David, 'New Regulations for Accessing Plant Biodiversity Samples, What Is ABS?' (2018) 17 Phytochemistry Reviews 1211 <https://doi.org/10.1007/s11101-018-9573-1>.



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# CHAPTER FIVE

# DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

The study aimed to examine the protection of genetic resources and associated traditional knowledge in South Africa and how it is balanced with the competing rights of IPLCs and users of genetic resources and traditional knowledge. The study began by examining the current legal and academic debates regarding the protectability of traditional knowledge within the IP system (Chapter Two). It then situated this examination within current theoretical and legal foundations from the South African Constitution and international law (Chapter Three). Chapter Four provided an in-depth comparative analysis of the measures taken in South Africa, Brazil, and India, to determine whether there are any lessons and opportunities for strengthening the policies and legislation to protect genetic resources and traditional knowledge in South Africa. This final chapter provides the main conclusions drawn from the study and some recommendations for consideration by South African policymakers and researchers.

## 5.2 Summary of key findings

Chapter One of the study provided an overview of the growing realisation of the importance of traditional knowledge in the commercial exploitation of genetic resources in biotechnological industries worldwide. It explored the key debates that pit the global South's biodiversity-rich countries on the one side against the global North's technologically advanced and yet resource-poor countries. In these debates, the former countries argue for measures to protect genetic resources and associated traditional knowledge to prevent their misappropriation through biopiracy. On the other hand, developed countries argue that the characteristics of traditional knowledge make it both undesirable and impractical to protect it within the international IP regime. The chapter demonstrated, however, that there is growing consensus that the continued misappropriation and biopiracy of genetic resources and associated traditional knowledge cannot continue unabated. Referring to the objectives of the CBD, the chapter argued that South Africa must balance the rights and interests of both holders and users of



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genetic resources and associated traditional knowledge. The chapter then went on to provide the problem statement, the research aims and objectives, the hypothesis, the scope and limitations of the study, and the study's significance. The chapter concluded by providing a brief literature overview focussing on the relationship between genetic resources, traditional knowledge and intellectual property rights and the rights of IPLCs as holders of traditional knowledge.

Chapter Two took the discussion of the relationship between genetic resources, traditional knowledge, IPLC rights and IPRs further. The chapter showed that genetic resources are an integral part of biodiversity, and the full realisation of their economic or commercial value requires the law to provide orderly access to them. The chapter argued that the protection of genetic resources and associated traditional knowledge is intricately linked to the protection of the rights of IPLCs and IPRs. The chapter also examined the problem of biopiracy globally, particularly in South Africa. In the case of South Africa, it was shown that even bona fide bioprospecting sometimes morphed into biopiracy due to the historical legacies of colonialism and apartheid. Also, it was revealed that a historical absence of domestic and international protection measures for genetic resources and traditional knowledge within the prevailing IP system allowed for biopiracy. These reasons were shown to be why IPLCs and provider countries such as South Africa were often left empty-handed whilst others obtained, patented, and commercially exploited their genetic resources and traditional knowledge. The chapter concluded that these problems were the driving force behind the persistent calls to end biopiracy and ensure the fair and equitable sharing of the benefits derived from the utilisation of genetic resources and associated traditional knowledge.

Chapter Three examined South Africa's constitutional and international obligations relating to the utilisation and protection of genetic resources and associated traditional knowledge. The chapter examined the provisions of the South African Constitution and international legal instruments to determine what provisions could be used as a basis for developing domestic protection policies and legislation. The first part of the chapter identified three constitutional rights, namely environmental rights (section 24), property rights (section 25) and cultural rights (sections 30 and 31), that are implicit in the



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protection of genetic resources, traditional knowledge and the rights of IPLCs and IPRs. The second part of the chapter then examined international legal instruments, which could be interpreted as placing an obligation on the South African State to protect genetic resources, associated traditional knowledge and the rights of holders (IPLCs) and users of traditional knowledge. The instruments examined included the TRIPS Agreement, the CBD and its Nagoya Protocol, the ITPGRFA, African Model Law and the ARIPO's Swakopmund Protocol, among others. The chapter found that despite apparent discord between the TRIPS Agreement and the CBD, these instruments are key to balancing the protection of genetic resources, traditional knowledge, and the rights of IPLCs and IPRs. When considered with the other instruments examined, the chapter argued that protecting traditional knowledge and genetic resources should incorporate a human rights perspective. Overall, the chapter concluded that the Constitution and international legal instruments mandate South Africa, when developing domestic tools to protect genetic resources, traditional knowledge and IPRs, to engage in a skilful balancing act to achieve human socio-economic development for IPLCs while promoting and rewarding innovation through strong IP laws.

Chapter Four provided a comprehensive comparative discussion of the legislative developments and provisions in South Africa, Brazil, and India. For each jurisdiction, the chapter first provided an overview of the historical and legislative context within which each country developed its domestic regimes. An in-depth discussion of each country's relevant statutes and policies followed. These provisions were critically analysed to determine whether there would be gaps, problems, and opportunities for South Africa to learn and further develop its legislative framework. The chapter revealed that all three countries had implemented domestic measures using a combination of *sui generis* mechanisms and existing IP laws to protect genetic resources and traditional knowledge within their territories. These mechanisms include the defensive protection of traditional knowledge by registering it in databases. India was the leading country in developing and utilising a comprehensive database for traditional knowledge. Even though all the countries also recognised the rights of IPLCs in relation to their traditional knowledge and established mechanisms for them to have a say through the principle of prior informed consent (PIC), Brazil was the leading country in developing positive protection



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mechanisms which accorded specific rights to its IPLCs. The Chapter concluded that, even though the developments in India and Brazil are similar in effect to South Africa, a few lessons can still be learned to improve South Africa's legislation and policy approach. These will be discussed below.

### 5.3 Discussion

Before providing the conclusions and recommendations of the study, a few important issues are worth discussing. Firstly, a key recurring theme in all the chapters was the need to consider the rights of IPLCs to genetic resources and associated traditional knowledge. The study noted how the historic absence of measures to regulate access to genetic resources and traditional knowledge negatively affected IPLCs, not only in terms of losing out on the benefits but also on the erosion of their culture, which is intricately linked to these resources. As a result, the study argued for a human rights approach to protecting genetic resources and associated traditional knowledge. This position has been canvassed in the literature by leading authors such as Dutfield, Osei-Tutu and Oguamanam.[1] However, Hossain and Ballardini support a more holistic, principle-based approach that considers human rights, biodiversity protection and private property concerns of IP within a system based on values such as fairness and equality.[2]

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[1] Graham Dutfield and Uma Suthersanen, 'Traditional Knowledge and Genetic Resources: Observing Legal Protection through the Lens of Historical Geography and Human Rights' (2019) 58 Washburn Law Journal 399 <https://ssrn.com/abstract=3282818https://ssrn.com/abstract=3282818>; Giulia Sajeva, 'The Legal Framework Behind Biocultural Rights. An Analysis of Their Pros and Cons for Indigenous Peoples and for Local Communities' in Fabien Girard, Ingrid Hall and Christine Frison (eds), *Biocultural Rights and Community Protocols. Protecting and Promoting Indigenous Peoples' and Local Communities' Ways of Life.* (Earthscan-Routeledge 2022) <https://library.oapen.org/bitstream/handle/20.500.12657/53679/9781000593624.pdf?sequence=1#page=202> accessed 24 August 2022; Janewa Osei-Tutu, 'Humanizing Intellectual Property: Moving Beyond the Natural Rights Property Focus' (2017) 20 Vanderbilt Journal of Entertainment & Technology Law 207; Sara Dal Monico, 'Biopiracy, or the Misappropriation of Traditional Knowledge for Profit : A Human Rights Perspective' (Ca' Foscari University of Venice 2018) <http://157.138.7.91/bitstream/handle/10579/14374/843353-1221115.pdf?sequence=2>; Chidi Oguamanam, 'Indigenous Peoples' Rights At The Intersection of Human Rights And Intellectual Property Rights' (2014) 18 Marquette Intellectual Property Law Review 265 <http://scholarship.law.marquette.edu/iplrhttp://scholarship.law.marquette.edu/iplr/vol18/iss2/8>.

[2] Kamrul Hossain and Rosa Maria Ballardini, 'Protecting Indigenous Traditional Knowledge Through a Holistic Principle-Based Approach' (2021) 39 Nordic Journal of Human Rights 51 <https://doi.org/10.1080/18918131.2021.1947449>.



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The present study thus agrees with this approach. Therefore, policies and legislation for protecting genetic resources and associated traditional knowledge should be implemented in such a way that it serves the various goals, which include the protection of the rights of IPLCs, and fair, equitable and sustainable socio-economic development, among others. In implementing legislation and policies, South Africa must embark on a balancing act that ensures that genetic resources and traditional knowledge are utilised effectively and that there is fair and equitable sharing of the befits.[3]

Secondly, the study noted that the Constitution mandated the South African State to protect the environmental rights of its citizens. These include the right 'to have the environment protected for the benefit of present and future generations'. The State also has an obligation to 'secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development'.[4] It was, therefore, argued that the constitutional duty to protect genetic resources also extends to the protection of the rights of IPLCs. This is the position that was also adopted by Murphy J in *HFD Developers (Pty) Ltd v Minister of Environmental Affairs and Tourism,* where the court held that section 24 of the Constitution imposed a 'constitutional imperative on the State to secure' the rights of South Africans, in particular, IPLCs whose livelihoods, customs and traditions were closely intertwined with the genetic resources and associated traditional knowledge in question.[5] As the Bill of Rights states, 'the Constitution is the supreme law of the Republic, law or conduct inconsistent with it is invalid, and *the obligations imposed by it must be fulfilled'*[6] (own emphasis).

Thirdly, and related to the above two observations is that, even though the Constitution provides for certain fundamental rights which can be invoked for the protection of the rights of IPLCs in the protection of genetic resources and traditional knowledge, there is a need to follow the Brazilian example of positively developing and assigning specific

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[3] Aman Gebru, 'Intellectual Property, Traditional Knowledge, and Bioprospecting: Searching for Efficient Balance of Rights' [2017] ProQuest Dissertations and Theses <http://cyber.usask.ca/login?url=https://search.proquest.com/docview/2002094052?accountid=14739&bdid=6492&_bd=b7u1ZKeAvdVT3wklvS4O0LZ0p2U%3D>.
[4] Section 24(b)(iii) of the Constitution.
[5] *HFD Developers (Pty) Ltd v Minister of Environment and Tourism* 2006 (5) SA 512 (T) at 17.
[6] Section 2 of the Constitution.



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rights to IPLCs. This clarifies the scope and content of their rights in cases of conflict with other competing rights, such as IPRs of users of genetic resources and associated traditional knowledge. This is critical, especially given the apparent controversy between the individual private rights approach of the IP system and the communal or collective rights approach espoused by the proponents for protecting genetic resources and associated traditional knowledge.

### 5.4 Conclusion

The study set out to critically assess the regulatory and policy interventions in South Africa and how they balance the competing rights and interests of IPLCs and IPRs in protecting traditional knowledge associated with genetic resources. An analysis of South Africa's legislative and policy frameworks shows that South Africa employs both sui generis systems and existing IP laws to protect genetic resources and associated traditional knowledge. It also showed that the IKS Act specifically recognises traditional knowledge as property belonging to IPLCs, and as such, it falls to be protected under the property laws of South Africa as well. However, lessons learned from other jurisdictions, such as Brazil, reveal that it is also worthwhile to implement positive protection mechanisms that develop and assign specific rights to IPLCs regarding genetic resources and associated traditional knowledge, which they can enforce against other competing rights such as IPRs.

The study also noted that at the core of any legislative and policy framework was the Constitution-backed goal of transforming South African society from the legacies of colonial and apartheid dispossession to an inclusive society. In pursuit of this goal, South Africa has been developing and realigning its legal and policy frameworks to include protections for genetic resources and associated traditional knowledge while ensuring the protection of IPRs for socio-economic development. Bagley suggests that, when fully implemented and operationalised, South Africa's protection regime has the potential 'to achieve superior economic, cultural and sustainable outcomes in the implementation of the CBD and NP, and, importantly, to provide protection for indigenous knowledge and



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indigenous biological resources.'[7] She posits further that this regime can serve as a model for other countries developing their own mechanisms for protecting genetic resources and associated traditional knowledge.[8]

### 5.5 Recommendations

Therefore, in light of the lessons drawn from the other jurisdictions and the findings and conclusions reached in this study, the following recommendations are made.

(a) Even though some significant progress has been made at the WIPO-IGC regarding the finalisation of a comprehensive international instrument for the protection of genetic resources, traditional knowledge and TCE within the global IP framework,[9] South Africa and like-minded countries[10] need to continue to strengthen their domestic legislative and regulatory frameworks to ensure that their citizens and IPLCs are not short-changed in the utilisation of genetic resources and traditional knowledge. Such efforts must involve IPLCs from the onset as equal partners and stakeholders in the development of policies and legislation.

(b) Linked to the first recommendation, this study also recommends that South Africa's policymakers must clearly define the rights (and corresponding obligations) that must be enjoyed by the different stakeholders in the protection of genetic resources and associated traditional knowledge. This will assist in weighing up and balancing these rights in cases of conflict.

(c) One of the challenges highlighted in all the countries, and glaringly in South Africa, is a lack of capacity and competencies to effectively implement ABS legislation. The study, therefore, recommends at least two approaches to resolving this problem. The first is to enhance capacity building, training, and awareness of all

[7] ibid 4.
[8] ibid 4.
[9] WIPO, 'Report on the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC): Decision' (WIPO, 2021) <https://www.wipo.int/export/sites/www/tk/en/documents/pdf/igc-mandate-2022-2023.pdf>.
[10] Chidi Oguamanam, 'Understanding African and Like-Minded Countries' Positions at WIPO-IGC' (2020) 60 IDEA 386.



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stakeholders regarding the processes and procedures for the protection of genetic resources and associated traditional knowledge. This includes holders and users of traditional knowledge and government bureaucrats. Secondly, the South African government needs to streamline the ABS application processes so that it promotes rather than hampers bioprospecting.

(d) South Africa needs to fully develop its *sui generis* regime to clarify what rights and obligations accrue to which stakeholders in the protection and utilisation of genetic resources and associated traditional knowledge. This should include clarifying the role of IPLCs as not only custodians and holders of genetic resources and traditional knowledge but also as equal co-creators and partners in the knowledge economy.

(e) South Africa and other like-minded countries should push for the finalisation and adoption of a stronger and more comprehensive internationally binding instrument at the WIPO-IGC. The enforcement of its domestic protection mechanisms can only be effective if supported by a strong international enforcement mechanism.

(f) Lastly, even though there appears to be a conflict between the objectives of the CBD and the TRIPS Agreement, both instruments are equally important for South Africa's socio-economic development. Therefore, there must be more coordination between government departments that deal with the different aspects relating to these instruments to ensure policy consistency and harmony, especially between the enforcement of IPRs and the protection of genetic resources and associated traditional knowledge.

**5.6 Areas for further research**

The protection of genetic resources and associated traditional knowledge is still an evolving topic, and as evidenced by the slow progress at the WIPO-IGC, international consensus will not be easy to come by. Even though countries such as South Africa, Brazil and India have developed domestic legislative mechanisms, there is little to no jurisprudence in these jurisdictions to determine how effective the mechanisms are in



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balancing competing rights. Therefore, there is a need for further studies that can examine the practical implications and applications of these legal frameworks and their impact on IPLCs, IPRs, and innovation.

Also, some studies have argued that the value of traditional knowledge in biotechnology in exaggerated. Even though some studies have demonstrated that South Africa possesses vast numbers of genetic resources with commercial potential, no study has examined the exact relationship between traditional knowledge and the commercial potential of these genetic resources in South Africa and what this relationship means for the legal protection of genetic resources and associated traditional knowledge.

Lastly, this study demonstrated that South Africa has the necessary legislative and policy tools to effectively protect genetic resources and associated traditional knowledge. However, the exact relationship between the rights of IPLCs relating to traditional knowledge and IPRs is also unclear. Therefore, the study recommends that this could be an important research area, an understanding of which would assist South African courts and other bodies in weighing up and balancing competing rights to genetic resources and associated traditional knowledge.



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